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A COMPARISON OF PRC LEGISLATION AND FOOD STANDARDS RELATED TO HYGIENE AND FOOD SAFETY IN THE PRODUCTION OF PORK, BEEF AND POULTRY MEAT AND OFFAL VERSUS PERTINENT EU LEGISLATION

A study conducted upon request of the EU Commission

INDEX

LIST OF NATIONAL STANDARDS ASSESSED

GB 14881-2013-National Food Safety Standard- General Hygiene Practice for food production

GB 31621-2014- National Food Safety Standard-Hygienic norms of food production

GB 27341-2009-National Standard-Hazard Analysis and Critical Control Point (HACCP) System - General Requirements for Food Processing Plant

GB 22000-2006- National Standard- Food Safety Management System

GB/T 19538-2004- National Standard-Hazard Analysis and Critical Control Point (HACCP) System – Requirements for application

GB 12694-2016- National Food Safety Standard-Hygienic Specification for livestock and poultry slaughtering and processing

GB 17237-2008- National Food Safety Standard-General technical conditions for slaughter and processing of livestock

GB 17236-2019- National Food Safety Standard-Livestock and pig slaughtering operation rules for pigs

GB 19479-2019- National Food Safety Standard- Livestock and pig slaughter good practices for pigs

GB 20575-2019- National Food Safety Standard- Specification for good manufacture practice for fresh and frozen meat processing

GB 2707-2016- National Food Safety Standard- fresh and frozen livestock and poultry products

GB 20799-2016- National Food Safety Standard- Hygiene specifications for meat and meat product management

GB 28640-2012- National Food Safety Standard-Technical Specifications for cold chain transportation management of livestock and poultry meat

GB 19303-2003- National Food Safety Standard-Hygienic Regulations for production of cooked meat products enterprises

GB 29921-2013- National Food Safety Standard-Pathogen limits for food

GB 2726-2016- National Food Safety Standard- For cooked meat products

PROJECT BACKGROUND AND INTRODUCTION

The overall objective of the project is to contribute to the facilitation of trade in livestock products between the European Union and the People's Republic of China by a systematic comparison of applicable hygiene and food safety standards in the production of fresh pork, beef and poultry as well as products thereof.

By identifying matching provisions – as well as any discrepancies in legal requirements – the work is hoped to contribute to the streamlining and simplification of approval and verification procedures in the trade of these products.

European Union (EU) Regulations pertinent to food hygiene in general and meat hygiene in particular are laid down in the General Food Law (Regulation (EC) No 178/2002), the Hygiene Legislation (Regulations (EC) No 852, No 853 and Regulation (EU) 2017/625 on official controls and other official activities, and the respective implementing rules. In addition, various Guidance Documents were published as Commission notices to assist food business operators with implementing the legislative requirements (Commission Notice 2016/C 278/01 and Commission Notice 2020/C 199/01).

The basic legislation in China pertinent to food hygiene in general and meat hygiene in particular is laid down in National standards.

The present document compares EU legislation applicable to the production of fresh meat and poultry with the respective legal requirements of the People's Republic of China, as published in the relevant Food Safety Standards and the Compliance Checklist for Registration of Overseas Establishments of meat to be Exported to P.R. China that was made available to the EU Commission by the General Customs Administration of China.

For the purpose of this study, 21 Chinese National Standards dealing with food hygiene, animal slaughter, meat processing, drinking water, residues and contaminants were evaluated. The provisions were compared with the EU requirements that are applicable and legally binding for all operators and authorities in the EU. The evaluation was occasionally complicated by the fact that overlapping provisions exist in the many Chinese standards, which are not always consistent.

RESULTS AND CONCLUSIONS

In general, the EU food law and Chinese food safety standards pursue the same objective, address the same end points and define very similar limit values for the control of contaminants, residues and microbial pathogens. Process controls based on HACCP principles are the core element of food hygiene in both regulatory systems.

As additional elements that are not found in Chinese provisions, the EU rules include an obligation that animals delivered for slaughter must be clean and must be accompanied by food chain information. This information provides data on the origin, health status, medical treatments and other issues that might affect the sanitary status of the animal or group of animals to be slaughtered. In addition to process controls after harvest, the EU implements preventative programmes to eliminate human pathogenic *Salmonella* species from poultry and pig herds.

EU rules also oblige slaughtering plants to designate an animal welfare officer, a provision that is not found in the Chinese standards evaluated.

Chinese national standards frequently contain technical details of procedures or analytical methods that are in the EU described in Guides to Good Practice or other guidance documents[1] rather than in EU law.

Notwithstanding these discrepancies in scope, the comparison finds that Chinese food safety requirements with regard to process hygiene, control of environmental contaminants and water quality are fully addressed by applicable EU legislation, which means that all legally authorized establishments that produce or process meat and poultry in the EU fulfil applicable Chinese hygiene standards.

With regard to microbiological analyses, Chinese and EU food safety standards show some differences: EU legislation defines two different criteria for process controls and market surveillance (process hygiene

[1] . For example Guidance Note 3 providing Guidelines for the Interpretation of Results of Microbiological Testing of Ready-to-Eat Foods Placed on the Market produced by the Food Safety Authority of Ireland in 2014. https://www.fsai.ie/food_businesses/micro_criteria/guideline_micro_criteria.html

criteria and food safety criteria), while in Chinese standards just one set of criteria exists. For red meat (beef, pork, mutton) EU and Chinese standards address very similar endpoints and set very similar tolerances. For poultry products, microbial testing requirements also differ slightly, however, given that poultry products are not consumed raw, these differences are not considered relevant for the safety of products consumed. In the EU, microbial standards applicable after slaughter are supplemented by programmes aimed at reducing the microbial load on animals entering slaughter and by specific farm control programmes to eliminate human pathogenic Salmonella species from poultry and pig herds.

The EU ensures compliance with all applicable rules throughout the food production chain via three layers of verification: (1) Mandatory self-controls of industry that must be reviewed and verified in regular intervals. (2) Official controls by competent authorities in all establishments on the basis of peer-reviewed, annual and multi-annual control plans and (3) audits of the official control systems by the European Commission.

The detailed comparison supports the conclusion that EU rules reliably address all hygiene requirements applicable along the production and processing chain of red meat and poultry in China. Meat and poultry produced according to EU standards complies with the food safety requirements of China as laid down in the national standards studied.

SUMMARY ASSESSMENT OF DISCREPANCIES IDENTIFIED

SUBJECT	EVALUATION RESULT
National standard 12694-2016 - basic requirements for sites, facilities and personnel and management rules.	**Food chain information** is a requirement in the EU legislation, the equivalent of which does not appear in the Chinese National standard. In EU legislation the implementation of HACCP-based self-control is mandatory for all food business operators (except primary producers), while in the National Standard GB 12694 (point 11.1.2) it is "encouraged" to be adopted.
National standard 17236-2019 - slaughter and processing.	**Animal welfare** is not a subject mentioned in the Chinese National Standards.
National standard 19479-2019 - sanitary control of slaughtering and processing.	The Chinese national standard provides **details** such as the entrance facilities for pigs, locker facilities for personal, or the frequency of a recall drill. In the EU, such detailed provisions can frequently be found in the Guides to Good Practice developed for the slaughter and meat industry but not in primary legislation. However, the requirements are not different.
National standard 20575-2019 - fresh and frozen meat production.	An **emergency slaughter** room is mentioned in the Chinese National standard. Emergency slaughter does not take place any longer in slaughterhouses in Europe, because animals showing symptoms of disease must not be transported to a slaughterhouse. **Details** as mentioned in the Chinese national standard (about corrugated boxes and stacking procedures) are often described in the EU in Guides to Good Practice as prepared for the meat sector but not in primary legislation. However, the requirements are not different.
National standard 19303-2003 - basic sanitary requirements for cooked meat.	**Details** as mentioned in the Chinese national standard (such as pressure vessels safety requirements, hand washing instructions, personnel behavior, meat sterilization, templates for recording forms, instructions to the food business operator and professional requirements for persons working in the slaughterhouse) are often described in the EU in Guides to Good Practice as prepared for the meat sector. However, the requirements are not different and aimed at the same objective.
National standards 29921, 2726, 16869-2005, 9959.2 and T 9961 - limit values and testing methods for microbial contaminants.	EU legislation makes a distinction between food safety criteria and process hygiene criteria, which does not exist in the Chinese National Standards. There are differences in the sampling protocols and indicator organisms used: For example, in the EU, enterobacteriaceae serve as indicators of fecal contamination, rather than coliform bacteria, as required by Chinese standards. For chilled and frozen poultry products, Chinese law requires testing of aerobic colony count, coliform bacteria and E. coli O157:H7, which are not required in the EU, while in the EU, process hygiene controls in poultry slaughtering plants must include Campylobacter testing, which is not required in China. Poultry is not consumed raw and, accordingly, these differences are not considered to impact product safety. In the EU, microbial standards are supplemented by programmes to reduce the microbial load on animals arriving at the slaughtering plant and by specific farm control programmes to eliminate human pathogenic Salmonella species from poultry and pig herds. Overall, the range of end points addressed and the level of scrutiny are very similar. It can be expected that meat or poultry produced in compliance with EU legislation and exported to China will also meet Chinese microbial standards.

ANNEX I

TABLE OF CORRESPONDENCE OF EU LEGISLATION WITH CHINESE LEGISLATION REGARDING FOOD SAFETY: HACCP

1) General hygiene rules, HACCP

a) National Standard GB 14881 General Hygiene Practice for food production

CHINESE LEGISLATION: NATIONAL STANDARD GB 14881	EU LEGISLATION: REGULATION (EC) NO 852/2004	IMPLEMENTING RULES AND COMPARATIVE EVALUATION
Scope This standard specifies basic requirements and management rules for locations, facilities and personnel of material purchasing, processing, packaging, storage and transportation in the process of food production. This standard applies to production of various kinds of food.	**Article 1[1] Scope** This Regulation lays down general rules for food business operators on the hygiene of foodstuffs, taking particular account of the following principles: (a) primary responsibility for food safety rests with the food business operator; (b) it is necessary to ensure food safety throughout the food chain, starting with primary production; (c) it is important, for food that cannot be stored safely at ambient temperatures, particularly frozen food, to maintain the cold chain; (d) general implementation of procedures based on the HACCP principles, together with the application of good hygiene practice, should reinforce food business operators' responsibility; **[1] - Unless specified otherwise, Articles in this table refer to Regulation 852/2004**	
	Article 1 Scope (*cont*.) (e) guides to good practice are a valuable instrument to aid food business operators at all levels of the food chain with compliance with food hygiene rules and with the application of the HACCP principles; (f) it is necessary to establish microbiological criteria and temperature control requirements based on a scientific risk assessment; (g) it is necessary to ensure that imported foods are of at least the same hygiene standard as food produced in the Community, or are of an equivalent standard. This Regulation shall apply to all stages of production, processing and distribution of food and to exports, and without prejudice to more specific requirements relating to food hygiene.	

CHINESE LEGISLATION: NATIONAL STANDARD GB 14881	EU LEGISLATION: REGULATION (EC) NO 852/2004	IMPLEMENTING RULES AND COMPARATIVE EVALUATION
2. Terms and Definitions Various terms are defined such as: Contamination, monitoring, contact surface, food processing location, etc.	**Article 2 Definitions** Various terms are defined such as: Food hygiene, establishment, contamination, processing, processed products, unprocessed products, etc.	
3. Site selection and plant surroundings 3.1.1 The areas that have large contamination on foods shall not be selected for the plant. If a place has obviously adverse effect which can't be improved by taking measures on food safety and edibility, the plant shall not be built there. 3.1.2 Sites where hazardous waste, dust, harmful gas, radioactive substance and other diffusive contaminants cannot be eliminated effectively shall not be selected for the plant. 3.1.3 Regions where flood disaster can usually occur should not be selected for the plant. If it's difficult to keep it away, necessary precaution measures shall be taken. 3.1.4 There should not be potential locations with a large number of insect pest breeding around the plant. If it's difficult to keep it away, necessary precaution measures shall be taken. 3.2 Plant surroundings 3.2.1 Potential contamination risk of the surroundings to food production shall be considered and appropriate measures shall be taken to reduce it to the minimum level. 3.2.2 The plant shall be arranged reasonably; each functional area shall be obviously divided with proper separation or partition measures to prevent cross contamination. 3.2.3 The roads in the plant shall be paved with concrete, tar or other hard materials. Necessary measures shall be taken for vacant land, e.g. cement, floor tile or lawn shall be paved to maintain clean surrounding and prevent raising dust and accumulated water under normal weather.	**Regulation (EC) No 853/2004, Article 4** states that establishments handling products of animal origin shall not operate unless the competent authority has approved them following an on-site visit. **Article 4, 1.** Food business operators carrying out primary production and those associated operations listed in Annex I shall comply with the general hygiene provisions laid down in part A of Annex I. Annex I, II, 3 a) states: a) measures to control contamination arising from the air, soil, water, feed, fertilisers, veterinary medicinal products, plant protection products and biocides and the storage, handling and disposal of waste; **Article 4, 2.** Food business operators carrying out any stage of production, processing and distribution of food after those stages to which paragraph 1 applies *(see Article 4.1.)* shall comply with the general hygiene requirements laid down in Annex II. Chapter I of Annex II states: Food premises are to be kept clean and maintained in good repair and condition. **Regulation (EC) No 852/2004,** Annex II, Chapter I, 8 states: Drainage facilities are to be adequate for the purpose intended. They are to be designed and constructed to avoid the risk of contamination. Where drainage channels are fully or partially open, they are to be so designed as to ensure that waste does not flow from a contaminated area towards or into a clean area, in particular an area where foods likely to present a high risk to the final consumer are handled.	**Guidance document Commission Notice 2016/C 278/01**, **Annex I, Examples of PRPs** **2.1 Infrastructure:** a) When assessing the risk from the location and surrounding areas, the proximity of potential sources of contamination, water supply, wastewater removal, power supply, access for transport, climate, possible flooding, … should be taken into account. *In the EU Guidance Document on the implementation of certain provisions of Regulation (EC) No 852/2004 on the hygiene of foodstuffs (Brussels 2018) it is stated that:* "Food premises" is not limited to the rooms where foodstuffs are handled or processed. It includes, additionally, and where applicable, the immediately surrounding area within the perimeter of the food business operation site. *The requirements for approval are explained in detail in the EU Guidance Document on the implementation of certain provisions of Regulation (EC) No 853/2004 on the hygiene of food of animal origin (SANCO/10098/2009 Rev. 3 (POOL/G4/2009/10098/10098R3-EN.doc of 2018).*

CHINESE LEGISLATION: NATIONAL STANDARD GB 14881	EU LEGISLATION: REGULATION (EC) NO 852/2004	IMPLEMENTING RULES AND COMPARATIVE EVALUATION
3.2.4 Plant greening shall be kept an appropriate distance from the production workshop, and vegetation shall be maintained on regular basis to prevent insect pest from breeding. 3.2.5 The plant shall be equipped with proper drainage system. 3.2.6 Living area such as dormitory, canteen or recreation facilities of employees shall be kept an appropriate distance or partitioned from the production areas.		
4. Plant and workshop **4.1 Design and layout** 4.1.1 Internal design and layout of plant and workshop shall meet the operation requirements on the food hygiene to avoid cross contamination during the process of food production. 4.1.2 Design of plant and workshop shall be arranged reasonably according to production process to prevent and reduce the risk of contamination on products. 4.1.3 Operating areas in the plant and workshop shall be divided reasonably based on product characteristics, production process, production characteristics and the requirements of cleanliness in production process and shall be effectively separated or partitioned. For example, operating areas are generally divided into clean operating area, quasi-clean operating area and general operating area, or clean operating area and general operating area, etc. General operating area shall be partitioned from other operating areas. 4.1.4 Inspection room in the plant shall be partitioned from the production area. 4.1.5 Area and space of the plant shall correspond to the productivity so that it can be convenient for equipment arrangement, cleaning and disinfection, material storage and personnel operation.	**Regulation (EC) No 852/2004,** Annex II, Chapter I, 2. states: The layout, design, construction, siting and size of food premises are to: (a) permit adequate maintenance, cleaning and/or disinfection, avoid or minimise air-borne contamination, and provide adequate working space to allow for the hygienic performance of all operations; (b) be such as to protect against the accumulation of dirt, contact with toxic materials, the shedding of particles into food and the formation of condensation or undesirable mould on surfaces; (c) permit good food hygiene practices, including protection against contamination and, in particular, pest control; and (d) where necessary, provide suitable temperature-controlled handling and storage conditions of sufficient capacity for maintaining foodstuffs at appropriate temperatures and designed to allow those temperatures to be monitored and, where necessary, recorded.	
4.2 Internal structure and materials of the building 4.2.1 Internal structure	**Regulation (EC) No 852/2004,** Annex II, Chapter II, 1 In rooms where food is prepared, treated or processed (excluding dining areas and those premises specified in	*For establishments producing food of animal origin additional requirements for internal structure and materials of the building are*

CHINESE LEGISLATION: NATIONAL STANDARD GB 14881	EU LEGISLATION: REGULATION (EC) NO 852/2004	IMPLEMENTING RULES AND COMPARATIVE EVALUATION
The building's internal structure shall be easy for maintenance, cleaning or disinfection and shall be constructed with appropriate durable materials. 4.2.2 Ceiling 4.2.1.1 Ceiling shall be constructed with nontoxic, odorless materials to meet the production demand and easy for observing cleaning condition. If it is directly coated on the inner-layer of the roof as ceiling, nontoxic, odorless and mold-proof coatings which are difficult for shedding and easy for cleaning shall be used. 4.2.1.2 Ceiling shall be easy for cleaning and disinfection, but difficult for condensed water to vertically drip so that insects and mold can be prevented from breeding. 4.2.1.3 Pipelines of accessories for steam, water and electricity shall not be arranged above the exposed food. If it's unavoidable, device or measure to prevent dust from scattering and water drop from dripping shall be provided.	Chapter III, but including rooms contained in means of transport) the design and layout are to permit good food hygiene practices, including protection against contamination between and during operations. (c) ceilings (or, where there are no ceilings, the interior surface of the roof) and overhead fixtures are to be constructed and finished so as to prevent the accumulation of dirt and to reduce condensation, the growth of undesirable mold and the shedding of particles;	*specified in more detail in **Regulation (EC) No 853/2004** (see below under the National Standards dealing with slaughter).*
4.2.3 Wall 4.2.3.1 Wall surface and partition shall be constructed with nontoxic, odorless and anti-seepage materials. Wall surface within the range of operation height shall be smooth, difficult for accumulating dirt and easy for cleaning. If coatings are necessary, they shall be nontoxic, odorless, mold-proof, difficult for shedding and easy for cleaning. 4.2.3.2 Wall, partition and ground junctions shall be reasonable in structure, easy for cleaning and effectively avoid the accumulation of dirt, for example, the arrangement of smooth and accessible surfaces.	(b) wall surfaces are to be maintained in a sound condition and be easy to clean and, where necessary, to disinfect. This will require the use of impervious, non-absorbent, washable and non-toxic materials and require a smooth surface up to a height appropriate for the operations unless food business operators can satisfy the competent authority that other materials used are appropriate;	
4.2.4 Doors and windows 4.2.4.1 Doors and windows shall be closed firmly. Door surface shall be smooth, adsorption-proof, anti-seepage and easy for cleaning and disinfection. They shall be made of water-proof, solid, and non-deformable materials. 4.2.4.2 Doors of clean operating area, quasi-cleaning operation area and other areas shall be able to timely be shut down.	(d) windows and other openings are to be constructed to prevent the accumulation of dirt. Those which can be opened to the outside environment are, where necessary, to be fitted with insect-proof screens which can be easily removed for cleaning. Where open windows would result in contamination, windows are to remain closed and fixed during production; (e) doors are to be easy to clean and, where necessary, to disinfect. This will require the use of smooth and nonabsorbent	

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4.2.4.3 Window glass shall be made of breakage-proof materials. If simple glass is used, necessary measures shall be taken to prevent contamination on materials, packaging materials and foods after glass breakage. 4.2.4.4 If windows are arranged with sills, their structure shall be able to avoid dust accumulation and be easy for cleaning. Windows able to open shall be equipped with insect pest prevention window screen which is easy for cleaning.	surfaces unless food business operators can satisfy the competent authority that other materials used are appropriate;	
4.2.5 Ground 4.2.5.1 Ground shall be made of nontoxic, odorless, anti-seepage and corrosion-resistant materials. The ground structure shall contribute to sewage discharge and cleaning. 4.2.5.2 Ground shall be flat, anti-skid, crack-free and easy for cleaning and disinfection and shall be provided with appropriate measures to prevent accumulated water.	(a) floor surfaces are to be maintained in a sound condition and be easy to clean and, where necessary, to disinfect. This will require the use of impervious, non-absorbent, washable and non-toxic materials unless food business operators can satisfy the competent authority that other materials used are appropriate. Where appropriate, floors are to allow adequate surface drainage;	*More detailed requirements on this subject (ground) are mentioned in the Guidance document* ***Commission Notice 2016/C 278/01****,* ***Annex I, 2.3:*** e) The presence of an indoor pool of water should be immediately addressed.
5 Facilities and Equipment **5.1 Facilities** 5.1.1 Water supply facilities 5.1.1.1 Water supply facilities shall ensure that the quality, pressure and amount of water meet the production requirements. 5.1.1.2 The quality of food processing water shall meet the requirements of GB 5749. For food with special requirements of processing water quality, corresponding requirements shall be met. The quality of food production water such as indirect cooling water and boiler water shall meet the production requirements. 5.1.1.3 Food processing water and other water such as indirect cooling water, sewage or waste water with no contact with food shall be transported with completely separated pipelines to prevent cross contamination. Each pipeline system shall be marked explicitly for distinction. 5.1.1.4 Self-provided water source and water supply facilities shall meet related requirements. Products used in water supply facilities	**Regulation (EC) No 852/2004,** Annex II, Chapter VII: 1. (a) There is to be an adequate supply of potable water, which is to be used whenever necessary to ensure that foodstuffs are not contaminated; 2. Where non-potable water is used, for example for fire control, steam production, refrigeration and other similar purposes, it is to circulate in a separate duly identified system. Non-potable water is not to connect with, or allow reflux into, potable water systems. 3. Recycled water used in processing or as an ingredient is not to present a risk of contamination. It is to be of the same standard as potable water, unless the competent authority is satisfied that the quality of the water cannot affect the wholesomeness of the foodstuff in its finished form. 4. Ice which comes into contact with food or which may contaminate food is to be made from potable water or, when used to chill whole fishery products, clean water. It is to be made, handled and stored under conditions that protect it from contamination.	*Potable water is defined in* ***Regulation (EC) No 852/2004, Article 2.*** (Article 2, 1, (g) 'potable water' means water meeting the minimum requirements laid down in Council Directive 98/83/EC of 3 November 1998 on the quality of water intended for human consumption).

CHINESE LEGISLATION: NATIONAL STANDARD GB 14881	EU LEGISLATION: REGULATION (EC) NO 852/2004	IMPLEMENTING RULES AND COMPARATIVE EVALUATION
involving hygienic security of drinking water shall also meet relevant national requirements. **5.1.2 Drainage facilities** 5.1.2.1 Drainage system shall be designed and constructed to ensure unblocked drainage and convenient cleaning and maintenance. It shall be adapted to the demand of food production and ensure that food, production and clean water be free from contamination. 5.1.2.2 The inlet of drainage system shall be installed with a device such as a floor drain with water seal to prevent solid waste from entering and discharged air from emitting. 5.1.2.3 Outlet of drainage system shall be provided with appropriate measures to lower the risk of insect attack. 5.1.2.4 Indoor drainage shall flow from areas with high cleanliness to those with low cleanliness and shall be designed to prevent backflow. 5.1.2.5 Sewage shall be disposed of properly before discharge on order to meet relevant national requirements on sewage discharge.	5. Steam used directly in contact with food is not to contain any substance that presents a hazard to health or is likely to contaminate the food. 6. Where heat treatment is applied to foodstuffs in hermetically sealed containers it is to be ensured that water used to cool the containers after heat treatment is not a source of contamination for the foodstuff. **Regulation (EC) No 852/2004,** Annex II, Chapter I, 8: Drainage facilities are to be adequate for the purpose intended. They are to be designed and constructed to avoid the risk of contamination. Where drainage channels are fully or partially open, they are to be so designed as to ensure that waste does not flow from a contaminated area towards or into a clean area, in particular an area where foods likely to present a high risk to the final consumer are handled.	
5.1.3 Cleaning and disinfection facilities Sufficient specialized cleaning facilities for food, tools and instruments and equipment shall be provided; where necessary, appropriate disinfection facilities shall be provided. Measures shall be taken to avoid cross contamination caused by tools and instruments for cleaning and disinfection.	**Regulation (EC) No 852/2004,** Annex II, Chapter I, 10: Cleaning agents and disinfectants are not to be stored in areas where food is handled. **Regulation (EC) No 852/2004,** Annex II, Chapter II, 2: Adequate facilities are to be provided, where necessary, for the cleaning, disinfecting and storage of working utensils and equipment. These facilities are to be constructed of corrosion-resistant materials, be easy to clean and have an adequate supply of hot and cold water.	
5.1.4 Waste storage facilities Specialized facilities for storing waste which are reasonably designed, anti-seepage and easy for cleaning shall be provided. Facilities and containers for storing waste in the workshop shall be marked clearly. Where necessary, facilities for storing waste	**Regulation (EC) No 852/2004,** Annex II, Chapter VI: 1. Food waste, non-edible by-products and other refuse are to be removed from rooms where food is present as quickly as possible, so as to avoid their accumulation. 2. Food waste, non-edible by-products and other refuse are to be deposited in closable containers, unless food business	

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temporarily shall be arranged in appropriate site and waste shall be stored in classes according to characteristics.	operators can demonstrate to the competent authority that other types of containers or evacuation systems used are appropriate. These containers are to be of an appropriate construction, kept in sound condition, be easy to clean and, where necessary, to disinfect. 3. Adequate provision is to be made for the storage and disposal of food waste, non-edible by-products and other refuse. Refuse stores are to be designed and managed in such a way as to enable them to be kept clean and, where necessary, free of animals and pests. 4. All waste is to be eliminated in a hygienic and environmentally friendly way in accordance with Community legislation applicable to that effect, and is not to constitute a direct or indirect source of contamination.	
5.1.5 Personal hygienic facilities 5.1.5.1 Changing room shall be arranged at the entrance of production location or production workshop. Where necessary, changing room may be arranged at the entrance of the specific operating area as needed. The changing room shall be designed to ensure that work clothes, personal clothes and other articles can be kept apart. 5.1.5.2 Facilities for changing shoes (putting on shoe covers) or disinfection facilities for work shoes or boots shall be arranged as needed at the entrance and necessary places of the production workshop. If disinfection facilities for work shoes or boots are needed, their specification and size shall meet the requirements of disinfection. 5.1.5.3 Restroom shall be arranged as needed. Its structure, facilities and internal materials shall be easy to keep clean. Facilities for washing hand shall be arranged at proper place in the rest room. The restroom shall not be directly connected with areas for food production, packaging or storage. 5.1.5.4 Facilities for washing and drying hand and disinfection shall be arranged at the entrance of clean operating area. If necessary, facilities for washing hand and (or) disinfection shall be arranged in the operating area. Switches shall be non-manual for the disinfection facilities.	**Regulation (EC) No 852/2004,** Annex II, Chapter I, 9. Where necessary, adequate changing facilities for personnel are to be provided. **Regulation (EC) No 852/2004,** Annex II, Chapter VIII, Every person working in a food-handling area is to maintain a high degree of personal cleanliness and is to wear suitable, clean and, where necessary, protective clothing. **Regulation (EC) No 852/2004,** Annex II, Chapter I, 3. An adequate number of flush lavatories are to be available and connected to an effective drainage system. Lavatories are not to open directly into rooms in which food is handled. 4. An adequate number of washbasins is to be available, suitably located and designated for cleaning hands. Washbasins for cleaning hands are to be provided with hot and cold running water, materials for cleaning hands and for hygienic drying. Where necessary, the facilities for washing food are to be separate from the hand-washing facility. Regulation 853/2004, Annex III, Section 1, Chapter 2 provides: Slaughterhouses must: …	*More detailed requirements on this subject (changing room) are mentioned in the Guidance document **Commission Notice 2016/C 278/01**, **Annex I, 2.1:*** g) The specific clothes changing room(s) should be clean and ordered, not used as a refectory or a smoking room, and should facilitate a separation between normal clothing, clean work clothing and used work clothing.

CHINESE LEGISLATION: NATIONAL STANDARD GB 14881	EU LEGISLATION: REGULATION (EC) NO 852/2004	IMPLEMENTING RULES AND COMPARATIVE EVALUATION
5.1.5.5 Quantity of the faucets for hand washing facilities shall be matched with the number of food processing personnel of the same shift. Where necessary, mixer of cold and hot water shall be arranged. Wash basins shall be made of smooth, water-proof and easy-to-clean materials and shall be designed and constructed to be easy for cleaning and disinfection. Simple and clear hand washing method shall be marked at visible position near the hand washing facilities. 5.1.5.6 In accordance with the cleanliness of food processing personnel, where necessary, facilities such as air shower and shower room can be arranged.	3. They must have facilities for disinfecting tools with hot water supplied at not less than 82 °C, or an alternative system having an equivalent effect. 4. The equipment for washing hands used by the staff engaged in handling exposed meat must have taps designed to prevent the spread of contamination.	
5.1.6 Ventilation facilities 5.1.6.1 Appropriate natural ventilation or artificial ventilation measures shall be taken; where necessary, natural ventilation or mechanical facilities shall be made to effectively control temperature and humidity of production environment. For ventilation facilities, air shall not flow from operating areas with low requirements on cleanliness to those with high requirements on cleanliness. 5.1.6.2 Air inlet position shall be arranged reasonably, and contamination source such as air inlet, air outlet and device for storing outdoor garbage shall be kept an appropriate distance and angle. Air inlet and outlet shall be provided with facilities such as mesh enclosure to prevent insect pest from intruding. Ventilation facilities shall be easy for cleaning, maintenance or replacement. 5.1.6.3 If filtration and purification treatment for air is needed in the production process, air filtration device shall be added and cleaned on regular basis. 5.1.6.4 According to production requirements, where necessary, de-dusting facilities shall be installed.	**Regulation (EC) No 852/2004,** Annex II, Chapter I, 5. There is to be suitable and sufficient means of natural or mechanical ventilation. Mechanical airflow from a contaminated area to a clean area is to be avoided. Ventilation systems are to be so constructed as to enable filters and other parts requiring cleaning or replacement to be readily accessible. 6. Sanitary conveniences are to have adequate natural or mechanical ventilation	*More detailed requirements on this subject (ventilation) are mentioned in the Guidance document* ***Commission Notice 2016/C 278/01****,* ***Annex I, 2.8:*** d) Ventilation systems are kept clean, so that they do not become a source of contamination. For high risk/care areas requiring air control, the implementation of positive air pressure systems and appropriate air filtering systems should be considered.
5.1.7 Lighting facilities 5.1.7.1 Sufficient natural lighting or artificial lighting shall be provided in the plant. Luster and luminance shall meet production and operation requirements.	**Regulation (EC) No 852/2004,** Annex II, Chapter I, 7. Food premises are to have adequate natural and/or artificial lighting.	*More detailed requirements on this subject (lighting) are mentioned in the Guidance document* ***Commission Notice 2016/C 278/01****,* ***Annex I, 2.1:***

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Light source shall make it possible that food takes on its actual color. 5.1.7.2 If lighting facilities are necessary to be installed above the exposed food and materials, safe lighting facilities shall be adopted or protection measures shall be taken.		e) There should be sufficient lighting in all areas, with special attention paid to provision of suitable lighting to food preparation and inspection areas. Lighting should be easy to clean, with protective covers to prevent contamination of food in the event of lights breaking.
5.1.8 Storage facilities 5.1.8.1 Storage facilities corresponding to quantity, storage requirements of products shall be provided. 5.1.8.2 Warehouse shall be made of nontoxic and solid materials; warehouse ground shall be flat and convenient for ventilation. Warehouse shall be designed to be easy for maintenance and cleaning to prevent insect pest from hiding and shall be equipped with device for preventing insect pest from intruding. 5.1.8.3 Materials, semi-finished products, finished products and packaging materials shall be arranged with different storage sites or placed in different areas based on different properties and shall be marked explicitly to prevent cross contamination. Where necessary, warehouse shall be provided with control facilities of temperature and humidity. 5.1.8.4 Storing articles shall be kept a proper distance from wall and ground to contribute to ventilation and articles handling. 5.1.8.5 Detergent, disinfectant, pesticide, lubricant or fuel shall be packaged safely and marked explicitly and shall be kept apart from materials, semi-finished products, finished products and packaging materials.	**Regulation (EC) No 852/2004,** Annex II, Chapter IX, 2. Raw materials and all ingredients stored in a food business are to be kept in appropriate conditions designed to prevent harmful deterioration and protect them from contamination. 3. At all stages of production, processing and distribution, food is to be protected against any contamination likely to render the food unfit for human consumption, injurious to health or contaminated in such a way that it would be unreasonable to expect it to be consumed in that state. **Regulation (EC) No 852/2004,** Annex II, Chapter X, 1. Material used for wrapping and packaging are not to be a source of contamination. 2. Wrapping materials are to be stored in such a manner that they are not exposed to a risk of contamination. 3. Wrapping and packaging operations are to be carried out so as to avoid contamination of the products. **Regulation (EC) No 852/2004,** Annex II, Chapter I 10. Cleaning agents and disinfectants are not to be stored in areas where food is handled. **Regulation (EC) No 852/2004,** Annex II, Chapter II 2. Adequate facilities are to be provided, where necessary, for the cleaning, disinfecting and storage of working utensils and equipment. These facilities are to be constructed of corrosion-resistant materials, be easy to clean and have an adequate supply of hot and cold water.	
5.1.9 Temperature control facilities 5.1.9.1 Appropriate heating, cooling and freezing facilities and facilities for monitoring temperature shall be equipped in accordance with the characteristics of	**Regulation (EC) No 852/2004, Article 4** 3. Food business operators shall, as appropriate, adopt the following specific hygiene measures:	

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food production. 5.1.9.2 According to production requirements, facilities for controlling room temperature may be arranged.	(c) compliance with temperature control requirements for foodstuffs; (d) maintenance of the cold chain; **Regulation (EC) No 852/2004,** Annex II, Chapter I 2, (d) where necessary, provide suitable temperature-controlled handling and storage conditions of sufficient capacity for maintaining foodstuffs at appropriate temperatures and designed to allow those temperatures to be monitored and, where necessary, recorded.	
5.2 Equipment 5.2.1 Production equipment 5.2.1.1 General requirements Production equipment corresponding to productivity shall be provided and kept in order according to process flow to avoid cross contamination. 5.2.1.2 Materials 5.2.1.2.1 Equipment and instruments contacting with materials, semi-finished products and finished products shall be made of nontoxic, odorless, corrosion-resistant materials which are difficult for shedding and shall be easy for cleaning and maintenance. 5.2.1.2.2 Surface of equipment and tools and instruments contacting with food shall be made of smooth, nonabsorbent materials easy for cleaning, curing and disinfection, and will not react with food, detergent and disinfectant under normal production and shall be kept in perfect condition	**Regulation (EC) No 852/2004,** Annex II, Chapter V 1. All articles, fittings and equipment with which food comes into contact are to: (a) be effectively cleaned and, where necessary, disinfected. Cleaning and disinfection are to take place at a frequency sufficient to avoid any risk of contamination; (b) be so constructed, be of such materials and be kept in such good order, repair and condition as to minimise any risk of contamination; **Regulation (EC) No 852/2004,** Annex II, Chapter II 1. In rooms where food is prepared, treated or processed (excluding dining areas and those premises specified in Chapter III, but including rooms contained in means of transport) the design and layout are to permit good food hygiene practices, including protection against contamination between and during operations. In particular: (f) surfaces (including surfaces of equipment) in areas where foods are handled and in particular those in contact with food are to be maintained in a sound condition and be easy to clean and, where necessary, to disinfect. This will require the use of smooth, washable corrosion-resistant and non-toxic materials… 2. Adequate facilities are to be provided, where necessary, for the cleaning, disinfecting and storage of working utensils and equipment. These facilities are to be constructed of corrosion-resistant materials, be easy to clean and have an adequate supply of hot and cold water.	
5.2.1.3 Design	**Regulation (EC) No 852/2004,** Annex II, Chapter I	*More detailed requirements on this subject (equipment) are mentioned in* the Guidance

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5.2.1.3.1 All production equipment shall make it possible in design and structure to prevent parts, metal chip, lubricating oil or other contamination factors being mixed into food and shall be easy for cleaning, disinfection, inspection and maintenance. 5.2.1.3.2 Equipment shall be fixed on the wall or floor without any gap or a sufficient distance shall be remained between the equipment and ground or wall during the installation to be convenient for cleaning and maintenance.	2. The layout, design, construction, siting and size of food premises are to: (a) permit adequate maintenance, cleaning and/or disinfection, avoid or minimise air-borne contamination, and provide adequate working space to allow for the hygienic performance of all operations; (b) be such as to protect against the accumulation of dirt, contact with toxic materials, the shedding of particles into food and the formation of condensation or undesirable mould on surfaces; **Regulation (EC) No 852/2004,** Annex II, Chapter V: 1. All articles, fittings and equipment with which food comes into contact are to: (b) be so constructed, be of such materials and be kept in such good order, repair and condition as to minimise any risk of contamination;	document **Commission Notice 2016/C 278/01**, **Annex I, 2.1:** k) Attention should be paid to the different possibilities whereby the use of equipment can result in (cross-) contamination of food: i. Prevention of contamination of the equipment by the environment e.g. condensation dripping from ceilings; ii. Prevention of contamination within the food handling equipment e.g. accumulation of food residues in slicing devices; iii. Prevention of contamination by raw materials: separate equipment (or cleaning and disinfection between use) for raw products and cooked products (chopping boards, knives, dishes, …). and **Annex I, 2.10:** d) Storage conditions at the establishment itself should take into account any instructions provided by the supplier, 'first in, first out' or 'first expire, first out' principles, accessibility for inspection from all sides (e.g. not placed directly on the ground, against walls, …).
5.2.2 Monitoring equipment The equipment used for monitoring, controlling and recording such as pressure gauge, thermometer and recorder shall be calibrated and maintained on regular basis.	**Regulation (EC) No 852/2004,** Annex II, Chapter I 2, (d) where necessary, provide suitable temperature-controlled handling and storage conditions of sufficient capacity for maintaining foodstuffs at appropriate temperatures and designed to allow those temperatures to be monitored and, where necessary, recorded. **Regulation (EC) No 852/2004,** Annex II, Chapter V 2. Where necessary, equipment is to be fitted with any appropriate control device to guarantee fulfilment of this Regulation's objectives.	*More detailed requirements on this subject (calibration) are mentioned in the Guidance document **Commission Notice 2016/C 278/01**, **Annex I, 2.4 Technical maintenance and calibration:*** c) Calibration of monitoring devices (e.g. weighing scales, thermometers, flow meters) is of importance in controlling food safety and hygiene.
5.2.3 Equipment maintenance and repair Equipment maintenance and repair system shall be established to enhance the routine maintenance and curing of equipment. The equipment shall be inspected on regular basis and the result shall be recorded timely.	**Regulation (EC) No 852/2004,** Annex II, Chapter V, Equipment requirements: 1. All articles, fittings and equipment with which food comes into contact are to:	Guidance document **Commission Notice 2016/C 278/01**, **Annex I, 2 Examples of PRPs, 2.4 Technical maintenance and calibration:** a) The maintenance plan should be considered with a technical specialist. The plan should include 'emergency' procedures when equipment

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	…(b) be so constructed, be of such materials and be kept in such good order, repair and condition as to minimise any risk of contamination;	is defective and instructions for preventive replacement of seals, gaskets, … b) Attention should be paid to hygiene during maintenance operations and to proper operation of equipment e.g. avoidance of overloading or exceeding the equipment's capacity, leading to cracks, (too) hot food in cooling systems preventing a quick cooling, too low (re)heating capacity for the amount of food put in warming tables of food service establishments, …
Hygiene Management **6.1 Hygiene management system** 6.1.1 Hygiene management system for food processing personnel, food production and corresponding assessment standard shall be established. Post responsibilities shall be determined to carry out post responsibility system. 6.1.2 Monitoring system for key control link significant to ensure food safety shall be issued according to the characteristics of food and hygienic requirements in the production and storage process to be implemented well and inspected periodically. If any problem is found, it shall be corrected at once. 6.1.3 Hygienic monitoring system for production environment, food processing personnel, equipment and facilities shall be established to determine the range, object and frequency of internal monitoring. The monitoring results shall be recorded and filed, and executive condition and effect shall be inspected periodically so that any problem can be corrected at once if it's found. 6.1.4 Cleaning and disinfection system and management system for cleaning and disinfection instruments shall be built up. Equipment and tools and instruments before and after cleaning and disinfection shall be kept apart and safely kept to avoid cross-contamination.	**Regulation (EC) No 852/2004, Article 4** 1. Food business operators carrying out primary production and those associated operations listed in Annex I shall comply with the general hygiene provisions laid down in part A of Annex I 2. Food business operators carrying out any stage of production, processing and distribution of food after those stages to which paragraph 1 applies shall comply with the general hygiene requirements laid down in Annex II… 3. Food business operators shall, as appropriate, adopt the following specific hygiene measures: (a) compliance with microbiological criteria for foodstuffs; (b) procedures necessary to meet targets set to achieve the objectives of this Regulation; (c) compliance with temperature control requirements for foodstuffs; (d) maintenance of the cold chain; (e) sampling and analysis. 6. Food business operators may use the guides provided for in Articles 7, 8 and 9 as an aid to compliance with their obligations under this Regulation. **Regulation (EC) No 852/2004, Article 5** 1. Food business operators shall put in place, implement and maintain a permanent procedure or procedures based on the HACCP principles. 2. The HACCP principles referred to in paragraph 1 consist of the following:	*Many guides to good practice have been developed both as Community guides as well as National guides by each Member State. These have been developed for all sectors (for example for broilers, for retail, for bovine slaughterhouses, for wholesale markets, etc.)* *In these guides requirements are explained in detail to enable application in that sector using simplified language, practical examples and, if necessary, providing flexibility.*

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	(a) identifying any hazards that must be prevented, eliminated or reduced to acceptable levels; (b) identifying the critical control points at the step or steps at which control is essential to prevent or eliminate a hazard or to reduce it to acceptable levels; (c) establishing critical limits at critical control points which separate acceptability from unacceptability for the prevention, elimination or reduction of identified hazards; (d) establishing and implementing effective monitoring procedures at critical control points; (e) establishing corrective actions when monitoring indicates that a critical control point is not under control; 4 (f) establishing procedures, which shall be carried out regularly, to verify that the measures outlined in subparagraphs (a) to (e) are working effectively; and (g) establishing documents and records commensurate with the nature and size of the food business to demonstrate the effective application of the measures outlined in subparagraphs (a) to (f). When any modification is made in the product, process, or any step, food business operators shall review the procedure and make the necessary changes to it. **See also** *EU requirements equivalent to points 5.2.1.3, 5.2.2, 5.2.3 and in addition:* **Regulation (EC) No 852/2004,** Annex II, Chapter II 2. Adequate facilities are to be provided, where necessary, for the cleaning, disinfecting and storage of working utensils and equipment. These facilities are to be constructed of corrosion-resistant materials, be easy to clean and have an adequate supply of hot and cold water.	
6.2 Hygiene management of plant and facilities 6.2.1 Facilities in the plant shall be kept clean and repaired or renewed timely in case of any problem. If there is any damage of plant ground, roof, ceiling and wall, it shall be repaired timely. 6.2.2 Equipment and tools and instruments for production, packaging and storage, pipeline for production, and exposed food	**Regulation (EC) No 852/2004,** Annex II, Chapter I 1. Food premises are to be kept clean and maintained in good repair and condition. 2. The layout, design, construction, siting and size of food premises are to: (a) permit adequate maintenance, cleaning and/or disinfection, avoid or minimise air-borne contamination, and provide	

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contact surface shall be cleaned and disinfected on regular basis.	adequate working space to allow for the hygienic performance of all operations; **Regulation (EC) No 852/2004,** Annex II, Chapter V 1. All articles, fittings and equipment with which food comes into contact are to: (a) be effectively cleaned and, where necessary, disinfected. Cleaning and disinfection are to take place at a frequency sufficient to avoid any risk of contamination; (b) be so constructed, be of such materials and be kept in such good order, repair and condition as to minimise any risk of contamination;	
6.3 Health management and hygienic requirement for food processing personnel 6.3.1 Health management for food processing personnel 6.3.1.1 Health management system for food processing personnel shall be established and implemented. 6.3.1.2 Personnel involved in food processing shall take an annual physical examination and obtain a health certificate. They shall accept hygienic training before taking posts. 6.3.1.3 Food processing personnel who suffer from infectious disease of digestive tract such as dysentery, typhoid, viral hepatitis A and viral hepatitis E, diseases affecting food safety such as active pulmonary tuberculosis and suppurative or exudative dermatosis, or the personnel whose skin injury has not been healed shall be transferred to other posts without affecting food safety. 6.3.2 Hygiene requirements for food processing personnel 6.3.2.1 The personnel shall handle personal hygiene before entering food production site to avoid food contamination. 6.3.2.2 The personnel shall wear clean work clothes, wash hand and disinfect oneself as needed when	**Regulation (EC) No 852/2004,** Annex II, Chapter VIII 1. Every person working in a food-handling area is to maintain a high degree of personal cleanliness and is to wear suitable, clean and, where necessary, protective clothing. 2. No person suffering from, or being a carrier of a disease likely to be transmitted through food or afflicted, for example, with infected wounds, skin infections, sores or diarrhoea is to be permitted to handle food or enter any food-handling area in any capacity if there is any likelihood of direct or indirect contamination. Any person so affected and employed in a food business and who is likely to come into contact with food is to report immediately the illness or symptoms, and if possible their causes, to the food business operator.	*More detailed requirements on this subject (personnel, health status) are mentioned in the Guidance document **Commission Notice 2016/C 278/01**, **Annex I, 2.9:*** a) Personnel should be aware of hazards from gastro-intestinal infections, hepatitis and wounds with appropriate exclusion from food handling or suitable protection; relevant health problems should be reported to the manager. Special consideration should be given to temporary workers who might be less familiar with potential hazards. *More detailed requirements on this subject (personnel, hygiene) are mentioned in the Guidance document **Commission Notice 2016/C 278/01**, **Annex I, 2.9:*** c) Hands should be washed (+ disinfected) regularly, as a minimum, before starting to work, after using the lavatory, after breaks, after rubbish disposal, after coughing or sneezing, after handling of raw materials, … d) Hair covers (and beard snoods) should be considered and appropriate clothing with high degree of cleanliness, minimum of pockets, absence of jewelry and watches. e) Eating, drinking and/or smoking rooms should be separated and clean.

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entering the operating area. Hair shall be hidden in work cap or restraint by hairnet. 6.3.2.3 The personnel shall not wear jewelry or watch, and shall not make up, dye fingernails and spray perfume. They shall not carry or store personal articles which are irrelevant to food production. 6.3.2.4 After going to the rest room, contacting articles which may contaminate food or engaging in other activities irrelevant to food production, the personnel shall wash hand and disinfect themselves before being engaged in activities related to food production contacting food, tools and instruments or food equipment again. 6.3.3 Visitors Those who are not food processing personnel shall not enter food production site. If they enter the food production site under special circumstances, they shall observe the same hygienic requirements as food processing personnel.		*More detailed requirements on this subject (visitors) are mentioned in the Guidance document* ***Commission Notice 2016/C 278/01, Annex I, 2.9:*** g) The number of visitors should be minimized. Visitors should wear appropriate protective clothing, provided by the Food Business Operator.
6.4 Insect pest control 6.4.1 The building shall be kept in perfect condition and tidy to prevent insect attack from intruding and breeding. 6.4.2 Insect pest control measures shall be prepared and carried out for regular inspection. Effective measures such as yarn curtain, gauze, rat guard, fly prevention lamp or wind screen shall be taken in production workshop and warehouse to prevent rodent or insects from intruding. If trail of insects or rodent is found, its source shall be traced to eradicate hidden danger. 6.4.3 Plan drawing for insect pest control shall be exactly drawn to mark the positions of mousetrap, glue board, fly-killing lamp, outdoor bait and killing device of biochemical pheromone. 6.4.4 Pest control shall be carried out on regular basis in the plant. 6.4.5 During the treatment by physical, chemical or biological agent, food safety and the proper food quality shall not be affected and food contact surface, equipment, tools and instruments and packaging	**Regulation (EC) No 852/2004,** Annex II, Chapter I General requirements for food premises: 1. Food premises are to be kept clean and maintained in good repair and condition. 2. The layout, design, construction, siting and size of food premises are to: (c) permit good food hygiene practices, including protection against contamination and, in particular, pest control; **Regulation (EC) No 852/2004,** Annex II, Chapter IX 4. Adequate procedures are to be in place to control pests. Adequate procedures are also to be in place to prevent domestic animals from having access to places where food is prepared, handled or stored (or, where the competent authority so permits in special cases, to prevent such access from resulting in contamination). **Regulation (EC) No 852/2004,** Annex II, Chapter IX 3. At all stages of production, processing and distribution, food is to be protected against any contamination likely to render	*More detailed requirements on this subject (pest control) are mentioned in the* Guidance document **Commission Notice 2016/C 278/01, Annex I, 2.3 Pest control: focus on prevention:** a) External walls should be free of cracks or chinks, surroundings neat and clean and areas for cleaning accessible. b) Insect screen should be placed at windows. c) Doors should be kept closed except when loading and or unloading. d) Unused equipment and rooms should be clean. e) The presence of an indoor pool of water should be immediately addressed. *In the EU Guidance Document on the implementation of certain provisions of Regulation (EC) No 852/2004 on the hygiene of foodstuffs (Brussels 2018) it is stated that:*

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material shall not be contaminated. Pest control shall be recorded correspondingly. 6.4.6 Before using various kinds of pesticides or other drugs, preventive measures shall be taken to avoid contamination on persons, food, equipment and tools. In case of contamination carelessly, contaminated equipment or tools shall be cleaned thoroughly in time to eradicate contamination.	the food unfit for human consumption, injurious to health or contaminated in such a way that it would be unreasonable to expect it to be consumed in that state. 2. Raw materials and all ingredients stored in a food business are to be kept in appropriate conditions designed to prevent harmful deterioration and protect them from contamination.	Guides may also usefully include procedures that must ensure a proper implementation of the Regulation, such as: • Procedures to prevent the introduction of hazards at the level primary production, • A procedure for the cleaning and disinfection of food businesses, • A procedure for pest control.
6.5 Waste disposal 6.5.1 System for waste storage and elimination shall be published; for waste with special requirements, its disposal shall meet the relevant requirements. Waste shall be eliminated periodically; corruptible waste shall be eliminated as soon as possible; where necessary, waste shall be eliminated in time. 6.5.2 Waste location outside the workshop shall be kept from food processing site to prevent contamination; smelly or harmful, toxic gas shall be prevented from escaping; insect pest shall be prevented from breeding.	**Regulation (EC) No 852/2004,** Annex II, Chapter VI 1. Food waste, non-edible by-products and other refuse are to be removed from rooms where food is present as quickly as possible, so as to avoid their accumulation. 2. Food waste, non-edible by-products and other refuse are to be deposited in closable containers, unless food business operators can demonstrate to the competent authority that other types of containers or evacuation systems used are appropriate. These containers are to be of an appropriate construction, kept in sound condition, be easy to clean and, where necessary, to disinfect. 3. Adequate provision is to be made for the storage and disposal of food waste, non-edible by-products and other refuse. Refuse stores are to be designed and managed in such a way as to enable them to be kept clean and, where necessary, free of animals and pests. 4. All waste is to be eliminated in a hygienic and environmentally friendly way in accordance with Community legislation applicable to that effect, and is not to constitute a direct or indirect source of contamination.	
6.6 Work clothes management 6.6.1 The personnel shall wear work clothes when entering the operating areas. 6.6.2 Specialized clothes such as coats, pants, shoes, caps and hairnet shall be equipped in accordance with the food characteristics and the requirements of production process; where necessary, mask, apron, sleeve or glove may be provided. 6.6.3 Cleaning system for work clothes shall be prepared, where necessary, work clothes shall be replaced timely. During the process of food	**Regulation (EC) No 852/2004,** Annex II, Chapter VIII 1. Every person working in a food-handling area is to maintain a high degree of personal cleanliness and is to wear suitable, clean and, where necessary, protective clothing.	*More detailed requirements on this subject (work clothes management) are mentioned in the Guidance document* ***Commission Notice 2016/C 278/01****,* ***Annex I, 2.9:*** d) Hair covers (and beard snoods) should be considered and appropriate clothing with high degree of cleanliness, minimum of pockets, absence of jewelry and watches.

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production, work clothes shall be kept clean and in perfect condition. 6.6.4 Work clothes shall be designed and made to meet to the requirements of different operating areas to lower the risk of cross contamination. Position of work clothes pocket and connection fastening shall be reasonably selected to reduce the contamination risk brought by content or fastening dropping.		
7 Food Raw Materials, Food Additives and Food Related Products 7.1 General requirements Purchasing, acceptance, transportation and storage management system for food raw materials, food additives and food related products shall be established to ensure that food raw materials, food additives and food related products meet relevant national requirements. Any substance which harm to human health and life safety may do shall not be added to foods.	**Regulation (EC) No 852/2004,** Annex II, Chapter IX A food business operator is not to accept raw materials or ingredients, other than live animals, or any other material used in processing products, if they are known to be, or might reasonably be expected to be, contaminated with parasites, pathogenic microorganisms or toxic, decomposed or foreign substances to such an extent that, even after the food business operator had hygienically applied normal sorting and/or preparatory or processing procedures, the final product would be unfit for human consumption.	
7.2 Food raw materials 7.2.1 Licenses and qualified certificates of the suppliers for the purchased food raw materials shall be checked. Food raw materials without qualified certificate shall be inspected based on food safety standard. 7.2.2 Food raw materials can be used only when they are approved. Food raw materials without being approved shall be kept from the qualified materials in designated areas with obvious marks and shall be returned and replaced timely. 7.2.3 Sensory inspection should be conducted before processing and where necessary, laboratory inspection shall be conducted. Once the item indexes involving food safety are found to be abnormal, the food raw materials shall not be used and only the verified applicable ones shall be used. 7.2.4 During transportation and storage, the food raw materials shall be kept away from direct sunlight and shall be equipped with rainproof and dustproof facilities. According to the characteristics and hygiene	**Regulation (EC) No 852/2004,** Annex II, Chapter IX 2. Raw materials and all ingredients stored in a food business are to be kept in appropriate conditions designed to prevent harmful deterioration and protect them from contamination. 3. At all stages of production, processing and distribution, food is to be protected against any contamination likely to render the food unfit for human consumption, injurious to health or contaminated in such a way that it would be unreasonable to expect it to be consumed in that state. 4. Adequate procedures are to be in place to control pests. Adequate procedures are also to be in place to prevent domestic animals from having access to places where food is prepared, handled or stored (or, where the competent authority so permits in special cases, to prevent such access from resulting in contamination). **Regulation (EC) No 852/2004,** Annex II, Chapter IV 1. Conveyances and/or containers used for transporting foodstuffs are to be kept clean and maintained in good repair and condition to protect foodstuffs from contamination and are, where necessary, to be designed and constructed to permit	

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requirements of food raw materials, they shall also be equipped with facilities for insulation, cold storage and preservation. 7.2.5 Transportation tools and vessels of food raw materials shall be kept clean and in good condition and be disinfected where necessary. The food raw materials shall not be shipped together with toxic and harmful substances to avoid contamination on food raw materials. 7.2.6 For warehouse of food raw materials, management system shall be built up and it shall be managed by specific personnel who are responsible for periodical inspection on the quality and hygienic condition and timely cleaning for bad food raw materials or those exceeding quality guarantee period. The distribution order of warehouse shall comply with the principle of "first in first out"; where necessary, it shall be determined according to the characteristics of different food raw materials.	adequate cleaning and/or disinfection. 2. Receptacles in vehicles and/or containers are not to be used for transporting anything other than foodstuffs where this may result in contamination. 3. Where conveyances and/or containers are used for transporting anything in addition to foodstuffs or for transporting different foodstuffs at the same time, there is, where necessary, to be effective separation of products	*More detailed requirements on this subject (first in, first out) are mentioned in the Guidance document **Commission Notice 2016/C 278/01**, **Annex I, 2.10**.:* d) Storage conditions at the establishment itself should take into account any instructions provided by the supplier, 'first in, first out' or 'first expire, first out' principles, accessibility for inspection from all sides (e.g. not placed directly on the ground, against walls, …).
7.3 Food additives 7.3.1 Licenses of the suppliers and qualified certificates of products shall be inspected where food additives are purchased. Food additives can only be used after being approved. 7.3.2 The transportation tools and containers of food additives shall be kept clean and in good condition and shall be provided with necessary protective measures to avoid contamination on food additives. 7.3.3 Storage of food additives shall be managed by specific personnel who are responsible for periodical inspection on the quality and hygienic condition and timely cleaning for the bad food materials or those exceeding quality guarantee period. The distribution order of warehouse shall comply with the principle of "first in first out"; where necessary, it shall be determined according to the characteristics of food additives.	**Regulation (EC) No 1333/2008, Article 4** 1. Only food additives included in the Community list in Annex II may be placed on the market as such and used in foods under the conditions of use specified therein. **Regulation (EC) No 852/2004,** Annex II, Chapter IV 5. Where conveyances and/or containers have been used for transporting anything other than foodstuffs or for transporting different foodstuffs, there is to be effective cleaning between loads to avoid the risk of contamination. **Regulation (EC) No 852/2004,** Annex II, Chapter IX 2. Raw materials and all ingredients stored in a food business are to be kept in appropriate conditions designed to prevent harmful deterioration and protect them from contamination.	***Regulation (EC) No 1333/2008 on food additives** provides general principles of safety and application for all food additives and sets out harmonised rules on food additives: definitions, conditions of use, labelling and procedures.* *In addition, Regulation (EU) No 1130/2011 establishes a Union list of additives approved for use in food additives, food enzymes, food flavourings and nutrients.* *More detailed requirements on this subject (first in, first out) are mentioned in the Guidance document **Commission Notice 2016/C 278/01**, **Annex I, 2.10**.:* d) Storage conditions at the establishment itself should take into account any instructions provided by the supplier, 'first in, first out' or 'first expire, first out' principles, accessibility for inspection from all sides (e.g. not placed directly on the ground, against walls, …).

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7.4 Food related products 7.4.1 Food related products including purchased food packaging materials, containers, detergents and disinfectants shall be inspected for qualified certificates. Those which are carried out with license management shall also be inspected for the licenses of the suppliers and those such as food packaging materials can only be used after being approved. 7.4.2 The transportation means and vessels of food related products shall be kept clean and be maintained in good condition and shall be provided with necessary protective measures to prevent contamination on food raw materials and cross contamination. 7.4.3 Storage of food related products shall be managed by specific personnel who are responsible for periodical inspection on the quality and hygienic condition and timely cleaning for the bad food materials or those exceeding quality guarantee period. The distribution order of warehouse shall abide by the principle of "first in first out".	**Regulation (EC) No 852/2004,** Annex II, Chapter IX 1. A food business operator is not to accept raw materials or ingredients, other than live animals, or any other material used in processing products, if they are known to be, or might reasonably be expected to be, contaminated with parasites, pathogenic microorganisms or toxic, decomposed or foreign substances to such an extent that, even after the food business operator had hygienically applied normal sorting and/or preparatory or processing procedures, the final product would be unfit for human consumption. **Regulation (EC) No 852/2004,** Annex II, Chapter IV 1. Conveyances and/or containers used for transporting foodstuffs are to be kept clean and maintained in good repair and condition to protect foodstuffs from contamination and are, where necessary, to be designed and constructed to permit adequate cleaning and/or disinfection. **Regulation (EC) No 852/2004,** Annex II, Chapter IX 2. Raw materials and all ingredients stored in a food business are to be kept in appropriate conditions designed to prevent harmful deterioration and protect them from contamination.	*More detailed requirements on this subject (first in, first out) are mentioned in the Guidance document **Commission Notice 2016/C 278/01**, **Annex I, 2.10**.:* d) Storage conditions at the establishment itself should take into account any instructions provided by the supplier, 'first in, first out' or 'first expire, first out' principles, accessibility for inspection from all sides (e.g. not placed directly on the ground, against walls, …).

CHINESE LEGISLATION: NATIONAL STANDARD GB 14881	EU LEGISLATION: REGULATION (EC) NO 852/2004	IMPLEMENTING RULES AND COMPARATIVE EVALUATION
7.5 Others For packaging or containers of food materials, food additives and packaging materials directly contacting food, their materials shall be stable, nontoxic, harmless, and difficult to be contaminated and meet hygienic requirements. Food materials, food additives and food packaging materials shall be provided with a certain buffer or cleaning measures for external packaging to lower the contamination risk.	**Regulation (EC) No 852/2004,** Annex II, Chapter II 1. (f) surfaces (including surfaces of equipment) in areas where foods are handled and in particular those in contact with food are to be maintained in a sound condition and be easy to clean and, where necessary, to disinfect. This will require the use of smooth, washable corrosion-resistant and non-toxic materials… **Regulation (EC) No 852/2004,** Annex II, Chapter X 1. Material used for wrapping and packaging are not to be a source of contamination. 2. Wrapping materials are to be stored in such a manner that they are not exposed to a risk of contamination. 3. Wrapping and packaging operations are to be carried out so as to avoid contamination of the products.	**Commission Regulation (EC) No 1935/2004** provides general principles of safety and inertness for all Food Contact Materials and sets out a harmonised legal EU framework.
8 Food Safety Control in Production Process **8.1 Contamination risk control of product** 8.1.1 Hazard analysis method shall be used to affirm the key link of food safety during production process, and control measures for the key link of food safety shall be taken. In the key link, relevant documents such as list of ingredients (feeding) and post operating procedures shall be provided to implement control measures. 8.1.2 Hazard Analysis and Critical Control Point system is encouraged to be adopted for the food safety control during the process of production**.**	**Regulation (EC) No 852/2004, Article 5** 1. Food business operators shall put in place, implement and maintain a permanent procedure or procedures based on the HACCP principles.	*In EU legislation the implementation of HACCP-based self-controls is mandatory for all food business operators (except primary producers), There is inconsistency between the National Standard GB 14881-2013 that specifies "shall be used" and the National Standard GB 12694-2016 (point 11.1.2) where it is mentioned "it is encouraged to be adopted" (i.e. not mandatory). However, overall, the objective and aim of the provisions are the same.* *A detailed assessment of National Standard GB 27341-2009 in comparison with EU legislation is provided below (see page 54 and following).*
8.2 Control of biological contamination **8.3 Control of chemical contamination** **8.4 Control of physical contamination**	**Regulation (EC) No 852/2004, Articles 4 and 5.** **Guidance document (Commission Notice 2016/C 278/01) Annex I and Annex II.**	*A detailed assessment of the requirements for the implementation of HACCP in EU legislation is provided below (see page 56 and following).*

CHINESE LEGISLATION: NATIONAL STANDARD GB 14881	EU LEGISLATION: REGULATION (EC) NO 852/2004	IMPLEMENTING RULES AND COMPARATIVE EVALUATION
8.5 Packaging 8.5.1 The food packaging shall be able to protect the food safety and quality to the maximum extent under normal storage, transportation and marketing conditions. 8.5.2 Identification shall be checked to avoid misuse where packaging materials are used. The use condition of packaging materials shall be recorded faithfully.	**Regulation (EC) No 852/2004,** Annex II, Chapter X 1. Material used for wrapping and packaging are not to be a source of contamination. 2. Wrapping materials are to be stored in such a manner that they are not exposed to a risk of contamination. 3. Wrapping and packaging operations are to be carried out so as to avoid contamination of the products. 4. Wrapping and packaging material re-used for foodstuffs is to be easy to clean and, where necessary, to disinfect.	
9 Inspection **9.1 The raw materials and products shall be inspected by the enterprise itself or by food inspection agencies or companies with corresponding qualifications. The recording system for delivery inspection of food shall be established.** **9.2 There shall be corresponding inspection room and inspection capability for self-inspection. The inspection shall be implemented by the inspection personnel with corresponding qualifications based on required inspection method. The inspection instruments and equipment shall be inspected on regular basis.** **9.3 The inspection room shall be equipped with sound management system to properly preserve the original record and inspection report of each inspection. Products sampling system shall be built up to timely keep sample.** **9.4 Comprehensive consideration shall be taken for factors such as product characteristics, process characteristics, and material control condition to reasonably determine inspection items and frequency so that control measures can be effectively verified during production process. The inspection frequency of net content, sensory requirements and other inspection items easy to**	**Regulation (EC) No 852/2004, Article 5** (f) establishing procedures, which shall be carried out regularly, to verify that the measures outlined in subparagraphs (a) to (e) are working effectively; The verification of effective self-controls is a key objective of official controls in food establishments: **Regulation (EU) 2017/625, Article 14** Official control methods and techniques shall include the following as appropriate: (a) an examination of the controls that operators have put in place and of the results obtained; (b) an inspection of: (i) equipment, means of transport, premises and other places under their control and their surroundings; (ii) animals and goods, including semi-finished goods, raw materials, ingredients, processing aids and other products used for the preparation and production of goods or for feeding or treating animals; (iii) cleaning and maintenance products and processes; (iv) traceability, labelling, presentation, advertising and relevant packaging materials including materials intended to come into contact with food; (c) controls on the hygiene conditions in the operators' premises; (d) an assessment of procedures on good manufacturing practices, good hygiene practices, good farming practices, and of procedures based on the principles of hazard analysis critical control points (HACCP);	Point 9 in Annex II of Guidance document: 'Verification should be carried out by someone other than the person who is responsible for performing the monitoring and corrective actions. Where certain verification activities cannot be performed in house, verification should be performed on behalf of the business by external experts or qualified third parties.' *Guidance document **Commission Notice 2016/C 278/01** provides that adequate infrastructure and resources must be provided to develop, organise and execute efficient self-controls.* 3.1 Assembly of a multidisciplinary HACCP team This team, which involves all parts of the food business concerned with the product, should include the whole range of specific knowledge and expertise appropriate to the product under consideration, its production (manufacture, storage, and distribution), its consumption and the associated potential hazards and should also involve as much as possible the higher management levels. The team should get the full support of the management who should consider itself owner of the HACCP plan and overall Food Safety Monitoring System.

CHINESE LEGISLATION: NATIONAL STANDARD GB 14881	EU LEGISLATION: REGULATION (EC) NO 852/2004	IMPLEMENTING RULES AND COMPARATIVE EVALUATION
change due to effect of production process shall be greater than that of other inspection items. **9.5 For the same variety of product with different packaging, inspection items free from effect of packaging specification and packaging type may be inspected together.**	(e) an examination of documents, traceability records and other records which may be relevant to the assessment of compliance with the rules referred to in Article 1(2), including, where appropriate, documents accompanying food, feed and any substance or material entering or leaving an establishment; (f) interviews with operators and with their staff; (g) the verification of measurements taken by the operator and other test results; (h) sampling, analysis, diagnosis and tests; (i) audits of operators; (j) any other activity required to identify cases of non-compliance.	
10 Storage and Transportation of Foods **10.1 Proper storage and transportation conditions are selected in accordance with requirements of food characteristics and hygienic requirements. Where necessary, the facilities shall be provided for thermal insulation, cold storage and preservation. Foods shall not be stored and transported together with toxic, harmful or smelly goods.** **10.2 Suitable warehousing system shall be established and carried out. In case of any abnormality, it shall be timely handled.** **10.3 The containers, tools and instruments and equipment to store, transport and load and unload foods shall be safe, harmless and clean to lower the risk of food contamination.** **10.4 During the storage and transportation, direct sunlight, rain, notable temperature and humidity change and violent impact shall be avoided to prevent the adverse effect on foods.**	**Regulation (EC) No 852/2004,** Annex II, Chapter IX 5. Raw materials, ingredients, intermediate products and finished products likely to support the reproduction of pathogenic micro-organisms or the formation of toxins are not to be kept at temperatures that might result in a risk to health. The cold chain is not to be interrupted. 8. Hazardous and/or inedible substances, including animal feed, are to be adequately labelled and stored in separate and secure containers. **Regulation (EC) No 852/2004,** Annex II, Chapter IV 1. Conveyances and/or containers used for transporting foodstuffs are to be kept clean and maintained in good repair and condition to protect foodstuffs from contamination and are, where necessary, to be designed and constructed to permit adequate cleaning and/or disinfection. 7. Where necessary, conveyances and/or containers used for transporting foodstuffs are to be capable of maintaining foodstuffs at appropriate temperatures and allow those temperatures to be monitored.	
11 Product Recall Management **11.1 The product recall system shall be established based on relevant national regulations.**	**Regulation (EC) No 178/2002, Article 19** 1. If a food business operator considers or has reason to believe that a food which it has imported, produced, processed, manufactured or distributed is not in compliance	

CHINESE LEGISLATION: NATIONAL STANDARD GB 14881	EU LEGISLATION: REGULATION (EC) NO 852/2004	IMPLEMENTING RULES AND COMPARATIVE EVALUATION
11.2 Where the produced food is not up to the food safety standard or other inedible conditions are found, the production shall be stopped immediately and the food already sold in market shall be recalled. Relevant production operators and consumers shall be notified and the recall and notification condition shall be recorded. **11.3 The recalled food shall be safely disposed of or destroyed to prevent them from flowing into the market again. For foods that are recalled due to improper labeling, identification, or directions for use not in conformity with food safety standards, corrective measures shall be taken to ensure the safety of the products and explain the situation to consumers once the products are re-launched for sale.** **11.4 Production batch shall be reasonably divided and recorded and it shall be labeled with product batch number for the convenience of product tracing.**	with the food safety requirements, it shall immediately initiate procedures to withdraw the food in question from the market where the food has left the immediate control of that initial food business operator and inform the competent authorities thereof. Where the product may have reached the consumer, the operator shall effectively and accurately inform the consumers of the reason for its withdrawal, and if necessary, recall from consumers products already supplied to them when other measures are not sufficient to achieve a high level of health protection. 2. A food business operator responsible for retail or distribution activities which do not affect the packaging, labelling, safety or integrity of the food shall, within the limits of its respective activities, initiate procedures to withdraw from the market products not in compliance with the food-safety requirements and shall participate in contributing to the safety of the food by passing on relevant information necessary to trace a food, cooperating in the action taken by producers, processors, manufacturers and/or the competent authorities.	
12 Training **12.1 Training system for relevant posts of food production shall be established and the corresponding training on food safety knowledge shall be carried out for food processing personnel and practitioners.** **12.2 The awareness and responsibility of the practitioners to comply with relevant laws, regulations and standards of food safety and implement management system of food safety shall be improved and the corresponding knowledge level shall be improved through the process of training.** **12.3 The annual training plan of food safety shall be developed and implemented according to the actual demand of different posts of food**	**Regulation (EC) No 852/2004,** Annex II, Chapter XII Food business operators are to ensure: 1. that food handlers are supervised and instructed and/or trained in food hygiene matters commensurate with their work activity; 2. that those responsible for the development and maintenance of the procedure referred to in Article 5(1) of this Regulation *(= HACCP programme)* or for the operation of relevant guides have received adequate training in the application of the HACCP principles; and 3. compliance with any requirements of national law concerning training programmes for persons working in certain food sectors.	

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production. The training plan should be evaluated, and the training should be recorded. **12.4 Where the relevant laws, regulations and standards of food safety are updated, training shall be developed in time.** **12.5 The training plan shall be examined and revised on regular basis and the training effect shall be evaluated. The routine inspection is carried out to guarantee the effective implementation of the training plan.**		
13 Management System and Personnel **13.1 The professional technical personnel and management personnel of food safety shall be allocated and the management system to ensure food safety shall be established.** **13.2 The management system of food safety shall correspond to the production scale, process level and variety characteristics of food and shall be constantly improved based on practical production and implementation experience.** **13.3 The management personnel shall master the basic principles and operation procedures of food safety and shall have the ability to judge the potential risks and take appropriate preventive and corrective measures to guarantee the effective management.**	**Regulation 178/2002** Article 17 Responsibilities 1. Food and feed business operators at all stages of production, processing and distribution within the businesses under their control shall ensure that foods or feeds satisfy the requirements of food law which are relevant to their activities and shall verify that such requirements are met.	Guidance document **Commission Notice 2016/C 278/01**, **Annex II, Heading 3: Preliminary activities** **3.1 Assembly of a multidisciplinary HACCP team** This team, which involves all parts of the food business concerned with the product, should include the whole range of specific knowledge and expertise appropriate to the product under consideration, its production (manufacture, storage, and distribution), its consumption and the associated potential hazards and should also involve as much as possible the higher management levels. The team should get the full support of the management who should consider itself owner of the HACCP plan and overall Food Safety Monitoring System.
14 Record and Document Management **14.1 Record management** 14.1.1 The recording system shall be established to record links of food production including purchasing, processing, storage, inspection and marketing in details. The record contents shall be complete and true to ensure that all links from material purchasing to production, to marketing of the products can be traced effectively.		Guidance document **Commission Notice 2016/C 278/01**, **Annex II, Heading 10: Documentation and record keeping** Efficient and accurate record keeping is essential to the application of HACCP-based procedures. HACCP-based procedures should be documented in the HACCP-plan and continuously supplemented by records on findings. Documentation and record keeping should be

CHINESE LEGISLATION: NATIONAL STANDARD GB 14881	EU LEGISLATION: REGULATION (EC) NO 852/2004	IMPLEMENTING RULES AND COMPARATIVE EVALUATION
14.1.1.1 The contents including name, specification, quantity, supplier' name and contact information and purchase date of food related products including food raw materials, food additives and food packaging materials shall be recorded faithfully. 14.1.1.2 The contents including food processing (process parameters and environmental monitoring included), storage condition of food and inspection batch No., inspection date, inspection personnel, inspection method and inspection result of the products shall be recorded truthfully. 14.1.1.3 The contents such as name, specification, quantity, production date, production batch No., purchaser's name and contact information, quality certificate and selling date of delivery product shall be recorded truthfully. 14.1.1.4 The contents including name, batch, specification, quantity, recall reason and subsequent rectification program of recalled food shall be recorded truthfully. 14.1.2 The purchasing inspection record of food related products including food raw materials, food additives and food packaging materials as well as delivery inspection record of foods shall be rechecked and signed by the recorders and examiner. The record contents shall be integral, which shall be kept not less than 2 years. 14.1.3 The customer complaint handling mechanism shall be built up. As for the written or verbal advice and complaint put forward by customers, the related management departments of the enterprise shall make records, find out the reasons and handle them carefully. **14.2 The document management system shall be established for effective document management to ensure that documents at each relevant location are valid.** **14.3 The advanced technology and means (electronic computer information system**		appropriate to the nature and size of the operation and sufficient to assist the business to verify that the HACCP-based procedures are in place and being maintained. Documents and records should be kept for a sufficient period of time beyond the shelf life of the product for traceability purposes, for the regular revision of the procedures by the FBO and to allow the competent authority to audit the HACCP-based procedures. Documents should be signed by a responsible reviewing official of the company. Recommended documentation includes: — PRPs applied, working instructions, standard operational procedures, control instructions; — Description of the preparatory stages (before 7 principles); — Hazard analysis; — CCP (+/- oPRPs) identification; — Critical limit determination; — Validation activities; — Corrective actions anticipated; — Description of planned monitoring and verification activities (what, who, when); — Record forms; — Modifications to the HACCP-based procedures; — Supporting documents (generic guides, scientific evidence, …). Record examples are: — Outcome of CCP monitoring activities; — Observed deviations and executed corrective actions; — Outcome of verification activities. Records should be kept for an appropriate period of time. That period should be long enough to ensure information to be available in case of an alert that can be traced back to the food in question. For certain foods the date of consumption is certain. For instance, in food catering, consumption takes

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included) are encouraged to be adopted to implement record and document management.		place shortly after the time of production. For food for which the date of consumption is uncertain, records should be kept for a reasonably short period after the expiry date of the food. Records are an important tool for the competent authorities to allow verification of the proper functioning of the food businesses' FSMS. A simple record-keeping system can be effective and easily communicated to employees. It may be integrated into existing operations and may use existing paperwork, such as delivery invoices and checklists to record, for example, product temperatures.
Appendix A Microbial Monitoring Procedure Guide of Food Processing		Regulation 2073/2005 provides microbiological criteria for foodstuffs. A detailed discussion and comparison to Chinese standards is provided below in table 2 (GB 29921).

b) National Standard GB 31621 National Food Safety Standard-Hygienic norms of food production

CHINESE LEGISLATION: NATIONAL STANDARD GB 31621	EU LEGISLATION: REGULATION (EC) NO 852/2004	IMPLEMENTING RULES AND COMPARATIVE EVALUATION
1 Scope This standard stipulates the food safety requirements during the business processes of food procurement, transportation, acceptance, storage, packaging and sales and applies to all types of food business activities.	**EU legislation: Regulation (EC) No 852/2004, Article 1:** This Regulation lays down general rules for food business operators on the hygiene of foodstuffs and shall apply to all stages of production, processing and distribution of food and to exports…	
2 Procurement same as 7.2.1 of National standard GB 14881 (see above). **2.3 The containers and packaging materials used for the purchase of bulk food shall comply with the requirements of relevant national laws, regulations and standards.**	**EU legislation: Regulation (EC) No 852/2004, Annex II, Chapter IV** 4. Bulk foodstuffs in liquid, granulate or powder form are to be transported in receptacles and/or containers/tankers reserved for the transport of foodstuffs. Such containers are to be marked in a clearly visible and indelible fashion, in one or more Community languages, to show that they are used for the transport of foodstuffs, or are to be marked 'for foodstuffs only'	
3. Transportation same as 7.2.4 and 7.2.5 of National standard GB 14881 (see above). **3.7 Should strictly control the loading and unloading time of refrigerated and frozen food, the temperature of food during the loading and unloading should not increase by more than 3℃.**	**EU legislation: Regulation (EC) No 852/2004, Annex II, Chapter IX** 5. Raw materials, ingredients, intermediate products and finished products likely to support the reproduction of pathogenic micro-organisms or the formation of toxins are not to be kept at temperatures that might result in a risk to health. The cold chain is not to be interrupted. However, limited periods outside temperature control are permitted, to accommodate the practicalities of handling during preparation, transport, storage, display and service of food, provided that it does not result in a risk to health.	
3.8 When different foods are transported by the same transportation means, they should be packed, separated or separated to prevent cross-contamination.	**EU legislation: Regulation (EC) No 852/2004, Annex II, Chapter IV** 3. Where conveyances and/or containers are used for transporting anything in addition to foodstuffs or for transporting different foodstuffs at the same time, there is, where necessary, to be effective separation of products.	
3.9 Bulk food should be sealed and packed in food containers or packaging materials that comply with relevant national laws, regulations and standards to prevent contamination during transportation.	**EU legislation: Regulation (EC) No 852/2004, Annex II, Chapter IV** 4. Bulk foodstuffs in liquid, granulate or powder form are to be transported in receptacles and/or containers/tankers reserved for the transport of foodstuffs. Such containers are to be marked in a clearly visible and indelible fashion,	

CHINESE LEGISLATION: NATIONAL STANDARD GB 31621	EU LEGISLATION: REGULATION (EC) NO 852/2004	IMPLEMENTING RULES AND COMPARATIVE EVALUATION
	in one or more Community languages, to show that they are used for the transport of foodstuffs, or are to be marked 'for foodstuffs only'. 6. Foodstuffs in conveyances and/or containers are to be so placed and protected as to minimise the risk of contamination.	
4 Acceptance **4.1 Conformity verification and sensory random inspection shall be carried out on foods in accordance with relevant national laws, regulations and standards, and transportation temperature shall be measured on foods with temperature control requirements.** **4.2 should check the food certification documents, and keep the relevant certificates. Food-related documents should be true and have a direct correspondence with food. Food with special acceptance requirements shall be implemented in accordance with relevant regulations.** **4.3. The name, specification, quantity, production date, shelf life, purchase date of the food, and the name, address and contact information of the supplier shall be faithfully recorded. Records, bills and other documents should be true, and the preservation period should not be less than 6 months after the expiration date of the food; if the quality period is not clearly guaranteed, the preservation period should not be less than two years.** **4.4 Food can only be put into storage after passing the acceptance inspection. Food that does not meet the acceptance criteria shall not be accepted and should be stored separately, marked and handled as soon as possible.**	**Regulation 178/2002 Article 18 provides:** 1. The traceability of food, feed, food-producing animals, and any other substance intended to be, or expected to be, incorporated into a food or feed shall be established at all stages of production, processing and distribution. 2. Food and feed business operators shall be able to identify any person from whom they have been supplied with a food, a feed, a food-producing animal, or any substance intended to be, or expected to be, incorporated into a food or feed. To this end, such operators shall have in place systems and procedures which allow for this information to be made available to the competent authorities on demand. 3. Food and feed business operators shall have in place systems and procedures to identify the other businesses to which their products have been supplied. This information shall be made available to the competent authorities on demand. 4. Food or feed which is placed on the market or is likely to be placed on the market in the Community shall be adequately labelled or identified to facilitate its traceability, through relevant documentation or information in accordance with the relevant requirements of more specific provisions.	*More detailed requirements on this subject (acceptance) are mentioned in the Guidance document **Commission Notice 2016/C 278/01**, **Annex I, 2.10**.:* a) Consideration should be given not only to the supply of raw materials themselves but also to the supply of additives, processing aids, packaging material and food contact material. b) A strict supply policy, containing agreement on specifications (e.g. microbiological) and hygiene assurance and/or requesting a certified quality management system can be taken into account in the extent of details on the PRPs and HACCP plan of the establishment itself. c) Apart from agreements with and possible auditing of the supplier, a number of issues might give a good indication on the reliability of the supplier such as homogeneity of delivered goods, compliance with agreed delivery period, accuracy of information added, sufficient shelf life or freshness, use of clean and suitably equipped transportation, hygiene awareness of the driver and other food handlers transporting the food, correct temperature during transport, long term satisfaction, etc. Most of these issues should be part of a reception control. It may be necessary to be aware of previous cargoes of a transport vehicle in order to implement adequate cleaning procedures to reduce the likelihood of cross contamination.
5 Storage The various points are the same as the requirements mentioned in 4.2.5.2, 5.1.3, 5.1.6.1, 5.1.8.2, 5.1.8.3,		The Guidance document **Commission Notice 2016/C 278/01**, **Annex I,** mentions:

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5.1.8.4, 5.1.8.5, 5.2.2, 6.1.4, 6.2.1, 6.4.2, 6.4.5, 7.2.6, 10.1 and 10.4 of National standard GB 14881 (see above). Additional is: **5.12 The time of entering and leaving the food and the storage temperature and its changes shall be recorded.**		2.10 d) Storage conditions at the establishment itself should take into account any instructions provided by the supplier, 'first in, first out' or 'first expire, first out' principles, accessibility for inspection from all sides (e.g. not placed directly on the ground, against walls, …). 2.11 Temperature control of storage environment a) Temperature and humidity should be (automatically) recorded where relevant.
6 Sale **6.1 should have a sales place suitable for the variety and scale of food products. The sales place should be reasonably laid out. The food business area and the non-food business area are set up separately. The raw food area is separated from the cooked food area. The food processing area is separated from the directly imported food area. The aquatic product area should be separated from other food business areas to prevent cross-cutting. Pollution.** The other points are the same as the requirements mentioned in 5.2.1.2.1, 5.1.6.1, 5.1.7.2, 5.1.8.3, 5.1.9.1, 5.1.9.2, 6.4.2, 6.5.1, 14.1.1.3 and 14.1.2 of National standard GB 14881 (see above). Additional is: **6.7 Foods that are prone to spoilage, such as meat, eggs, milk, quick-frozen food, etc., should establish corresponding temperature control and other food safety control measures and ensure implementation.** **6.8 For the sale of bulk foods, the name, ingredients or ingredients list of the food, production date, shelf life, name of the manufacturer and contact information, etc. should be marked on the container and outer packaging of the bulk food to ensure that consumers can get clear and easy understand the information. The production date marked for bulk**	**Regulation (EC) No 852/2004, Article 4:** 3. Food business operators shall, as appropriate, adopt the following specific hygiene measures: c) compliance with temperature control requirements for foodstuffs; **Regulation (EC) No 178/2002, Article 18:** 1. The traceability of food, feed, food-producing animals, and any other substance intended to be, or expected to be, incorporated into a food or feed shall be established at all stages of production, processing and distribution. 2. Food and feed business operators shall be able to identify any person from whom they have been supplied with a food, a feed, a food-producing animal, or any substance intended to be, or expected to be, incorporated into a food or feed. 3. Food and feed business operators shall have in place systems and procedures to identify the other businesses to which their products have been supplied. This information shall be made available to the competent authorities on demand. **Commission Regulation (EC) No 1935/2004** provides general principles of safety and inertness for all Food Contact Materials and sets out a harmonised legal EU framework.	*This part applies to retail.* **Commission Notice** providing guidance on food safety management systems for food retail activities, including food donations **(2020/C 199/01)** shall apply. **Commission Notice** providing guidance on food safety management systems for food retail activities, including food donations **(2020/C 199/01):** See PRP 11 See also generic hazard analysis for a butcher, a bakery shop, a fish shop and an ice cream shop. **Guidelines on the implementation of the main General Food Law requirements (**produced by the Commission on **26 January 2010):** iv) Information to be kept Article 18 does not specify what type of information should be kept by the food and feed business operators. However, to fulfil the objective of Article 18, the following information should be kept at least. Name, address of supplier, and identification of products supplied; Name, address of customer, and identification of products delivered; Date and, where necessary, time of transaction / delivery; Volume, where appropriate, or quantity.

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food shall be the same as the production date marked by the producer when leaving the factory. **6.9 In the course of business, food packaged or repacked shall not change the original production date and extend the shelf life. Packaging materials and containers for packaging or sub-packaging foods shall be non-toxic, harmless, and odor-free, and shall comply with the requirements of relevant national laws, regulations and standards.**		**Guidance document on the implementation of certain provisions of Regulation (EC) No 853/2004 on the hygiene of food of animal origin (SANCO/10098/2009 Rev. 3 of 2018).** 4.5 Re-wrapping establishments: their approval is required. In order to ensure traceability, food business operators should not place on the market products of animal origin handled in rewrapping establishments unless the identification mark of the rewrapping establishment is applied.
7 Product traceability and recall **7.1 is the same as the requirements mentioned in 11.2 of National standard GB 14881 (see above). Additional is:** **7.2 Cooperate with relevant food production operators and food safety authorities to carry out relevant traceability and recall work to avoid or reduce hazards.** **7.3 In response to the problems found, the food business operator should search for records of each link, analyze the cause of the problem, and improve it in a timely manner.**	**Regulation (EC) No 178/2002, Article 18 relates to traceability:** 2. Food and feed business operators shall be able to identify any person from whom they have been supplied with a food, a feed, a food-producing animal, or any substance intended to be, or expected to be, incorporated into a food or feed. To this end, such operators shall have in place systems and procedures which allow for this information to be made available to the competent authorities on demand. **Article 19 relates to recall:** 1. If a food business operator considers or has reason to believe that a food which it has imported, produced, processed, manufactured or distributed is not in compliance with the food safety requirements, it shall immediately initiate procedures to withdraw the food in question from the market where the food has left the immediate control of that initial food business operator and inform the competent authorities thereof. Where the product may have reached the consumer, the operator shall effectively and accurately inform the consumers of the reason for its withdrawal, and if necessary, recall from consumers products already supplied to them when other measures are not sufficient to achieve a high level of health protection. 2. A food business operator responsible for retail or distribution activities which do not affect the packaging,	The Guidance document **Commission Notice 2016/C 278/01**, **Annex II,** mentions: 10. Efficient and accurate record keeping is essential to the application of HACCP-based procedures. Record examples are: — Observed deviations and executed corrective actions; Records should be kept for an appropriate period of time.

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	labelling, safety or integrity of the food shall, within the limits of its respective activities, initiate procedures to withdraw from the market products not in compliance with the food-safety requirements and shall participate in contributing to the safety of the food by passing on relevant information necessary to trace a food, cooperating in the action taken by producers, processors, manufacturers and/or the competent authorities. 3. A food business operator shall immediately inform the competent authorities if it considers or has reason to believe that a food which it has placed on the market may be injurious to human health. Operators shall inform the competent authorities of the action taken to prevent risks to the final consumer and shall not prevent or discourage any person from cooperating, in accordance with national law and legal practice, with the competent authorities, where this may prevent, reduce or eliminate a risk arising from a food. 4. Food business operators shall collaborate with the competent authorities on action taken to avoid or reduce risks posed by a food which they supply or have supplied.	
8 Health management The various points are the same as the requirements mentioned in 6.1.2, 6.1.3, 6.3.2.1, 6.3.2.2 and 6.3.2.4 of National standard GB 14881 (see above). Additional is: **8.5 In the course of food business, you should not eat, drink, spit, throw litter, etc.**		document **Commission Notice 2016/C 278/01**, **Annex I,** mentions: 2.9 Personnel e) Eating, drinking and/or smoking rooms should be separated and clean.
9 Training The various points are the same as the requirements mentioned in 12.1, 12.2, 12.3, 12.4 and 12.5 of National standard GB 14881 (see above).		
10 Management system and personnel The various points are the same as the requirements mentioned in 13.1, 13.2 and 13.3 of National standard GB 14881 (see above). Additional is: **10.3 Each person should be familiar with the basic principles and operating specifications of food safety, and have clear responsibilities and**	**Regulation (EC) No 852/2004, Annex II, Chapter XII:** Food business operators are to ensure: 1. that food handlers are supervised and instructed and/or trained in food hygiene matters commensurate with their work activity;	

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authorities to report food safety problems that occur during the operation.	2. that those responsible for the development and maintenance of the procedure referred to in Article 5(1) of this Regulation or for the operation of relevant guides have received adequate training in the application of the HACCP principles;	
11 Record and document management The various points are the same as the requirements mentioned in 14.1.1, 14.2 and 14.3 of National standard GB 14881 (see above). Additional is: **11.2 The name, batch, specification, quantity of the recalled food, the reason for the recall and the subsequent rectification plan shall be recorded truthfully.**	**Regulation 178/2002, Article 19 provides:**3. A food business operator shall immediately inform the competent authorities if it considers or has reason to believe that a food which it has placed on the market may be injurious to human health.	

c) National standard GB 27341 - Hazard Analysis and Critical Control Point (HACCP) System - General Requirements for Food Processing Plant

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1 Scope This standard specifies the general requirements of HACCP for food processing (catering) plant, including the purchasing, processing, packaging, storing and transporting of raw material and food packaging material. **2 Normative References**	**Article 1 Scope** This Regulation shall apply to all stages of production, processing and distribution of food and to exports, and without prejudice to more specific requirements relating to food hygiene.	**Article 5 of the EU law** requires the implementation and maintenance of HACCP mandatory for **all food business operators except primary producers** (some additional exceptions are: primary production for private domestic use; the domestic preparation, handling or storage of food for private domestic consumption; the direct supply, by the producer, of small quantities of primary products to the final consumer or to local retail establishments directly supplying the final consumer; collection centres and tanneries which fall within the definition of food business only because they handle raw material for the production of gelatine or collagen). *The Chinese legislation refers to processing plants.* ***Two more Chinese standards** apply and have been studied: GB/T 19538 (Hazard Analysis and Critical Control Point (HACCP) System and Guidelines for Its Application) and GB/T 22000 (Food Safety Management Systems - Requirements for Any Organization in the Food Chain)* *A guidance document on the implementation of HACCP principles was published by the EU on 16 November 2005 to facilitate the implementation and cover all principles in more detail. The guidance document was extended in 2016 in order to provide a more integrated approach within a Food Safety Management System (Commission Notice 2016/C 278/01).*
3 Terms and Definitions **3.1 Raw material** All intended products articles or substances constituting food constituent or composition. Note: including materials, auxiliary materials and additives contained in foods or all intended substances of other source. **3.2 Potential hazard**	**Definitions** *In Regulation (EC) No 178/2002 definitions are listed in Article 2 for food and in Article 3 for:* 'hazard' means a biological, chemical or physical agent in, or condition of, food or feed with the potential to cause an adverse health effect; 'risk' means a function of the probability of an adverse health effect and the severity of that effect, consequential to a hazard;	*In EU legislation there is no definition for raw material. The various components of raw material (food, animal by-products, residues, additives, etc.) are defined and dealt with in specific Regulations.* In the guidance document (Commission Notice 2016/C 278/01) **Annex II, heading 5** deals with identification of critical control points (CCP) and identifies different levels of risk: lower risk levels, intermediate levels of risks and high level of risks. This is equivalent to the

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Food safety hazard which may occur in case of no precaution. **3.3 Significant hazard** Potential hazard which is much more likely to occur and may result in disease or injury in case of no control. Note: "much more likely to occur" and "result in disease or injury" mean that the hazard has "probability" and "severity". **3.4 Operation limit** The operation index established in order to avoid deviation of monitoring index from critical limit. **3.5 Food defense plan** Measures established and implemented to protect food supply from deliberate biological, chemical or physical contamination or artificial damage.	'retail' means the handling and/or processing of food and its storage at the point of sale or delivery to the final consumer, and includes distribution terminals, catering operations, factory canteens, institutional catering, restaurants and other similar food service operations, shops, supermarket distribution centres and wholesale outlets; 'primary production' means the production, rearing or growing of primary products including harvesting, milking and farmed animal production prior to slaughter. It also includes hunting and fishing and the harvesting of wild products; In Regulation (EC) No 852/2004 several definitions are listed (in Article 2) such as for food hygiene, establishment, potable water, clean water, wrapping, packaging, processing, processed products and unprocessed products.	notion of potential hazard and significant hazard used in GB 27341. *Operation limit is an additional tool to assess the deviation noticed while monitoring the Critical limit.* In the guidance document (Commission Notice 2016/C 278/01) **heading 3** deals with **links between FSMS, PRPS, GHP, GMP and HACCP**. FSMS = food safety management system; PRPs = prerequisite programs; GHP = good hygiene practices; GMP = good manufacturing practices *These measures are equivalent to the food defense plan and have the same objective.*
4 HACCP System of Plant **4.1 General Requirements** The plant shall: a) Plan, implement, inspect and improve the HACCP system process, and provide the required resource. b) Determine the scope of HACCP system, and define the relationship between the step involved in this scope and other steps of the food chain. c) Guarantee to control all operations (including the outsourced process) which may affect the food safety requirements, and to carry out identification and verification in HACCP system. During verification, main attention shall be paid to the conformance of product safety with relevant laws, regulations, and standards. d) Guarantee that the HACCP system is effectively implemented so as to effectively control the product safety. Where systematic deviation occurs to product safety, HACCP plan shall be reconfirmed to continuously improve the HACCP system.	**Article 5** ***Hazard analysis and critical control points*** 1. Food business operators shall put in place, implement and maintain a permanent procedure or procedures based on the HACCP principles. 2. The HACCP principles referred to in paragraph 1 consist of the following: (a) identifying any hazards that must be prevented, eliminated or reduced to acceptable levels; (b) identifying the critical control points at the step or steps at which control is essential to prevent or eliminate a hazard or to reduce it to acceptable levels; (c) establishing critical limits at critical control points which separate acceptability from unacceptability for the prevention, elimination or reduction of identified hazards; (d) establishing and implementing effective monitoring procedures at critical control points;	*While the Chinese standard is directed to the plant, the EU Regulation is directed to the food business operator, allocating clear accountability and liability to the management of the establishment.* In the guidance document (Commission Notice 2016/C 278/01) **Annex II, heading 2** deals with: **General principles** The HACCP-based procedures should be science/risk-based and systematic, identifying specific hazards, and measures for control of those hazards, to ensure the safety of food. HACCP-based procedures are tools to identify and assess hazards and establish control systems that focus on prevention, as opposed to older systems that relied mainly on end product testing. All HACCP-based procedures are capable of accommodating changes, such as advances in equipment design, processing procedures or technological developments as they include a requirement to review the procedures to ensure that new hazards have not been introduced when such

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4.2 Document Requirements 4.2.1 HACCP system documents shall include: a) Documented food safety guideline; b) HACCP manual; c) Documented procedure required in this standard; d) Documents required to guarantee the effective planning, operation and control of HACCP system process; e) Record required in this standard. 4.2.2 HACCP manual The plant shall prepare and maintain HACCP manual, at least covering: a) Scope of HACCP system, including the covered product or product category, operation step, site, and the relationship with other steps of food chain; b) Procedure document of HACCP system or the quotation of such document; c) Expression for HACCP system process and its interaction. 4.2.3 Document control Documents required for HACCP system shall be controlled. The documented procedure shall be prepared to specify the control on the following aspects: a) The document is approved prior to issuance so as to guarantee that it is sufficient, proper and effective; b) Where necessary, review and update the document and re-approve it; c) Ensure that changes and the current revision status of the document are identified; d) Ensure that relevant effective version of applicable document is available at application location; e) Ensure that the document is clear and easy for identification; f) Ensure that documents related to HACCP system are identified, with their distribution controlled; g) Prevent the unintended use of obsolete documents, properly mark the obsolete documents which shall be	(e) establishing corrective actions when monitoring indicates that a critical control point is not under control; (f) establishing procedures, which shall be carried out regularly, to verify that the measures outlined in subparagraphs to (e) are working effectively; and (g) establishing documents and records commensurate with the nature and size of the food business to demonstrate the effective application of the measures outlined in subparagraphs (a) to (f). When any modification is made in the product, process, or any step, food business operators shall review the procedure and make the necessary changes to it. 3. Paragraph 1 shall apply only to food business operators carrying out any stage of production, processing and distribution of food after primary production. 4. Food business operators shall: (a) provide the competent authority with evidence of their compliance with paragraph 1 in the manner that the competent authority requires, taking account of the nature and size of the food business; (b) ensure that any documents describing the procedures developed in accordance with this Article are up-to-date at all times; (c) retain any other documents and records for an appropriate period.	changes are made. … The intent of HACCP-based procedures is to focus on control at CCPs. They should be applied to each specific operation separately. The application of the HACCP-based procedures should be reviewed and necessary changes made when any modification is made in the product, process, or any step. It is important when applying the HACCP-based procedures to be flexible where appropriate, given the context of the application taking into account the nature and the size of the operation. In the guidance document (Commission Notice 2016/C 278/01) **Annex II, heading 10** deals with: **Documentation and record keeping** Efficient and accurate record keeping is essential to the application of HACCP-based procedures. HACCP-based procedures should be documented in the HACCP-plan and continuously supplemented by records on findings. Documentation and record keeping should be appropriate to the nature and size of the operation and sufficient to assist the business to verify that the HACCP-based procedures are in place and being maintained. Documents and records should be kept for a sufficient period of time beyond the shelf life of the product for traceability purposes, for the regular revision of the procedures by the FBO and to allow the competent authority to audit the HACCP-based procedures. Expert developed HACCP guidance materials (e.g. sector-specific HACCP guides) may be utilized as part of the documentation, provided that those materials reflect the specific food operations of the business. Documents should be signed by a responsible reviewing official of the company. Records should be kept for an appropriate period of time. That period should be long enough to ensure information to be available in case of an alert that can be traced back to the food in question. For certain foods the date of consumption is certain. For food for which the date of consumption is uncertain, records should be kept for a reasonably short period after the

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reserved. 4.2.4 Record control Record shall be established and maintained to provide effective operation evidence meeting relevant requirements and HACCP system. Documented procedure shall be prepared, specifying the control required for mark, storage, protection, retrieval, storage life and disposal of the record. The record shall be maintained clear and easy for identification and retrieval.		expiry date of the food. Records are an important tool for the competent authorities to allow verification of the proper functioning of the food businesses' FSMS.
5 Management Responsibilities **5.1 Management Commitment** Top management shall, through the following activities, provide evidence for the commitment made to establish and implement HACCP system: a) Transmit the importance to meet the requirements of the customer and laws and regulations to plants; b) Establish food safety guideline; c) Ensure the establishment of food safety objective; d) Conduct management review; e) Ensure the obtaining of resource. **5.2 Food Safety Guideline** Top management shall focus on the consumer's edible safety, establish food safety guideline and food safety objective, and ensure food safety. **5.3 Responsibility, Authority and Communication** 5.3.1 Responsibility and authority Top management shall appoint a leader for HACCP working team, and confirm his responsibility and authority; meanwhile, it shall specify the responsibilities and authorities of all departments in a plant. 5.3.2 Communication In order to obtain necessary food safety information and guarantee the effectiveness of HACCP system, top management shall ensure that the plant has	*Regulation (EC) No 178/2002 (General Food Law) as well as Regulation (EC) No 852/2004 and 853/2004 are directed to the food business operator (= management).* *For example Regulation 178/2002 provides in Article 17:* Food and feed business operators at all stages of production, processing and distribution within the businesses under their control shall ensure that foods or feeds satisfy the requirements of food law. **Regulation 852/2005 Article 5** (on HACCP): 1. Food business operators shall put in place, implement and maintain a permanent procedure or procedures based on the HACCP principles. **Annex II, Chapter XII to Reg 852/2004** **Training** Food business operators are to ensure: 1. that food handlers are supervised and instructed and/or trained in food hygiene matters commensurate with their work activity; 2. that those responsible for the development and maintenance of the procedure referred to in Article 5(1) of this Regulation or for the operation of relevant guides have received adequate training in the application of the HACCP principles; Article 5(2)(f) provides that food business operators must establish 'procedures, which shall be carried out	In the guidance document (Commission Notice 2016/C 278/01) **Annex II, heading 3** states: **Preliminary activities** **Assembly of a multidisciplinary HACCP team** This team, which involves all parts of the food business concerned with the product, should include the whole range of specific knowledge and expertise appropriate to the product under consideration, its production (manufacture, storage, and distribution), its consumption and the associated potential hazards and should also involve as much as possible the higher management levels. The team should get the full support of the management who should consider itself owner of the HACCP plan and overall FSMS. Where necessary, the team should be assisted by specialists who will help it to solve its difficulties as regards assessment and control of critical points. In the guidance document (Commission Notice 2016/C 278/01) **heading 7. Training** states: Staff should be supervised and instructed and/or trained in food hygiene matters appropriate to their role, and those responsible for developing and maintaining the food safety management system should be suitably trained in the application of PRPs and HACCP principles.

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established, implemented and maintained the required internal communication, and has carried out necessary external communication with other suppliers, customers, food safety competent departments and other interested parties. Communication personnel shall accept proper training, sufficiently learn about the product, relevant hazard and HACCP system of the plant, and reasonably authorized. Communication record shall be maintained. **5.4 Internal Review** 5.1.2 Drainage facilities 5.1.2.1 Drainage system shall be designed and constructed to ensure unblocked drainage and convenient cleaning and maintenance. It shall be adapted to the demand of food production and ensure that food, production and clean water be free from contamination. 5.1.2.2 The inlet of drainage system shall be installed with a device such as a floor drain with water seal to prevent solid waste from entering and discharged air from emitting. 5.1.2.3 Outlet of drainage system shall be provided with appropriate measures to lower the risk of insect attack. 5.1.2.4 Indoor drainage shall flow from areas with high cleanliness to those with low cleanliness and shall be designed to prevent backflow. 5.1.2.5 Sewage shall be disposed of properly before discharge on order to meet relevant national requirements on sewage discharge. **5.5 Management Review** Top management shall review HACCP system according to the planned time interval to ensure its continuous suitability, sufficiency and effectiveness; the review shall include the improvement and updating demand of HACCP system; record of management review shall be maintained.	regularly, to verify that the [control] measures outlined … are working effectively	In the guidance document (Commission Notice 2016/C 278/01) **Annex II, heading 9** states: **Verification (and validation) procedures** The HACCP team should specify the methods and procedures to be used for determining if the HACCP-based procedures are working correctly. The frequency of verification should be sufficient to confirm that HACCP-based procedures are working effectively. The frequency of verification shall depend on the characteristics of the business (output, number of employees, nature of the food handled), the monitoring frequency, the accuracies of the employees, the number of deviations detected over time and the hazards involved. Verification should be carried out by someone other than the person who is responsible for performing the monitoring and corrective actions. Where certain verification activities cannot be performed in house, verification should be performed on behalf of the business by external experts or qualified third parties. Where necessary, such a review must result in the amendment of the procedures laid down. The changes should be fully incorporated into the documentation and record-keeping system in order to ensure that accurate up-to-date information is available.
6 Prerequisite Plan	**Article 4** states:	In the guidance document (Commission Notice 2016/C 278/01) **Annex I** states:

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6.1 General Plant shall establish, implement, verify and maintain the prerequisite plan, and update and improve it where necessary, so as to continuously meet the sanitation condition required for HACCP system; prerequisite plan shall include human resource security plan, good manufacture practice (GMP), sanitation standard operation procedure (SSOP), safety and sanitation security system of packaging material of raw material or that directly contacting foods, recall and tracing system, equipment and facility maintenance plan and emergency plan. Plant prerequisite plan shall be approved and recorded. **6.2 Human Resource Security Plan** Plant shall establish and implement human resource security plan, so as to ensure that all personnel engaged in food safety work are competent. The plan shall meet the following requirements: a) Provide continuous training on HACCP system, relevant professional technology knowledge, operating skills, laws and regulations, or take other measures to ensure that all managers and staff are equipped with necessary capacity; b) Assess the effectiveness of training provide or other measures taken; c) Maintain proper records of personnel education, training, skill and experience.	**General and specific hygiene requirements** 1. Food business operators carrying out primary production and those associated operations listed in Annex I shall comply with the general hygiene provisions laid down in part A of Annex I and any specific requirements provided for in Regulation (EC) No 853/2004. 2. Food business operators carrying out any stage of production, processing and distribution of food after those stages to which paragraph 1 applies shall comply with the general hygiene requirements laid down in Annex II and any specific requirements provided for in Regulation (EC) No 853/2004. 3. Food business operators shall, as appropriate, adopt the following specific hygiene measures: (a) compliance with microbiological criteria for foodstuffs; (b) procedures necessary to meet targets set to achieve the objectives of this Regulation; (c) compliance with temperature control requirements for foodstuffs; (d) maintenance of the cold chain; (e) sampling and analysis. **Annex II, Chapter XII** stipulates: **Training** Food business operators are to ensure: 1. that food handlers are supervised and instructed and/or trained in food hygiene matters commensurate with their work activity; 2. that those responsible for the development and maintenance of the procedure referred to in Article 5(1) of this Regulation or for the operation of relevant guides have received adequate training in the application of the HACCP principles; and 3. compliance with any requirements of national law concerning training programmes for persons working in certain food sectors.	**Prerequisite programs (PRPs)** Each FBO should implement prerequisite programs as part of the Food Safety Management System (FSMS). They include good hygiene practices (GHP) and good manufacturing practices (GMP) among other good practices. Food hygiene and safety is the result of the implementation by food businesses of prerequisite programs (PRPs) and procedures based on the HACCP principles. The PRPs provide the foundation for effective HACCP implementation and should be in place before any HACCP-based procedures are established. PRPs must always be in place in any food business, including at primary production. The FBO should describe the applied PRPs, proportionate to the size and nature of the establishment, including a list of responsible person(s). Guidance document (Commission Notice 2016/C 278/01) **Annex I, 2 Examples of PRPs, 2.2 Cleaning and disinfection:** Cleaning and sanitation procedures are part of PRPs, including a description a) What, when and how cleaning and disinfection should be considered. b) Typical steps should be removal of visible dirt → cleaning → rinsing → disinfection → rinsing. c) Materials and approach for cleaning equipment should be different between low and highly contaminated areas. d) Hot water should be used as much as possible for cleaning. e) Technical information should be available regarding detergents, disinfection agents (e.g. active component, contact time, concentration). f) Visual checks on cleaning and sampling for analysis (e.g. hygienogram) should be used to control disinfection activities. **2.12 Working methodology**

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		Work instructions should be kept clear and simple, visible or easily accessible. They may include instructions to clean and remove broken glass immediately and report it, not to leave inspection places unmanned, put finished products in cooled room as soon as possible if cooled storage is required, fill in records correctly as soon as possible, … **Appendix I Glossary** Provides definitions for: FSMS, GHP, GMP, PRPs
6.3 Good Manufacture Practice (GMP) Plant shall establish and implement GMP according to food regulations and corresponding sanitary regulations.		In the guidance document (Commission Notice 2016/C 278/01) **Annex I** states: **Prerequisite programs (PRPs)** Each FBO should implement prerequisite programs as part of the FSMS. They include good hygiene practices (GHP) and good manufacturing practices (GMP) among other good practices.
6.4 Sanitation Standard Operation Procedure (SSOP) Plant shall at least meet the following requirements when establishing and implementing SSOP: a) Water and ice contacting foods (including raw material, semi-finished product and finished product) or those in articles contacting foods shall meet the safety and sanitation requirements; b) Instruments, gloves or interior and exterior packaging materials contacting foods shall be clean, sanitary and safe; c) Protect foods free from cross contamination; d) Ensure that hands of operators are cleaned and disinfected and the toilet facilities are clean; e) Protect food safety free of hazard by lubricants, fuels, articles for cleaning and disinfecting, condensate and other chemical, physical and biological contaminants; f) Correctly label, store and use various toxic chemicals;	**Annex II** to the Regulation provides detailed requirements under the heading: **General hygiene requirements for all food business operators, Chapter VII deals with water supply:** 1. a) There is to be an adequate supply of potable water, which is to be used whenever necessary to ensure that foodstuffs are not contaminated; 4. Ice which comes into contact with food or which may contaminate food is to be made from potable water or, when used to chill whole fishery products, clean water. **Chapter V deals with equipment requirements** All articles, fittings and equipment with which food comes into contact are to: (a) be effectively cleaned and, where necessary, disinfected. Cleaning and disinfection are to take place at a frequency sufficient to avoid any risk of contamination; (b) be so constructed, be of such materials and be kept in such good order, repair and condition as to minimise any risk of contamination;	In addition, the guidance document (Commission Notice 2016/C 278/01) **Annex I** lays down the: **Prerequisite programs (PRPs)** **2.8 Water and air control** a) Regular own microbiological and chemical analysis of water directly in contact with food (unless community potable water) should be carried out. Factors such as the source, intended use of the water, etc. will determine the frequency of analysis. **2.1 Infrastructure (building, equipment)** j) Equipment and monitoring/recording devices (e.g. thermometers) should be clean and the equipment suitable for contact with food products. k) Attention should be paid to the different possibilities whereby the use of equipment can result in (cross-) contamination of food: i. Prevention of contamination of the equipment by the environment e.g. condensation dripping from ceilings;

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g) Ensure the physical health and sanitation of the personnel contacting foods; h) Prevent and eliminate damage caused by rats and insects. SSOP record shall be preserved.	(c) with the exception of non-returnable containers and packaging, be so constructed, be of such materials and be kept in such good order, repair and condition as to enable them to be kept clean and, where necessary, to be disinfected; (d) be installed in such a manner as to allow adequate cleaning of the equipment and the surrounding area. **Chapter IX Provisions applicable to foodstuffs** 3. At all stages of production, processing and distribution, food is to be protected against any contamination likely to render the food unfit for human consumption, injurious to health or contaminated in such a way that it would be unreasonable to expect it to be consumed in that state. **Chapter VIII Personal hygiene** 1. Every person working in a food-handling area is to maintain a high degree of personal cleanliness and is to wear suitable, clean and, where necessary, protective clothing. **Chapter I General requirements for food premises** 3. An adequate number of flush lavatories are to be available and connected to an effective drainage system. Lavatories are not to open directly into rooms in which food is handled. 2. b) be such as to protect against the accumulation of dirt, contact with toxic materials, the shedding of particles into food and the formation of condensation or undesirable mould on surfaces; **Chapter IX Provisions applicable to foodstuffs** 3. At all stages of production, processing and distribution, food is to be protected against any contamination likely to render the food unfit for human consumption, injurious to health or contaminated in such a way that it would be unreasonable to expect it to be consumed in that state.	ii. Prevention of contamination within the food handling equipment e.g. accumulation of food residues in slicing devices; iii. Prevention of contamination by raw materials: separate equipment (or cleaning and disinfection between use) for raw products and cooked products (chopping boards, knives, dishes, …). **2.9 Personnel (hygiene, health status)** c) Hands should be washed (+ disinfected) regularly, as a minimum, before starting to work, after using the lavatory, after breaks, after rubbish disposal, after coughing or sneezing, after handling of raw materials, … **2.1 Infrastructure (building, equipment)** h) Toilets should not open directly to food handling areas. Preferably water flushing with use of foot/arm pedals should be present and reminders to wash hands strategically placed. **2.5 Physical and chemical contaminations from production environment** a) The frequency of the control of physical hazards (glass, plastic, metal, …) should be determined using a risk-based analysis (how big is the likelihood of occurrence in an establishment in question?). b) A procedure should be available explaining what to do in case of breakage of glass, hard plastic, knives, … c) Only cleaning products suitable for food contact surfaces should be used in food processing environments where there is some possibility of incidental food contact. Other cleaning products should be only used outside periods of production. d) Possible chemical hazards should only be dealt with by specialized, trained staff. Weighing scales for additives should be automatic. **2.9 Personnel (hygiene, health status)** a) Personnel should be aware of hazards from gastro-intestinal infections, hepatitis and wounds with appropriate exclusion from food handling or suitable protection; relevant health problems should be reported

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	Chapter I General requirements for food premises 10. Cleaning agents and disinfectants are not to be stored in areas where food is handled. **Chapter VIII Personal hygiene** 2. No person suffering from, or being a carrier of a disease likely to be transmitted through food or afflicted, for example, with infected wounds, skin infections, sores or diarrhoea is to be permitted to handle food or enter any food-handling area in any capacity if there is any likelihood of direct or indirect contamination. Any person so affected and employed in a food business and who is likely to come into contact with food is to report immediately the illness or symptoms, and if possible their causes, to the food business operator. **Chapter IX Provisions applicable to foodstuffs** 4. Adequate procedures are to be in place to control pests. Adequate procedures are also to be in place to prevent domestic animals from having access to places where food is prepared, handled or stored (or, where the competent authority so permits in special cases, to prevent such access from resulting in contamination). **Article 5, point 4:** Food business operators shall: (a) provide the competent authority with evidence of their compliance with paragraph 1 in the manner that the competent authority requires, taking account of the nature and size of the food business; (b) ensure that any documents describing the procedures developed in accordance with this Article are up-to-date at all times; (c) retain any other documents and records for an appropriate period.	to the manager. Special consideration should be given to temporary workers who might be less familiar with potential hazards. **2.3 Pest control: focus on prevention** a) External walls should be free of cracks or chinks, surroundings neat and clean and areas for cleaning accessible. b) Insect screen should be placed at windows. c) Doors should be kept closed except when loading and or unloading. d) Unused equipment and rooms should be clean. e) The presence of an indoor pool of water should be immediately addressed. f) A pest control program should be available *In the guidance document (Commission Notice 2016/C 278/01)* **Annex II, point 10** *specifies* **Documentation and record keeping***:* Recommended documentation includes: — PRPs applied, working instructions, standard operational procedures, control instructions. **Annex II, point 10** concludes: Records should be kept for an appropriate period of time. That period should be long enough to ensure information to be available in case of an alert that can be traced back to the food in question. Cleaning and sanitation procedures are part of PRPs and fall under these requirements of record keeping.
6.5 Safety and Sanitation Security System of Raw Material and Food Packaging Material	Reg 178/2002 provides in Art 18:	The guidance document (Commission Notice 2016/C 278/01) **Annex I, 2.10 Raw materials s**tates:

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Plant shall protect raw material and food packaging material free of food safety hazard, and shall establish and implement its safety and sanitation security system so as to meet the following requirements: a) Establish valid qualification conditions for raw material and food packaging material suppliers, and determine the supplier name list; b) Assess the capacity of raw material and food packaging material suppliers to provide product safety and sanitation, and carry out document review or site review for the supplier's food safety management system; c) Establish acceptance requirements and procedure for raw material and food packaging material, including checking for inspection and quarantine, sanitation qualification and tracing mark of raw material and food packaging material; carry out targeted inspection and verification for the heath and sanitation of raw material and food packaging material where necessary; d) Establish control measures for food additives where necessary; e) Establish the supplier's assessment system, including elimination system for rejected suppliers.	2. Food and feed business operators shall be able to identify any person from whom they have been supplied with a food, a feed, a food-producing animal, or any substance intended to be, or expected to be, incorporated into a food or feed. **Commission Regulation (EC) No 1935/2004** provides general principles of safety and inertness for all Food Contact Materials and sets out a harmonised legal EU framework. Art. 11 of Reg 178/2002 and Art 10 of Reg 852/2004 provide that any supplies from Third countries must comply with the EU food law. As EU food business operators, importers must verify that these conditions are met.	a) Consideration should be given not only to the supply of raw materials themselves but also to the supply of additives, processing aids, packaging material and food contact material. b) A strict supply policy, containing agreement on specifications (e.g. microbiological) and hygiene assurance and/or requesting a certified quality management system can be taken into account in the extent of details on the PRPs and HACCP plan of the establishment itself c) Apart from agreements with and possible auditing of the supplier, a number of issues might give a good indication on the reliability of the supplier such as homogeneity of delivered goods, compliance with agreed delivery period, accuracy of information added, sufficient shelf life or freshness, use of clean and suitably equipped transportation, hygiene awareness of the driver and other food handlers transporting the food, correct temperature during transport, long term satisfaction, etc. Most of these issues should be part of a reception control. It may be necessary to be aware of previous cargoes of a transport vehicle in order to implement adequate cleaning procedures to reduce the likelihood of cross contamination. d) Storage conditions at the establishment itself should take into account any instructions provided by the supplier, 'first in, first out' or 'first expire, first out' principles, accessibility for inspection from all sides (e.g. not placed directly on the ground, against walls, …).
6.6 Maintenance Plan Plant shall establish and implement maintenance plans for plant area, plant, facility and equipment, maintain them in good conditions and protect them free from contamination.	Annex II, Chapter I to Reg 852/2004 provides: 1. Food premises are to be kept clean and maintained in good repair and condition. 2. The layout, design, construction, siting and size of food premises are to: (a) permit adequate maintenance, cleaning and/or disinfection, avoid or minimise air-borne contamination, and provide adequate working space to allow for the hygienic performance of all operations;	

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6.7 Marking and Tracing Plan and Product Recall Plan 6.7.1 Marking and tracing plan Plant shall ensure that it has capacity to identify products and trace their states. It shall establish and implement product marking and tracing plan, which shall at least meet the following requirements: a) Identify product with proper method, and ensure its traceability during the whole food production process; b) Mark the product state in allusion to monitoring and verification requirements; c) Maintain product shipment record, including all distributors, retailers, customers and the consumers. 6.7.2 Product recall plan Plant shall establish product recall plan, and ensure that all released products under safety hazard effect are recalled. This plan shall at least cover the following requirements: a) Ensure the responsibilities and rights of personnel starting and implementing product recall plan; b) Ensure relevant laws and regulations and related requirements which shall be complied with; c) Establish and implement recall measures for products under safety hazard effect; d) Establish analysis and disposal measures for recalled products; e) Periodic drill and verify its effectiveness. Implementation record for product recall plan shall be maintained.	**Regulation (EC) No 178/2002, Article 18** states: 1. The traceability of food, feed, food-producing animals, and any other substance intended to be, or expected to be, incorporated into a food or feed shall be established at all stages of production, processing and distribution. 2. Food and feed business operators shall be able to identify any person from whom they have been supplied with a food, a feed, a food-producing animal, or any substance intended to be, or expected to be, incorporated into a food or feed. To this end, such operators shall have in place systems and procedures which allow for this information to be made avail-able to the competent authorities on demand. 3. Food and feed business operators shall have in place systems and procedures to identify the other businesses to which their products have been supplied. This information shall be made available to the competent authorities on demand. 4. Food or feed which is placed on the market or is likely to be placed on the market in the Community shall be adequately labelled or identified to facilitate its traceability, through relevant documentation or information in accordance with the relevant requirements of more specific provisions. **Regulation (EC) No 178/2002, Article 19** states: 1. If a food business operator considers or has reason to believe that a food which it has imported, produced, processed, manufactured or distributed is not in compliance with the food safety requirements, it shall immediately initiate procedures to withdraw the food in question from the market where the food has left the immediate control of that initial food business operator and inform the competent authorities thereof. Where the product may have reached the consumer, the operator shall effectively and accurately inform the consumers of the reason for its withdrawal, and if necessary, recall from consumers products already supplied to them when other measures are not sufficient to achieve a high level of health protection.	In addition, detailed requirements for the traceability of food of animal origin has been laid down in implementing Regulation (EU) No 931/2011, Article 3: 1. Food business operators shall ensure that the following information concerning consignments of food of animal origin is made available to the food business operator to whom the food is supplied and, upon request, to the competent authority: (a) an accurate description of the food; (b) the volume or quantity of the food; (c) the name and address of the food business operator from which the food has been dispatched; (d) the name and address of the consignor (owner) if different from the food business operator from which the food has been dispatched; (e) the name and address of the food business operator to whom the food is dispatched; (f) the name and address of the consignee (owner), if different from the food business operator to whom the food is dispatched; (g) a reference identifying the lot, batch or consignment, as appropriate; and (h) the date of dispatch. 2. The information referred to in paragraph 1 shall be made available in addition to any information required under relevant provisions of Union legislation concerning the traceability of food of animal origin. 3. The information referred to in paragraph 1 shall be updated on a daily basis and kept at least available until it can be reasonably assumed that the food has been consumed.

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	2. A food business operator responsible for retail or distribution activities which do not affect the packaging, labelling, safety or integrity of the food shall, within the limits of its respective activities, initiate procedures to withdraw from the market products not in compliance with the food-safety requirements and shall participate in contributing to the safety of the food by passing on relevant information necessary to trace a food, cooperating in the action taken by producers, processors, manufacturers and/or the competent authorities. 3. A food business operator shall immediately inform the competent authorities if it considers or has reason to believe that a food which it has placed on the market may be injurious to human health. Operators shall inform the competent authorities of the action taken to prevent risks to the final consumer and shall not prevent or discourage any person from cooperating, in accordance with national law and legal practice, with the competent authorities, where this may prevent, reduce or eliminate a risk arising from a food. 4. Food business operators shall collaborate with the competent authorities on action taken to avoid or reduce risks posed by a food which they supply or have supplied.	
6.8 Emergency Plan Plant shall identify and determine potential food safety accident or emergency situation, preestablish response plan and measure, and make response where necessary to reduce the effect of potential safety hazard. Where necessary, especially in or after accident or emergency situation, plant shall review and improve the emergency plan. Implementation record for emergency plan shall be maintained. Periodic drill shall be conducted and its effectiveness shall be verified. Note: emergency situations include conditions put the plant's products under effect of force majeure, like natural disaster, epidemic situation and biohazard.	**Regulation (EC) No 178/2002, Article 17** states: Food and feed business operators at all stages of production, processing and distribution within the businesses under their control shall ensure that foods or feeds satisfy the requirements of food law which are relevant to their activities and shall verify that such requirements are met.	*Emergency plans are not part of food hygiene rules in the EU. If the safety of food products becomes compromised in a situation of disaster or emergency, food must not be placed on the market.*
7 Establishment and Implementation of HACCP Plan	**Regulation (EC) No 852/2004, Article 5** **Hazard analysis and critical control points**	

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7.1 General HACCP team shall establish and implement food HACCP plan according to the following 7 principles and systematically control the significant hazard, so as to prevent and eliminate such hazard, or reduce it to an acceptable level, and further to guarantee food safety. a) Carry out hazard analysis and establish control measures; b) Determine critical control point; c) Determine critical limit; d) Establish monitoring system of critical control point; e) Establish correction measures; f) Establish verification procedure; g) Establish maintenance system for documents and records. Any change in factors affecting the effectiveness of HACCP plan, like the change in product formula, process and processing condition, may affect the change of HACCP plan. Thus, the HACCP plan shall be confirmed and verified, and updated where necessary.	1. Food business operators shall put in place, implement and maintain a permanent procedure or procedures based on the HACCP principles. 2. The HACCP principles referred to in paragraph 1 consist of the following: (a) identifying any hazards that must be prevented, eliminated or reduced to acceptable levels; (b) identifying the critical control points at the step or steps at which control is essential to prevent or eliminate a hazard or to reduce it to acceptable levels; (c) establishing critical limits at critical control points which separate acceptability from unacceptability for the prevention, elimination or reduction of identified hazards; (d) establishing and implementing effective monitoring procedures at critical control points; (e) establishing corrective actions when monitoring indicates that a critical control point is not under control; (f) establishing procedures, which shall be carried out regularly, to verify that the measures outlined in subparagraphs to (e) are working effectively; and (g) establishing documents and records commensurate with the nature and size of the food business to demonstrate the effective application of the measures outlined in subparagraphs (a) to (f). When any modification is made in the product, process, or any step, food business operators shall review the procedure and make the necessary changes to it. 3. Paragraph 1 shall apply only to food business operators carrying out any stage of production, processing and distribution of food after primary production and those associated operations listed in Annex I. 4. Food business operators shall:	

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	(a) provide the competent authority with evidence of their compliance with paragraph 1 in the manner that the competent authority requires, taking account of the nature and size of the food business; (b) ensure that any documents describing the procedures developed in accordance with this Article are up-to-date at all times; (c) retain any other documents and records for an appropriate period.	
7.2 Preliminary Steps 7.2.1 Composition of HACCP team The capacity of personnel in plant HACCP team shall meet the specialized technical requirements of food production in this plant; the team shall consist of personnel from different departments, including the departments of sanitary quality control, product R&D, production process technology, equipment and facility management, raw material purchasing, marketing, storing and transporting. Where necessary, outside expert may be invited. Team members shall be provided with professional knowledge and experience on product, process and hazard involved in this plant, and shall be properly trained. Top management shall designate a HACCP team leader, and empower him with responsibility and authority on the following aspects: a) Ensure that the process required for HACCP system is established, implemented and maintained; b) Report the effectiveness, suitability and updating or improving demand (if any) of HACCP system to top management; c) Lead and organize the work of HACCP team, and ensure that the HACCP team members are continuously improved in professional knowledge, skill and experience through education, training and practice. Record of education background, experience, training, approval and activity of HACCP team member shall be maintained.		Guidance document **Commission Notice 2016/C 278/01**, **Annex II, Heading 3: Preliminary activities** **3.1 Assembly of a multidisciplinary HACCP team** This team, which involves all parts of the food business concerned with the product, should include the whole range of specific knowledge and expertise appropriate to the product under consideration, its production (manufacture, storage, and distribution), its consumption and the associated potential hazards and should also involve as much as possible the higher management levels. The team should get the full support of the management who should consider itself owner of the HACCP plan and overall FSMS. Where necessary, the team should be assisted by specialists who will help it to solve its difficulties as regards assessment and control of critical points. The team may include specialists and technicians: — who understand the biological, chemical or physical hazards connected with a particular product group, — who have responsibility for, or are closely involved with, the technical process of manufacturing the product under study, — who have a working knowledge of the hygiene and operation of the process plant and equipment, — any other person with specialist knowledge of. microbiology, hygiene or food technology. One person may fulfil several or all of these roles, provided all relevant information is available to the team and is used to ensure that the system developed is reliable. Where expertise is not available in the

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7.2.2 Product description HACCP team shall identify and determine the applicable information (as listed below) required for hazard analysis in allusion to the product: a) Name, category, composition as well as biological, chemical and physical properties of raw material and food packaging material; b) Source, production, packaging, storage, transportation and delivery mode of raw material and food packaging material; c) Reception requirement, reception mode and use mode of raw material and food packaging material; d) Name, category, composition as well as biological, chemical and physical properties of the product; e) Processing mode of the product; f) Packaging, storage, transportation and delivery modes of the product; g) Marketing mode and mark of the product; h) Other necessary information. Record of product description shall be maintained. 7.2.3 Determination of intended use HACCP team shall identify and determine the applicable information (as listed below) required for hazard analysis on the basis of product description: a) Consumption or use expectation of the customer on the product; b) Intended use, storage condition and warranty period of the product; c) Intended edible or use modes of the product; d) Intended customer of the product; e) Applicability of directly consumed product to vulnerable group; f) Unintended (but much more likely to occur) edible or use modes of product; g) Other necessary information. Record for intended use of the product shall be maintained. 7.2.4 Establishment of flow diagram		establishment, advice should be obtained from other sources (consultancy, guides of good hygiene practices, etc. not excluding other companies of the same group (at sectorial or association level) where expertise is available). **3.2 Description of the product(s) at the end of process (called hereafter 'end product')** A full description of the end product should be drawn up, including relevant safety information such as: — Origin of ingredients/raw materials, which may help identify certain hazards, — composition (e.g. raw materials, ingredients, additives, possible allergens etc.), — structure and physico-chemical characteristics (e.g. solid, liquid, gel, emulsion, moisture content, pH, water activity, etc.), — processing (e.g. heating, freezing, drying, salting, smoking, etc. and to what extent), — packaging (e.g. hermetic, vacuum, modified atmosphere) and labelling, — storage and distribution conditions, including transport and handling — required shelf life (e.g. 'use by date' or 'best before date'), — instructions for use, — any microbiological or chemical criteria applicable. **3.3 Identification of intended use** The HACCP team should also define the normal or expected use of the product by the customer and by the consumer target groups for which the product is intended. In specific cases, the suitability of the product for particular groups of consumers, such as institutional caterers, travellers, etc. and for vulnerable groups of the population may have to be considered.

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HACCP team shall draw process flow diagram of the product according to the operation requirements within the production scope of the plant. This diagram shall include: a) Each step and corresponding operation; b) Sequence and interrelationship of such steps; c) Rework point and cycle point (where suitable); d) External process and outsourced content; e) Input point of raw material, auxiliary material and intermediate product; f) Discharge point of waste. The establishment of flow diagram shall be complete, exact and clear. The operation requirements and process parameters of each processing step shall be listed in process description. If applicable, plant location diagram, plant area plan, workshop plan, people and material flow diagram, supply and drainage network diagram, moth-proof layout diagram shall be provided. 7.2.5 Confirmation of flow diagram HACCP team personnel who are familiar with operation process shall carry out on-site verification for all operation steps under operating state, so as to confirm and verify that they are consistent with the established flow diagrams, and to carry out modification where necessary. The confirmed flow diagram shall be maintained.		**3.4 Construction of a flow diagram (description of manufacturing process)** Whatever format is chosen, all steps involved in the process should be studied in sequence and presented in a detailed flow diagram. 30.7.2016 EN Official Journal of the European Union C 278/11 All processes (from receiving the raw materials to placing the end product on the market) including delays during or between steps, should be mentioned together with sufficient technical data that is relevant for food safety, such as temperature and the duration of heat treatment. Types of data may include but are not limited to: — plan of working premises and ancillary premises, — equipment layout and characteristics, — sequence of all process steps (including the incorporation of raw materials, ingredients or additives and delays during or between steps), — technical parameters of operations (in particular time and temperature, including delays), — flow of products (including potential cross-contamination), — segregation of clean and dirty areas (or high/low risk areas). **3.5 On-site confirmation of flow diagram** After the flow diagram has been drawn up, the HACCP team should confirm it on site during operating hours. Any observed deviation must result in an amendment of the original flow diagram to make it accurate.
7.3 Hazard Analysis and Control Measures Preparation 7.3.1 Hazard identification HACCP team shall consider the following factors when analyzing the biological, chemical and physical hazards in processing step according to the food risk degree: a) Product, operation and environment;	**Regulation (EC) No 178/2002, Article 3 (14):** A hazard is a biological, chemical or physical agent in, or condition of, food or feed with the potential to cause an adverse health effect.	Guidance document **Commission Notice 2016/C 278/01**, **Annex II, Heading 4. Hazard analysis (Principle 1)** **4.1 Listing of relevant hazards** All major potential biological, chemical or physical hazards that may be reasonably expected to occur at each process step (including production, acquisition, storage, transport and handling of raw materials and ingredients and delays during manufacture) should be identified and listed. It may be useful to consult external

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b) Safety and sanitation requirements for product, raw material and food packaging materials by the consumers, customers, laws and regulations; c) Monitoring and assessment results on edible and use safety of the product; d) Disposal, correction, recall and emergency plan of unsafe product; e) Historical and current data and food safety accidents on epidemiology, animal and plant epidemic situation or morbidity statistics; f) Scientific and technical literature, including hazard control guideline for relevant product; g) Effect of other step on the product within the scope of hazard identification; h) Artificial destruction and deliberate contamination. i) Experience. For each considered hazard from raw material production to final consumption, all potential hazards and their causes in each operation step on intended introduction, generation and increase shall be identified. Where any factor affecting the identification result is changed, HACCP team shall repeat the hazard identification. Records of hazard identification criterion and result shall be maintained. 7.3.2 Hazard assessment HACCP team shall assess its severity and probability in allusion to the identified potential hazard. If this potential hazard is much more likely to occur and will result in serious consequence in this step, it shall be determined as significant hazard. Records of hazard assessment criterion and result shall be maintained. 7.3.3 Establishment of control measures HACCP team shall establish corresponding control measures in allusion to each significant hazard, and provide evidence to verify its effectiveness; it shall define corresponding relationship between significant		source of information (e.g. the Rapid Alert System for Food and Feed). The HACCP team should next conduct a hazard analysis to identify which hazards are of such a nature that their elimination or reduction to acceptable levels is essential to the production of a safe food (end product). In conducting the hazard analysis, the following should be considered: — the likelihood of occurrence of hazards and severity of their adverse health effects; — the qualitative and/or quantitative evaluation of the presence of hazards;

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hazard and control measures, and consider the conditions where one control measure controls multiple significant hazards or multiple control measures control one significant hazard. Food defense plan shall be established as a control measure in allusion to the significant hazard caused by artificial destruction or deliberate contamination. Where operating change is involved in such measures, corresponding change shall be carried out and flow diagram shall be modified. Since effective control measures for some significant hazard can't be established under existing technical conditions, plant shall plan and implement necessary technical renovation, and change the process, product (including raw material) or intended use where necessary, until establishing effective control measures. All established control measures shall be confirmed. Where the effectiveness of control measures is affected, such measures shall be assessed, updated, improved and then reconfirmed. Establishment criterion and document of control measures shall be maintained. 7.3.4 Hazard analysis sheet HACCP team shall provide hazard analysis sheet for documentation according to the results of process flow, hazard identification, hazard assessment and control measures, including processing step, considered potential hazard, judgment criterion of significant hazard and control measures; it shall also define the interrelationship among factors. Relationship between control measures and corresponding significant hazard shall be described in the hazard analysis sheet, so as to provide criterion for the determination of critical control point. HACCP team shall make necessary update or revision for hazard analysis sheet where the hazard analysis result is affected. Hazard analysis sheet for documentation shall be maintained.		— the survival or multiplication of pathogenic micro-organisms and unacceptable generation of chemicals in intermediate products, end products, production line or line environment; — the production or persistence in foods of toxins or other undesirable products of microbial metabolism, chemicals or physical agents or allergens; — the contamination (or recontamination), of a biological (micro-organisms, parasites), chemical or physical nature, of raw materials, intermediate products or end products. **4.2 Control measures** The FBO should consider and describe what control measures, if any, can be applied for each hazard. Control measures are those actions and activities that can be used to prevent hazards, eliminate them or reduce their impact or likelihood of occurrence to acceptable levels. Many preventive control measures are part of PRPs and are intended to avoid contamination from the production environment (e.g. personnel, pest, water, maintenance which are listed as examples in Annex I). Other control measures aiming at reduction or elimination of hazards are more specifically linked to particular production process e.g. pasteurization, fermentation and may result in the establishment of CCPs or operational PRPs (oPRPs). More than one control measure may be required to control an identified hazard e.g. pasteurization controlled by time, temperature and flow rate of the fluid and more than one hazard may be controlled by one control measure e.g. pasteurization or controlled heat treatment may provide sufficient assurance of reduction of the level of several pathogenic micro-organisms such as *Salmonella* and *Listeria*. Control measures should be validated. Control measures should be supported by detailed procedures and specifications to ensure their effective implementation.

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		Documentation requirements are listed separately in the Guidance document **Commission Notice 2016/C 278/01**, **Annex II, heading 10.**
7.4 Determination of Critical Control Point (CCP) HACCP team shall identify proper step for control of each significant hazard according to the relationship between significant hazard and control measures provided in hazard analysis, so as to determine CCP, and ensure that all significant hazards are effectively controlled. Plant shall adopt suitable method (like judgment tree in Appendix A) to determine CCP However, the following factors shall be considered when adopting judgment tree: a) Judgment tree is only a tool contributing to the determine CCP, and cannot supersede professional knowledge; b) Judgment tree is used after hazard analysis and during determination of significant hazard; c) Subsequent processing step may be more effective to control hazard, and may be the preferred CCP which shall be selected; d) In processing, above I step may control I hazard. Where significant hazard or control measures are changed, HACCP team shall repeat the hazard analysis to judge CCP. Criterion and document determined by CCP shall be maintained. Where standard operating procedure (SOP) control is identical with CCP control according to analysis, the criterion, parameter document determined by SOP shall be maintained.		Guidance document **Commission Notice 2016/C 278/01**, **Annex II, Heading 5. Identification of critical control points (CCP) (Principle 2)** The identification of a CCP requires a logical approach. Such an approach can be facilitated by the use of a decision tree or other methods, according to the knowledge and experience of the HACCP team. The identification of CCPs has two consequences for the HACCP team which should then: — ensure that appropriate control measures are effectively designed and implemented. In particular, if a hazard has been identified at a step where control is necessary for product safety and no control measure exists at that step, or at any other further on in the production process, then the product or process should be modified at that step or at an earlier or later stage, to include a control measure; — establish and implement a monitoring system at each CCP. Each process step identified in the flow diagram should be considered in sequence. At each step, the decision tree and/or risk evaluation should be applied to each hazard that may be reasonably expected to occur or be introduced and each control measure identified. Application should be flexible, considering the whole manufacturing process in order to avoid, whenever possible, unnecessary CCPs. Training in the application of a method to identify CCPs is recommended. As illustrated in the Appendices, the hazard analysis may identify different levels of risks for each process step: — For lower risk levels it can be concluded that, if robust PRPs are in place, these PRPs are sufficient to control the hazards — For intermediate levels of risks identified, 'intermediate' measures can be proposed, such as 'operational PRPs (oPRPs (sometimes other wording is

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		used such as 'Control Point (CP)', as not all intermediate measures are linked to an operation, or 'Points of Attention' (PoA)). — oPRPs are PRPs that are typically linked to the production process and are identified by the hazard analysis as essential, in order to control the likelihood of the introduction, survival and/or proliferation of food safety hazards in the product(s) or in the processing environment. Similarly to CCPs, operational PRPs include measurable or observable action criteria or action limits (but targets rather than critical limits), monitoring of the implementation of control measures, monitoring records and corrective actions if needed. Examples are: — Control of washing process of vegetables (e.g. by frequency of wash water refreshment to avoid microbial cross-contamination, mechanical action in the water to remove physical hazards as stones, pieces of wood) — Control of blanching process for the deep freezing industry (time/temperature) Washing and blanching processes can usually not be considered as CCPs because neither full elimination of the microbial hazards nor reduction to an acceptable level can be achieved or is aimed at. However, they will impact the microbial load of the processed products. — More intensive cleaning and disinfection in high care areas, more strict personal hygiene in high care areas, for example in packaging areas of ready to eat food. — More severe incoming check upon reception of raw materials if supplier is not guaranteeing the desired quality/safety level (e.g. mycotoxins in spices). — Control of allergens by a sanitation program — For high level of risks, which are not controlled by PRPs or oPRPs, CCPs should be established.
7.5 Determination of Critical Limit HACCP team shall establish a critical limit for each CCP, and one CCP may have one or more critical limit (s). The establishment of critical limit shall be scientific, visual and easy for monitoring, so as to ensure that the		Guidance document **Commission Notice 2016/C 278/01**, **Annex II, Heading 6. Critical limits at CCPs (Principle 3)** Each control measure associated with a critical control point should give rise to the specification of critical limits.

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product safety hazard is effectively controlled and within the acceptable level. The assessed competent personnel shall carry out monitoring and judgment based on perceptive critical limit. HACCP team should establish CCP operation limit to prevent or reduce deviation from critical limit. Records of critical limit determination criterion and result shall be maintained. Note: critical limits may be time, rate, temperature, humidity, moisture content, water activity, pH value and salt content.		Critical limits correspond to the extreme values acceptable with regard to product safety. They separate acceptability from unacceptability. They are set for observable or measurable parameters which can demonstrate that the critical point is under control. They should be based on substantiated evidence that the chosen values will result in process control. Examples of such parameters include temperature, time, pH, moisture content, amount of additive, preservative or salt, sensory parameters such as visual appearance or texture, etc. In some cases, to reduce the likelihood of exceeding a critical limit due to process variations, it may be necessary to specify more stringent levels (i.e. target levels) to assure that critical limits are observed. Critical limits should be validated and should have clear, specific values. Critical limits may be derived from a variety of sources. When not taken from regulatory standards or from guides of good hygiene practices, the HACCP team should ascertain their validity relative to the control of identified hazards at CCPs.
7.6 CCP Monitoring Plant shall establish and implement effective monitoring measures in allusion to each CCP, and guarantee that CCP is controlled; monitoring measures include monitoring object, method, frequency and personnel. Monitoring objects shall include all critical limits involved with each CCP; the monitoring method shall be exact and timely; generally, continuous monitoring shall be implemented; where discontinuous monitoring is adopted, its frequency shall be able to guarantee the control requirements of CCP; monitoring personnel shall accept suitable training, understand monitoring purpose and importance, get familiar with monitoring operation, and timely and accurately record and report the monitoring result. Where deviation from operation limit is indicated in monitoring, monitoring personnel shall timely take correction to prevent deviation from critical limit.		Guidance document **Commission Notice 2016/C 278/01**, **Annex II, Heading 7. Monitoring procedures at CCPs (Principle 4)** An essential part of HACCP-based procedures is a program of observations or measurements performed at each CCP to ensure compliance with specified critical limits. Observations or measurements must be able to detect loss of control at CCPs and provide information in time for corrective action to be taken. Where possible, process adjustments should be made when monitoring results indicate a trend towards loss of control at a CCP. The adjustments should be made before a deviation occurs (the critical limit is not met). Data derived from monitoring must be evaluated by a designated and experienced person with knowledge and authority to carry out corrective actions when indicated.

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Where deviation critical limit is indicated in monitoring, the monitoring personnel shall immediately stop the operation procedure, and timely take correction measures. Monitoring record shall be maintained.		Observations or measurements can be made continuously or intermittently. When observations or measurements are not continuous, it is necessary to establish a frequency of observations or measurements which provides information in time for corrective actions to be taken. The HACCP plan should describe the methods, the frequency of observations or measurements and the recording procedure for monitoring at CCPs: — who is to perform monitoring and checking, — when monitoring and checking is performed, — how monitoring and checking is performed. The frequency of monitoring should be risk based e.g. depending on the likelihood of hazard occurrence in the product, the volume of production, the distribution of the product, the potential consumers, the number of workers directly handling the product, … Records associated with monitoring CCPs must be signed by the person(s) doing the monitoring and when records are verified by staff of the company responsible for reviewing.
7.7 Correction Measures for Establishment of Critical Limit Deviation Plant shall pre-establish correction measures for deviation of each critical limit of CCP for implementation upon deviation. Correction measures shall include personnel implementing correction measures and releasing affected products, identification and elimination of deviation causes, as well as isolation, assessment and disposal of affected products. Measurement or inspection for biological, chemical or physical properties may be carried out when assessing affected products; where the inspection result shows that the hazard is within the acceptable index, the product may be released to subsequent operation; otherwise, it shall be reworked, degraded, altered or discarded. Correction personnel shall be familiar with product and HACCP plan, and shall be properly trained and authorized.		Guidance document **Commission Notice 2016/C 278/01**, **Annex II, Heading 8. Corrective actions (Principle 5)** For each CCP, corrective actions should be planned in advance by the HACCP team, so that they can be taken without hesitation when monitoring indicates a deviation from the critical limit. Such corrective actions should include: — proper identification of the person(s) responsible for the implementation of the corrective action, — means and action required to correct the observed deviation, — action(s) (sometimes called ‘corrections’ to differentiate from other corrective actions) to be taken with regard to products that have been manufactured during the period when the process was out of control, — written record of measures taken indicating all relevant information (for example: date, time, type of action, actor and subsequent verification check).

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Where the monitoring result of a critical limit repeatedly deviates or the deviation cause involves the control ability of corresponding control measures, HACCP team shall reassess the effectiveness and suitability of relevant control measures, and improve and update them where necessary. Correction record shall be maintained.		Monitoring may indicate that preventive measures (PRPs or their robustness) or the process and its CCPs shall have to be reviewed if corrective actions for the same procedure have to be taken repeatedly.
7.8 Confirmation and Verification for HACCP Plan Plant shall establish and implement confirmation and verification procedures for HACCP plan, so as to verify the integrity, suitability and effectiveness of HACCP plan. Confirmation procedure shall include effectiveness verification for all elements of HACCP plan. Confirmation shall be carried out before the implementation or after change of HACCP plan. Verification procedure shall include: criterion, method, frequency, personnel, content, result, measure and record of verification. Monitor the review of equipment alignment record; where necessary, carry out technical verification for the required control equipment and method through qualified inspection organization, and provide technical verification report for documentation. Verification result shall be input into the management review to ensure that such data resources are duly considered and can contribute to the continuous improvement of the whole HACCP system; where the verification result fails to meet the requirements, corrective measures shall be taken and then verification shall be repeated.		Guidance document **Commission Notice 2016/C 278/01**, **Annex II, Heading 9. Verification (and validation) procedures (Principle 6)** The HACCP team should specify the methods and procedures to be used for determining if the HACCP-based procedures are working correctly. Methods for verification may include in particular random sampling and analysis, reinforced analysis or tests at selected critical points, intensified analysis of intermediate or end products, surveys on actual condition during storage, distribution and sale and on actual use of the product. The frequency of verification should be sufficient to confirm that HACCP-based procedures are working effectively. The frequency of verification shall depend on the characteristics of the business (output, number of employees, nature of the food handled), the monitoring frequency, the accuracies of the employees, the number of deviations detected over time and the hazards involved. Verification procedures may include: — Audits of HACCP-based procedures and their records, — Inspection of operations (people compliance), — Confirmation that CCPs monitoring is implemented and maintained, — Review of deviations and product dispositions; corrective actions taken with regard to the product. The frequency of verification will greatly influence the amount of recheck or recall required in case a deviation exceeding the critical limits has been detected. Verification should comprise all of the following elements, but not necessarily all at the same time:

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		— check on the correctness of the records and analysis of deviations, — check on the person monitoring processing, storage and/or transport activities, — physical check on the process being monitored, — calibration of instruments used for monitoring. Verification should be carried out by someone other than the person who is responsible for performing the monitoring and corrective actions. Where certain verification activities cannot be performed in house, verification should be performed on behalf of the business by external experts or qualified third parties. At the start of a process or in case of a change, validation activities should be carried out and should gather evidence to confirm the efficacy of all elements of the HACCP plan. Such evidence includes scientific publications, in-house testing, predictive microbiology, … demonstrating that the critical limits set, will, if adhered to, result in the intended effect on the hazard (no growth, reduction, …). Examples of changes that may require re-validation include: — change in raw material or in product, processing conditions (factory layout and environment, process equipment, cleaning and disinfection program), — change in packaging, storage or distribution conditions, — change in consumer use, — receipt of any information on a new hazard associated with the product. Where necessary, such a review must result in the amendment of the procedures laid down. The changes should be fully incorporated into the documentation and record-keeping system in order to ensure that accurate up-to-date information is available.
7.9 Maintenance of HACCP Plan Record Establishment, operation and verification records of HACCP plan shall be maintained.		Guidance document **Commission Notice 2016/C 278/01**, **Annex II, Heading 10. Documentation and record keeping (Principle 7)** Efficient and accurate record keeping is essential to the application of HACCP-based procedures. HACCP-

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Control of HACCP plan record shall be consistent with that of the system record. HACCP plan record shall include relevant information. Verification record shall at least include the following information: a) Product description record: name and address of plant; processing category; type, name, dosing and characteristic of the product; intended use and customer; edible (use) method; packaging type; storage condition and warranty period; label instruction; marketing and transportation requirements. b) Monitoring record: name of address of plant; product name; processing date; operation procedure; CCP; significant hazard; critical limit (operation limit); control measure; monitoring method and frequency; actually measured or observed result; monitoring personnel signature; monitoring date; review signature and date of monitoring record. c) Correction record: name and address of plant; product name; processing date; description and cause of deviation; correction measure and result; batch, isolated location, assessment method and result and final disposal of affected product; correction personnel signature; correction date; review signature and date of correction record. d) Proper records for HACCP plan shall be maintained. For example, main records required for verification activity are HACCP plan amendment record, semi-finished product and finished product periodical inspection record, CCP monitoring review record, CCP correction review record and CCP site verification record.		based procedures should be documented in the HACCP-plan and continuously supplemented by records on findings. Documentation and record keeping should be appropriate to the nature and size of the operation and sufficient to assist the business to verify that the HACCP-based procedures are in place and being maintained. Documents and records should be kept for a sufficient period of time beyond the shelf life of the product for traceability purposes, for the regular revision of the procedures by the FBO and to allow the competent authority to audit the HACCP-based procedures. Expert developed HACCP guidance materials (e.g. sector-specific HACCP guides) may be utilized as part of the documentation, provided that those materials reflect the specific food operations of the business. Documents should be signed by a responsible reviewing official of the company. Recommended documentation includes: — PRPs applied, working instructions, standard operational procedures, control instructions; — Description of the preparatory stages (before 7 principles); — Hazard analysis; — CCP (+/- oPRPs) identification; — Critical limit determination; — Validation activities; — Corrective actions anticipated; — Description of planned monitoring and verification activities (what, who, when); — Record forms; — Modifications to the HACCP-based procedures; — Supporting documents (generic guides, scientific evidence, …). A systematic, integrated approach can be taken by using worksheets for the development of the HACCP plan as provided in the Annex to CAC/RCP 1-1969, Diagram 3. Starting from the flow diagram, at each step of processing the potential hazards are described, relevant control measures (PRPs) listed, CCPs identified (if appropriate based on the hazards analysis)

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		along with their critical limits, monitoring procedures, corrective actions and available records. Record examples are: — Outcome of CCP monitoring activities; — Observed deviations and executed corrective actions; — Outcome of verification activities. Records should be kept for an appropriate period of time. That period should be long enough to ensure information to be available in case of an alert that can be traced back to the food in question. For certain foods the date of consumption is certain. For instance, in food catering, consumption takes place shortly after the time of production. For food for which the date of consumption is uncertain, records should be kept for a reasonably short period after the expiry date of the food. Records are an important tool for the competent authorities to allow verification of the proper functioning of the food businesses' FSMS. A simple record-keeping system can be effective and easily communicated to employees. It may be integrated into existing operations and may use existing paperwork, such as delivery invoices and checklists to record, for example, product temperatures (see also Annex III).

2) Specific rules for slaughter and process hygiene

a) National standard GB-12694 - Specific hygiene rules for slaughter, processing and transport of livestock ad poultry

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1. Scope This standard specifies basic requirements for sites, facilities and personnel and management rules for hygienic control operation at the stages of livestock and poultry acceptance, slaughter, cutting, packaging, storage and transportation during livestock and poultry slaughtering and processing.	**Article 1 Scope** This Regulation lays down specific rules on the hygiene of food of animal origin for food business operators. These rules supplement those laid down by Regulation (EC) No 852/2004. They shall apply to unprocessed and processed products of animal origin.	
2. Terms and definitions Such as: carcass, edible offal, non-edible offal, meat, ante-mortem inspection, post-mortem inspection, etc.	**Annex I Definitions** Such as meat, carcass, offal, slaughterhouse, etc. **Regulation (EU) No 2017/625, Article 17 Specific definitions:** Ante-mortem inspection, post-mortem inspection	
3. Site selection and plant environment **3.2 Site selection** 3.2.2 is the same as National Standard 14881 (see Table 1, 3.1.1 and 3.1.2). 3.2.3 Plant site must be provided with satisfactory water source and power supply and be determined in accordance with local condition and process requirement and shall meet the requirements of slaughtering establishment for arrangement and planning.	**Regulation (EC) No 852/2004, Annex II,** **Chapter III:** (e) an adequate supply of hot and/or cold potable water is to be available; (g) adequate facilities and/or arrangements for maintaining and monitoring suitable food temperature conditions are to be available; **Chapter VII:** 1. (a) There is to be an adequate supply of potable water, which is to be used whenever necessary to ensure that foodstuffs are not contaminated;	
3.3 Plant environment 3.3.1, 3.3.2 3.3.3are the same as National Standard 14881 (see Table 1, 3.2.3 and 5.1.4). 3.3.4 Animals irrelevant to slaughtering and processing are forbidden to be fed in the plant area.	**Regulation (EC) No 852/2004, Annex II, Chapter IX:** 4. Adequate procedures are to be in place to control pests. Adequate procedures are also to be in place to prevent domestic animals from having access to places where food is prepared, handled or stored (or, where	

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	the competent authority so permits in special cases, to prevent such access from resulting in contamination). **Regulation (EC) No 853/2004, Annex III, Section I, Chapter IV:** **2.** (b) Only live animals intended for slaughter may be brought into the slaughter premises…	
4. Plant Building and Workshop **4.1 Design and layout** 4.1.1 Plant area shall be classified into production area and non-production area. A front door shall not be shared for the transport of live livestock and poultry and waste and delivery of finished product and one channel shall not be shared in the site. 4.1.2 Layout and facilities of workshop in production area shall meet production process flow and hygienic requirements. The hygienic area and non-hygienic area shall be separated. 4.1.3 Building area and facilities of slaughtering workshop and cutting workshop shall be corresponding to production scale. Processing area within workshop shall be delineated in accordance with production and processing procedure in such a way that people flow and goods flow are not interfered and the processing area shall meet the requirements of technology, sanitation, quarantine and inspection.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:** 2. To avoid contaminating meat, they must: (a) have a sufficient number of rooms, appropriate to the operations being carried out; c) ensure separation in space or time of the following operations: (i) stunning and bleeding; (ii) in the case of porcine animals, scalding, depilation, scraping and singeing; (iii) evisceration and further dressing; (iv) handling clean guts and tripe; (v) preparation and cleaning of other offal, particularly the handling of skinned heads if it does not take place at the slaughter line; (vi) packaging offal; and (vii) dispatching meat;	**Guidance document Commission Notice 2016/C 278/01, Annex I:** **2.1 Infrastructure** b) Lay-out should strictly separate between contaminated (low care) and clean areas (high care) (or separation in time and suitable cleaning in between); suitable arrangements of rooms should be made for one-direction production flow and cooled rooms or heating facilities should be insulated. **Guidance document Commission Notice 2016/C 278/01, Annex II:** 3.4 Construction of a flow diagram (description of manufacturing process) — segregation of clean and dirty areas (or high/low risk areas), — flow of products (including potential cross-contamination).
4.1.4 Slaughtering enterprises shall be equipped with slaughter waiting lot (area), isolating room, emergency slaughtering house, experiment (chemical assay) room, official veterinarian room, chemicals storage room and bio-safety disposal house. The plant area shall be equipped with specialized area for cleaning and disinfecting the vehicle for transporting livestock and poultry and products and tools for such purpose.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:** 1. (a) Slaughterhouses must have adequate and hygienic lairage facilities or, climate permitting, waiting pens that are easy to clean and disinfect. (b) They must also have separate lockable facilities or, climate permitting, pens for sick or suspect animals with separate draining and sited in such a way as to avoid contamination of other animals… 6. There must be a separate place with appropriate facilities for the cleaning, washing and disinfection of means of transport for livestock.	*The requirement for a chemicals storage room and bio-safety disposal house can be found in* ***Regulation (EC) No 852/2004, Annex II, Chapter 1:*** 10. Cleaning agents and disinfectants are not to be stored in areas where food is handled. *And in Chapter VI of the same Regulation:* 1. Food waste, non-edible by-products and other refuse are to be removed from rooms where food is present as quickly as possible, so as to avoid their accumulation. 2. Food waste, non-edible by-products and other refuse are to be deposited in closable containers. These containers are to be of an appropriate construction,

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	7. They must have lockable facilities reserved for the slaughter of sick and suspect animals. 9. They must have an adequately equipped lockable facility or, where needed, room for the exclusive use of the veterinary service. For poultry slaughter similar requirements are mentioned in **Annex III, Section II, Chapter II, points 1, 2, 5, 6 and 7, Chapter III, 1, b and c, Chapter V, 4.**	kept in sound condition, be easy to clean and, where necessary, to disinfect. *The requirement for a laboratory room can be found in* ***Regulation (EU) 2017/625, Article 18:*** 2. The official controls referred to in paragraph 1 performed in relation to the production of meat shall include: (iv) laboratory tests to detect the presence of zoonotic agents and animal diseases and to verify compliance with the microbiological criterion as defined in point (b) of Article 2 of Commission Regulation (EC) No 2073/2005.
4.1.5 As for slaughtering enterprises without bio-safety disposal house, professional and qualified bio-safety disposal site shall be entrusted to implement bio-safety disposal.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:** 2. To avoid contaminating meat, they must: (b) have a separate room for the emptying and cleaning of stomachs and intestines…	*Proper and hygienic waste disposal is a requirement for all food producing establishments according to* ***Regulation (EC) No 852/2004*** *(see point 4.1.4).*
4.1.6 It shall be arranged special edible and non-edible offal processing houses. The area of each edible offal processing workshop shall be suitable to its processing capacity, equipment installations shall meet the hygienic requirements, and the technological layout shall be such to separate processing area and avoid cross contamination.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:** 2. To avoid contaminating meat, they must: (a) have a sufficient number of rooms, appropriate to the operations being carried out; c) ensure separation in space or time of the following operations: (iv) handling clean guts and tripe; (v) preparation and cleaning of other offal, particularly the handling of skinned heads if it does not take place at the slaughter line;	
4.3.1 Workshop temperature shall be controlled within the specified range in accordance with product process requirement. The precooling facilities temperature is controlled between 0℃ and 4℃; the cutting workshop temperature is controlled under 12℃; freezing room temperature is controlled under -28℃; refrigerating and storage depot temperature is controlled under -18℃.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter V:** **2.** b) during cutting, boning, trimming, slicing, dicing, wrapping and packaging, the meat is maintained at not more than 3 °C for offal and 7 °C for other meat, by means of an ambient temperature of not more than 12 °C or an alternative system having an equivalent effect; **Section V, Chapter III:**	*The requirement in the Chinese national standard of "freezing room temperature is controlled under -28℃" is not laid down in European legislation, but target temperatures must be reached* via continuous decrease of the temperature curve, which requires the same process. *For freezing destruction of Trichinella in pork meat a freezing room temperature of -28°C is legally defined in* ***Regulation (EU) No 2015/1375, Annex II, Freezing treatments.***

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	2. The following requirements apply to the production of minced meat and meat preparations. (c) Immediately after production, minced meat and meat preparations must be wrapped or packaged and be: (i) chilled to an internal temperature of not more than 2 °C for minced meat and 4 °C for meat preparations; or (ii) frozen to an internal temperature of not more than -18 °C. These temperature conditions must be maintained during storage and transport.	
4.3.2 Procedure or site required for temperature shall be installed with temperature displaying device and shall be monitored, for which hygrometer shall be mounted where necessary; both thermometer and hygrometer shall be calibrated periodically.	**Regulation (EC) No 852/2004, Annex II,** **Chapter V:** 2. Where necessary, equipment is to be fitted with any appropriate control device to guarantee fulfilment of this Regulation's objectives.	**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs:** 2.4 c) Calibration of monitoring devices (e.g. weighing scales, thermometers, flow meters) is of importance in controlling food safety and hygiene. 2.11 Temperature control of storage environment a) Temperature and humidity should be (automatically) recorded where relevant. b) Alarm devices should preferably be automatic.
5. Facilities and Equipment **5.1 Water supply requirements** 5.1.2 Cold and hot water pipes shall be arranged respectively, according to production process flow, in slaughtering and cutting workshops where water is used. Hot water for cleaning purpose should not be less than 40℃; hot water for disinfection purpose shall not be less than 82℃.	**Regulation (EC) No 852/2004, Annex II,** **Chapter VII:** 1. (a) There is to be an adequate supply of potable water, which is to be used whenever necessary to ensure that foodstuffs are not contaminated; 3. Recycled water used in processing or as an ingredient is not to present a risk of contamination. It is to be of the same standard as potable water… 5. Steam used directly in contact with food is not to contain any substance that presents a hazard to health or is likely to contaminate the food. **Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:** Food business operators must ensure that the construction, layout and equipment of slaughterhouses in which domestic ungulates are slaughtered meet the following requirements.	**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs:** 2.2 d) Hot water should be used as much as possible for cleaning.

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	3. They must have facilities for disinfecting tools with hot water supplied at not less than 82 °C, or an alternative system having an equivalent effect.	
5.1.3 Cold and hot water pipes shall be arranged in emergency slaughtering house and biosafety disposal workshop.	Regulation (EC) No 853/2004, Annex III, Section I, Chapter III: Food business operators must ensure that the construction, layout and equipment of slaughterhouses meet the following requirements: … 1. (a) Slaughterhouses must have adequate and hygienic lairage facilities or, climate permitting, waiting pens that are easy to clean and disinfect. (b) They must also have separate lockable facilities or, climate permitting, pens for sick or suspect animals with separate draining and sited in such a way as to avoid contamination of other animals… 6. There must be a separate place with appropriate facilities for the cleaning, washing and disinfection of means of transport for livestock. 7. They must have lockable facilities reserved for the slaughter of sick and suspect animals.	*In the EU legislation there is a general requirement for cold and hot water to be present in rooms where foodstuffs are prepared, treated or processed (***Regulation (EC) No 852/2004 Annex II, Chapter II, point 2:** These facilities are to be constructed of corrosion-resistant materials, be easy to clean and have an adequate supply of hot and cold water*) with additional requirements for a slaughterhouse and a cutting room, but it is not specified for each room (such as the emergency slaughtering house and biosafety disposal workshop).*
5.1.4 Processing water pipeline shall be equipped with anti-siphon or backflow-prevention devices; water outlet in water supply network shall not be directly inserted into the sewage level.	**Regulation (EC) No 852/2004, Annex II,** **Chapter I:** 8. Drainage facilities are to be adequate for the purpose intended. They are to be designed and constructed to avoid the risk of contamination. Where drainage channels are fully or partially open, they are to be so designed as to ensure that waste does not flow from a contaminated area towards or into a clean area, in particular an area where foods likely to present a high risk to the final consumer are handled.	
5.2 Drainage requirements 5.2.1 Water shall not be accumulated on the ground in slaughtering and cutting workshops where water drained shall flow from cleaning area to non-hygienic area	**Regulation (EC) No 852/2004, Annex II,** **Chapter II:** (a) floor surfaces are to be maintained in a sound condition and be easy to clean and, where necessary, to disinfect. Where appropriate, floors are to allow adequate surface drainage;	**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs:** 2.1 Infrastructure b) Lay-out should strictly separate between contaminated (low care) and clean areas (high care) (or separation in time and suitable cleaning in between); suitable arrangements of rooms should be made for one-direction production flow…

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		2.3 Pest control: focus on prevention e) The presence of an indoor pool of water should be immediately addressed.
5.2.2 Water outlet of open trench shall be equipped with grid made of non-corrosive material, with rat-proof and odor-resistant facilities.		**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs:** 2.1 Infrastructure c) Floors should be constructed with waterproof, non-absorbent, washable, non-slippery material without fissures and walls likewise at least up to appropriate height. 2.3 Pest control f) A pest control program should be available: ii. The program should cover rodents, crawling, walking and flying pests;
5.3 Cleaning and disinfection facilities 5.3.1.1 Hand washing facilities, disinfection facilities and hand dryers controlled at appropriate temperature appropriate to the production capacity shall be arranged at the entrance of workshop and in the bathroom and workshop where appropriate. Hand washing facilities shall be equipped with non-manual switches, water from which shall be directly discharged into sewer pipeline.	**Regulation (EC) No 852/2004, Annex II,** **Chapter I:** 4. An adequate number of washbasins is to be available, suitably located and designated for cleaning hands. Washbasins for cleaning hands are to be provided with hot and cold running water, materials for cleaning hands and for hygienic drying. Where necessary, the facilities for washing food are to be separate from the hand-washing facility. Regulation (EC) No 853/2004, Annex III, Section I, Chapter III: Food business operators must ensure that the construction, layout and equipment of slaughterhouses meet the following requirements: … 4. The equipment for washing hands used by the staff engaged in handling exposed meat must have taps designed to prevent the spread of contamination	**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs:** 2.1 Infrastructure i) Hand washing facilities should be positioned conveniently between toilets/changing rooms and the food handling area; disinfectants/soap and towels for single use should be available; installations blowing warm air should only be present in rooms without food and non-hand-operable taps are desirable.
5.3.1.2 Dressing rooms, bathrooms and shower stalls appropriate to the production capacity and connected with the workshop shall be arranged, of which facilities and layouts shall not cause potential pollution to products.	**Regulation (EC) No 852/2004, Annex II,** **Chapter I:** 3. An adequate number of flush lavatories are to be available and connected to an effective drainage	**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs:** 2.1 Infrastructure g) The specific clothes changing room(s) should be clean and ordered, not used as a refectory or a smoking room, and should facilitate a separation

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5.3.1.3 Zones having different cleaning requirements shall be provided with separate dressing rooms where personal clothing and work clothes shall be stored separately. 5.3.1.4 It shall be convenient to keep clean and disinfected of structures of shower stalls and bathrooms and their internal facilities and material. Bathrooms shall be equipped with ventilation facilities and fly- and inset-proof facilities to keep clean and hygienic. Bathrooms shall not be directly connected to slaughtering/processing, packaging, and storage areas, etc. Bathrooms shall be equipped with self-closing doors, doors and windows of which shall not be directly open toward workshops.	system. Lavatories are not to open directly into rooms in which food is handled. 9. Where necessary, adequate changing facilities for personnel are to be provided.	between normal clothing, clean work clothing and used work clothing. h) Toilets should not open directly to food handling areas. Preferably water flushing with use of foot/arm pedals should be present and reminders to wash hands strategically placed.
5.3.2.1 Disinfection pools, above 4m*0.3m (length*width), as wide as the door, shall be arranged at the entrance/exit of vehicles transporting livestock and poultry in the plant area; at the entrance of production workshop and where necessary in the workshop, it is required to arrange facilities helping changing shoes (wearing shoe covers) or work shoes disinfection facilities, specification and dimension of which shall meet the requirements of disinfection. 5.3.2.2 Disinfection facilities for wheels and shoes shall be arranged at the door of isolating room and bio-safety disposal workshop.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:** 6. There must be a separate place with appropriate facilities for the cleaning, washing and disinfection of means of transport for livestock. However, slaughterhouses need not have these places and facilities if the competent authority so permits and official authorised places and facilities exist nearby. **Regulation (EC) No 852/2004, Annex II, Chapter VIII Personal hygiene:** 1. Every person working in a food-handling area is to maintain a high degree of personal cleanliness and is to wear suitable, clean and, where necessary, protective clothing.	**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs:** 2.1 Infrastructure g) The specific clothes changing room(s) should be clean and ordered, not used as a refectory or a smoking room, and should facilitate a separation between normal clothing, clean work clothing and used work clothing.
5.4 Equipment and appliance 5.4.1 Production equipment appropriate to the production capacity shall be arranged in order according to process flow, so as to avoid cross contamination.	**Regulation (EC) No 852/2004, Annex II, Chapter V Equipment requirements** 1. All articles, fittings and equipment with which food comes into contact are to: (a) be effectively cleaned and, where necessary, disinfected. Cleaning and disinfection are to take place at a frequency sufficient to avoid any risk of contamination;	
5.4.2 Equipment, appliance and containers exposed to meat products shall be fabricated with nontoxic,	**Regulation (EC) No 852/2004, Annex II, Chapter II:**	

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inodorous, non-absorbent, corrosion-resistant materials which are difficult of deformation and shedding and can withstand repeated washing and disinfection; they will not react with meat products, detergents or disinfectants during normal production; they shall be kept in good condition; bamboo tools (appliance) and containers are forbidden.	(f) surfaces (including surfaces of equipment) in areas where foods are handled and in particular those in contact with food are to be maintained in a sound condition and be easy to clean and, where necessary, to disinfect. This will require the use of smooth, washable corrosion-resistant and non-toxic materials, unless food business operators can satisfy the competent authority that other materials used are appropriate.	
5.4.3 The location of processing equipment shall be convenient for maintenance, washing and disinfection, and the processing equipment shall be such mounted to avoid cross contamination during processing.	**Regulation (EC) No 852/2004, Annex II, Chapter V:** 1. All articles, fittings and equipment with which food comes into contact are to: (b) be so constructed, be of such materials and be kept in such good order, repair and condition as to minimise any risk of contamination; (d) be installed in such a manner as to allow adequate cleaning of the equipment and the surrounding area.	
5.4.4 Waste containers shall be made of metal or other watertight material. Containers shall not be used to contain both waste and meat. Containers of different uses shall have visible sign or color difference.	**Regulation (EC) No 852/2004, Annex II, Chapter VI:** 2. Food waste, non-edible by-products and other refuse are to be deposited in closable containers… These containers are to be of an appropriate construction, kept in sound condition, be easy to clean and, where necessary, to disinfect.	**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs:** 2.7 Waste management Compliance with the requirements in Chapter VI of Annex II to Regulation (EC) No 852/2004 can be best achieved and illustrated by the FBO by implementing procedures for each type of waste (animal by-products, spoiled food, chemical waste, redundant/used packing material). When applicable, it should be recorded who is responsible for the removal, how it is collected, where it is stored and how it is removed from the establishment.
5.4.5 Appliance and equipment used in slaughtering and inspecting livestock and poultry, such as slaughtering and dehorning equipment, inspecting cutter, thoracotome and slicer, and viscera-holding tray for quarantine and inspection, shall all be cleaned and disinfected with hot water above 82℃ after each use.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:** Food business operators must ensure that the construction, layout and equipment of slaughterhouses in which domestic ungulates are slaughtered meet the following requirements. 3. They must have facilities for disinfecting tools with hot water supplied at not less than 82 °C, or an alternative system having an equivalent effect.	

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5.4.6 Facilities and equipment in the workshop shall be cleaned and disinfected timely catering to the production requirements. In production, appliance, control console and processing surface exposed to foods shall be cleaned and disinfected regularly, during which, adequate measures shall be taken to avoid contaminating products.	**Regulation (EC) No 852/2004, Annex II, Chapter V:** 1. All articles, fittings and equipment with which food comes into contact are to: (a) be effectively cleaned and, where necessary, disinfected. Cleaning and disinfection are to take place at a frequency sufficient to avoid any risk of contamination; and **Chapter IX:** 3. At all stages of production, processing and distribution, food is to be protected against any contamination likely to render the food unfit for human consumption, injurious to health or contaminated in such a way that it would be unreasonable to expect it to be consumed in that state.	**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs:** k) Attention should be paid to the different possibilities whereby the use of equipment can result in (cross-) contamination of food: i. Prevention of contamination of the equipment by the environment e.g. condensation dripping from ceilings; ii. Prevention of contamination within the food handling equipment e.g. accumulation of food residues in slicing devices; iii. Prevention of contamination by raw materials: separate equipment (or cleaning and disinfection between use) for raw products and cooked products (chopping boards, knives, dishes, …).
5.5 Ventilation facilities 5.5.1 Good ventilation and air exhausting device shall be equipped in the workshop to eliminate polluted air and vapor. Air shall flow from cleaning area to non-hygienic area. 5.5.2 Vents shall be equipped with gauze or other protective mesh enclosure made of corrosion-resistant material against insect pests. Gauze or mesh enclosure shall be convenient for handling, cleaning, maintenance or replacement.	**Regulation (EC) No 852/2004, Annex II, Chapter I:** 5. There is to be suitable and sufficient means of natural or mechanical ventilation. Mechanical airflow from a contaminated area to a clean area is to be avoided. Ventilation systems are to be so constructed as to enable filters and other parts requiring cleaning or replacement to be readily accessible.	**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs:** 2.8 d) Ventilation systems are kept clean, so that they do not become a source of contamination. For high risk/care areas requiring air control, the implementation of positive air pressure systems and appropriate air filtering systems should be considered. 2.3 2.3 Pest control: focus on prevention a) External walls should be free of cracks or chinks, surroundings neat and clean and areas for cleaning accessible. b) Insect screen should be placed at windows.
5.6 Lighting facilities 5.6.1 Workshops shall have proper natural light or artificial lighting. The luster of lighting fixture shall not change the natural color of processed material and the luminance shall be able to meet the job demand of quarantine and inspection personnel and manufacturing operators. 5.6.2 Light fixture above meats shall be of safety-type or with protection facilities to prevent meats from being contaminated by crushed light fixture.	**Regulation (EC) No 852/2004, Annex II, Chapter I:** 7. Food premises are to have adequate natural and/or artificial lighting.	**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs:** 2.1 e) There should be sufficient lighting in all areas, with special attention paid to provision of suitable lighting to food preparation and inspection areas. Lighting should be easy to clean, with protective covers to prevent contamination of food in the event of lights breaking.
5.7 Storage facilities	**Regulation (EC) No 852/2004, Annex II, Chapter I:**	**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs:**

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5.7.1 The temperature in storage depot shall meet specific requirements for products stored. 5.7.2 The storage depot shall maintain clean, neat and ventilated, equipped with mold proofing, rat proofing and insect prevention facilities. 5.7.3 Cold storage temperature shall be monitored, for which hygrometer shall be mounted where necessary; both the thermometer and the hygrometer shall be calibrated periodically.	1. Food premises are to be kept clean and maintained in good repair and condition. **2.** The layout, design, construction, siting and size of food premises are to: (a) permit adequate maintenance, cleaning and/or disinfection, avoid or minimise air-borne contamination, and provide adequate working space to allow for the hygienic performance of all operations; (b) be such as to protect against the accumulation of dirt, contact with toxic materials, the shedding of particles into food and the formation of condensation or undesirable mold on surfaces; (c) permit good food hygiene practices, including protection against contamination and, in particular, pest control; (d) where necessary, provide suitable temperature-controlled handling and storage conditions of sufficient capacity for maintaining foodstuffs at appropriate temperatures and designed to allow those temperatures to be monitored and, where necessary, recorded.	2.3 f) A pest control program should be available… 2.4 c) Calibration of monitoring devices (e.g. weighing scales, thermometers, flow meters) is of importance in controlling food safety and hygiene. 2.10 d) Storage conditions at the establishment itself should take into account any instructions provided by the supplier, 'first in, first out' or 'first expire, first out' principles, accessibility for inspection from all sides (e.g. not placed directly on the ground, against walls, …).
5.8 Waste storage and bio-safety disposal facilities 5.8.1 The temporary storage facilities shall be arranged at proper place far away from the workshop. The facility shall be manufactured with sterilized materials convenient for cleaning; the structure shall be tight to avoid the access of insect pest and the pollution to plant are and road or operators by the waste. Facilities and containers for storing waste in the workshop shall be clearly and visibly marked. 5.8.2 Bio-safety disposal facilities shall be configured according to the requirements of the national relevant laws and regulations, standards and codes, and bio-safety disposal.	**Regulation (EC) No 852/2004, Annex II, Chapter VI:** 1. Food waste, non-edible by-products and other refuse are to be removed from rooms where food is present as quickly as possible, so as to avoid their accumulation. 2. Food waste, non-edible by-products and other refuse are to be deposited in closable containers, … These containers are to be of an appropriate construction, kept in sound condition, be easy to clean and, where necessary, to disinfect. 3. Adequate provision is to be made for the storage and disposal of food waste, non-edible by-products and other refuse. Refuse stores are to be designed and managed in such a way as to enable them to be kept clean and, where necessary, free of animals and pests. 4. All waste is to be eliminated in a hygienic and environmentally friendly way in accordance with Community legislation applicable to that effect, and is not to constitute a direct or indirect source of contamination.	**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs:** 2.7 Waste management Compliance with the requirements in Chapter VI of Annex II to Regulation (EC) No 852/2004 can be best achieved and illustrated by the FBO by implementing procedures for each type of waste (animal by-products, spoiled food, chemical waste, redundant/used packing material). When applicable, it should be recorded who is responsible for the removal, how it is collected, where it is stored and how it is removed from the establishment.

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6. Quarantine and Inspection **6.1 Basic requirements** 6.1.1 The enterprise shall have the inspection department appropriate to its production capacity; possess the necessary inspection method and relevant standard materials, and establish sound internal management system to ensure the accuracy of inspection result. The original record of inspection shall be available. The laboratory shall be equipped with necessary inspection facility/apparatus. Where the inspection is entrusted to the social inspection agency, the agency shall possess corresponding qualification. The entrustment shall satisfy the enterprise's routine inspection demand. 6.1.2 Metrologic instruments and apparatus required for product processing, inspection and maintenance of food safety control system shall be subjected to metrological verification as stipulated and calibration prior to use.	**Regulation 178/2002 Article 17***:* Food and feed business operators at all stages of production, processing and distribution within the businesses under their control shall ensure that foods or feeds satisfy the requirements of food law. **Regulation 852/2005 Article 5** (on HACCP): 1. Food business operators shall put in place, implement and maintain a permanent procedure or procedures based on the HACCP principles.	The legal obligations of the operator imply that adequate infrastructure must be provded to perform the necessary activities for self-controls. **Guidance document Commission Notice 2016/C 278/01***,* Chapter 3.1: The HACCP team should get the full support of the management who should consider itself owner of the HACCP plan and overall FSMS **Annex I, 2. Examples of PRPs:** 2.4 c) Calibration of monitoring devices (e.g. weighing scales, thermometers, flow meters) is of importance in controlling food safety and hygiene. H**eading 7. Training** states: Staff should be supervised and instructed and/or trained in food hygiene matters appropriate to their role, and those responsible for developing and maintaining the food safety management system should be suitably trained in the application of PRPs and HACCP principles. H**eading 9** states: **Verification (and validation) procedures** The HACCP team should specify the methods and procedures to be used for determining if the HACCP-based procedures are working correctly. Verification should be carried out by someone other than the person who is responsible for performing the monitoring and corrective actions. Where certain verification activities cannot be performed in house, verification should be performed on behalf of the business by external experts or qualified third parties.
6.2 Ante-mortem inspection 6.2.1 The livestock and poultry to be slaughtered shall be accompanied with Veterinary Inspection Certificate,	**Regulation (EC) No 853/2004, Annex II, Section II**	Food chain information is a requirement in the EU legislation, the equivalent of which does not appear in the Chinese National standard.

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and shall wear specified identifier for livestock and poultry. 6.2.2 The livestock and poultry to be slaughtered shall be subjected to ante-mortem inspection according to the relevant national laws and regulations, standards and regulations. The livestock and poultry arrived shall be subjected to clinical health examination according to the relevant procedures. Observe the live livestock and poultry in terms of behavior, posture, physical condition, body surface, excrement, smell, etc. The abnormal ones shall be isolated to measure the body temperature and perform further inspection. If necessary, the sampling shall be conducted as required to carry out laboratory test. 6.2.3 Livestock and poultry which are judged to be unsuitable for normal slaughtering shall be disposed according to relevant requirements. 6.2.4 Stop feeding and keep the livestock and poultry at rest before slaughtering. 6.2.5 Ante-mortem inspection information shall be timely fed back to the farm and the postmortem inspection personnel, and ante-mortem inspection records shall be made.	2. The procedures must guarantee that each animal or, where appropriate, each lot of animals accepted onto the slaughterhouse premises: (a) is properly identified; (b) is accompanied by the relevant information from the holding of provenance referred to in Section III *(= Food chain information);* c) does not come from a holding or an area subject to a movement prohibition or other restriction for reasons of animal or public health, except when the competent authority so permits; (d) is clean; (e) is healthy, as far as the food business operator can judge; and (f) is in a satisfactory state as regards welfare on arrival at the slaughterhouse. **Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:** Food business operators must ensure that the construction, layout and equipment of slaughterhouses in which domestic ungulates are slaughtered meet the following requirements. 1. (b) They must also have separate lockable facilities or, climate permitting, pens for sick or suspect animals with separate draining and sited in such a way as to avoid contamination of other animals… 5. There must be lockable facilities for the refrigerated storage of detained meat and separate lockable facilities for the storage of meat declared unfit for human consumption. **Regulation (EC) No 853/2004, Annex III, Section I, Chapter IV:** 1. After arrival in the slaughterhouse, the slaughter of the animals must not be unduly delayed. However, where required for welfare reasons, animals must be given a resting period before slaughter.	The details of the food chain information are laid down in **Regulation (EC) No 853/2004, Annex II, Section III and** in Regulation 2074/2005, Annex I. **The controls by the competent authority are laid down in Regulation (EU) 2019/627, Section I, Article 9.**

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	Regulation (EU) 2017/625, Article 18 2. The official controls referred to in paragraph 1 performed in relation to the production of meat shall include: (a) the ante-mortem inspection performed in the slaughterhouse by an official veterinarian who may, as regards preselection of animals, be assisted by official auxiliaries trained for that purpose; As regards poultry and lagomorphs, the ante-mortem inspection performed by an official veterinarian, under the supervision of the official veterinarian or, where sufficient guarantees are in place, under the responsibility of the official veterinarian **Regulation (EU) 2019/627, Section 2, Article 11:** 1. All animals shall be subjected to ante-mortem inspection before slaughter. However, inspection can be limited to a representative sample of birds from each flock and a representative sample of lagomorphs from each holding of provenance of lagomorphs. 2. Ante-mortem inspection shall take place within 24 hours of arrival of the animals at the slaughterhouse and less than 24 hours before slaughter. The official veterinarian may require an additional ante-mortem inspection at any other time. 3. Ante-mortem inspections shall determine whether, as regards the particular animal inspected, there is any sign: (a) that the health and welfare of the animal has been compromised; (b) of any condition, abnormalities or disease that make the fresh meat unfit for human consumption or that might adversely affect animal health, paying particular attention to the detection of zoonotic diseases and animal diseases for which animal health rules are laid down in Regulation (EU) 2016/429; (c) of the use of prohibited or unauthorised substances, misuse of veterinary medicinal products or the presence of chemical residues or contaminants.	

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	4. Ante-mortem inspection shall include verification of food business operators' compliance with their obligation to ensure that animals have a clean hide, skin or fleece, so as to avoid any unacceptable risk of contamination of the fresh meat during slaughter. 5. The official veterinarian shall carry out a clinical inspection of all animals that the food business operator or an official auxiliary may have put aside for a more thorough ante-mortem inspection. **Regulation (EU) 2019/627, Chapter III, Article 39:** 1. The official veterinarian shall record and evaluate the results of official controls carried out in accordance with Articles 7 to Article 38. 2. The following actions shall be taken by the official veterinarian where inspections reveal the presence of any disease or condition that might affect human or animal health, or compromise animal welfare: (iii) the food business operator responsible for the holding of provenance;	
6.3 Post-mortem inspection 6.3.1 Post-mortem inspection on head, hoof (jaw), carcass and viscera (body cavity) shall be performed in accordance with relevant national laws, standards and regulations. 6.3.2 The special rail for reserving the suspicious diseased carcass shall be arranged at the proper position of the livestock slaughtering workshop; the suspicious diseased carcass shall be subjected to further inspection and judgment. Independent low-temperature space or area shall be arranged for temporary storage of suspicious diseased carcass or tissues. 6.3.3 Enough space shall be reserved in the workshop for post-mortem inspection. 6.3.4 Pig slaughtering workshop shall be provided with trichinae inspection room and inspection facilities. 6.3.5 Where the laboratory test is necessary according to the national specifications, the laboratory sampling inspection shall be conducted.	**Regulation (EU) 2017/625, Article 18** 2. The official controls referred to in paragraph 1 performed in relation to the production of meat shall include: c) the post-mortem inspection performed by an official veterinarian, under the supervision of the official veterinarian or, where sufficient guarantees are in place, under the responsibility of the official veterinarian; **Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:** 5. There must be lockable facilities for the refrigerated storage of detained meat and separate lockable facilities for the storage of meat declared unfit for human consumption. 7. They must have lockable facilities reserved for the slaughter of sick and suspect animals. This is not essential if this slaughter takes place in other establishments authorised by the competent authority	

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6.3.6 The quarantine and inspection result shall be determined by combining the pre-mortem and post-mortem inspection information.	for this purpose, or at the end of the normal slaughter period.	
6.3.7 Those judged as waste shall be clearly identified and disposed to avoid cross contamination due to mixing with other meat.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:** 5. There must be lockable facilities for the refrigerated storage of detained meat and separate lockable facilities for the storage of meat declared unfit for human consumption.	**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs:** 2.7 Waste management Compliance with the requirements in Chapter VI of Annex II to Regulation (EC) No 852/2004 can be best achieved and illustrated by the FBO by implementing procedures for each type of waste (animal by-products, spoiled food, chemical waste, redundant/used packing material). When applicable, it should be recorded who is responsible for the removal, how it is collected, where it is stored and how it is removed from the establishment.
6.3.8 In order to perform post-mortem inspection or in case of emergency, the official veterinarian has the right to slow down or stop slaughtering.	**Regulation (EU) 2019/627, Section 3 Post mortem inspection, Article 12:** 4. The speed of the slaughter line and the number of inspection staff present shall be such as to allow for proper inspection.	
6.4 Bio-safety disposal 6.4.1 After quarantine and inspection, the livestock and poultry and the tissues detected with infectious disease, parasitic disease, toxic disease, or harm residues shall be put in dedicated closed watertight vessel and transported by the special-purpose vehicle timely to undergo bio-safety disposal under supervision of the official veterinarian. Those with suspicious pestilence shall be handled according to the relevant quarantine and inspection regulations, and subjected to bio-safety disposal after confirmation. 6.4.2 Other livestock and poultry and their tissues judged as needing bio-safety disposal shall be subjected to bio-safety disposal under supervision of the official veterinarian. 6.4.3 The corresponding protective measures shall be established to avoid hazard to personnel, cross	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:** 5. There must be lockable facilities for the refrigerated storage of detained meat and separate lockable facilities for the storage of meat declared unfit for human consumption. **R**	

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contamination and environmental pollution during bio-safety disposal.		
7. Hygiene Control for Slaughtering and Processing **7.1 The enterprise shall implement the monitoring plans established by the competent authority concerning the residues, illegal additives and pathogenic microorganism, and then establish its own plans accordingly for all meats of the enterprise.**	**Regulation (EC) No 852/2004, Article 4, 3** Food business operators shall, as appropriate, adopt the following specific hygiene measures: a) compliance with microbiological criteria for foodstuffs; **Article 5:** 1. Food business operators shall put in place, implement and maintain a permanent procedure or procedures based on the HACCP principles. **Regulation (EC) No 1333/2008, Article 4** 1. Only food additives included in the Community list in Annex II may be placed on the market as such and used in foods under the conditions of use specified therein. 2. Only food additives included in the Community list in Annex III may be used in food additives, in food enzymes and in food flavourings under the conditions of use specified therein. **Council Directive 96/23, Article 3:** The production process of animals and primary products of animal origin shall be monitored in accordance with this Chapter for the purpose of detecting the presence of the residues and substances listed in Annex I in live animals, their excrement and body fluids and in tissue, animal products, animal feed and drinking water. **Article 9:** 1. Any farms which place farm animals on the market and any natural or legal person engaged in trade in such animals register beforehand with the competent authorities and undertake to abide by the relevant Community and national rules, in particular the provisions laid down in Articles 5 and 12 of Directive 90/425/EEC;	

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	2. the owners or persons in charge of the establishment of initial processing of primary products of animal origin take all necessary measures, in particular by carrying out their own checks, to (a) accept - whether by direct delivery or through an intermediary - only those animals for which the producer is able to guarantee that withdrawal times have been observed; (b) satisfy themselves that the farm animals or products brought into the establishment (i) do not contain residue levels which exceed maximum permitted limits; (ii) do not contain any trace of prohibited substances or products; 3. (a) the producers or persons in charge referred to in points 1 and 2 place on the market only: (i) animals to which no unauthorised substances or products have been administered or which have not undergone illegal treatment within the meaning of this Directive; (ii) animals in respect of which, where authorised products or substances have been administered, the withdrawal periods prescribed for these products or substances have been observed; **Article 10** Member States shall ensure that the terms of reference and responsibilities of veterinarians monitoring farms are extended to monitoring the rearing conditions and the forms of treatment referred to in this Directive. Within this framework, the veterinarian shall enter in a register kept on the farm the date and nature of any treatment pre-scribed or administered, the identification of the animals treated and the corresponding withdrawal periods. For the monitoring of microbial contaminants, process control criteria are laid down in Regulation (EC) No 2073/2005.	

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7.2 Inspection post shall be set at the proper position to examine the carcass and hygiene condition of product. **7.3 Appropriate measures shall be taken to prevent the carcass, tissue, body fluids (e.g., bile, urine, milk, etc.), and gastrointestinal contents of the livestock and poultry with suspicious disease from contaminating other meats, or equipment and site. The contaminated equipment and site shall not be used to slaughter and process normal livestock and poultry unless cleaned and disinfected.**	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter 4:** 5. Slaughterhouse operators must follow the instructions of the veterinarian appointed by the competent authority in accordance with Regulation (EU) No 2017/625 to ensure that ante-mortem inspection of every animal to be slaughtered is carried out under suitable conditions. **Regulation (EC) No 853/2004, Annex III, Section I, Chapter II, 1:** (b) They must also have separate lockable facilities or, climate permitting, pens for sick or suspect animals with separate draining and sited in such a way as to avoid contamination of other animals… 7. They must have lockable facilities reserved for the slaughter of sick and suspect animals. This is not essential if this slaughter takes place in other establishments authorised by the competent authority for this purpose, or at the end of the normal slaughter period. **Regulation (EC) No 853/2004, Annex III, Section I, Chapter IV:** 16. After post-mortem inspection: c) meat detained or declared unfit for human consumption and inedible by-products must not come into contact with meat declared fit for human consumption; 20. If the slaughterhouse does not have lockable facilities reserved for the slaughter of sick or suspect animals, the facilities used to slaughter such animals must be cleaned, washed and disinfected under official supervision before the slaughter of other animals is resumed.	
7.4 Carcass or product contaminated by pus, effusion, pathological tissue, body fluid, contents in stomach and intestine and other contaminants shall be disposed, eliminated or abandoned in accordance with relevant regulations.	**Regulation (EU) 2017/625, Article 18** 4. Where the official controls referred to in points (a) and (c) of paragraph 2 have not identified any shortcoming that would make the meat unfit for human consumption, the health mark shall be applied to	

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	domestic ungulates, farmed game mammals other than lagomorphs, and large wild game, by the official veterinarian, under the supervision of the official veterinarian, under the responsibility of the official veterinarian, or, in compliance with the conditions laid down in paragraph 3, by the slaughterhouse staff.	
7.5 Apparatus used in processing, such as containers for holding products and water pipes for cleaning, shall not fall to the ground or contact with unclean surface so as to avoid cross contamination to products; in case that products fall to the ground, adequate measures shall be taken to eliminate contamination.	**Regulation (EC) No 852/2004, Annex II, Chapter II:** 1. In rooms where food is prepared, treated or processed (excluding dining areas and those premises specified in Chapter III, but including rooms contained in means of transport) the design and layout are to permit good food hygiene practices, including protection against contamination between and during operations. In particular: (f) surfaces (including surfaces of equipment) in areas where foods are handled and in particular those in contact with food are to be maintained in a sound condition and be easy to clean and, where necessary, to disinfect. This will require the use of smooth, washable corrosion-resistant and non-toxic materials…	**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs:** 2.1 j) Equipment and monitoring/recording devices (e.g. thermometers) should be clean and the equipment suitable for contact with food products. k) Attention should be paid to the different possibilities whereby the use of equipment can result in (cross-) contamination of food: i. Prevention of contamination of the equipment by the environment e.g. condensation dripping from ceilings; ii. Prevention of contamination within the food handling equipment e.g. accumulation of food residues in slicing devices; iii. Prevention of contamination by raw materials: separate equipment (or cleaning and disinfection between use) for raw products and cooked products (chopping boards, knives, dishes, …).
7.6 If required by the process requirements, the slaughtered carcass and edible offal shall be precooled immediately. After cooling, the core temperature shall be kept below 7℃ for livestock meat, below 4℃ for poultry meat, and below 3℃ for viscera. The processing, cutting and deboning shall be as quick as possible. When producing frozen products, the meat will enter into the freezer after the core temperature reaches -15℃ within 48h.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter VII:** Food business operators must ensure that the storage and transport of meat of domestic ungulates takes place in accordance with the following requirements. 1. (a) Unless other specific provisions provide otherwise, post-mortem inspection must be followed immediately by chilling in the slaughterhouse to ensure a temperature throughout the meat of not more than 3 °C for offal and 7 °C for other meat along a chilling curve that ensures a continuous decrease of the temperature. 4. Meat intended for freezing must be frozen without undue delay, taking into account where necessary a stabilisation period before freezing.	***Council Directive 89/108/EEC*** *gives additional requirements for quick-frozen foodstuffs for human consumption. For example:* ***Article 5*** *1. The temperature of quick-frozen foodstuffs must be stable and maintained, at all points in the product, at — 18 °C or lower, with possibly brief upward fluctuations of no more than 3 °C during transport.*

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	Regulation (EC) No 853/2004, Annex III, Section II, Chapter V: Food business operators must ensure that cutting and boning of meat of poultry and lagomorphs takes place in accordance with the following requirements. 1. (b) during cutting, boning, trimming, slicing, dicing, wrapping and packaging, the temperature of the meat is maintained at not more than 4 °C by means of an ambient temperature of 12 °C or an alternative system having an equivalent effect; 3. As soon as it is cut and, where appropriate, packaged, the meat must be chilled to the temperature referred to in point 1(b). **Regulation (EC) No 853/2004, Annex III, Section V, Chapter III:** Food business operators producing minced meat, meat preparations or MSM must ensure compliance with the following requirements. 1. The work on meat must be organised in such a way as to prevent or minimise contamination. To this end, food business operators must ensure in particular that the meat used is: (a) at a temperature of not more than 4 °C for poultry, 3 °C for offal and 7 °C for other meat; 2. The following requirements apply to the production of minced meat and meat preparations. (c) Immediately after production, minced meat and meat preparations must be wrapped or packaged and be: (i) chilled to an internal temperature of not more than 2 °C for minced meat and 4 °C for meat preparations; or (ii) frozen to an internal temperature of not more than -18 °C. These temperature conditions must be maintained during storage and transport.	
7.7 The slaughter room shall be of sufficient area and the operation shall meet the requirements. Different kinds of livestock and poultry shall not be	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:**	

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slaughtered in the same slaughter room at the same time.	Food business operators must ensure that the construction, layout and equipment of slaughterhouses in which domestic ungulates are slaughtered meet the following requirements. 2. To avoid contaminating meat, they must: (a) have a sufficient number of rooms, appropriate to the operations being carried out; **Regulation (EC) No 853/2004, Annex III, Section I, Chapter IV:** 19. Where establishments are approved for the slaughter of different animal species or for the handling of carcasses of farmed game and wild game, precautions must be taken to prevent cross-contamination by separation either in time or in space of operations carried out on the different species. Separate facilities for the reception and storage of unskinned carcasses of farmed game slaughtered at the farm and for wild game must be available.	
7.8 In order to avoid contaminating meats, strict management shall be performed over the storage and application of toxic and harmful substances, and effective control shall be realized over detergents, disinfectants, pesticides, fuel, lubricants, chemical reagents used in the plant area, workshop and laboratory, as well as other toxic and harmful substances which must be used in processing.	**Regulation (EC) No 852/2004, Annex II, Chapter I** 10. Cleaning agents and disinfectants are not to be stored in areas where food is handled. **Chapter IX:** 3. At all stages of production, processing and distribution, food is to be protected against any contamination likely to render the food unfit for human consumption, injurious to health or contaminated in such a way that it would be unreasonable to expect it to be consumed in that state. 8. Hazardous and/or inedible substances, including animal feed, are to be adequately labelled and stored in separate and secure containers.	**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs:** f) Clearly defined storage facilities should be available for raw material, receptacles for food and packaging materials. Only products that may be added to food (e.g. additives) should be stored in the same area, excluding common storage with toxic products (e.g. pesticides). 2.3 f) v. Pesticides should be stored and used so that there is no possible contact with food, packaging material, equipment, …
8. Packaging, Storage and Transportation **8.1 Packaging** **8.**1.2 Packaging materials shall comply with the relevant standards and shall not contain toxic and harmful substances, nor change the organoleptic properties of the meat.	**Regulation (EC) No 852/2004, Annex II, Chapter IX** 2. Raw materials and all ingredients stored in a food business are to be kept in appropriate conditions designed to prevent harmful deterioration and protect them from contamination. **Chapter X**	

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8.1.3 Unless the meat packaging materials are easily cleaned and corrosion resistant, they shall not be reused and shall be cleaned and disinfected prior to use. 8.1.4 Interior and exterior packaging materials shall be separately stored and the packaging material depot shall keep dry, ventilated, clean and sanitary. 8.1.5 The temperature in product packing room shall meet the specific product requirements.	1. Material used for wrapping and packaging are not to be a source of contamination. 2. Wrapping materials are to be stored in such a manner that they are not exposed to a risk of contamination. 3. Wrapping and packaging operations are to be carried out so as to avoid contamination of the products. Where appropriate and in particular in the case of cans and glass jars, the integrity of the container's construction and its cleanliness is to be assured. 4. Wrapping and packaging material re-used for foodstuffs is to be easy to clean and, where necessary, to disinfect.	
8.2 Storage and transportation 8.2.2 The finished products in storage depot shall maintain a proper distance from the wall, shall not directly contact the ground, and shall be stored in stacks by category and batch, and be identified.		**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs:** d) Storage conditions at the establishment itself should take into account any instructions provided by the supplier, 'first in, first out' or 'first expire, first out' principles, accessibility for inspection from all sides (e.g. not placed directly on the ground, against walls, …).
8.2.3 Articles detrimental to sanitation shall not be stored in storage depot and products possibly causing cross contamination or tainting of odor shall not be stored in the same depot. The storage depot shall be periodically disinfected.	**Regulation (EC) No 852/2004, Annex II, Chapter IV** 5. Where conveyances and/or containers have been used for transporting anything other than foodstuffs or for transporting different foodstuffs, there is to be effective cleaning between loads to avoid the risk of contamination.	
8.2.4 The refrigerated storage depot shall be periodically defrosted.		**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs:** 2.11 Temperature control of storage environment a) Temperature and humidity should be (automatically) recorded where relevant. b) Alarm devices should preferably be automatic. c) Temperature fluctuations should be minimized e.g. by using a separate room/freezer to freeze products from that used for storage of frozen products. d) Chilling/heating capacity should be adapted to the amounts involved.

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		e) Temperatures in the product and during transport should also be monitored. f) Verification should occur regularly
8.2.5 Dedicated transportation vehicles shall be adopted for meats and shall not be used to transport livestock and poultry, livestock and poultry products to be subjected to biosafety disposal or other articles possibly contaminating the meats.	**Regulation (EC) No 852/2004, Annex II, Chapter IV** 2. Receptacles in vehicles and/or containers are not to be used for transporting anything other than foodstuffs where this may result in contamination.	
8.2.6 Packaged and nude meats shall not be transported in the same vehicle; if inevitable, physical insulation and protection measures shall be taken.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter VII:** 5. Exposed meat must be stored and transported separately from packaged meat, unless stored or transported at different times or in such a way that the packaging material and the manner of storage or transport cannot be a source of contamination for the meat.	
8.2.7 The transportation vehicles shall be provided with refrigerating and thermal insulation installations depending on the product characteristics. During the transportation process, appropriate temperature shall be maintained.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter VII:** Food business operators must ensure that the storage and transport of meat of domestic ungulates takes place in accordance with the following requirements. 3. Meat must attain the temperature specified in point 1 *(= 7 °C)* before transport, and remain at that temperature during transport.	
8.2.8 The transportation vehicles shall be cleaned and disinfected timely to maintain clean and hygienic.	**Regulation (EC) No 852/2004, Annex II, Chapter IV** 1. Conveyances and/or containers used for transporting foodstuffs are to be kept clean and maintained in good repair and condition to protect foodstuffs from contamination and are, where necessary, to be designed and constructed to permit adequate cleaning and/or disinfection. **Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:** 6. There must be a separate place with appropriate facilities for the cleaning, washing and disinfection of means of transport for livestock. However, slaughterhouses need not have these places and facilities if the competent authority so permits and official authorised places and facilities exist nearby.	

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9. Product Tracing and Recall Management **9.1 Product tracing** Sound traceability system shall be established to ensure the meats and their derived products can be traced in the case of unacceptable food safety risk.	**Regulation (EC) No 178/2002, Article 18:** 1. The traceability of food, feed, food-producing animals, and any other substance intended to be, or expected to be, incorporated into a food or feed shall be established at all stages of production, processing and distribution. 2. Food and feed business operators shall be able to identify any person from whom they have been supplied with a food, a feed, a food-producing animal, or any substance intended to be, or expected to be, incorporated into a food or feed. 3. Food and feed business operators shall have in place systems and procedures to identify the other businesses to which their products have been supplied. This information shall be made available to the competent authorities on demand. 4. Food or feed which is placed on the market or is likely to be placed on the market in the Community shall be adequately labelled or identified to facilitate its traceability, through relevant documentation or information in accordance with the relevant requirements of more specific provisions.	
9.2 Product recall 9.2.1 Livestock and poultry slaughtering and processing enterprises shall establish the product recall system according to relevant laws and regulations. If any outgoing products are found unsafe, they shall be recalled and reported to official veterinarian.	**Regulation (EC) No 178/2002, Article 19:** 1. If a food business operator considers or has reason to believe that a food which it has imported, produced, processed, manufactured or distributed is not in compliance with the food safety requirements, it shall immediately initiate procedures to withdraw the food in question from the market where the food has left the immediate control of that initial food business operator and inform the competent authorities thereof. Where the product may have reached the consumer, the operator shall effectively and accurately inform the consumers of the reason for its withdrawal, and if necessary, recall from consumers products already supplied to them when other measures are not sufficient to achieve a high level of health protection. 3. A food business operator shall immediately inform the competent authorities if it considers or has reason to believe that a food which it has placed on the market may be injurious to human health. Operators shall	

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	inform the competent authorities of the action taken to prevent risks to the final consumer and shall not prevent or discourage any person from cooperating, in accordance with national law and legal practice, with the competent authorities, where this may prevent, reduce or eliminate a risk arising from a food.	
10. Personnel Requirements **10.2 is the same as National Standard 14881 (see Table 1, 6.3.1.2 and 6.3.1.3).** **10.3 is the same as National Standard 14881 (see Table 1, 6.3.2.2 and 6.3.2.3).**		
10.4 Personnel at areas or posts with different hygienic requirements shall wear work clothes and caps with different colors or marks. Personnel in different processing areas shall not leave for other irrelevant posts.	**Regulation (EC) No 852/2004, Annex II, Chapter VIII:** 1. Every person working in a food-handling area is to maintain a high degree of personal cleanliness and is to wear suitable, clean and, where necessary, protective clothing.	*Such detailed requirements ("clothes and caps with different colors, shall not leave for other irrelevant posts") are often mentioned in the Community or national guides to good practice, but are not laid down in legislation.*
10.5 Corresponding number of quarantine and inspection personnel shall be assigned in the **enterprises. Personnel engaged in slaughtering, cutting, processing, inspection and hygienic control shall pass professional training and examination before starting the work.**	**Regulation (EC) No 852/2004, Annex II, Chapter XII:** Food business operators are to ensure: 1. that food handlers are supervised and instructed and/or trained in food hygiene matters commensurate with their work activity; 2. that those responsible for the development and maintenance of the procedure referred to in Article 5(1) of this Regulation or for the operation of relevant guides have received adequate training in the application of the HACCP principles;	
11. Hygienic Management **11.1 Management system** 11.1.1 Enterprises shall establish and implement the food safety control system centering on hazard analysis and prevention and control measures.	**Regulation 852 (EC) No 852/2004, Article 4** 2. Food business operators carrying out any stage of production, processing and distribution of food after those stages to which paragraph 1 applies shall comply with the general hygiene requirements laid down in Annex II and any specific requirements provided for in Regulation (EC) No 853/2004. 3. Food business operators shall, as appropriate, adopt the following specific hygiene measures: (a) compliance with microbiological criteria for foodstuffs; (b) procedures necessary to meet targets set to achieve the objectives of this Regulation;	**Guidance document Commission Notice 2016/C 278/01, Annex I:** Each FBO should implement prerequisite programs as part of the Food Safety Management System. They include good hygiene practices (GHP) and good manufacturing practices (GMP) among other good practices. Food hygiene and safety is the result of the implementation by food businesses of prerequisite programs (PRPs) and procedures based on the HACCP principles. The PRPs provide the foundation for effective HACCP implementation and should be in place before any HACCP-based procedures are established.

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	(c) compliance with temperature control requirements for foodstuffs; (d) maintenance of the cold chain; (e) sampling and analysis.	
11.1.2 Enterprises are encouraged to establish and implement the hazard analysis and critical control point (HACCP) system.	**Regulation 852 (EC) No 852/2004, Article 5** 1. Food business operators shall put in place, implement and maintain a permanent procedure or procedures based on the HACCP principles.	*As mentioned in Table 1 point 8.1.2 of National Standard GB 14881-2013:* *In EU legislation the implementation of HACCP-based controls is mandatory for all food business operators (except primary producers), while in the National Standard GB 14881-2013 as well as in National Standard GB 12694-2016 (point 11.1.2) it is encouraged to be adopted (i.e. not mandatory).*
11.1.3 is the same as National Standard 14881 (see Table 1, 13.3).		
11.2 Hygienic management requirements 11.2.1 Enterprises shall prepare written hygienic management requirements, define the responsibilities of executor, determine the implementation frequency and implement effective monitoring and corresponding corrective and preventive measures.	**Regulation 852 (EC) No 852/2004, Article 5** 1. Food business operators shall put in place, implement and maintain a permanent procedure or procedures based on the HACCP principles. (g) establishing documents and records commensurate with the nature and size of the food business to demonstrate the effective application of the measures.	**Guidance document Commission Notice 2016/C 278/01, Annex II:** A systematic, integrated approach can be taken by using worksheets for the development of the HACCP plan (…). Starting from the flow diagram, at each step of processing the potential hazards are described, relevant control measures (PRPs) listed, CCPs identified (if appropriate based on the hazards analysis) along with their critical limits, monitoring procedures, corrective actions and available records. Record examples are: — Outcome of CCP monitoring activities; — Observed deviations and executed corrective actions; — Outcome of verification activities.
11.2.2 Water and ice in direct or indirect contact with the meats (including raw materials, semi-finished products and finished products) shall meet the hygienic requirements.	**Regulation (EC) No 852/2004, Annex II, Chapter VII:** 4. Ice which comes into contact with food or which may contaminate food is to be made from potable water.	**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs:** 2.8 a) Regular own microbiological and chemical analysis of water directly in contact with food (unless community potable water) should be carried out. Factors such as the source, intended use of the water, etc. will determine the frequency of analysis.

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11.2.3 Appliance, gloves and interior and exterior packaging materials in contact with the meats shall keep clean, hygienic and safe.	**Regulation (EC) No 852/2004, Annex II, Chapter V:** 1. All articles, fittings and equipment with which food comes into contact are to: (a) be effectively cleaned and, where necessary, disinfected. Cleaning and disinfection are to take place at a frequency sufficient to avoid any risk of contamination; (b) be so constructed, be of such materials and be kept in such good order, repair and condition as to minimise any risk of contamination;	**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs:** 2.1 j) Equipment and monitoring/recording devices (e.g. thermometers) should be clean and the equipment suitable for contact with food products.
11.2.4 Personnel hygiene, staff operations and installations design shall ensure the meats are safe from cross contamination.	**Regulation (EC) No 852/2004, Annex II, Chapter VIII:** Every person working in a food-handling area is to maintain a high degree of personal cleanliness and is to wear suitable, clean and, where necessary, protective clothing	**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs:** 2.1 k) Attention should be paid to the different possibilities whereby the use of equipment can result in (cross-) contamination of food: i. Prevention of contamination of the equipment by the environment e.g. condensation dripping from ceilings; ii. Prevention of contamination within the food handling equipment e.g. accumulation of food residues in slicing devices; iii. Prevention of contamination by raw materials: separate equipment (or cleaning and disinfection between use) for raw products and cooked products (chopping boards, knives, dishes, …). 2.6 Strict measures to minimize cross-contamination should be applied with products potentially containing allergens separated from other products at the time of production, by the use of different production lines, receptables and storage facilities, by a specific work methodology, awareness of workers and compliance with hygiene rules before returning to work from breaks for eating.
11.2.5 Installations for washing hands and disinfection of operating personnel and toilet facilities shall keep clean and be periodically maintained	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter II** Food business operators must ensure that the construction, layout and equipment of slaughterhouses in which domestic ungulates are slaughtered meet the following requirements.	**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs, 2.1:** h) Toilets should not open directly to food handling areas. Preferably water flushing with use of foot/arm pedals should be present and reminders to wash hands strategically placed.

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	3. They must have facilities for disinfecting tools with hot water supplied at not less than 82 °C, or an alternative system having an equivalent effect. 4. The equipment for washing hands used by the staff engaged in handling exposed meat must have taps designed to prevent the spread of contamination.	i) Hand washing facilities should be positioned conveniently between toilets/changing rooms and the food handling area; disinfectants/soap and towels for single use should be available; installations blowing warm air should only be present in rooms without food and non-hand-operable taps are desirable.
11.2.6 Chemical, physical and biological pollutants shall be prevented from contaminating the meats, meat packaging materials and meat contact surface.	**Regulation (EC) No 852/2004, Annex II Chapter IX:** 1. A food business operator is not to accept raw materials or ingredients, other than live animals, or any other material used in processing products, if they are known to be, or might reasonably be expected to be, contaminated with parasites, pathogenic microorganisms or toxic, decomposed or foreign substances to such an extent that, even after the food business operator had hygienically applied normal sorting and/or preparatory or processing procedures, the final product would be unfit for human consumption. 2. Raw materials and all ingredients stored in a food business are to be kept in appropriate conditions designed to pre-vent harmful deterioration and protect them from contamination. 3. At all stages of production, processing and distribution, food is to be protected against any contamination likely to render the food unfit for human consumption, injurious to health or contaminated in such a way that it would be un-reasonable to expect it to be consumed in that state. 4. Adequate procedures are to be in place to control pests. Adequate procedures are also to be in place to prevent domestic animals from having access to places where food is prepared, handled or stored (or, where the competent au-thority so permits in special cases, to prevent such access from resulting in contamination). 5. Raw materials, ingredients, intermediate products and finished products likely to support the reproduction of pathogenic micro-organisms or the formation of toxins are not to be kept at temperatures that might result in a risk to health. The cold chain is not to be interrupted.	**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs, 2.4:** a) The frequency of the control of physical hazards (glass, plastic, metal, …) should be determined using a risk-based analysis (how big is the likelihood of occurrence in an establishment in question?). b) A procedure should be available explaining what to do in case of breakage of glass, hard plastic, knives, … c) Only cleaning products suitable for food contact surfaces should be used in food processing environments where there is some possibility of incidental food contact. Other cleaning products should be only used outside periods of production. **Guidance document Commission Notice 2016/C 278/01, Annex II, 4 Hazard analysis:** In conducting the hazard analysis, the following should be considered: — the likelihood of occurrence of hazards and severity of their adverse health effects; — the qualitative and/or quantitative evaluation of the presence of hazards; — the survival or multiplication of pathogenic micro-organisms and unacceptable generation of chemicals in intermediate products, end products, production line or line environment; — the production or persistence in foods of toxins or other undesirable products of microbial metabolism, chemicals or physical agents or allergens; — the contamination (or recontamination), of a biological (micro-organisms, parasites), chemical or physical nature, of raw materials, intermediate products or end products.

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11.2.7 Various toxic chemicals shall be correctly marked, stored and used.	**Regulation (EC) No 852/2004, Annex II, Chapter I** 10. Cleaning agents and disinfectants are not to be stored in areas where food is handled. **Regulation (EC) No 852/2004, Annex II, Chapter V:** 3. Where chemical additives have to be used to prevent corrosion of equipment and containers, they are to be used in accordance with good practice.	**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs, 2.5:** c) Only cleaning products suitable for food contact surfaces should be used in food processing environments where there is some possibility of incidental food contact. Other cleaning products should be only used outside periods of production. d) Possible chemical hazards should only be dealt with by specialized, trained staff. Weighing scales for additives should be automatic.
11.2.8 Contamination to meats, meat packaging materials and meat contact surface, due to poor health of staff, shall be avoided.	**Regulation (EC) No 852/2004, Annex II, Chapter VIII:** 1. Every person working in a food-handling area is to maintain a high degree of personal cleanliness and is to wear suitable, clean and, where necessary, protective clothing. 2. No person suffering from, or being a carrier of a disease likely to be transmitted through food or afflicted, for example, with infected wounds, skin infections, sores or diarrhoea is to be permitted to handle food or enter any food-handling area in any capacity if there is any likelihood of direct or indirect contamination. Any person so affected and employed in a food business and who is likely to come into contact with food is to report immediately the illness or symptoms, and if possible their causes, to the food business operator.	**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs:** 2.9 a) Personnel should be aware of hazards from gastro-intestinal infections, hepatitis and wounds with appropriate exclusion from food handling or suitable protection; relevant health problems should be reported to the manager. Special consideration should be given to temporary workers who might be less familiar with potential hazards.
11.2.9 Rats, pests and birds shall be prevented and eliminated.	**Regulation (EC) No 852/2004, Annex II, Chapter IX:** 4. Adequate procedures are to be in place to control pests. Adequate procedures are also to be in place to prevent domestic animals from having access to places where food is prepared, handled or stored (or, where the competent authority so permits in special cases, to prevent such access from resulting in contamination).	**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs:** 2.3 f) A pest control program should be available: i. Baits and traps (inside/outside) should be considered in appropriate numbers and strategic placement; ii. The program should cover rodents, crawling, walking and flying pests;
12. Records and Document Management 12.1, 12.2, 12.3, 12.4, 12.5 and 12.6 are the same as National Standard GB 14881-2013 (see Table 1, 14.1.1, 14.1.2, 14.1.3, 14.2 and 14.3), but also as National Standard 27341		

b) National standard GB-17237 - General technical conditions for slaughter and processing of livestock

CHINESE NATIONAL STANDARD 17237	EU LEGISLATION REGULATION (EC) NO 853/2004	IMPLEMENTING RULES AND COMPARATIVE EVALUATION
1 Scope This standard specifies the basic technical requirements for slaughtering and processing of livestock. This standard is applicable to slaughter plants (farms) of pigs, cattle and sheep.	**1 Scope** 1. This Regulation lays down specific rules on the hygiene of food of animal origin for food business operators.	
4. Site selection of slaughterhouse (yard) **Is the same as National Standard GB 12694-2016 (see Table 1, 3.2).**		
5. Requirements for livestock slaughterhouses (yards) 5.1.2 Enterprises working as cutting plants should also set up cooling rooms, cutting meat processing rooms, packaging rooms, and freezing rooms that are compatible with the slaughter processing volume of the entereprise	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:** Food business operators must ensure that the construction, layout and equipment of slaughterhouses in which domestic ungulates are slaughtered meet the following requirements. 2. To avoid contaminating meat, they must: (a) have a sufficient number of rooms, appropriate to the operations being carried out;	*In various locations (**Chapter III, 2 and 3** of Annex III, Section I of Regulation (EC) No 853/2004) the requirement for adequate layout of the respective facilities is repeated.*
5.1.3 is the same as National Standard GB 12694-2016 (see Table 1, 4.3.1).		
5.2 Plant layout is the same as National Standard GB 12694-2016 (see Table 1, 4.1.1, 4.1.2 and 4.1.3).		
5.3 Processing equipment and tools is the same as National Standard GB 12694-2016 (see Table 1, 5.3.2, 5.4.2, 5.4.5 and 5.8).		
5.4 Synchronous inspection device The factory (field) should be equipped with a synchronous inspection device that is compatible with the slaughter and processing volume. A definition of synchronous inspection instrument is given in point 3.8: After slaughtering the laparotomy, remove the internal organs and place it on the set plate or hook device and run synchronously with the carcass production line to facilitate inspection and comprehensive judgment.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter IV:** 13. Until post-mortem inspection is completed, parts of a slaughtered animal subject to such inspection must: (a) remain identifiable as belonging to a given carcasses; and (b) come into contact with no other carcass, offal or viscera, including those that have already undergone postmortem inspection. **Regulation (EU) 2019/627, Section 3, Article 12, point 2:**	*Offal is defined in **Regulation (EC) No 853/2004, Annex I** as:* *1.11. 'Offal' means fresh meat other than that of the carcass, including viscera and blood.*

	The competent authorities may require the food business operator to provide special technical facilities and sufficient space to check offal.	
5.5 Laboratory (Examination Room) **5.5. A factory (field) should be equipped with laboratory, equipped with corresponding drugs and laboratory instruments that can carry out microbiological testing and routine physical and chemical testing.** 5.5.2 The laboratory should have convenient water supply and drainage facilities, ventilation and lighting conditions necessary to meet the daily work of the laboratory, relatively stable power supply, if there is a large instrument, it should be equipped with a large instrument anti-static floor. 5.5.3 The laboratory shall be equipped with physical and chemical testing rooms and microbiological testing rooms. 5.5.4 Fire-fighting equipment such as sandboxes and fire extinguishers should be installed in the laboratory, and designated personnel should be responsible for maintenance and replenishment. Fire-fighting equipment should be placed in a fixed place.	**Regulation (EC) No 2073/2005, Article 4:** 1. Food business operators shall perform testing as appropriate against the microbiological criteria set out in Annex I, when they are validating or verifying the correct functioning of their procedures based on HACCP principles and good hygiene practice. **Regulation (EU) 2015/1375, Article 2:** 1. Carcasses of domestic swine shall be sampled in slaughterhouses as part of the post-mortem examination as follows: … A sample shall be collected from each carcass and the sample shall be examined for *Trichinella*, in a laboratory designated by the competent authority, using one of the following methods of detection: …	*EU legislation requires food business operators to perform testing and collect samples as part of the HACCP programme and during the slaughter process. Testing has to be done in laboratories designated by the competent authority. These laboratories can be situated in the slaughterhouse, but can also be located elsewhere.* ***Regulation (EU) 2017/625, Articles 37, 38 and 39** lay down the requirements for the designation, obligations and audits of official laboratories. **Article 40** deals with the designation of Trichinella laboratories.* *Prevention and protection against fire hazards are laid down in other legislation, this aspect is of no relevance for meat hygiene.*
5.6 Lighting is the same as National Standard GB 12694-2016 (see Table 1, 5.6).		
5.7 Sewage treatment and discharge is the same as National Standard GB 12694-2016 (see Table 1, 5.2.3 and 5.8).		
5.8 Slaughter equipment 5. 8. 1 stunning device Stun equipment should be provided. 5. 8.2 Suspended conveyor equipment 5.8.2. 1 Pig slaughter hanging conveyor equipment The track surface of the bloodletting line should be 3 m ~ 3.5 m from the ground; the height of the track surface of the carcass processing line from the ground is: single pulley 2. 5 m ~ 2. 8 m, double pulley 2. 8 m ~ 3 m; the	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:** Food business operators must ensure that the construction, layout and equipment of slaughterhouses in which domestic ungulates are slaughtered meet the following requirements. 2. To avoid contaminating meat, they must: (a) have a sufficient number of rooms, appropriate to the operations being carried out; (c) ensure separation in space or time of the following operations:	*In addition, **Regulation (EC) No 853/2004, Annex III, Section I, Chapter IV requires:*** Food business operators operating slaughterhouses in which domestic ungulates are slaughtered must ensure compliance with the following requirements. 7. Stunning, bleeding, skinning, evisceration and other dressing must be carried out without undue delay and in a manner that avoids contaminating the meat. 8. Complete skinning of the carcass and other parts of the body intended for human consumption must be carried out, except for porcine animals and the heads

distance between hanging pigs should be greater than 0. 8 m. 5. 8. 2. 2 Cattle slaughter hanging conveyor equipment The track surface of the bloodletting line should be 4.5 m ~ 5 m above the ground, and the distance between hanging cattle should not be less than 1.2 m. 5. 8. 2. 3 sheep slaughter hanging conveyor equipment The orbital surface of the bleeding line should be 2.4 m ~ 2.6 m from the ground, and the distance between the hanging sheep should be greater than 0.8 m. 5.8.3 The length of the hanging conveyor track should be able to ensure that the bleeding time of the animals is not less than 5 min. 5.8.4 Set up a fork rail for suspected sick animals to transport sick animals and heads, hooves, tails, carcasses, internal organs etc. 5.8.5 When using the hanging method to transport slaughtered livestock, a device for storing empty pulleys and hanging hoof chains should be installed in the stunning area of the livestock. 5.8.6 should be equipped with corresponding carcass classification facilities and equipment.	(i) stunning and bleeding; (ii) in the case of porcine animals, scalding, depilation, scraping and singeing; (iii) evisceration and further dressing; (iv) handling clean guts and tripe; (v) preparation and cleaning of other offal, particularly the handling of skinned heads if it does not take place at the slaughter line; (vi) packaging offal; and (vii) dispatching meat (d) have installations that prevent contact between the meat and the floors, walls and fixtures; and (e) have slaughter lines (where operated) that are designed to allow constant progress of the slaughter process and to avoid cross-contamination between the different parts of the slaughter line. **Regulation (EC) No 853/2004, Annex III, Section I, Chapter IV:** 7. Stunning, bleeding, skinning, evisceration and other dressing must be carried out without undue delay… 7. They must have lockable facilities reserved for the slaughter of sick and suspect animals. This is not essential if this slaughter takes place in other establishments authorised by the competent authority for this purpose, or at the end of the normal slaughter period. **Regulation (EC) No 852/2004, Annex II, Chapter V - Equipment requirements:** 1. All articles, fittings and equipment with which food comes into contact are to: (a) be effectively cleaned and, where necessary, disinfected. Cleaning and disinfection are to take place at a frequency sufficient to avoid any risk of contamination; (b) be so constructed, be of such materials and be kept in such good order, repair and condition as to minimise any risk of contamination;	and feet of ovine and caprine animals and calves. Heads and feet must be handled so as to avoid contamination of other meat. 11. Carcasses and offal must not come into contact with floors, walls or work stands. *A list of stunning methods and related techniques for various animal species is provided in **Annex I, Regulation (EC) No 1099/2009**. Moreover, a description, key parameters and conditions of use are given for each technique.* ***Regulation (EC) No 1099/2009 lays down in Article 7:*** 2. Business operators shall ensure that the following slaughter operations are only carried out by persons holding a certificate of competence for such operations, as provided for in Article 21, demonstrating their ability to carry them out in accordance with the rules laid down in this Regulation: a) the handling and care of animals before they are restrained; (b) the restraint of animals for the purpose of stunning or killing; (c) the stunning of animals; (d) the assessment of effective stunning; (e) the shackling or hoisting of live animals; (f) the bleeding of live animals; *Carcass classification is not considered a food safety issue, but a quality issue and is regulated by requirements laid down in agricultural legislation.*

	(c) with the exception of non-returnable containers and packaging, be so constructed, be of such materials and be kept in such good order, repair and condition as to enable them to be kept clean and, where necessary, to be disinfected; and (d) be installed in such a manner as to allow adequate cleaning of the equipment and the surrounding area	
5.9 Split processing The temperature of the hot-segment processing environment should be controlled below 20 ° C, and the temperature of the cold-segment processing environment should be controlled below 12 ° C.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter V:** Food business operators must ensure that cutting and boning of meat of domestic ungulates takes place in accordance with the following requirements. 2. The work on meat must be organised in such a way as to prevent or minimise contamination. To this end, food business operators must ensure in particular that: (b) during cutting, boning, trimming, slicing, dicing, wrapping and packaging, the meat is maintained at not more than 3 °C for offal and 7 °C for other meat, by means of an ambient temperature of not more than 12 °C or an alternative system having an equivalent effect; **Regulation (EC) No 853/2004, Annex III, Section I, Chapter VII:** Food business operators must ensure that the storage and transport of meat of domestic ungulates takes place in accordance with the following requirements. 1. (a) Unless other specific provisions provide otherwise, post-mortem inspection must be followed immediately by chilling in the slaughterhouse to ensure a temperature throughout the meat of not more than 3 °C for offal and 7 °C for other meat along a chilling curve that ensures a continuous decrease of the temperature.	*In the EU legislation no temperature requirement is laid down for the hot-segment processing environment. For a number of activities the legislation stresses at several points to avoid contamination (stunning, bleeding, skinning, evisceration). However, for porcine animals an additional requirement has been laid down in* ***Regulation (EC) No 853/2004, Annex III, Section I, Chapter IV:*** 9. When not skinned, porcine animals must have their bristles removed immediately. The risk of contamination of the meat with scalding water must be minimised. Only approved additives may be used for this operation. Porcine animals must be thoroughly rinsed afterwards with potable water.
5.10 Product storage 5. 10. 1 and 5. 10.2 are the same as National Standard GB 12694-2016 (see Table 1, 4.3.1)		
5.11 Cleaning and disinfection is the same as National Standard GB 12694-2016 (see Table 1, 5.3.1, 5.4.2 and 5.4.5).		

5.12 Special slaughter Slaughterhouses (farms) that supply livestock products consumed by ethnic minorities shall respect ethnic customs and practices, set up appropriate facilities and equipment, and shall obtain the consent of relevant agencies.		*In EU legislation such derogations are possible by adopting national measures, which generally apply at a local, restricted level.*

c) National standard GB-17236 - Livestock and pig slaughtering operation rules for pigs

CHINESE NATIONAL STANDARD GB 17236	EU LEGISLATION REGULATION (EC) NO 853/2004	IMPLEMENTING RULES AND COMPARATIVE EVALUATION
1 Scope This standard specifies the terms and definitions of pig slaughter, pre-slaughter requirements, slaughter operation procedures and requirements, packaging, labeling, marking and storage, and other requirements.	**1 Scope** 1. This Regulation lays down specific rules on the hygiene of food of animal origin for food business operators.	
4 Requirements before slaughter 4.1 The pigs to be slaughtered shall be in good health, and shall be accompanied by the "Quality Certificate of Animal Quarantine" issued by the animal health supervision organization in the place of origin. 4.2 The pigs to be slaughtered should stop eating and rest for at least 12 hours before slaughter, and stop feeding at 3 hours before slaughter. 4.3 The pig body surface should be sprayed to wash off the feces and dirt on the pig body surface. 4.4 Before slaughtering, quarantine should be declared to the local animal health supervision agency, and quarantine and inspection should be carried out in accordance with the "Guidelines for Pig Slaughtering and Quarantine" and GB / T 17996. 4.5 When the slaughtered pigs are sent through the slaughter tunnel, they should be sent in order, and should not be driven savagely.	**Regulation (EC) No 853/2004, Annex II, Section II** 2. The procedures must guarantee that each animal or, where appropriate, each lot of animals accepted onto the slaughterhouse premises: (a) is properly identified; (b) is accompanied by the relevant information from the holding of provenance referred to in Section III; (d) is clean; (e) is healthy, as far as the food business operator can judge; and (f) is in a satisfactory state as regards welfare on arrival at the slaughterhouse. **Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:** Food business operators must ensure that the construction, layout and equipment of slaughterhouses in which domestic ungulates are slaughtered meet the following requirements. 1. (a) Slaughterhouses must have adequate and hygienic lairage facilities or, climate permitting, waiting pens that are easy to clean and disinfect. These facilities must be equipped for watering the animals and, if necessary, feeding them. The drainage of the wastewater must not compromise food safety. **Regulation (EC) No 853/2004, Annex III, Section I, Chapter IV:** Food business operators operating slaughterhouses in which domestic ungulates are slaughtered must ensure compliance with the following requirements.	**Regulation (EC) No 853/2004, Annex II, Section III** *lays down a whole list of requirements for the Food Chain Information:* Food business operators operating slaughterhouses must, as appropriate, request, receive, check and act upon food chain information as set out in this Section in respect of all animals, other than wild game, sent or intended to be sent to the slaughterhouse. More detailed provisions are laid down in Regulation 2074/2005, Annex I. **Regulation (EC) No 1099/2009, Chapter II,**

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	1. After arrival in the slaughterhouse, the slaughter of the animals must not be unduly delayed. However, where required for welfare reasons, animals must be given a resting period before slaughter. 4. Animals must be clean. **Regulation (EC) No 853/2004, Annex III, Section I, Chapter I:** 2. Animals showing symptoms of disease or originating in herds known to be contaminated with agents of public health importance may only be transported to the slaughterhouse when the competent authority so permits. **Chapter II:** 1. b) Slaughterhouses must also have separate lockable facilities or, climate permitting, pens for sick or suspect animals with separate draining and sited in such a way as to avoid contamination of other animals, unless the competent authority considers that such facilities are unnecessary. Provisions related to food chain information are in Regulation 853/2004, Annex II Section III and Regulation 2074/2005 Annex I. **Regulation (EC) No 1099/2009, Chapter II, Article 3:** 2. For the purposes of paragraph 1, business operators shall, in particular, take the necessary measures to ensure that animals: (a) are provided with physical comfort and protection, in particular by being kept clean in adequate thermal conditions and prevented from falling or slipping; (b) are protected from injury; (c) are handled and housed taking into consideration their normal behaviour; (d) do not show signs of avoidable pain or fear or exhibit abnormal behaviour; **Article 7:** 2. Business operators shall ensure that the following slaughter operations are only carried out by persons	

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	holding a certificate of competence for such operations, as provided for in Article 21, demonstrating their ability to carry them out in accordance with the rules laid down in this Regulation: (a) the handling and care of animals before they are restrained; (b) the restraint of animals for the purpose of stunning or killing; **Article 15:** 3. The following methods of restraint shall be prohibited: (a) suspending or hoisting conscious animals; (b) mechanical clamping or tying of the legs or feet of animals; (c) severing the spinal cord, such as by the use of a puntilla or dagger; (d) the use of electric currents to immobilise the animal that do not stun or kill it under controlled circumstances, in particular, any electric current application that does not span the brain.	
5 Slaughter operation procedures and requirements **5.1 stunning** 5.1.1 Ways to stun Electrical stunning or carbon dioxide (CO2) stunning should be used; A) Electrical stun: stun pigs by means of stuns such as artificial electrical anesthesia or automatic electrical anesthesia B) Carbon dioxide (CO2) stunning: stun pigs into carbon dioxide (CO2) stunning equipment.	Regulation (EC) No 1099/2009, Article 17 Animal welfare officer 1. Business operators shall designate an animal welfare officer for each slaughterhouse to assist them in ensuring compliance with the rules laid down in this Regulation. Annex I, Chapter II: 4. Head-only electrical stunning 4.1. When using head-only electrical stunning, electrodes shall span the brain of the animal and be adapted to its size. 4.2. Head-only electrical stunning shall be carried out in accordance with the minimum currents set out in Table 1. Animals of porcine species: 1,30 A 5. Head-to-body electrical stunning 5.1. Animals of the ovine, caprine and porcine species. The minimum currents for head-to-body electrical	

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	stunning shall be 1 ampere for sheep and goats and 1,30 amperes for pigs. 7. Carbon dioxide at high concentration In the case of pigs, mustelids and chinchillas, the minimum concentration of 80 % of carbon dioxide shall be used. 8. Carbon dioxide, use of inert gases or a combination of those gas mixtures Under no circumstances shall gases enter into the chamber or the location where animals are to be stunned and killed in a way that it could create burns or excitement by freezing or lack of humidity.	
5.1.2 Requirements for stunning The heart of the pig should be comatose after coma. It should not be lethal or stun repeatedly.	**Regulation (EC) No 1099/2009, Article 4:** 1. Animals shall only be killed after stunning in accordance with the methods and specific requirements related to the application of those methods set out in Annex I. The loss of consciousness and sensibility shall be maintained until the death of the animal. The methods referred to in Annex I which do not result in instantaneous death (hereinafter referred to as simple stunning) shall be followed as quickly as possible by a procedure ensuring death such as bleeding, pithing, electrocution or prolonged exposure to anoxia.	*A list of stunning methods and related techniques for various animal species is provided in **Annex I, Regulation (EC) No 1099/2009**. Moreover, a description, key parameters and conditions of use are given for each technique.*
5.2 Killing and bleeding 5.2.1 Killing and bleeding should be performed immediately after stun, and it should not exceed 30s from stun to assassination.	**Regulation (EC) No 1099/2009, Article 5:** 1. Business operators shall ensure that persons responsible for stunning or other nominated staff carry out regular checks to ensure that the animals do not present any signs of consciousness or sensibility in the period between the end of the stunning process and death. Those checks shall be carried out on a sufficiently representative sample of animals and their frequency shall be established taking into account the outcome of previous checks and any factors which may affect the efficiency of the stunning process.	
5.2.2 Align the tip of the knife to the center of the throat of the first rib 0.5cm to 1cm and pierce it into the heart. Then drag the side of the knife to cut off the neck artery and vein. The heart or esophagus and trachea should not be punctured. The length of the assassination blade is about 5cm, and the bleeding time is not less than	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter IV:** Food business operators operating slaughterhouses in which domestic ungulates are slaughtered must ensure compliance with the following requirements. 7. Stunning, bleeding, skinning, evisceration and other dressing must be carried out without undue delay and	

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5min. Pigs should not choke or congest blood during assassination.	in a manner that avoids contaminating the meat. In particular: (a) the trachea and oesophagus must remain intact during bleeding, except in the case of slaughter according to a religious custom;	
5.2.3 Swine carcasses should be sprayed with warm water or cleaned with cleaning equipment to clean blood, feces and other contaminants. The subsequent processing can be carried out by peeling (5.3) or scalding and depilation (5.4) processes.	9. When not skinned, porcine animals must have their bristles removed immediately. The risk of contamination of the meat with scalding water must be minimised. Only approved additives may be used for this operation. Porcine animals must be thoroughly rinsed afterwards with potable water.	
5.2.4 From bleeding to removing internal organs, it should not exceed 30mm, and from bleeding to pre-cooling should not exceed 45min.	6. Animals brought into the slaughter hall must be slaughtered without undue delay. 7. Stunning, bleeding, skinning, evisceration and other dressing must be carried out without undue delay and in a manner that avoids contaminating the meat.	
5.3 Skinning		*In EU legislation there are no requirements laid down for the skinning of pigs, which is generally not practiced in commercial slaughterhouses in Europe.*
5.4 Perm and depilation 5.4.1 Use steam scalding tunnel or scalding pool to scald. The temperature and time of scalding should be adjusted according to the size, breed and season difference of pig carcasses. a) Steam scalding tunnel: adjust the temperature in the tunnel to 59 ℃ ～ 62 ℃, the scalding time is 6min ～ 8min; b) Immersion pool: Adjust the water temperature to 58 ℃ ～ 63 ℃, the scalding time is 3min ～ 6min, and there should be an overflow port and a device for replenishing water. The scalding pool water is changed once or twice a day according to the sanitary conditions. During the scalding process, the pig carcass should not be allowed to sink, burn, or burn. 5.4.2 Hair removal using hair removal equipment. The pig carcass should be free of floating hair, no mechanical damage and no peeling after depilation.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter IV:** 9. When not skinned, porcine animals must have their bristles removed immediately. The risk of contamination of the meat with scalding water must be minimised. Only approved additives may be used for this operation. Porcine animals must be thoroughly rinsed afterwards with potable water. 10. The carcasses must not contain visible faecal contamination. Any visible contamination must be removed without delay by trimming or alternative means having an equivalent effect.	
5.5 Hanging and lifting 5.5.1 Lift the two hind legs of the pig and perforate the tarsal joints of the hind legs of the pig. The ligaments of	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter IV:**	

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the tibia and tarsal joints should not be cut. The length of the blade should be 5cm to 6cm. 5.5.2 Hang up the hind legs and lift the pig carcass to the carcass processing line track.	11. Carcasses and offal must not come into contact with floors, walls or work stands	
5.6 Pre-drying Use pre-drying equipment or manually brush off the residual pig hair and moisture on the pig body. **5.7 Use blowtorch or singeing equipment to singe hair to remove residual pig hair on the surface of pig body.** **5.8 Cleaning and polishing** Use manual or polishing equipment to remove the residual hair and ash on the pig body surface and clean it.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter IV:** 9. When not skinned, porcine animals must have their bristles removed immediately…. Porcine animals must be thoroughly rinsed afterwards with potable water.	
5.9 Tail, head, hoof **5.10 Carved circle** **5.11 Opening, clean cavity**	*These are slaughter techniques, which are not described in the EU legislation. However, inspection by the Competent Authority of the various parts of the pig carcass is described in **Articles 12, 14 and 23 of Regulation (EU) 2019/627**.*	*More detailed instructions for proper slaughter techniques can be found in the Guides to Good Practice developed for the meat sector. In the EU legislation the focus is on preventing (cross) contamination and on insisting that all techniques used should ensure food safety and prevent any contamination.*
5.12 Inspection and quarantine The synchronous inspection shall be carried out in accordance with the provisions of GB / T 17996, and the synchronous quarantine shall be carried out in accordance with the regulations of "Livestock Slaughter and Quarantine Regulations".	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter IV:** 13. Until post-mortem inspection is completed, parts of a slaughtered animal subject to such inspection must: (a) remain identifiable as belonging to a given carcass; and (b) come into contact with no other carcasses, offal or viscera, including those that have already undergone postmortem inspection. 20. If the slaughterhouse does not have lockable facilities reserved for the slaughter of sick or suspect animals, the facilities used to slaughter such animals must be cleaned, washed and disinfected under official	

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	supervision before the slaughter of other animals is resumed.	
5.13 Split in half (saw in half) When splitting the half, the carcass should be split in half along the midline of the spine. The split pork should be free of oil, kidneys, blood stains and floating hair.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter V:** Food business operators must ensure that cutting and boning of meat of domestic ungulates takes place in accordance with the following requirements. 1. Carcasses of domestic ungulates may be cut into half-carcasses or quarters, and half carcasses into no more than three wholesale cuts, in slaughterhouses. Further cutting and boning must be carried out in a cutting plant. 2. The work on meat must be organised in such a way as to prevent or minimise contamination. To this end, food business operators must ensure in particular that:…	
5.14 Renovation In order to repair the abdomen, bleeding blade, mandibular meat, dark wounds, pustules, plaques and visible lymph nodes, remove the adrenal glands and residual thyroid glands, and wash the body cavity of congestion, floating hair, sawdust and dirt.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter IV:** 16. After post-mortem inspection: (a) the tonsils of bovine animals and solipeds must be removed hygienically; (b) parts unfit for human consumption must be removed as soon as possible from the clean sector of the establishment; (c) meat detained or declared unfit for human consumption and inedible by-products must not come into contact with meat declared fit for human consumption; and (d) viscera or parts of viscera remaining in the carcass, except for the kidneys, must be removed entirely and as soon as possible, unless the competent authority authorises otherwise.	
5.15 Measurement and quality classification is the same as National Standard GB 17237-2008 (see Table 3, 5.8.6).		
5.16 Finishing of by-products 5.16.1 finishing requirements	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter IV:**	EU legislation does not make specific provisions for the handling and treatment of by-products. All edible parts of an animal, including offal, viscera or blood are falling

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During the process of finishing by-products, they should not be processed on the floor. 5.16.2 Centrifugation, liver, lung Resection of the liver diaphragmatic ligament and hilar connective tissue. When removing the gallbladder, it should not be damaged or left over; the pig's heart should be repaired with protective oil and diaphragm; the lung tube of 2 cm ~ 3 cm should be kept on the lung of the pig. 5.16.3 Separation of spleen and stomach Cut off the fat at the bottom of the stomach and cut off the junction with the duodenum and the ligaments of the liver and stomach. Peel the ointment, cut off the spleen from the omentum, and carry less oil. During gastric lavage cleaning, grasp the tip of the stomach in one hand to rinse the stomach dirt, use a knife to poke a 5 cm ~ 8 cm small mouth at the big bend of the stomach, and then use the gastric lavage equipment or long running water to turn the stomach over and rinse it. 5.16.4 Pulling the small intestine Pull the small intestine out of the cut away from the stomach, grasp the flower oil in one hand, and hang the end of the small intestine on the side of the operating table with the other hand to remove feces from top to bottom. It should not be broken or messed up during operation. The pulled out small intestine should promptly remove the intestinal dirt. 5.16.5 Pulling the large intestine Straighten the large intestine, tear the flower oil (crown oil) from the end of the colon to about 2 cm from the junction of the cecum and the small intestine, cut and tie. The cecum should not be damaged and excessive grease left. Rewash the large intestine, grasp one end of the intestine in one hand, squeeze out the feces from the top down, and turn the small intestine out of a small part, use your two fingers to open the intestine mouth, pour water into the large intestine, make the intestine fall, It can be turned over automatically and can be washed by special equipment. The cleaned and conditioned large intestine should not carry feces.	7. Stunning, bleeding, skinning, evisceration and other dressing must be carried out without undue delay and in a manner that avoids contaminating the meat. In particular: (a) the trachea and oesophagus must remain intact during bleeding, except in the case of slaughter according to a religious custom; … 11. Carcasses and offal must not come into contact with floors, walls or work stands. carcass18. When destined for further handling: (a) stomachs must be scalded or cleaned; (b) intestines must be emptied and cleaned; and (c) heads and feet must be skinned or scalded and depilated.	under the definition of 'meat' in accordance with Regulation 853/2004 and must be treated accordingly. *More detailed instructions for proper slaughter techniques can be found in the Guides to Good Practice developed for the meat sector. In the EU legislation the focus is on preventing (cross) contamination and on insisting that all techniques used should ensure food safety and prevent any contamination.* *Compliance with hygiene standards, i.e. avoidance of contamination is subject to official controls.*

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5.16.6 Pancreas removal Pick up from the head of the pancreas, peel off the membrane and fat with a knife, and then remove the pancreas. The pancreas should not be washed with water to avoid hydrolysis.		
5.17 Pre-cooling Put the sliced pork into the cooling room for pre-cooling. One-stage pre-cooling or two-stage pre-cooling process can be used: a) One-stage pre-cooling. The relative humidity in the cooling room is 75% ~ 95%, the temperature is 0 C ~ 4 ° C, the sliced pork interval is not less than 3 cm, the time is 16 h ~ 24 h, and the temperature of the center of the hind legs is cooled to below 7 ° C. b) Two-stage pre-cooling. Rapid cooling: Put the sliced pork into a rapid cooling room below 15 ° C for cooling, time 1.5 h ~ 2 h, and then enter the 0 C ~ 4 C cooling room for pre-cooling. Pre-cooling: relative humidity in the cooling room is 75% ~ 95%, temperature is 0 C ~ 4 C, the interval between sliced pork is not less than 3 cm, time is 14 h ~ 20 h, and the temperature of the center of hind legs is cooled to below 7 C.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter VII:** Food business operators must ensure that the storage and transport of meat of domestic ungulates takes place in accordance with the following requirements. 1. (a) Unless other specific provisions provide otherwise, post-mortem inspection must be followed immediately by chilling in the slaughterhouse to ensure a temperature throughout the meat of not more than 3 °C for offal and 7 °C for other meat along a chilling curve that ensures a continuous decrease of the temperature. However, meat may be cut and boned during chilling in accordance with Chapter V, point 4. (b) During the chilling operations, there must be adequate ventilation to prevent condensation on the surface of the meat. 2. Meat must attain the temperature specified in point 1 and remain at that temperature during storage.	
5.18 Freeze The temperature in the freezing room is below 28'C, and the product will be transferred to the refrigerator for storage when the center temperature of the product drops below -15C. It is the same as National Standard GB 12694-2016 (see Table 3, 4.3.1).	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter VII:** Meat intended for freezing must be frozen without undue delay, taking into account where necessary a stabilisation period before freezing. **Council Directive 89/108/EEC** lays down requirements for the production of quick-frozen foodstuffs for human consumption.	
6 Packaging, labels, signs and storage **6.1 Packaging, labels, signs** is the same as National Standard GB 12694-2016 (see Table 3, 8.1)		
6.2 Storage 6.2.1 The packaged products that pass the inspection shall be immediately stored in the finished product	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter VII:** with the following requirements.	*Checking and recording is part of the HACCP-based self controls, which is mandatory for slaughterhouses and cutting plants.*

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warehouse, and shall be equipped with temperature and humidity monitoring devices and anti-rodent and anti-insect facilities, and shall be regularly checked and recorded. 6.2.2 Pork slices should be stored in a cold meat storage (room) with a relative humidity of 85% to 90% and a temperature of 0 C to 4 C, and sliced pork should be hung at intervals of not less than 3 cm; frozen sliced pork should Store in a refrigerator with a relative humidity of 90% to 95% and a temperature below -18'C, and the temperature fluctuation of the refrigerator during the day and night should not exceed ± 1 ° C.	1. (a) Unless other specific provisions provide otherwise, post-mortem inspection must be followed immediately by chilling in the slaughterhouse to ensure a temperature throughout the meat of not more than 3 °C for offal and 7 °C for other meat along a chilling curve that ensures a continuous decrease of the temperature. However, meat may be cut and boned during chilling. (b) During the chilling operations, there must be adequate ventilation to prevent condensation on the surface of the meat. 2. Meat must attain the temperature specified in point 1 and remain at that temperature during storage. 4. Meat intended for freezing must be frozen without undue delay, taking into account where necessary a stabilisation period before freezing. 5. Exposed meat must be stored and transported separately from packaged meat, unless stored or transported at different times or in such a way that the packaging material and the manner of storage or transport cannot be a source of contamination for the meat. **Regulation (EC) No 852/2004, Annex II, Chapter IX:** 4. Adequate procedures are to be in place to control pests. Adequate procedures are also to be in place to prevent domestic animals from having access to places where food is prepared, handled or stored (or, where the competent authority so permits in special cases, to prevent such access from resulting in contamination). **Regulation (EC) No 853/2004, Annex III, Section V, Chapter III:** Food business operators producing minced meat, meat preparations or MSM must ensure compliance with the following requirements. (c) Immediately after production, minced meat and meat preparations must be wrapped or packaged and be:	

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	(i) chilled to an internal temperature of not more than 2 °C for minced meat and 4 °C for meat preparations; or (ii) frozen to an internal temperature of not more than -18 °C. These temperature conditions must be maintained during storage and transport.	
7 Other requirements **7.1 After using knives for assassination, blood removal, head removal, engraving, and rifling, they should be sterilized one by one with hot water not less than 82 C, and the knives should be rotated after disinfection.**	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:** Food business operators must ensure that the construction, layout and equipment of slaughterhouses in which domestic ungulates are slaughtered meet the following requirements. 3. They must have facilities for disinfecting tools with hot water supplied at not less than 82 °C, or an alternative system having an equivalent effect.	*The same requirement applies to cutting plants as laid down in **Regulation (EC) No 853/2004, Annex III, Section I, Chapter III, point 5.***
7.2 Meat and by-products that fail to pass inspection and quarantine shall be handled in accordance with the requirements of GB 12694 (see table 3, points 5.8 and 6.4). **7.3 Product traceability and recall response meet the requirements of GB 12694 (see table3, point 9).** **7.4 Records and documents shall meet the requirements of GB 12694 (see table 3, point 12).**	Annex III, Section I, Chapter II: In a slaughterhouse there must be lockable facilities for the refrigerated storage of detained meat and separate lockable facilities for the storage of meat declared unfit for human consumption. Chapter IV: 16. After post-mortem inspection: (a) the tonsils of bovine animals, porcine animals and solipeds must be removed hygienically; (b) parts unfit for human consumption must be removed as soon as possible from the clean sector of the establishment; (c) meat detained or declared unfit for human consumption and inedible by-products must not come into contact with meat declared fit for human consumption;	

d) National standard GB-19479 - Livestock and pig slaughtering operation rules for pigs

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1 Scope		

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This standard stipulates the site selection of pig slaughtering and processing, plant environment, plant and workshop, facilities and equipment, inspection and quarantine, sanitary control of slaughtering and processing, packaging, storage and transportation, product traceability and recall management, personnel requirements, hygiene management, records Document management requirements.		
Headings 2 and 3 deal with normative references and definitions and are not relevant for this comparative evaluation.		
4 Site selection and plant environment **4.2 Site selection** is the same as National Standard GB 14881-2013 (see Table 1, 3.1.1 and 3.1.2) and as National Standard GB 12694-2016 (see Table 3, 3.2.2).		
4.3 Factory environment 4.3.1 Fences or fences should be built around the plant area.	**Regulation (EC) No 852/2004, Annex II, Chapter I** 1. Food premises are to be kept clean and maintained in good repair and condition. 2. The layout, design, construction, siting and size of food premises are to: (a) permit adequate maintenance, cleaning and/or disinfection, avoid or minimise air-borne contamination, and provide adequate working space to allow for the hygienic performance of all operations; (b) be such as to protect against the accumulation of dirt, contact with toxic materials, the shedding of particles into food and the formation of condensation or undesirable mould on surfaces; (c) permit good food hygiene practices, including protection against contamination and, in particular, pest control;	
4.3.2 There should be no animals unrelated to slaughter and processing in the plant.	Regulation (EC)853/2004, Annex III Section II Chapter VI SLAUGHTER HYGIENE Only live animals intended for slaughter may be brought into the slaughter premises	
5 Workshop and workshop **5.1 Design and layout**		*The Chinese national standard makes more detailed provisions, while EU standards rather focus on the*

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5.1.1 is the same as National Standard GB 12694-2016 (see Table 3, 4.1.1 and 4.1.4).		*outcome that must be achieved, i.e. strict avoidance of contamination.* *The suitability of structural and organizational designs of work flows are subject to official controls. While Chinese standards must be formally changed in case of technical progress, EU laws can remain unchanged because the objective remains the same, even if best practices progress.*
5.1.2 is the same as National Standard GB 12694-2016 (see Table 3, 4.1.1)		
5.1.3 and 5.1.4 are the same as National Standard GB 12694-2016 (see Table 3, 4.1.4).		
5.1.5 The emergency slaughter room should be located near the isolation room, with separate dressing rooms and shower rooms. The slope of ground drainage should not be less than 2%.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:** Food business operators must ensure that the construction, layout and equipment of slaughterhouses in which domestic ungulates are slaughtered meet the following requirements. 1. (b) They must also have separate lockable facilities or, climate permitting, pens for sick or suspect animals with separate draining and sited in such a way as to avoid contamination of other animals, unless the competent authority considers that such facilities are unnecessary. 7. They must have lockable facilities reserved for the slaughter of sick and suspect animals. This is not essential if this slaughter takes place in other establishments authorised by the competent authority for this purpose, or at the end of the normal slaughter period.	
5.1.6 The slaughtering and dividing workshop should be installed in the upwind direction of the harmless treatment room, waste collection room, sewage treatment site, boiler room, and room to be slaughtered. Leveling, no water accumulation, the main channel and site should be paved with asphalt or concrete.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:** 2. To avoid contaminating meat, they must: (a) have a sufficient number of rooms, appropriate to the operations being carried out; (b) have a separate room for the emptying and cleaning of stomachs and intestines, unless the competent authority authorises the separation in time of these operations within a specific slaughterhouse on a case-by-case basis;	**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs:** 2.1 b) Layout should strictly separate between contaminated (low care) and clean areas (high care); suitable arrangements of rooms should be made for one-direction production flow and cooled rooms or heating facilities should be insulated. c) Floors should be constructed with waterproof, non-absorbent, washable, non-slippery material without

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		fissures and walls likewise at least up to appropriate height. 2.3 e) The presence of an indoor pool of water should be immediately addressed.
5.1.8 The processing areas in the workshop should meet the requirements of technology, hygiene and inspection and quarantine, and the discharge of people, logistics, airflow and waste should not cause cross-contamination.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:** e) have slaughter lines (where operated) that are designed to allow constant progress of the slaughter process and to avoid cross-contamination between the different parts of the slaughter line. Where more than one slaughter line is operated in the same premises, there must be adequate separation of the lines to prevent cross-contamination.	
5.1.9 is the same as National Standard GB 12694-2016 (see Table 3, 4.1.1 and 4.1.2).		
5.1.10 The inspection and quarantine location should be set up in the slaughter workshop, and enough space should be allowed to flow out.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter IV:** 5. Slaughterhouse operators must follow the instructions of the veterinarian appointed by the competent authority in accordance with Regulation (EU) 2019/627 to ensure that ante-mortem inspection of every animal to be slaughtered is carried out under suitable conditions. 12. Slaughterhouse operators must follow the instructions of the competent authority to ensure that post-mortem inspection of all slaughtered animals is carried out under suitable conditions in accordance with Regulation (EU) 2019/627.	
5.1.11 A temporary storage room for suspected diseased pig products should be set up in the slaughter workshop, and near the track for simultaneous inspection of internal organs and ketone bodies. The temporary storage room for suspected diseased pig products should have a door leading to the outside of the workshop or a closed container for storage.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:** 5. There must be lockable facilities for the refrigerated storage of detained meat and separate lockable facilities for the storage of meat declared unfit for human consumption.	
5.1.12 Red dirty processing room, white dirty processing room, head and hoof processing room should be set separately to prevent cross contamination.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:** 2. To avoid contaminating meat, they must:	

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	(a) have a sufficient number of rooms, appropriate to the operations being carried out; (b) have a separate room for the emptying and cleaning of stomachs and intestines, unless the competent authority authorises the separation in time of these operations within a specific slaughterhouse on a case-by-case basis; (c) ensure separation in space or time of the following operations: (i) stunning and bleeding; (ii) in the case of porcine animals, scalding, depilation, scraping and singeing; (iii) evisceration and further dressing; (iv) handling clean guts and tripe; (v) preparation and cleaning of other offal, particularly the handling of skinned heads if it does not take place at the slaughter line; (vi) packaging offal; and (vii) dispatching meat; **Chapter IV:** 18. When destined for further handling: (a) stomachs must be scalded or cleaned; (b) intestines must be emptied and cleaned; and (c) heads and feet must be skinned or scalded and depilated.	
5.1.13 The cutting workshop shall be provided with a carcass cooling room, a cutting and deboning room, a cooling room, a packaging room, a sharpening room, and an air-conditioning equipment room.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter III:** Food business operators must ensure that cutting plants handling meat of domestic ungulates: 1. are constructed so as to avoid contamination of meat, in particular by: (a) allowing constant progress of the operations; or (b) ensuring separation between the different production batches; 2. have rooms for the separate storage of packaged and exposed meat, unless stored at different times or in such a way that the packaging material and the manner of storage cannot be a source of contamination for the meat; 3. have cutting rooms equipped to ensure compliance with the requirements laid down in Chapter V *(= hygiene during cutting and boning)*;	

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5.1.14 The cooling room and the carcass delivery room are connected to the slaughter room. The delivery should be well ventilated and cooling measures adopted. There should be a delivery platform outside the delivery room, which should be made closed.	**Chapter VII:** Food business operators must ensure that the storage and transport of meat of domestic ungulates takes place in accordance with the following requirements. 1. (a) Unless other specific provisions provide otherwise, post-mortem inspection must be followed immediately by chilling in the slaughterhouse to ensure a temperature throughout the meat of not more than 3 °C for offal and 7 °C for other meat along a chilling curve that ensures a continuous decrease of the temperature. … (b) During the chilling operations, there must be adequate ventilation to prevent condensation on the surface of the meat. 3. Meat must attain the temperature specified in point 1 before transport, and remain at that temperature during transport. 5. Exposed meat must be stored and transported separately from packaged meat, unless stored or transported at different times or in such a way that the packaging material and the manner of storage or transport cannot be a source of contamination for the meat.	
5.1.15 is the same as National Standard GB 12694-2016 (see Table 3, 5.6.1).		
5.1.16 is the same as National Standard GB 14881-2013 (see Table 1, 6.4.1 and 6.4.2).		
5.2 Building internal structure and materials 5.2.1 is the same as National Standard GB 14881-2013 (see Table 1, 4.2.5.1 and 4.2.5.2).		
5.2.2 is the same as National Standard GB 14881-2013 (see Table 1, 4.2.3.1).		
5.2.3 is the same as National Standard GB 14881-2013 (see Table 1, 4.2.2).		
5.2.4 is the same as National Standard GB 14881-2013 (see Table 1, 4.2.4).		

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5.2.5 Doors through which products or semi-finished products pass shall have sufficient width to avoid contact with products.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:** Food business operators must ensure that the construction, layout and equipment of slaughterhouses in which domestic ungulates are slaughtered meet the following requirements. 2. To avoid contaminating meat, they must: (d) have installations that prevent contact between the meat and the floors, walls and fixtures;	
5.2.6 Bloodletting tanks and blood pools should be made of water-impermeable and corrosion-resistant materials, and the surface should be smooth and flat. The slope of the bottom of the blood-slotting trough from 8 m to 10 m should not be less than 5%, and the lowest part should be equipped with blood and water delivery pipes. The blood collection pool should be able to hold the blood collection volume slaughtered for 3 hours at the minimum, the bottom of the pool should have a slope of 2%, and be connected to the blood discharge.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter IV:** 15. If the blood or other offal of several animals is collected in the same container before completion of post-mortem inspection, the entire contents must be declared unfit for human consumption if the carcass of one or more of the animals concerned has been declared unfit for human consumption.	EU legislation does not make specific provisions for the handling and treatment of by-products. All edible parts of an animal, including offal, viscera or blood are falling under the definition of 'meat' in accordance with Regulation 853/2004 and must be treated accordingly. *The Chinese national standard makes more detailed provisions, while EU standards rather focus on the outcome that must be achieved, i.e. strict avoidance of contamination.* *The suitability of structural and organizational designs of work flows are subject to official controls. While Chinese standards must be formally changed in case of technical progress, EU laws can remain unchanged because the objective remains the same, even if best practices progress.*
5.3 Workshop temperature control 5.3.2 The room temperature of the packaging room should not be higher than 12 ° C	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:** Food business operators must ensure that cutting and boning of meat of domestic ungulates takes place in accordance with the following requirements. 2. The work on meat must be organised in such a way as to prevent or minimise contamination. To this end, food business operators must ensure in particular that: b) during cutting, boning, trimming, slicing, dicing, wrapping and packaging, the meat is maintained at not more than 3 °C for offal and 7 °C for other meat, by means of an ambient temperature of not more than 12 °C or an alternative system having an equivalent effect;	
6 Facilities and equipment		

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6.1 Facilities 6.1.1 Water supply facilities is the same as National Standard GB 14881-2013 (see Table 1, 5.1.1).		
6.1.2 Exhaust (steam) requirements is the same as National Standard GB 14881-2013 (see Table 1, 5.1.2).		
6.1.3 Cleaning and disinfection facilities 6.1.3.1 The entrance of live pigs should be set with the same width as the door, 4m long and more than 0.3m deep to facilitate the discharge of disinfectant; the door of the isolation room, emergency slaughter room and harmless treatment room should be equipped with a trolley for easy entry. It is the same width as the door, 2m long and 0.1m deep to facilitate the disinfection tank to discharge disinfectant.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:** 1. (a) Slaughterhouses must have adequate and hygienic lairage facilities or, climate permitting, waiting pens that are easy to clean and disinfect. These facilities must be equipped for watering the animals and, if necessary, feeding them. The drainage of the wastewater must not compromise food safety. (c) The size of the lairage facilities must ensure that the welfare of the animals is respected. Their layout must facilitate ante-mortem inspections, including the identification of the animals or groups of animals.	*The Chinese national standard makes more detailed provisions about the design of premises for slaughter and processing, while EU standards rather focus on the outcome that must be achieved, i.e. strict avoidance of contamination.* *The suitability of structural and organizational designs of work flows are subject to official controls. While Chinese standards must be formally changed in case of technical progress, EU laws can remain unchanged because the objective remains the same, even if best practices progress.*
6.1.3.2 is the same as National Standard GB 14881-2013 (see Table 1, 5.1.5.3 and 5.1.5.4).		
6.1.3.3 is the same as National Standard GB 14881-2013 (see Table 1, 5.2.1.2.1 and 5.2.1.2.2).		
6.1.3.4 is the same as National Standard GB 12694-2016 (see Table 3, 5.1.2).		
6.1.3.5 is the same as National Standard GB 12694-2016 (see Table 3, 5.3.2) and the same as National Standard GB 14881-2013 (see Table 1, 5.2 and 6.1.4)		
6.1.4 Temporary storage facilities for waste 6.1.4.1 is the same as National Standard GB 12694-2016 (see Table 3, 5.8.1).		
6.1.4.2 6.1.4.2 The waste storage facilities should be leak-free.	**Regulation (EC) No 852/2004, Annex II, Chapter VI:** 4. All waste is to be eliminated in a hygienic and environmentally friendly way in accordance with Community legislation applicable to that effect, and is	

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	not to constitute a direct or indirect source of contamination.	
6.1.4.3 Hazardous waste should be stored separately, and signed an agreement with a qualified institution for professional treatment.	**Regulation (EC) No 852/2004, Annex II, Chapter IX:** 8. Hazardous and/or inedible substances, including animal feed, are to be adequately labelled and stored in separate and secure containers.	
6.1.5 Personal hygiene facilities 6.1.5.1 The shower room should be provided with skylights or ventilation holes and heating facilities, and communicate with the dressing room. The number of showers shall be no less than one for every 20 people. 6.1.5.2 A locker and hanger shall be provided. The locker shall be provided separately, and the locker shall be more than 20 cm above the ground.	**Regulation (EC) No 852/2004, Annex II, Chapter I** 6. Sanitary conveniences are to have adequate natural or mechanical ventilation. 9. Where necessary, adequate changing facilities for personnel are to be provided.	**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs:** 2.1 Infrastructure g) The specific clothes changing room(s) should be clean and ordered, not used as a refectory or a smoking room, and should facilitate a separation between normal clothing, clean work clothing and used work clothing.
6.1.5.3 The locker material should be corrosion resistant, easy to clean and disinfect. The top of the locker should have a certain slope for easy cleaning.	**Regulation (EC) No 852/2004, Annex II, Chapter II:** 2. Adequate facilities are to be provided, where necessary, for the cleaning, disinfecting and storage of working utensils and equipment. These facilities are to be constructed of corrosion-resistant materials, be easy to clean and have an adequate supply of hot and cold water.	
6.1.5.4 is the same as National Standard GB 14881-2013 (see Table 1, 5.1.5.1).		
6.1.5.5 is the same as National Standard GB 14881-2013 (see Table 1, 5.1.5.3). The sewage pipes should be separated from the drainage pipes in the workshop.	**Regulation (EC) No 852/2004, Annex II, Chapter I** 3. An adequate number of flush lavatories are to be available and connected to an effective drainage system. Lavatories are not to open directly into rooms in which food is handled. 8. Drainage facilities are to be adequate for the purpose intended. They are to be designed and constructed to avoid the risk of contamination. Where drainage channels are fully or partially open, they are to be so designed as to ensure that waste does not flow from a contaminated area towards or into a clean area, in particular an area where foods likely to present a high risk to the final consumer are handled.	

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6.2 Equipment and tools 6.2.1 is the same as National Standard GB 12694-2016 (see Table 3, 5.4.2) and as National Standard GB 14881-2013 (see Table 1, 5.2.1.2.1).		
6.2.2 is the same as National Standard GB 12694-2016 (see Table 3, 5.4.3 and 5.4.6).		
6.2.3 The tools and tools used in the workshop should be clearly marked or distinguished by different colors, and tools and tools of different cleaning areas and degrees of cleanliness should not be mixed.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:** Food business operators must ensure that the construction, layout and equipment of slaughterhouses in which domestic ungulates are slaughtered meet the following requirements.3. They must have facilities for disinfecting tools with hot water supplied at not less than 82 °C, or an alternative system having an equivalent effect.	**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs:** 2.1 Infrastructure (building, equipment) k) Attention should be paid to the different possibilities whereby the use of equipment can result in (cross-) contamination of food: iii. Prevention of contamination by raw materials: separate equipment (or cleaning and disinfection between use) for raw products and cooked products (chopping boards, knives, dishes, …). 2.2 Cleaning and disinfection c) Materials and approach for cleaning equipment should be different between low and highly contaminated areas.
7 Inspection and Quarantine **7.1 Quarantine and 7.2 Quality inspection** is the same as National Standard GB 17236-2019 (see Table 3, 5.12) and as National Standard GB 12694-2016 (see Table 3, 6.1.1).		
7.3 Laboratory inspection 7.3.1 Drug residue testing should be conducted on the purchased pigs in accordance with the requirements of the competent authority.	**Regulation (EU) 2019/627, Article 14:** 1. Additional examinations, such as palpation and incision of parts of the carcass and offal, and laboratory tests, shall be carried out if needed to: b) detect the presence of: (ii) chemical residues or contaminants as referred to in Directive 96/23/EC and Decision 97/747/EC, especially: — chemical residues in excess of the levels laid down in Regulations (EU) No 37/2010 and (EC) No 396/2005; — contaminants exceeding the maximum levels laid down in Regulations (EC) No 1881/2006 and (EC) No 124/2009; or	

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	— residues of substances that are prohibited or unauthorised in accordance with Regulation (EU) No 37/2010 or Directive 96/22/EC; (iii) non-compliance with the microbiological criteria referred to in Article 3(1)(b) of Regulation (EC) No 2073/2005 or the possible presence of other microbiological hazards that would make the fresh meat unfit for human consumption;	
7.3.2 The indicator bacteria shall be verified for the degree of contamination of the food contact surface and the effect of cleaning and disinfection.	**Regulation (EC) No 2073/2005, Article 4:** 1. Food business operators shall perform testing as appropriate against the microbiological criteria set out in Annex I, when they are validating or verifying the correct functioning of their procedures based on HACCP principles and good hygiene practice.	**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of Pre-requisite programmes:** 2.2 Cleaning and disinfection … a) What, when and how should be considered. b) Typical steps should be removal of visible dirt → cleaning → rinsing → disinfection → rinsing. c) Materials and approach for cleaning equipment should be different between low and highly contaminated areas. d) Hot water should be used as much as possible for cleaning. e) Technical information should be available regarding detergents, disinfection agents (e.g. active component, contact time, concentration). f) Visual checks on cleaning and sampling for analysis (e.g. hygienogram) should be used to control disinfection activities.
7.3.3 The product should be type tested annually.		
7.3.4 It is advisable to carry out verification inspection on packaging materials.	**Regulation (EC) No 852/2004, Article 5:** 1. Food business operators shall put in place, implement and maintain a permanent procedure or procedures based on the HACCP principles. 2. The HACCP principles referred to in paragraph 1 consist of the following: (f) establishing procedures, which shall be carried out regularly, to verify that the measures outlined in subparagraphs (a) to (e) are working effectively;	*In addition,* ***Regulation (EC) No 852/2004, Annex II, Chapter X*** *shall apply:* *1. Material used for wrapping and packaging are not to be a source of contamination.*

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7.3.5 is the same as National Standard GB 14881-2013 (see Table 1, 5.1.1.4).		
7.4 Harmless treatment Is the same as National Standard GB 12694-2016 (see Table 3, 6.4.1).		
8 Hygienic control of slaughter and processing **8.1 Supplier management** Is the same as National Standard GB 14881-2013 (see Table 1, 7.1, 7.3.1 and 7.4.1) and as National Standard GB 12694-2016 (see Table 3, 9.1).		**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs:** 2.10 Raw materials (supplier selection, specifications) a) Consideration should be given not only to the supply of raw materials themselves but also to the supply of additives, processing aids, packaging material and food contact material. b) A strict supply policy, containing agreement on specifications (e.g. microbiological) and hygiene assurance and/or requesting a certified quality management system can be taken into account in the extent of details on the PRPs and HACCP plan of the establishment itself. c) Apart from agreements with and possible auditing of the supplier, a number of issues might give a good indication on the reliability of the supplier such as homogeneity of delivered goods, compliance with agreed delivery period, accuracy of information added, sufficient shelf life or freshness, use of clean and suitably equipped transportation, hygiene awareness of the driver and other food handlers transporting the food, correct temperature during transport, long term satisfaction, etc. Most of these issues should be part of a reception control. It may be necessary to be aware of previous cargoes of a transport vehicle in order to implement adequate cleaning procedures to reduce the likelihood of cross contamination.

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8.2 Acceptance before slaughter 8.2.1 Before entering the plant, live pigs should check whether the live pigs are wearing livestock and poultry logos. Live pigs without livestock and poultry logos should not enter the plant. 8.2.2 Check the inspection items, check whether they carry the "Quality Certificate of Animal Quarantine", check the number of heads, the validity period, the signatures and seals of the quarantine personnel, etc., to understand whether there is epidemic situation in the place of origin and the deaths on the way. Only after passing the inspection can admission.	**Regulation (EC) No 853/2004, Annex II, Section II:** 2. The procedures must guarantee that each animal or, where appropriate, each lot of animals accepted onto the slaughterhouse premises: (a) is properly identified; (b) is accompanied by the relevant information from the holding of provenance referred to in Section III *(= Food chain information)*; (c) does not come from a holding or an area subject to a movement prohibition or other restriction for reasons of animal or public health, except when the competent authority so permits; (d) is clean; (e) is healthy, as far as the food business operator can judge; and (f) is in a satisfactory state as regards welfare on arrival at the slaughterhouse. 3. In the event of failure to comply with any of the requirements listed under point 2, the food business operator must notify the official veterinarian and take appropriate measures.	The quality certificate on animal quarantine required under GB 19479 is an instrument of animal health control and has no animal welfare or food safety-related objective.
8.2.3 It should be ensured that the disinfectant in the wheel disinfection tank thoroughly disinfects the wheels.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:** 6. There must be a separate place with appropriate facilities for the cleaning, washing and disinfection of means of transport for livestock.	
8.2.4 is the same as National Standard GB 17236-2019 (see Table 3, 4.1 and 4.2).		
8.2.5 The slaughterhouse should be equipped with special patrol personnel to conduct patrol inspection during the static rearing process. After observation of static, dynamic and drinking water status, if a suspected diseased pig is found, it should be immediately transferred to the isolation circle for isolation observation and the official veterinarian should be notified Check processing.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:** Food business operators must ensure that the construction, layout and equipment of slaughterhouses in which domestic ungulates are slaughtered meet the following requirements. 1. (a) Slaughterhouses must have adequate and hygienic lairage facilities or, climate permitting, waiting pens that	

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	are easy to clean and disinfect. These facilities must be equipped for watering the animals and, if necessary, feeding them. The drainage of the wastewater must not compromise food safety. (b) They must also have separate lockable facilities or, climate permitting, pens for sick or suspect animals with separate draining and sited in such a way as to avoid contamination of other animals, unless the competent authority considers that such facilities are unnecessary. (c) The size of the lairage facilities must ensure that the welfare of the animals is respected. Their layout must facilitate ante-mortem inspections, including the identification of the animals or groups of animals. 7. They must have lockable facilities reserved for the slaughter of sick and suspect animals.	
8.2.6 Cleaning and disinfection should be carried out in time after the use of the pen.	**Regulation (EC) No 852/2004, Annex II, Chapter I** 2. The layout, design, construction, siting and size of food premises are to: a) permit adequate maintenance, cleaning and/or disinfection, avoid or minimise air-borne contamination, and provide adequate working space to allow for the hygienic performance of all operations; (c) permit good food hygiene practices	
8.3 Process control 8.3.1 is the same as National Standard GB 17236-2019 (see Table 3, 4.5).		
8.3.2 is the same as National Standard GB 17236-2019 (see Table 3, 4.3).		
8.3.3 is the same as National Standard GB 17236-2019 (see Table 3, 5.1).		
8.3.4 One pig and one sterilization knife for slaughtering to prevent cross contamination.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:** 3. They must have facilities for disinfecting tools with hot water supplied at not less than 82 °C, or an alternative system having an equivalent effect. **Chapter IV:**	

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	Food business operators operating slaughterhouses in which domestic ungulates are slaughtered must ensure compliance with the following requirements. 7. Stunning, bleeding, skinning, evisceration and other dressing must be carried out without undue delay and in a manner that avoids contaminating the meat.	
8.3.5 The bayonet should not pierce the heart when bleeding, and should not cut the trachea and esophagus to prevent blood from flowing into the lungs and chest cavity.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter IV:** 7. Stunning, bleeding, skinning, evisceration and other dressing must be carried out without undue delay and in a manner that avoids contaminating the meat. In particular: (a) the trachea and oesophagus must remain intact during bleeding, except in the case of slaughter according to a religious custom;	
8.3.6 Before scalding, pre-wash pig carcasses with warm water at around 40 ° C to remove dirt from the skin of the pig carcasses.	According to Regulation (EC) No 853/2004, Annex II Section II Annex III, Section I Chapter IV, animals must be clean. **Regulation (EC) No 853/2004, Annex III, Section I, Chapter IV:** 10. The carcasses must not contain visible faecal contamination. Any visible contamination must be removed without delay by trimming or alternative means having an equivalent effect.	*It should be noted that there is a requirement that animals shall be delivered at the slaughterhouse "clean" as stated in* ***Regulation (EC) No 853/2004,*** *in* ***Annex III, Section I, Chapter IV, point 4.***
8.3.7 The chest picking process should avoid cutting the gallbladder and heart. If bile contamination occurs, it should be rinsed with clean water immediately and then trimmed. 8.3.8 Avoid cutting the bladder, stomach, intestines and other white internal organs during laparotomy. If the contents are contaminated, they should be rinsed with clean water immediately and then trimmed.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter IV:** Food business operators operating slaughterhouses in which domestic ungulates are slaughtered must ensure compliance with the following requirements. 7. Stunning, bleeding, skinning, evisceration and other dressing must be carried out without undue delay and in a manner that avoids contaminating the meat. In particular: c) measures must be taken to prevent the spillage of digestive tract content during and after evisceration and to ensure that evisceration is completed as soon as possible after stunning;	Carcass

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8.3.9 The flushing process should be gentle from top to bottom to reduce secondary pollution. Check the spray head before the shift every day to ensure the flushing effect.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter IV:** 9. When not skinned, porcine animals must have their bristles removed immediately. The risk of contamination of the meat with scalding water must be minimised. Only approved additives may be used for this operation. Porcine animals must be thoroughly rinsed afterwards with potable water.	
8.3.10 Opening the anus should avoid puncturing the large intestine.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter IV:** Stunning, bleeding, skinning, evisceration and other dressing must be carried out without undue delay and in a manner that avoids contaminating the meat. In particular: (a) the trachea and oesophagus must remain intact during bleeding, except in the case of slaughter according to a religious custom; (b) during the removal of hides and fleece: (i) contact between the outside of the skin and the carcass must be prevented; and (ii) operators and equipment coming into contact with the outer surface of hides and fleece must not touch the meat; (c) measures must be taken to prevent the spillage of digestive tract content during and after evisceration and to ensure that evisceration is completed as soon as possible after stunning;	
8.3.11 During the removal of thyroid and adrenal glands, there should be no missing or incomplete removal.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter IV:** 13. Until post-mortem inspection is completed, parts of a slaughtered animal subject to such inspection must: (a) remain identifiable as belonging to a given carcass; (b) come into contact with no other carcasses, offal or viscera, including those that have already undergone postmortem inspection.	

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8.3.12 Red internal organs and white internal organs should be processed in special rooms to prevent cross-contamination.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter IV:** 16. After post-mortem inspection: (d) viscera or parts of viscera remaining in the carcass, except for the kidneys, must be removed entirely and as soon as possible, unless the competent authority authorises otherwise.	
8.3.13 Visible diseased lymph nodes should be removed.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter IV:** 16. After post-mortem inspection: b) parts unfit for human consumption must be removed as soon as possible from the clean sector of the establishment;	Visibly diseased tissues are unfit for human consumption and must be presented for official control before removal.
8.3.14 and 8.3.15 are the same as National Standard GB 12694-2016 (see Table 3, 6.3.2).		
8.3.16 Foreign material control procedures should be formulated to cover glass products, lamps, equipment, and other items that are easily broken or loose. 8.3.17 Strengthen the monitoring of links that may cause bones to mix into the product, such as splitting, deboning, and trimming.		*Broken glass and bone products are typical physical hazards that shall be controlled by the pre-requisite programmes that are part of HACCP-based self controls. These are mandatory requirements for slaughterhouses and cutting plants (see* **Guidance document Commission Notice 2016/C 278/01***,* **Annex II** *and the* **Guidance documents on Regulation 852/2004 and Regulation 853/2004).**
8.3.18 When pre-cooling the carcass, the distance between the carcass should not be less than 3 cm and the distance to the wall should not be less than 10 cm. is the same as National Standard GB 17236-2019 (see Table 3, 5.17).	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:** (d) have installations that prevent contact between the meat and the floors, walls and fixtures; **Chapter IV:** 13. Until post-mortem inspection is completed, parts of a slaughtered animal subject to such inspection must: (b) come into contact with no other carcass, offal or viscera, including those that have already undergone postmortem inspection.	
8.3.19 The pipeline facilities shall be protected to avoid pollution caused by condensed water.	**Regulation (EC) No 852/2004, Annex II, Chapter VII:** 1. (a) There is to be an adequate supply of potable water, which is to be used whenever necessary to ensure that foodstuffs are not contaminated;	**Guidance document Commission Notice 2016/C 278/01***,* **Annex I, 2. Examples of PRPs:** 2.8 Water and air control c) Condensation should be avoided.

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8.3.20 is the same as National Standard GB 14881-2013 (see Table 1, 6.2.2 and 9.4).		
8.3.21 is the same as National Standard GB 14881-2013 (see Table 1, 5.1.9 and 14.1).		
9 Packaging, storage and transportation **9.1 Packaging** 9.1.1 is the same as National Standard GB 14881-2013 (see Table 1, 8.5.2).		
9.1.2 is the same as National Standard GB 14881-2013 (see Table 1, 7.4.3 and 14.1.1.2).		
9.1.3 The inner packaging materials should be disinfected regularly. It is the same as National Standard GB 14881-2013 (see Table 1, 8.5.1 and 8.5.2	**Regulation (EC) No 852/2004, Annex II, Chapter V:** 1. All articles, fittings and equipment with which food comes into contact are to: (a) be effectively cleaned and, where necessary, disinfected. Cleaning and disinfection are to take place at a frequency sufficient to avoid any risk of contamination;	
9.2 Storage It is the same as National Standard GB 14881-2013 (see Table 1, 10).		
9.3 Transportation It is the same as National Standard GB 14881-2013 (see Table 1, 10).		
10 Product Traceability and Recall Management **10.1 It is the same as National Standard GB 14881-2013 (see Table 1, 11).**		
10.2 It is the same as National Standard GB 14881-2013 (see Table 1, 14).		
10.3 It should be no less than one recall drill every year.	**Regulation (EC) No 178/2002, Article 19:** 1. If a food business operator considers or has reason to believe that a food which it has imported, produced, processed, manufactured or distributed is not in compliance with the food safety requirements, it shall immediately initiate procedures to withdraw the food in question from the market where the food has left the immediate control of that initial food business operator and inform the competent authorities thereof. Where	

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	the product may have reached the consumer, the operator shall effectively and accurately inform the consumers of the reason for its withdrawal, and if necessary, recall from consumers products already supplied to them when other measures are not sufficient to achieve a high level of health protection.	
11 and 12 see National Standard GB 12694 (Table 3, 10 and 11).		
13 Management of records and documents see National Standard GB 12694 (Table 3, 12).		

e) National standard GB-20575 - Specification for good manufacture practice for fresh and frozen meat processing

CHINESE LEGISLATION: NATIONAL STANDARD GB 20575	EU LEGISLATION REGULATION (EC) NO 853/2004	IMPLEMENTING RULES AND COMPARATIVE EVALUATION
1 Scope This standard stipulates the location of fresh and frozen meat production and applies to the production of fresh and frozen pigs, cattle, sheep, poultry and other products for human consumption.	**Scope** 1. This Regulation lays down specific rules on the hygiene of food of animal origin for food business operators. These rules supplement those laid down by Regulation (EC) No 852/2004. They shall apply to unprocessed and processed products of animal origin.	
4 Site selection and plant environment see National Standard GB 12694 (Table 3, 3).		
5 Workshop **5.1 Design and layout** is the same as National Standard GB 12694-2016 (Table 3, 4).		
5.1.7 The animal emergency slaughter room should be connected to the isolation ring, should be locked and only used for the slaughter and processing of emergency animal slaughter.	Regulation (EC) No 853/2004, Annex III, Section I, Chapter I: Food business operators transporting live animals to slaughterhouses must ensure compliance with the following requirements. 2. Animals showing symptoms of disease or originating in herds known to be contaminated with agents of public health importance may only be transported to the slaughterhouse when the competent authority so permits. Chapter VI: Food business operators must ensure that meat from domestic ungulates that have undergone emergency slaughter outside the slaughterhouse may be used for human consumption only if it complies with all the following requirements. 1. An otherwise healthy animal must have suffered an accident that prevented its transport to the slaughterhouse for welfare reasons. 9. Food business operators may not place meat from animals having undergone emergency slaughter on the market unless it bears a special health mark which cannot be confused either with the health mark	

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	provided for in Regulation (EC) No 854/2004 or with the identification mark provided for in Annex II, Section I to this Regulation. Such meat may be placed on the market only in the Member State where slaughter takes place and in accordance with national law.	
5.1.8 is the same as National Standard GB 12694-2016 (Table 3, 4.1.6).		
5.1.9 The deboning segmentation and packaging area should be separated, and the temperature control should be able to be carried out.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter V:** Food business operators must ensure that cutting and boning of meat of domestic ungulates takes place in accordance with the following requirements. 1. Carcasses of domestic ungulates may be cut into half-carcasses or quarters, and half carcasses into no more than three wholesale cuts, in slaughterhouses. Further cutting and boning must be carried out in a cutting plant. 2. The work on meat must be organised in such a way as to prevent or minimise contamination. To this end, food business operators must ensure in particular that: b) during cutting, boning, trimming, slicing, dicing, wrapping and packaging, the meat is maintained at not more than 3 °C for offal and 7 °C for other meat, by means of an ambient temperature of not more than 12 °C or an alternative system having an equivalent effect;	*In addition,* ***Regulation (EC) No 853/2004, Annex III, Section I, Chapter III:*** Food business operators must ensure that cutting plants handling meat of domestic ungulates: 2. have rooms for the separate storage of packaged and exposed meat, unless stored at different times or in such a way that the packaging material and the manner of storage cannot be a source of contamination for the meat;
5.1.10 is the same as National Standard GB 12694-2016 (Table 3, 6.1,1) and the same as National Standard GB 19479-2019 (Table 3, 5.10).		
5.1.11 is the same as National Standard GB 12694-2016 (Table 3, 4.1.3 and 7.3).		
5.1.12 is the same as National Standard GB 19479-2019 (Table 3, 5.2.5).		
5.1.13 is the same as National Standard GB 14881-2013 (Table 1, 6.4).		
6 Facilities and equipment 6.1.2 Facilities for thorough cleaning and disinfection of vehicles, as well as facilities for the collection and	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:**	

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harmless treatment of animal manure should be provided.	6. There must be a separate place with appropriate facilities for the cleaning, washing and disinfection of means of transport for livestock. 8. If manure or digestive tract content is stored in the slaughterhouse, there must be a special area or place for that purpose.	
6.1.3 and 6.1.4 are the same as National Standard GB 14881-2013 (Table 1, 5.2.1.2).		
6.1.5 The meat shall not be in contact with the ground, walls or the surfaces of facilities other than those specified in 6.1.3.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:** 2. To avoid contaminating meat, they must: (d) have installations that prevent contact between the meat and the floors, walls and fixtures;	
6.1.6 The track for transporting meat should not cause contamination of the meat.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:** 2. To avoid contaminating meat, they must: (e) have slaughter lines (where operated) that are designed to allow constant progress of the slaughter process and to avoid cross-contamination between the different parts of the slaughter line.	
6.1.7 If necessary, special facilities and equipment shall be provided for the processing and storage of edible fats.	**Regulation (EC) No 853/2004, Annex III, Section XII, Chapter I:** Food business operators must ensure that establishments collecting or processing raw materials for the production of rendered animal fats and greaves comply with the following requirements. 1. Centres for the collection of raw materials and further transport to processing establishments must be equipped with facilities for the storage of raw materials at a temperature of not more than 7 °C. 2. Each processing establishment must have: (a) refrigeration facilities; (b) a dispatch room, unless the establishment dispatches rendered animal fat only in tankers; and (c) if appropriate, suitable equipment for the preparation of products consisting of rendered animal fats mixed with other foodstuffs and/or seasonings	

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6.1.8 is the same as National Standard GB 19479-2019 (table 3, 5.1.15) and the same as National **Standard GB 12694-2016 (table 3, 5.6.1).**		
6.2 Water supply facilities 6.2.1 and 6.2.2 are the same as National Standard GB 14881-2013 (Table 1, 5.1.1).		
6.2.3 is the same as National Standard GB 12694-2016 (table 3, 5.1.2).		
6.3 Drainage facilities and waste treatment facilities is the same as National Standard GB 14881-2013 (table 1, 5.1.2), the same as National Standard GB 12694-2016 (table 3, 5.2.1) and the same as National Standard GB 19479-2019 (table 3, 6.1.4.2 and 6.1.5.5).		
6.3.5 Waste treatment should avoid pollution to domestic drinking water.	**Regulation (EC) No 852/2004, Annex II, Chapter VI:** 4. All waste is to be eliminated in a hygienic and environmentally friendly way in accordance with Community legislation applicable to that effect, and is not to constitute a direct or indirect source of contamination.	
6.4 Cleaning and disinfection facilities 6.4.1 is the same as National Standard GB 12694-2016 (table 3, 5.3.1.1).		
6.4.2 is the same as National Standard GB 19479-2019 (table 3, 6.1.3.3).		
6.5 Personal hygiene facilities 6.5.1 is the same as National Standard GB 12694-2016 (table 3, 5.3.1.2).		
6.5.2 is the same as National Standard GB 14881-2013 (table 1, 5.1.5.3) and the same as National Standard GB 19479-2019 (table 3, 6.1.5.5).		
6.5.3 is the same as National Standard GB 14881-2013 (table 1, 5.1.7.1).		

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6.5.4 is the same as National Standard GB 14881-2013 (table 1, 5.1.5.3).		
6.6 Storage and temperature control facilities 6.6.1 is the same as National Standard GB 12694-2016 (table 3, 5.7.3).		
6.6.2 The walls and roof of all carcasses, split carcasses, split meat and edible by-product cooling rooms shall be insulated. If the hanging cooling pipe is installed, it should be equipped with an insulated drip tray; if the floor-mounted cooler is installed, if it is not close to the ground drainage pipe, it should be installed in the edge area with independent drainage facilities.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter VII:** Food business operators must ensure that the storage and transport of meat of domestic ungulates takes place in accordance with the following requirements. 1. (a) Unless other specific provisions provide otherwise, post-mortem inspection must be followed immediately by chilling in the slaughterhouse to ensure a temperature throughout the meat of not more than 3 °C for offal and 7 °C for other meat along a chilling curve that ensures a continuous decrease of the temperature. (b) During the chilling operations, there must be adequate ventilation to prevent condensation on the surface of the meat. 2. Meat must attain the temperature specified in point 1 and remain at that temperature during storage.	
6.7 Equipment 6.7.1 is the same as National Standard GB 12694-2016 (table 3, 5.4.2).		
6.7.2 and 6.7.3 are the same as National Standard GB 19479-2019 (table 3, 6.2.2).		
6.7.4 is the same as National Standard GB 19479-2019 (table 3, 6.2.3).		
6.7.5 is the same as National Standard GB 12694-2016 (table 3, 5.7.3).		
6.8 Transportation 6.8.1 is the same as National Standard GB 12694-2016 (table 3, 8.2.8).		
6.8.2 is the same as National Standard GB 12694-2016 (table 3, 8.2.5 and 8.2.7).		

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7 Requirements for production materials 7.1.2 The farm should control the use of chemical substances (such as veterinary drugs, pesticides and other pesticides) in accordance with relevant national regulations.	**Regulation (EC) No 852/2004, Annex I:** 4. Food business operators rearing, harvesting or hunting animals or producing primary products of animal origin are to take adequate measures, as appropriate: (j) to use feed additives and veterinary medicinal products correctly, as required by the relevant legislation. 8. Food business operators rearing animals or producing primary products of animal origin are, in particular, to keep records on: (b) veterinary medicinal products or other treatments administered to the animals, dates of administration and withdrawal periods; 9. Food business operators producing or harvesting plant products are, in particular, to keep records on: (a) any use of plant protection products and biocides;	
7.1.3 Breeding of livestock and poultry for slaughtering shall be conducted in accordance with good feeding management regulations. The feed should meet the relevant national requirements.	See above Regulation 852/2004, Annex I. Potential sources of contamination (medicated feed, pharmaceuticals, diseases) must be recorded by livestock farmers. Provisions under the General Food Law in Regulation 173/2002 apply to food and feed producing establishments alike.	*This is not a food hygiene requirement, but an animal management (feeding) requirement*, *which is laid down in other legislation.*
7.1.4 The feeding or waste disposal methods in the intensive aquaculture production system shall not cause danger to public health and livestock and poultry health, and shall not cause pollution to the surrounding environment.	**Regulation (EC) No 852/2004, Annex II, Chapter VI:** 4. All waste is to be eliminated in a hygienic and environmentally friendly way in accordance with Community legislation applicable to that effect, and is not to constitute a direct or indirect source of contamination.	
7.2 Transport requirements for slaughtered livestock and poultry 7.2.1 Transport vehicles should be easy to load and unload livestock and poultry, and the risk of injury to livestock and poultry is minimal.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter I:** Food business operators transporting live animals to slaughterhouses must ensure compliance with the following requirements. 1. During collection and transport, animals must be handled carefully without causing unnecessary distress.	

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	Regulation (EC) No 1/2005, Article 3: No person shall transport animals or cause animals to be transported in a way likely to cause injury or undue suffering to them.	
7.2.2 The different types of prepared poultry or the same kind of livestock and poultry that may harm each other should be separated.	**Regulation (EC) No 1/2005, Annex I, Chapter III:** 1.12. Animals shall be handled and transported separately in the following cases: (a) animals of different species; (b) animals of significantly different sizes or ages; (c) adult breeding boars or stallions; (d) sexually mature males from females; (e) animals with horns from animals without horns; (f) animals hostile to each other; (g) tied animals from untied animals.	
7.2.3 Transportation vehicles should ensure proper ventilation, which is convenient for cleaning and disinfection. 7.2.4 When two or more layers of transport vehicles are used, each layer shall have a leakage barrier. 7.2.5 The pollution and cross-contamination caused by excreta should be minimized during transportation.	**Regulation (EC) No 1/2005, Annex I, Chapter II:** 1.1. Means of transport, containers and their fittings shall be designed, constructed, maintained and operated so as to: c) be cleaned and disinfected; (e) ensure that air quality and quantity appropriate to the species transported can be maintained; (h) present a flooring surface that minimises the leakage of urine or faeces; 1.2. Sufficient space shall be provided inside the animals' compartment and at each of its levels to ensure that there is adequate ventilation above the animals when they are in a naturally standing position, without on any account hindering their natural movement.	
7.2.6 During transportation, it is necessary to ensure that no new hazards are introduced to avoid undue stress on livestock and poultry.	**Regulation (EC) No 1/2005, Annex I, Chapter III:** 2.7. During transport, animals shall be offered water, feed and the opportunity to rest as appropriate to their species and age, at suitable intervals and in particular as referred to in Chapter V. If not otherwise specified, Mammals and Birds shall be fed at least every 24 hours and watered at least every 12 hours. The water and feed shall be of good quality and presented to the	

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	animals in a way which minimises contamination. Due regard shall be paid to the need of animals to become accustomed to the mode of feeding and watering.	
7.3 Requirements for slaughtering livestock 7.3.1 The identification of livestock and poultry to be slaughtered shall be complete.	**Regulation (EC) No 853/2004, Annex II, Section I, Chapter II:** 2. The procedures must guarantee that each animal or, where appropriate, each lot of animals accepted onto the slaughterhouse premises: (a) is properly identified;	
7.3.2 When slaughtered livestock and poultry are judged to require special handling during transportation, pre-slaughter, during-slaughter and post-slaughter, the correct transmission of animal rot or carcasses and related information should be ensured.	**Regulation (EC) No 853/2004, Annex II, Section III:** Food business operators operating slaughterhouses must, as appropriate, request, receive, check and act upon food chain information as set out in this Section in respect of all animals, other than wild game, sent or intended to be sent to the slaughterhouse. 1. Slaughterhouse operators must not accept animals onto the slaughterhouse premises unless they have requested and been provided with relevant food safety information contained in the records kept at the holding of provenance in accordance with Regulation (EC) No 852/2004.	
7.3.3 is the same as National Standard GB 12694-2016 (table 3, 6.1.1 and 12.1).		
7.3.4 Requirements before livestock slaughter 7.3.4.1 is the same as National Standard GB 12694-2016 (table 3, 6.2.4).		
7.3.4.2 Livestock and poultry suffering from any diseases or defects that affect or may affect the safety of fresh and frozen meat should be isolated from other livestock and poultry.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:** Food business operators must ensure that the construction, layout and equipment of slaughterhouses in which domestic ungulates are slaughtered meet the following requirements. (b) They must also have separate lockable facilities or, climate permitting, pens for sick or suspect animals with separate draining and sited in such a way as to avoid contamination of other animals, unless the competent authority considers that such facilities are unnecessary. *Animals suffering from a disease must not be transported to a slaughterhouse, unless with special*	

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	permission (**Regulation (EC) No 853/2004, Annex III, Section I, Chapter I and Annex III, Section II, Chapter I, point 2).** 2. Animals showing symptoms of disease or originating in herds known to be contaminated with agents of public health importance may only be transported to the slaughterhouse when the competent authority so permits.	
7.3.4.3 Different species should be slaughtered on different slaughter lines.	**Regulation (EC) No 853/2004, Annex III, Section II, Chapter IV:** Where establishments are approved for the slaughter of different animal species or for the handling of farmed ratites and small wild game, precautions must be taken to prevent cross contamination by separation either in time or in space of the operations carried out on the different species. Separate facilities for the reception and storage of carcasses of farmed ratites slaughtered at the farm and for small wild game must be available.	According to GB 1294 and GB 20575, different species can be slaughthered in the same establishment on different lines and/or different times.
7.3.4.4 The poultry to be slaughtered should be sprayed and rinsed before being slaughtered.	**Regulation (EC) No 853/2004, Annex II, Section II:** 2. The procedures must guarantee that each animal or, where appropriate, each lot of animals accepted onto the slaughterhouse premises: (d) is clean; 3. In the event of failure to comply with any of the requirements listed under point 2, the food business operator must notify the official veterinarian and take appropriate measures.	
8 Inspection and Quarantine 8.1.1 is the same as National Standard GB 12694-2016 (table 3, 4.1.4 and 6.2.2).		
8.1.2 and 8.1.3 are the same as National Standard GB 14881-2013 (table 1, 6.1.1) and the same as National Standard GB 17237-2008 (table 3, 5.5).		
8.2.1 Livestock and poultry that need to be isolated and slaughtered after medical quarantine should be slaughtered in accordance with the corresponding operating specifications.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:** 7. They must have lockable facilities reserved for the slaughter of sick and suspect animals. This is not essential if this slaughter takes place in other	

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	establishments authorised by the competent authority for this purpose, or at the end of the normal slaughter period.	
8.2.2 The meat produced by isolation slaughtering and processing shall be judged whether it is edible, and those with doubts about its edibility shall be stored separately to prevent contaminate other edible meat to prevent confusion with other meat products.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:** 5. There must be lockable facilities for the refrigerated storage of detained meat and separate lockable facilities for the storage of meat declared unfit for human consumption.	
8.3 Operational requirements for inedible meat 8.3.1 Workrooms, equipment and utensils that do not eat meat should be used exclusively. 8.3.2 Meat that is unqualified or unsuitable for human consumption should take the following measures under the supervision of inspection and quarantine personnel: a) Immediately put it in a special closed container or room, or handle it accordingly; b) Use the corresponding mark to distinguish; c) Dispose in accordance with the "Technical Specifications for the Harmless Treatment of Diseased and Diseased Livestock Meat" and relevant regulations.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:** 5. There must be lockable facilities for the refrigerated storage of detained meat and separate lockable facilities for the storage of meat declared unfit for human consumption. **Regulation (EU) 2017/625, Article 18:** 4. Where the official controls referred to in points (a) and (c) of paragraph 2 have not identified any shortcoming that would make the meat unfit for human consumption, the health mark shall be applied to domestic ungulates, farmed game mammals other than lagomorphs, and large wild game, by the official veterinarian, under the supervision of the official veterinarian, under the responsibility of the official veterinarian, or, in compliance with the conditions laid down in paragraph 3, by the slaughterhouse staff.	*For meat that is declared unfit for human consumption or is not intended to be used for human consumption* ***Regulation (EC) No 1069/2009*** *laying down health rules as regards animal by-products and derived products not intended for human consumption, will apply.*
9 Production process control **9.1 Process control procedures** is the same as National Standard GB 12694-2016 (table 3, 12) and the same as National Standard GB 14881-2013 (table 1, 13).		
9.2 Operational requirements for slaughter and processing 9.2.1 The workshop and utensils for slaughtering and processing shall only be used for slaughtering, not for deboning and segmentation.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter V:** Food business operators must ensure that cutting and boning of meat of domestic ungulates takes place in accordance with the following requirements. 1. Carcasses of domestic ungulates may be cut into half-carcasses or quarters, and half carcasses into no	

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	more than three wholesale cuts, in slaughterhouses. Further cutting and boning must be carried out in a cutting plant. For poultry **Regulation (EC) No 853/2004, Annex III, Section II, Chapter V applies:** Food business operators must ensure that cutting and boning of meat of poultry and lagomorphs takes place in accordance with the following requirements. 1. The work on meat must be organised in such a way as to prevent or minimise contamination. To this end, food business operators must ensure in particular that: (a) meat intended for cutting is brought into the workrooms progressively as needed; (b) during cutting, boning, trimming, slicing, dicing, wrapping and packaging, the temperature of the meat is maintained at not more than 4 °C by means of an ambient temperature of 12 °C or an alternative system having an equivalent effect; and (c) where the premises are approved for the cutting of meat of different animal species, precautions are taken to avoid cross-contamination, where necessary by separation of the operations on the different species in either space or time. 2. However, meat may be boned and cut prior to reaching the temperature referred to in point 1(b) when the cutting room is on the same site as the slaughter premises, provided that it is transferred to the cutting room either: (a) directly from the slaughter premises; or (b) after a waiting period in a chilling or refrigerating room. 3. As soon as it is cut and, where appropriate, packaged, the meat must be chilled to the temperature referred to in point 1(b). 4. Exposed meat must be stored and transported separately from packaged meat, unless stored or transported at different times or in such a way that the	

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	packaging material and the manner of storage or transport cannot be a source of contamination for the meat.	
9.2.2 Livestock and poultry that need to be slaughtered urgently. Slaughtering and processing should be carried out under the supervision of inspection and quarantine personnel.	Regulation (EC) 853/2004, Annex III, Section I, Chapter VI provides: Food business operators must ensure that meat from domestic ungulates that have undergone emergency slaughter outside the slaughterhouse may be used for human consumption only if it complies with all the following requirements. 1. An otherwise healthy animal must have suffered an accident that prevented its transport to the slaughterhouse for welfare reasons. 2. A veterinarian must carry out an ante-mortem inspection of the animal. 3. The slaughtered and bled animal must be transported to the slaughterhouse hygienically and without undue delay. Removal of the stomach and intestines, but no other dressing, may take place on the spot, under the supervision of the veterinarian. Any viscera removed must accompany the slaughtered animal to the slaughterhouse and be identified as belonging to that animal. 4. If more than two hours elapse between slaughter and arrival at the slaughterhouse, the animal must be refrigerated. Where climatic conditions so permit, active chilling is not necessary. 5. A declaration by the food business operator who reared the animal, stating the identity of the animal and indicating any veterinary products or other treatments administered to the animal, dates of administration and withdrawal periods, must accompany the slaughtered animal to the slaughterhouse. 6. A declaration issued by the veterinarian recording the favourable outcome of the ante-mortem inspection, the date and time of, and reason for, emergency slaughter, and the nature of any treatment administered by the veterinarian to the animal, must accompany the slaughtered animal to the slaughterhouse. 7. The slaughtered animal must be fit for human consumption following post-mortem inspection carried	

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	out in the slaughterhouse, including any additional tests required in the case of emergency slaughter. 8. Food business operators must follow any instructions that the official veterinarian may give after post-mortem inspection concerning the use of the meat. 9. Food business operators may not place meat from animals having undergone emergency slaughter on the market unless it bears a special health mark which cannot be confused either with the health mark or with the identification mark provided for. Such meat may be placed on the market only in the Member State where slaughter takes place and in accordance with national law. Emergency slaughter of poultry is not foreseen in the EU. Only slaughter in approved slaughterhouses is allowed uder Regulation (EC) No 853/2004, Annex II, Section II, Chapter IV: Food business operators operating slaughterhouses in which poultry or lagomorphs are slaughtered must ensure compliance with the following requirements. 1. (a) Meat from animals must not be used for human consumption if they die otherwise than by being slaughtered in the slaughterhouse.	
9.2.3 Livestock and poultry entering the slaughterhouse shall be slaughtered immediately.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter IV:** 1. After arrival in the slaughterhouse, the slaughter of the animals must not be unduly delayed. However, where required for welfare reasons, animals must be given a resting period before slaughter. 6. Animals brought into the slaughter hall must be slaughtered without undue delay. *The same requirement applies to poultry:* **Regulation (EC) No 853/2004, Annex III, Section II, Chapter IV:** 4. Animals brought into the slaughter room must be slaughtered without undue delay.	
9.2.4 The stun, slaughter and bleeding should be compatible with the subsequent slaughter and processing speed.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:** 2. To avoid contaminating meat, they must:	

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9.2.5 The operations of slaughtering, bleeding and depilation should ensure the cleanliness of the meat.	e) have slaughter lines (where operated) that are designed to allow constant progress of the slaughter process and to avoid cross-contamination between the different parts of the slaughter line. **Chapter V:** 7. Stunning, bleeding, skinning, evisceration and other dressing must be carried out without undue delay and in a manner that avoids contaminating the meat. *The same requirement applies to poultry:* **Regulation (EC) No 853/2004, Annex III, Section II, Chapter II:** Food business operators must ensure that the construction, layout and equipment of slaughterhouses in which poultry or lagomorphs are slaughtered meet the following requirements. 1. They must have a room or covered space for the reception of the animals and for their inspection before slaughter. 2. To avoid contaminating meat, they must: (a) have a sufficient number of rooms, appropriate to the operations being carried out; (b) have a separate room for evisceration and further dressing, including the addition of seasonings to whole poultry carcasses, unless the competent authority authorises separation in time of these operations within a specific slaughterhouse on a case-by-case basis; (c) ensure separation in space or time of the following operations: (i) stunning and bleeding; (ii) plucking or skinning, and any scalding; and (iii) dispatching meat; (d) have installations that prevent contact between the meat and the floors, walls and fixtures; and (e) have slaughter lines (where operated) that are designed to allow a constant progress of the slaughter process and to avoid cross-contamination between the different parts of the slaughter line. Where more than one slaughter line is operated in the same premises,	

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	there must be adequate separation of the lines to prevent cross-contamination. **Chapter IV:** 5. Stunning, bleeding, skinning or plucking, evisceration and other dressing must be carried out without undue delay in such a way that contamination of the meat is avoided. In particular, measures must be taken to prevent the spillage of digestive tract contents during evisceration.	
9.2.6 Bleeding should be thorough. If the blood of livestock and poultry is used for food, it should be collected and processed by safe and hygienic methods; when stirring is required, tools that meet the requirements should be used. is the same as National Standard GB 19479-2019 (table 3, 5.2.6).	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter IV:** 15. If the blood or other offal of several animals is collected in the same container before completion of post-mortem inspection, the entire contents must be declared unfit for human consumption if the carcass of one or more of the animals concerned has been declared unfit for human consumption.	
9.2.7 After hair removal (feathering) or peeling, a certain distance should be maintained between carcasses to prevent cross-contamination.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter IV:** 13. Until post-mortem inspection is completed, parts of a slaughtered animal subject to such inspection must: (b) come into contact with no other carcass, offal or viscera, including those that have already undergone postmortem inspection.	
9.2.8 Before dividing the meat and brain for consumption from the head, the head should be thoroughly rinsed; except for scalding and depilation (feather), the head should be peeled to facilitate head hygiene inspection and head meat and brain segmentation hygiene .	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter IV:** 18. When destined for further handling: (c) heads and feet must be skinned or scalded and depilated.	All offal intended for human consumption is defined as 'meat' in accordance with Regulation 853/2004 and all pertinent requirements apply (Regulation (EC) No 853/2004 Annex I: 'Meat' means edible parts of the animal, including blood).
9.2.9 When the tongue needs to be taken, avoid cutting the tonsils.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter IV:** 16. After post-mortem inspection: a) the tonsils of bovine animals and solipeds must be removed hygienically;	
9.2.10 Peeling and other related operations shall meet the following requirements:	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter IV:**	

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a) Peeling should be carried out before evisceration and viscera removal, to avoid contamination of meat; b) If the carcasses that have not been eviscerated after peeling are washed, they should avoid entering the chest cavity and abdominal cavity; c) Carcasses after scalding, depilation, singeing or related treatments shall be cleaned of mane, hair, dander and dirt; d) The water in the scalding pool should be replaced regularly; e) Breasts with lactation or obvious symptoms should be removed as early as possible in the early stage of slaughtering and processing to avoid contamination of the carcass with breast secretions and contents. When removing the breast, the nipple and the breast itself should be kept intact, and the breast and sinus should not be cut.	9. When not skinned, porcine animals must have their bristles removed immediately. The risk of contamination of the meat with scalding water must be minimised. Only approved additives may be used for this operation. Porcine animals must be thoroughly rinsed afterwards with potable water. **Regulation (EC) No 853/2004, Annex III, Section I, Chapter IV:** 7. Stunning, bleeding, skinning, evisceration and other dressing must be carried out without undue delay and in a manner that avoids contaminating the meat. In particular: (d) removal of the udder must not result in contamination of the carcass with milk or colostrum. For poultry, similar provisions apply under Annex III, Section II, Chapter IV: Stunning, bleeding, skinning or plucking, evisceration and other dressing must be carried out without undue delay in such a way that contamination of the meat is avoided. In particular, measures must be taken to prevent the spillage of digestive tract contents during evisceration.	
9.2.11 The following requirements shall be met during further processing: a) The internal organs should be quickly removed in accordance with hygiene requirements; b) The contents of the digestive tract, gallbladder, bladder, uterus and / or breast should be avoided from contaminating the carcass; c) When removing internal organs before evisceration, avoid damage to the intestine, and ligature the small intestine to prevent the contents from overflowing when it is handled separately; d) When washing the carcass, it should not cause secondary pollution of the carcass; e) The processing or storage of edible meat should not store fur or hides; f) The inedible parts removed during the slaughtering process should be stored in sealed containers to	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter IV:** 7. Stunning, bleeding, skinning, evisceration and other dressing must be carried out without undue delay and in a manner that avoids contaminating the meat. In particular: (a) the trachea and oesophagus must remain intact during bleeding, except in the case of slaughter according to a religious custom; (b) during the removal of hides and fleece: (i) contact between the outside of the skin and the carcass must be prevented; and (ii) operators and equipment coming into contact with the outer surface of hides and fleece must not touch the meat; (c) measures must be taken to prevent the spillage of digestive tract content during and after evisceration and	

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prevent contamination. After shipment, it should be handled at the designated place; g) Remove feces and other contaminants that pollute the carcass in a timely manner during slaughter;	to ensure that evisceration is completed as soon as possible after stunning; 10. The carcass must not contain visible faecal contamination. Any visible contamination must be removed without delay by trimming or alternative means having an equivalent effect. 16. After post-mortem inspection: (b) parts unfit for human consumption must be removed as soon as possible from the clean sector of the establishment; (c) meat detained or declared unfit for human consumption and inedible by-products must not come into contact with meat declared fit for human consumption; and (d) viscera or parts of viscera remaining in the carcass, except for the kidneys, must be removed entirely and as soon as possible, unless the competent authority authorises otherwise.	
h) When the inspection and quarantine personnel believe that the carcass or meat safety, production hygiene, and inspection and quarantine efficiency are adversely affected during slaughtering, cutting, and packaging, and the management personnel cannot take effective measures to eliminate the adverse effects, inspection and quarantine Personnel have the right to request to slow down the production speed or temporarily suspend the production of a certain section.	**Regulation (EU) 2019/627, Section 3, Article 12:** 4. The speed of the slaughter line and the number of inspection staff present shall be such as to allow for proper inspection. Regulation 853/2004, Annex III, Section I, Chapter IV: Slaughterhouse operators must follow the instructions of the veterinarian appointed by the competent authority to ensure that ante-mortem and post mortem inspection of every animal is carried out under suitable conditions. For poultry under Section II, Chapter IV: Slaughterhouse operators must follow the instructions of the competent authority to ensure that the ante mortem and post-mortem inspection is carried out under suitable conditions, and in particular that slaughtered animals can be inspected properly.	
9.3 Operation requirements after slaughter and processing	**Regulation (EC) No 853/2004, Annex III, Section VI:** 2. All meat, including minced meat and meat preparations, used to produce meat product must meet the requirements for fresh meat.	

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9.3.1 Meat products qualified for inspection and quarantine and suitable for consumption shall meet the following requirements: a) It should prevent pollution and deterioration during processing, storage and transportation; b) The next process should be entered as soon as possible; c) For carcasses requiring cold sectioning, the carcass temperature and / or water activity should be reduced as soon as possible.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter III:** CHAPTER III: REQUIREMENTS FOR CUTTING PLANTS Food business operators must ensure that cutting plants handling meat of domestic ungulates: 1. are constructed so as to avoid contamination of meat, in particular by: (a) allowing constant progress of the operations; or (b) ensuring separation between the different production batches; **Annex III, Section I, Chapter V:** 2. The work on meat must be organised in such a way as to prevent or minimise contamination. To this end, food business operators must ensure in particular that: (a) meat intended for cutting is brought into the workrooms progressively as needed; (b) during cutting, boning, trimming, slicing, dicing, wrapping and packaging, the meat is maintained at not more than 3 °C for offal and 7 °C for other meat, by means of an ambient temperature of not more than 12 °C or an alternative system having an equivalent effect;	
9.3.2 Workshops, equipment and utensils used for deboning, dividing or deep processing of meat shall not be used for other purposes.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter V:** 1. Carcasses of domestic ungulates may be cut into half-carcasses or quarters, and half carcasses into no more than three wholesale cuts, in slaughterhouses. Further cutting and boning must be carried out in a cutting plant. 2. The work on meat must be organised in such a way as to prevent or minimise contamination. (a) meat intended for cutting is brought into the workrooms progressively as needed; (b) during cutting, boning, trimming, slicing, dicing, wrapping and packaging, the meat	

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9.3.3 A certain temperature and humidity should be maintained between the deboning and dividing room, suitable for operation. 9.3.4 The ambient temperature during cold deboning should not be higher than 12 ° C.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter V:** 2. The work on meat must be organised in such a way as to prevent or minimise contamination. To this end, food business operators must ensure in particular that: (a) meat intended for cutting is brought into the workrooms progressively as needed; (b) during cutting, boning, trimming, slicing, dicing, wrapping and packaging, the meat is maintained at not more than 3 °C for offal and 7 °C for other meat, by means of an ambient temperature of not more than 12 °C or an alternative system having an equivalent effect;	
9.3.5 The following requirements shall be met for the hot segmentation: a) Should be transferred from the slaughterhouse to the deboning division; b) Deboning segmentation, packaging, rapid cooling or deboning segmentation, rapid cooling, packaging should be performed immediately, and the operation process should meet the requirements of process control procedures; c) The ambient temperature between the deboning sections should be controlled not higher than 15 ° C.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter V:** 4. Meat may also be boned and cut prior to reaching the temperature referred to in point 2(b) when the cutting room is on the same site as the slaughter premises. In this case, the meat must be transferred to the cutting room either directly from the slaughter premises or after a waiting period in a chilling or refrigerating room. As soon as it is cut and, where appropriate, packaged, the meat must be chilled to the temperature referred to in point 2(b). ***Regulation (EC) No 853/2004, Annex III, Section I, Chapter VII**:* Food business operators must ensure that the storage and transport of meat of domestic ungulates takes place in accordance with the following requirements. 1. (a) Unless other specific provisions provide otherwise, post-mortem inspection must be followed immediately by chilling in the slaughterhouse to ensure a temperature throughout the meat of not more than 3 °C for offal and 7 °C for other meat along a chilling curve that ensures a continuous decrease of the temperature. However, meat may be cut and boned during chilling in accordance with Chapter V, point 4. For poultry, Annex III, Section II, Chapter V applies:	*Point 2 (b) lays down that the ambient temperature is not more than 12 °C.*

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	during cutting, boning, trimming, slicing, dicing, wrapping and packaging, the temperature of the meat is maintained at not more than 4 °C by means of an ambient temperature of 12 °C or an alternative system having an equivalent effect; and (c) where the premises are approved for the cutting of meat of different animal species, precautions are taken to avoid cross-contamination, where necessary by separation of the operations on the different species in either space or time.	
9.3.6 Carcasses, carcass cuts, meat cuts and edible by-products should be cooled or frozen in accordance with the following requirements: a) The hot cut meat should enter the cooling room after passing through the meat; b) Meat products that are not placed in corrugated boxes should be hung or placed in appropriate trays and ensure adequate air circulation; c) Corrugated cartons or trays containing meat should be neatly arranged to ensure air circulation around each carton or tray; d) Meat not placed in corrugated boxes or trays should prevent dripping of juice from contaminating other meat products; e) When the trays containing meat are stacked, the bottom of the tray should be prevented from contacting the meat below;	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter VII:** (b) During the chilling operations, there must be adequate ventilation to prevent condensation on the surface of the meat 4. Meat intended for freezing must be frozen without undue delay, taking into account where necessary a stabilisation period before freezing. 5. Exposed meat must be stored and transported separately from packaged meat, unless stored or transported at different times or in such a way that the packaging material and the manner of storage or transport cannot be a source of contamination for the meat.	
f) After cooling, the center temperature of the meat should not be higher than 7 ° C, the center temperature of the edible by-products should not be higher than 3 ° C within 24 hours after division, and the center temperature of all products should not be lower than 0 ° C;	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter VII:** 1. (a) Unless other specific provisions provide otherwise, post-mortem inspection must be followed immediately by chilling in the slaughterhouse to ensure a temperature throughout the meat of not more than 3 °C for offal and 7 °C for other meat along a chilling curve that ensures a continuous decrease of the temperature.	

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g) After freezing, the center temperature of the meat within 48 h after division shall not be higher than -15 ° C; **h) The cooling and freezing process should be monitored and recorded in detail. To ensure that the time and temperature parameters can meet the requirements.** **is the same as National Standard GB 12694-2016 (table 3, 7.6).**	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter VII:** 4. Meat intended for freezing must be frozen without undue delay, taking into account where necessary a stabilisation period before freezing.	**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs:** 2.11 Temperature control of storage environment a) Temperature and humidity should be (automatically) recorded where relevant. b) Alarm devices should preferably be automatic. c) Temperature fluctuations should be minimized e.g. by using a separate room/freezer to freeze products from that used for storage of frozen products. d) Chilling/heating capacity should be adapted to the amounts involved. e) Temperatures in the product and during transport should also be monitored. f) Verification should occur regularly.
10 Packaging, storage and transportation **10.1 is the same as National Standard GB 14881-2013 (table 1, 8.5.1) and the same as National Standard GB 12694-2016 (table 3, 8.1.2).**		
10.2 Storage 10.2.1 is the same as National Standard GB 12694-2016 (table 3, 7.6) and the same as National Standard GB 17236-2019 (table 3, 6.2.2).		
10.2.2 Carcasses, carcass cuts, meat cuts and edible by-products should be placed in the storage, and should meet the following requirements: a) Only relevant staff are allowed to enter; b) The time for opening the door should not be too long, it should be closed immediately after use; c) The storage temperature, relative humidity and air circulation control should meet the requirements in the process control procedures; d) There should be corresponding monitoring facilities.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter VII:** 5. Exposed meat must be stored and transported separately from packaged meat, unless stored or transported at different times or in such a way that the packaging material and the manner of storage or transport cannot be a source of contamination for the meat.	**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs:** 2.11 Temperature control of storage environment a) Temperature and humidity should be (automatically) recorded where relevant. b) Alarm devices should preferably be automatic. c) Temperature fluctuations should be minimized e.g. by using a separate room/freezer to freeze products from that used for storage of frozen products. d) Chilling/heating capacity should be adapted to the amounts involved. e) Temperatures in the product and during transport should also be monitored. f) Verification should occur regularly.

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10.2.3 The storage of cooled carcasses, carcasses, meat and edible by-products shall meet the following requirements: a) The temperature of the storage should be controlled at 0 ° C ~ 4 ° C " b) Good ventilation between carcasses; c) The split carcass should be hung or placed in a suitable container, and ensure sufficient air circulation; d) Prevent dripping of juice from contaminating other meat products; e) Prevent dripping, including condensation. 10.2.3 a) is the same as National Standard GB 17236-2019 (table 3, 6.2.2).	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter VII:** Food business operators must ensure that the storage and transport of meat of domestic ungulates takes place in accordance with the following requirements. 1. (a) Unless other specific provisions provide otherwise, post-mortem inspection must be followed immediately by chilling in the slaughterhouse to ensure a temperature throughout the meat of not more than 3 °C for offal and 7 °C for other meat along a chilling curve that ensures a continuous decrease of the temperature. (b) During the chilling operations, there must be adequate ventilation to prevent condensation on the surface of the meat. **Regulation (EC) No 853/2004, Annex III, Section V, Chapter III:** Food business operators producing minced meat, meat preparations or MSM must ensure compliance with the following requirements. c) Immediately after production, minced meat and meat preparations must be wrapped or packaged and be: (i) chilled to an internal temperature of not more than 2 °C for minced meat and 4 °C for meat preparations; or (ii) frozen to an internal temperature of not more than -18 °C.	
10.2.4 Frozen carcasses, split carcasses, split meat and edible by-products shall meet the following requirements during storage: a) The temperature of the cold storage should be controlled below -18 ° C, and the daily temperature fluctuation should be less than 1 ° C; b) Carcasses or meat-containing packaging should not directly contact the ground to ensure adequate air circulation. 10.2.4 a) is the same as National Standard GB 17236-2019 (table 3, 6.2.2).	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter VII:** 4. Meat intended for freezing must be frozen without undue delay, taking into account where necessary a stabilisation period before freezing.	**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs:** 2.10 Raw materials (supplier selection, specifications) d) Storage conditions at the establishment itself should take into account any instructions provided by the supplier, 'first in, first out' or 'first expire, first out' principles, accessibility for inspection from all sides (e.g. not placed directly on the ground, against walls, …).

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10.2.5 is the same as National Standard GB 17236-2019 (table 3, 6.2.1).		
10.3 Transportation 10.3.1 Transportation vehicles and containers should be washed, disinfected and repaired before loading.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter II:** 6. There must be a separate place with appropriate facilities for the cleaning, washing and disinfection of means of transport for livestock. **Regulation (EC) No 852/2004, Annex II, Chapter IV:** 1. Conveyances and/or containers used for transporting foodstuffs are to be kept clean and maintained in good repair and condition to protect foodstuffs from contamination and are, where necessary, to be designed and constructed to permit adequate cleaning and/or disinfection.	
10.3.2 The transportation process should meet the following requirements: a) Should not be mixed with other goods; b) Livestock and poultry intestines and stomach should be cleaned or scalded before transportation; c) Heads and hooves should be peeled or scalded to remove hair before being transported; d) The pork, cattle and sheep carcass transport elbows should be hung, and can be transported in a suitable way when packed and frozen in good condition; e) Unpackaged and unfrozen by-products should be transported in suitable closed containers; f) The product should not touch the floor of the transportation vehicle; g) The means of transportation should be equipped with refrigeration, thermal insulation and other facilities according to the characteristics of the product, and the appropriate temperature should be maintained during transportation.	**Regulation (EC) No 852/2004, Annex II, Chapter IV:** 2. Receptacles in vehicles and/or containers are not to be used for transporting anything other than foodstuffs where this may result in contamination. 3. Where conveyances and/or containers are used for transporting anything in addition to foodstuffs or for transporting different foodstuffs at the same time, there is, where necessary, to be effective separation of products. 5. Where conveyances and/or containers have been used for transporting anything other than foodstuffs or for transporting different foodstuffs, there is to be effective cleaning between loads to avoid the risk of contamination. 6. Foodstuffs in conveyances and/or containers are to be so placed and protected as to minimise the risk of contamination. **Regulation (EC) No 853/2004, Annex III, Section I, Chapter VII:** Food business operators must ensure that the storage and transport of meat of domestic ungulates takes place in accordance with the following requirements.	

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	3. Meat must attain the temperature specified in point 1 before transport *(= 3° C for offal and 7° C for other meat)*, and remain at that temperature during transport. 5. Exposed meat must be stored and transported separately from packaged meat, unless stored or transported at different times or in such a way that the packaging material and the manner of storage or transport cannot be a source of contamination for the meat.	
11 Product identification *Refers to other national standards (GB 7718 and GB 6388).*		*These provisions have no relevance for food hygiene.*
12 Product Traceability and Recall Management is the same as National Standard GB 12694-2016 (table 3, 9).		
13 Hygiene management and control is the same as National Standard GB 12694-2016 (table 3, 10 and 11).		
14 Record and document management is the same as National Standard GB 12694-2016 (table 3, 12).		

f) National standard GB-2707 - fresh and frozen livestock and poultry products

CHINESE LEGISLATION: NATIONAL STANDARD GB 2707	EU LEGISLATION REGULATION (EC) NO 853/2004	IMPLEMENTING RULES AND COMPARATIVE EVALUATION
1 Scope This standard applies to fresh and frozen livestock and poultry products.	**Scope** This Regulation lays down specific rules on the hygiene of food of animal origin for food business operators.	
3 Technical Requirements **3.1 Raw material requirements** The live livestock and poultry, before being slaughtered, shall undergo and pass quarantine inspection by the Animal Health Supervision Institutions.	**Regulation (EC) No 178/2002, Article 14 Food safety requirements.** 1. Food shall not be placed on the market if it is unsafe. 2. Food shall be deemed to be unsafe if it is considered to be: (a) injurious to health; (b) unfit for human consumption. **Regulation (EU) 625/2017 on Official Controls:** Art. 18: Specific rules on official controls and for action taken by the competent authorities in relation to the production of products of animal origin intended for human consumption 1. Official controls performed to verify compliance with the in rela-tion to products of animal origin intended for human consumption shall include the verification of compliance with the requirements laid down in Regulations (EC) No 852/2004, (EC) No 853/2004, (EC) No 1069/2009 and (EC) No 1099/2009 as applicable. 2. The official controls referred to in paragraph 1 performed in relation to the production of meat shall include: (a) the ante-mortem inspection performed in the slaughterhouse by an official veterinarian who may, as regards pre-selection of animals, be assisted by official auxiliaries trained for that purpose; (b) by way of derogation from point (a), as regards poultry and lagomorphs, the ante-mortem inspection performed by an official veterinarian, under the supervision of the official veterinarian or, where sufficient guarantees are in place, under the responsibility of the official veterinarian;	

	(c) the post-mortem inspection performed by an official veterinarian, under the supervision of the official veterinarian or, where sufficient guarantees are in place, under the responsibility of the official veterinarian; (d) the other official controls performed in slaughterhouses, cutting plants and game-handling establishments, by an official veterinarian, under the supervision of the official veterinarian or, where sufficient guarantees are in place, under the responsibility of the official veterinarian, to verify compliance with the requirements applicable to: (i) the hygiene of meat production; (ii) the presence of residues of veterinary medicinal products and contaminants in products of animal origin in-tended for human consumption; (iii) audits of good hygiene practices and procedures based on HACCP principles; (iv) laboratory tests to detect the presence of zoonotic agents and animal diseases and to verify compliance with the microbiological criterion as defined in point (b) of Article 2 of Commission Regulation (EC) No 2073/2005 (54); (v) the handling and disposal of animal by-products and of specified risk material; (vi) the health and welfare of the animals.	
3.2 Sensory requirements The sensory requirements shall be in accordance with those given in Table 1: Color and luster, smell, status	**The General food Law laid down in Regulation (EC) No 178/2002 provides in Article 14** 1. Food shall not be placed on the market if it is unsafe. 2. Food shall be deemed to be unsafe if it is considered to be: (a) injurious to health; (b) unfit for human consumption. 3. In determining whether any food is unsafe, regard shall be had: (a) to the normal conditions of use of the food by the consumer and at each stage of production, processing and distribution, and	

	(b) to the information provided to the consumer, including information on the label, or other information generally available to the consumer concerning the avoidance of specific adverse health effects from a particular food or category of foods. 4. In determining whether any food is injurious to health, regard shall be had: (a) not only to the probable immediate and/or short-term and/or long-term effects of that food on the health of a person consuming it, but also on subsequent generations; (b) to the probable cumulative toxic effects; (c) to the particular health sensitivities of a specific category of consumers where the food is intended for that category of consumers. 5. In determining whether any food is unfit for human consumption, regard shall be had to whether the food is unacceptable for human consumption according to its intended use, for reasons of contamination, whether by extraneous matter or otherwise, or through putrefaction, deterioration or decay.	
3.3 Physical and chemical indexes The physical and chemical indexes shall be in accordance with those given in Table 2: Volatile basic nitrogen / (mg/100g): ≤ 15	See above. Only food that is fit for human consumption must be placed on the market.	

g) National standard GB-20799 - Hygiene specifications for meat and meat product management

CHINESE LEGISLATION: NATIONAL STANDARD GB 20799	EU LEGISLATION REGULATION (EC) NO 853/2004	IMPLEMENTING RULES AND COMPARATIVE EVALUATION
1 Scope This standard defines the food safety requirements in the operating processes, such as procurement, transportation, inspection and acceptance, storage, sales, etc. of the meat and meat products.	**Scope** This Regulation lays down specific rules on the hygiene of food of animal origin for food business operators.	
3. Procurement 3.2 While procuring fresh meat, chilled meat, frozen meat and edible by-products, it shall check and inspect eligible, qualified documents, such as “Conformance Certificate for Animal Epidemic Preventive Conditions”, etc. 3.3 The fresh meat, chilled meat, frozen meat and edible by-products shall have conformance certification for animal epidemic inspection as well as the animal epidemic inspection logo. 3.4 It shall not procure the livestock and poultry meat originating from the death of illnesses, poisoning, or any unknown causes of death and their processed products. Additionally, it shall not procure meat that have not abided by the regulation to carry out quarantine and inspection, or have not conformed to the quarantine and inspection, or meat products that have yet to be inspected or failed in the inspection process.	Regulation (EU) No 2017/625, Art. 18: 4. Where the official controls have not identified any shortcoming that would make the meat unfit for human consumption, the health mark shall be applied to domestic ungulates, farmed game mammals other than lagomorphs, and large wild game, by the official veterinarian. Regulation (EC) No 853/2004, Article 13: Health and identification marking 1. Food business operators shall not place on the market a product of animal origin handled in an establishment subject to approval in accordance with Article 4(2) unless it has either: (a) a health mark applied in accordance with Regulation (EU) No 2017/625; or (b) when that Regulation does not provide for the application of a health mark, an identification mark applied in accordance with Annex II, Section I, of this Regulation. 2. Food business operators may apply an identification mark to a product of animal origin only if the product has been manufactured in accordance with this Regulation. 3. Food business operators may not remove a health mark applied in accordance with Regulation (EU) No 2017/625 from meat unless they cut or process it or work upon it in another manner.	
4. Transportation is the same as National Standard GB 12694-2016 (table 3, 8.2.2, 8.2.3 and 8.2.5), the same as National		

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Standard GB 20575-2019 (table 3, 10.2.3 and 10.3.2), the same as National Standard GB GB 14881-2013 (table 1, 10.1) and the same as National Standard GB 17236-2019 (table 3, 5.18). Except points:		
4.2 Prior to the loading of the fresh meat and fresh edible by-products for transportation, they shall be chilled to room temperature. At room temperature, the transportation time shall not surpass 2 hours.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter VII:** 1. Post-mortem inspection must be followed immediately by chilling in the slaughterhouse to ensure a temperature throughout the meat of not more than 3 °C for offal and 7 °C for other meat along a chilling curve that ensures a continuous decrease of the temperature. However, meat may be cut and boned during chilling in accordance with Chapter V, point 4 3. Meat must attain the temperature specified in point 1 before transport, and remain at that temperature during transport. However, transport may also take place if the competent authority so authorises to enable the production of specific products, provided that: (a) such transport takes place in accordance with the requirements that the competent authority specifies in respect of transport from one given establishment to another; and (b) the meat leaves the slaughterhouse, or a cutting room on the same site as the slaughter premises, immediately and transport takes no more than two hours.	
4.13 The meat loaded and unloaded shall be strictly prohibited with the stamping by foot and falling of the products to the floor.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter VII:** 5. Exposed meat must be stored and transported separately from packaged meat, unless stored or transported at different times or in such a way that the packaging material and the manner of storage or transport cannot be a source of contamination for the meat.	
5. Inspection and Acceptance 5.2 While inspecting and accepting the fresh meat, chilled meat, frozen meat and edible by-products, it	General Food Law Regulation (EC) No 178/2002, Article 17 Responsibilities:	**Guidance document Commission Notice 2016/C 278/01, Annex I, 2 Examples of PRPs:** 2.10 Raw materials (supplier selection, specifications)

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shall check and inspect the conformance certification for animal quarantine, animal quarantine logo, etc. Moreover, it shall also initiate the checking of the core temperature for the chilled meat and frozen meat. 5.3 While inspecting and accepting the meat and meat products, it shall check and inspect the hygiene conditions and maintenance situation of the transportation tools for the meat and meat products. For the meat and meat products that have temperature requirements, it shall check and inspect the temperature records of the transportation tools.	1. Food and feed business operators at all stages of production, processing and distribution within the businesses under their control shall ensure that foods or feeds satisfy the requirements of food law which are relevant to their activities and shall verify that such requirements are met. Article 18, Traceability: 2. Food and feed business operators shall be able to identify any person from whom they have been supplied with a food, a feed, a food-producing animal, or any substance intended to be, or expected to be, incorporated into a food or feed. To this end, such operators shall have in place systems and procedures which allow for this information to be made available to the competent authorities on demand.	b) A strict supply policy, containing agreement on specifications (e.g. microbiological) and hygiene assurance and/or requesting a certified quality management system can be taken into account in the extent of details on the PRPs and HACCP plan of the establishment itself. c) Apart from agreements with and possible auditing of the supplier, a number of issues might give a good indication on the reliability of the supplier such as homogeneity of delivered goods, compliance with agreed delivery period, accuracy of information added, sufficient shelf life or freshness, use of clean and suitably equipped transportation, hygiene awareness of the driver and other food handlers transporting the food, correct temperature during transport, long term satisfaction, etc. Most of these issues should be part of a reception control. It may be necessary to be aware of previous cargoes of a transport vehicle in order to implement adequate cleaning procedures to reduce the likelihood of cross contamination.
6. Storage is the same as National Standard GB 12694-2016 (table 3, 8.2.3) and the same as National Standard GB 17236-2019 (table 3, 5.17, 6.2.1 and 6.2.2).		
7. Sales		*These are requirements applicable to retail activities*
8. Product Traceability and Recall is the same as National Standard GB 12694-2016 (table 3, 9).		
9. Hygiene Management is the same as National Standard GB 12694-2016 (table 3, 11.2.3 and 11.2.4). Except point:		
9.3 For the knives, containers, operating tables, chopping boards, etc. used in the storage and sales process, it shall use hot water that are 82°C and above or detergents and disinfectants that meet the relevant standards to carry out cleaning and sanitization.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter III:** Food business operators must ensure that cutting plants handling meat of domestic ungulates:	

CHINESE LEGISLATION: NATIONAL STANDARD GB 20799	EU LEGISLATION REGULATION (EC) NO 853/2004	IMPLEMENTING RULES AND COMPARATIVE EVALUATION
	5. have facilities for disinfecting tools with hot water supplied at not less than 82 °C, or an alternative system having an equivalent effect.	
10. Training **11. Management System and Personnel** **12. Recording and Documentation Management** are the same as National Standard GB 14881-2013 (table 1, 12, 13 and 14).		

h) National standard GB 28640 - Technical Specifications for cold chain transportation management of livestock and poultry meat

CHINESE LEGISLATION: NATIONAL STANDARD GB 28640	EU LEGISLATION REGULATION (EC) NO 853/2004	IMPLEMENTING RULES AND COMPARATIVE EVALUATION
1 Scope This standard stipulates the cooling and freezing treatment, packaging and labeling, storage, loading and unloading, transportation, energy saving requirements of livestock and poultry meat, and the basic requirements of personnel.	**Scope** This Regulation lays down specific rules on the hygiene of food of animal origin for food business operators.	
4 Cooling and freezing treatment 4. 1. 1 Post-slaughter cooling treatment 4. 1. 1. 1 slice of pork After slaughtering, the sliced pork should enter the cooling room of 0 ° C ~ 4 ° C within 45 minutes of stunning, and the temperature of the deep center of the hind leg muscles should be lowered within 24 h To 0 ° C ~ 7 ° C. 4. 1. 1.2 slices of beef After slaughtering, sliced beef should enter the cooling room of 0 ° C ~ 4 ° C within 45 minutes of stunning, and make the deep muscles of the hind legs and scapula within 36 hours. The core temperature drops to 0 ° C ~ 7 ° C. 4. 1. 1.3 sheep carcass After slaughtering, the sheep carcass should enter the cooling room of 0 ° C ~ 4 ° C within 1 h of stun. The temperature drops to 0 ° C ~ 7 ° C. 4. 1. 1.4 Chicken carcass The temperature of the cooling medium is controlled at 0 ° C ~ 4 ° C, and the cooling time is controlled within 45 min. After cooling, the temperature of the center of the chicken carcass reaches below 7 ° C. Temperature requirement is the same as National Standard GB 17236-2019 (table 3, 6.2.2).	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter VII:** Food business operators must ensure that the storage and transport of meat of domestic ungulates takes place in accordance with the following requirements. 1. (a) Unless other specific provisions provide otherwise, post-mortem inspection must be followed immediately by chilling in the slaughterhouse to ensure a temperature throughout the meat of not more than 3 °C for offal and 7 °C for other meat along a chilling curve that ensures a continuous decrease of the temperature. **For poultry, Regulation (EC) No 853/2004, Annex III, Section II, Chapter IV provides:** 8. After inspection and evisceration, slaughtered animals must be cleaned and chilled to not more than 4 °C as soon as possible, unless the meat is cut while warm. 9. When carcasses are subjected to an immersion chilling process, account must be taken of the following. (a) Every precaution must be taken to avoid contamination of carcasses, taking into account parameters such as carcass weight, water temperature, volume and direction of water flow and chilling time. (b) Equipment must be entirely emptied, cleaned and disinfected whenever this is necessary and at least once a day.	*In the Chinese National standard is indicated that sliced meat shall enter the cooling room within a certain time period (45 minutes for pork, beef and chicken, 1 hour for sheep) after stunning and that core temperature should be lowered to 0 °C ~ 7 °C within a specified time period. In EU legislation these time specifications are not indicated. The EU legislation requires that all activities (slaughter, cutting, boning and storage) are done without undue delay.*
4. 1.2 Cold segmentation of livestock and poultry products	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter V:**	

CHINESE LEGISLATION: NATIONAL STANDARD GB 28640	EU LEGISLATION REGULATION (EC) NO 853/2004	IMPLEMENTING RULES AND COMPARATIVE EVALUATION
After cooling, the livestock and poultry products should be divided in good hygienic conditions and the workshop temperature is lower than 12 ° C. The center temperature of the meat after division the temperature should not be higher than 7 ° C.	Food business operators must ensure that cutting and boning of meat of domestic ungulates takes place in accordance with the following requirements. 2. The work on meat must be organised in such a way as to prevent or minimise contamination. To this end, food business operators must ensure in particular that: (b) during cutting, boning, trimming, slicing, dicing, wrapping and packaging, the meat is maintained at not more than 3 °C for offal and 7 °C for other meat, by means of an ambient temperature of not more than 12 °C or an alternative system having an equivalent effect;	
4.2 Livestock and poultry meat freezing treatment 4.2.1 The cut pork should reduce the temperature of the deep center of the muscle to below -15 ° C within 24 h. 4.2.2 Sliced beef and cut beef should reduce the deep center temperature of the muscle to below -15 ° C within 72 h and 36 h, respectively. 4.2.3 The lamb segmentation should reduce the deep center temperature of the muscle to below -15 ° C within 16 h. 4.2.4 The chicken carcass and its segmented products should reduce the deep center temperature of the muscle to below -18 ° C within 12 h. 4.2.5 The freezing of other livestock and poultry products shall be implemented with reference to the above requirements.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter VII:** Food business operators must ensure that the storage and transport of meat of domestic ungulates takes place in accordance with the following requirements. 4. Meat intended for freezing must be frozen without undue delay, taking into account where necessary a stabilisation period before freezing.	*There are no detailed legislative requirements for the freezing treatment of meat except for quick frozen foodstuffs as laid down in **Council Directive 89/108/EEC, Article 5:*** *1. The temperature of quick-frozen foodstuffs must be stable and maintained, at all points in the product, at −18 ºC or lower, with possibly brief upward fluctuations of no more than 3 ºC during transport.*
5 Packaging and labeling 5.1.1 Cooled livestock and poultry meat should be packaged in an environment with good hygienic conditions and the temperature of the packaging room not exceeding 12 ° C.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter V:** (b) during cutting, boning, trimming, slicing, dicing, wrapping and packaging, the meat is maintained at not more than 3 °C for offal and 7 °C for other meat, by means of an ambient temperature of not more than 12 °C or an alternative system having an equivalent effect;	
5.1.2 Frozen livestock and poultry meat should be packaged in an environment with good hygienic conditions and the temperature of the packaging room does not exceed 0 ° C.	**Regulation (EC) No 852/2004, Article 4:** 3. Food business operators shall, as appropriate, adopt the following specific hygiene measures: (d) maintenance of the cold chain;	**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs:** 2.11 Temperature control of storage environment

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		c) Temperature fluctuations should be minimized e.g. by using a separate room/freezer to freeze products from that used for storage of frozen products.
5.1.4 Transport packaging should meet the requirements for the safe transportation of livestock and poultry meat.	**Regulation (EC) No 852/2004, Annex II, Chapter IV:** 1. Conveyances and/or containers used for transporting foodstuffs are to be kept clean and maintained in good repair and condition to protect foodstuffs from contamination and are, where necessary, to be designed and constructed to permit adequate cleaning and/or disinfection.	
5.2 Logo		This has no relevance for food safety
6 Storage 6.1 is the same as National Standard GB 20575-2019 (table 3, 10.2.5). 6.2 and 6.3 are the same as National Standard GB 17236-2019 (table 3, 6.2.2).		
6.4 Livestock and poultry meat should be stored according to product categories, and product storage should follow the first-in first-out principle. Is the same as National Standard GB 14881-2013 (table 1, 7.4.3) and the same as National Standard GB 31621-2014 (table 1, 5.8).	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter VII:** 5. Exposed meat must be stored and transported separately from packaged meat, unless stored or transported at different times or in such a way that the packaging material and the manner of storage or transport cannot be a source of contamination for the meat.	**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs:** 2.10 Raw materials (supplier selection, specifications) d) Storage conditions at the establishment itself should take into account any instructions provided by the supplier, 'first in, first out' or 'first expire, first out' principles, accessibility for inspection from all sides (e.g. not placed directly on the ground, against walls, …).
6.5 When the livestock and poultry meat and by-products are mixed and stored, they should be sealed and packed separately.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter VII and Section II Chapter V:** Exposed meat must be stored and transported separately from packaged meat, unless stored or transported at different times or in such a way that the packaging material and the manner of storage or transport cannot be a source of contamination for the meat.	

CHINESE LEGISLATION: NATIONAL STANDARD GB 28640	EU LEGISLATION REGULATION (EC) NO 853/2004	IMPLEMENTING RULES AND COMPARATIVE EVALUATION
6.6 The time, quantity and storage temperature of livestock and poultry meat shall be recorded in detail.		**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs:** 2.11 Temperature control of storage environment a) Temperature and humidity should be (automatically) recorded where relevant. b) Alarm devices should preferably be automatic. c) Temperature fluctuations should be minimized e.g. by using a separate room/freezer to freeze products from that used for storage of frozen products. d) Chilling/heating capacity should be adapted to the amounts involved. e) Temperatures in the product and during transport should also be monitored. f) Verification should occur regularly.
6.7 The livestock and poultry meat products used by persons with specific religious beliefs shall meet their specific storage requirements while meeting the above requirements. Halal products should be stored in an approved dedicated warehouse, and should not be mixed with other livestock and poultry products.	**Regulation (EC) No 853/2004, Article 10:** 3. Member States may, without compromising achievement of the objectives of this Regulation, adopt, in accordance with paragraphs 4 to 8, national measures adapting the requirements laid down in Annex III. 4. (a) The national measures referred to in paragraph 3 shall have the aim of: (i) enabling the continued use of traditional methods at any of the stages of production, processing or distribution of food;	
7 loading and unloading 7.1.1 It should be equipped with battery forklifts, shelves, pallets and other loading and unloading facilities according to the actual needs of the enterprise. 7.1.2 Enterprises should uniformly use pallets of 1 200 mm x 1000 mm.		*Besides the obligation to avoid any contamination, this provision is not relevant for meat hygiene.*
7.1.3 Loading and unloading facilities and equipment should be kept clean and sanitary, and disinfected regularly.	**Regulation (EC) No 852/2004, Annex II, Chapter V:** 1. All articles, fittings and equipment with which food comes into contact are to: (a) be effectively cleaned and, where necessary, disinfected. Cleaning and disinfection are to take place	

CHINESE LEGISLATION: NATIONAL STANDARD GB 28640	EU LEGISLATION REGULATION (EC) NO 853/2004	IMPLEMENTING RULES AND COMPARATIVE EVALUATION
	at a frequency sufficient to avoid any risk of contamination;	
7.1.4 It should be equipped with closed platform for loading and unloading activities.	(b) be so constructed, be of such materials and be kept in such good order, repair and condition as to minimise any risk of contamination;	
7.2 Requirements for loading livestock and poultry 7. 2. 1 Livestock and poultry meat or other products with different temperature requirements shall not be placed in the same carriage.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter** Meat must attain the temperature specified and remain at that temperature during storage. **Regulation (EC) No 852/2004, Annex II, Chapter IV:** 3. Where conveyances and/or containers are used for transporting anything in addition to foodstuffs or for transporting different foodstuffs at the same time, there is, where necessary, to be effective separation of products. 7. Where necessary, conveyances and/or containers used for transporting foodstuffs are to be capable of maintaining foodstuffs at appropriate temperatures and allow those temperatures to be monitored.	
7.2.2 Halal livestock and poultry products should be transported by special vehicle	See above Point 6.7	
7.2.3 and 7.2.4 are the same as National Standard GB 12694-2016 (table 3, 8.2.2 and 8.2.6) and the same as National Standard GB 20575-2019 (table 3, 10.2.3 c).		
7.3 Operation management requirements 7.3.1 is the same as National Standard GB 12694-2016 (table 3, 12.1) and the same as National Standard GB 19479-2019 (table 3, 13).		
7.3.2 In this session, it should be ensured that the time for cooling livestock and poultry meat to leave the cold chain does not exceed 30 minutes, and the time for frozen livestock and poultry meat to leave the cold chain does not exceed 15 minutes.	**Regulation (EC) No 852/2004, Article 4:** 3. Food business operators shall, as appropriate, adopt the following specific hygiene measures: (d) maintenance of the cold chain;	
8 Transportation 8.1.1 is the same as National Standard GB 17236-2019 (table 3, 6.2.2).		

CHINESE LEGISLATION: NATIONAL STANDARD GB 28640	EU LEGISLATION REGULATION (EC) NO 853/2004	IMPLEMENTING RULES AND COMPARATIVE EVALUATION
8.1.2 is the same as National Standard GB 20575-2019 (table 3, 9.3.6).		
8.2 Transportation 8.2.1 is the same as National Standard GB 20575-2019 (table 3, 10.3.2 g) and the same as National Standard GB 12694-2016 (table 3, 8.2.7).		
8.2.2 The transportation vehicles should be equipped with temperature and humidity sensors and automatic temperature and humidity recorders to monitor and record temperature and humidity in real time.		**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs:** 2.11 Temperature control of storage environment e) Temperatures in the product and during transport should also be monitored. f) Verification should occur regularly.
8.2.3 All transportation devices should be in good technical condition. For example, the ventilation holes on the top should be in working condition, the car should be well drained, and there should be cargo pads to ensure air circulation.	**Regulation (EC) 852/2004, Annex II, Chapter II:** In rooms where food is prepared, treated or processed (including rooms contained in means of transport) the design and layout are to permit good food hygiene practices, including protection against contamination between and during operations.	
8.3 Transport conditions is the same as National Standard GB 20575-2019 (table 3, 10.3.2 g).		
8.4 Monitoring and recording 8.4.1 and 8.4.2 are the same as National Standard GB 12694-2016 (table 3, 9.1 and 12.1)		
9 Energy-saving requirements		*Not relevant for meat hygiene*
10 people 10.1 is the same as National Standard GB 12694-2016 (table 3, 10.5).		
10.2 is the same as National Standard GB 12694-2016 (table 3, 10.2).		

i) National standard GB 19303 - Hygienic Regulations for production of cooked meat products enterprises

CHINESE LEGISLATION: NATIONAL STANDARD GB 19303	EU LEGISLATION REGULATION (EC) NO 853/2004	IMPLEMENTING RULES AND COMPARATIVE EVALUATION
1 Scope This standard stipulates the basic sanitary requirements for cooked meat and cooked meat product processing enterprises in terms of factory design and facilities, sanitary management, production process, sanitary quality control, and personnel.	**Scope** This Regulation lays down specific rules on the hygiene of food of animal origin for food business operators.	
4 Factory design and facilities 4.1.1 is the same as National Standard GB 14881-2013 (table 1, 3.1) and the same as National Standard GB 12694-2016 (table 3, 3.2.3)		
4.1.2 is the same as National Standard GB 12694-2016 (table 3, 3.3.1)		
4.1.3 There shall be no stinky drains, garbage dumps or other places that impede sanitation and environmental cleanliness in the plant area.	**EU legislation Regulation (EC) No 852/2004, Annex II, Chapter I:** 2. The layout, design, construction, siting and size of food premises are to: (a) permit adequate maintenance, cleaning and/or disinfection, avoid or minimise air-borne contamination, and provide adequate working space to allow for the hygienic performance of all operations; (b) be such as to protect against the accumulation of dirt, contact with toxic materials, the shedding of particles into food and the formation of condensation or undesirable mold on surfaces; (c) permit good food hygiene practices, including protection against contamination and, in particular, pest control;	
4.1.4 is the same as National Standard GB 14881-2013 (table 1, 3.2.6)		
4.1.5 is the same as National Standard GB 14881-2013 (table 1, 4.1.3) and the same as National Standard GB 12694-2016 (table 3, 4.1.2)		
4.1.6 is the same as National Standard GB 14881-2013 (table 1, 5.1.8.3)		

CHINESE LEGISLATION: NATIONAL STANDARD GB 19303	EU LEGISLATION REGULATION (EC) NO 853/2004	IMPLEMENTING RULES AND COMPARATIVE EVALUATION
4.1.7 Boiler room, coal storage place and other places prone to dust and steam should be separated from the meat processing workshop by a certain distance. The boiler room is equipped with smoke and dust removal facilities. is the same as National Standard GB 14881-2013 (table 1, 8.3.1 and 8.4.1)	**EU legislation Regulation (EC) No 852/2004, Annex II, Chapter I:** 1. Food premises are to be kept clean and maintained in good repair and condition. 2. The layout, design, construction, siting and size of food premises are to: (b) be such as to protect against the accumulation of dirt, contact with toxic materials, the shedding of particles into food and the formation of condensation or undesirable mold on surfaces;	
4.1.8 is the same as National Standard GB 20575-2019 (table 3, 10.2.2 and 10.2.3)		
4.1.9 is the same as National Standard GB 14881-2013 (table 1, 5.1.2)		
4.2 Workshop 4.2.1 is the same as National Standard GB 14881-2013 (table 1, 4.1.1)		
4.2.2 is the same as National Standard GB 14881-2013 (table 1, 4.1.1 and 4.1.5)		
4.2.3 is the same as National Standard GB 14881-2013 (table 1, 4.2.4)		
4.2.4 is the same as National Standard GB 14881-2013 (table 1, 4.2.5)		
4.2.5 is the same as National Standard GB 14881-2013 (table 1, 5.1.2)		
4.2.6 is the same as National Standard GB 14881-2013 (table 1, 4.2.3)		
4.2.7 is the same as National Standard GB 14881-2013 (table 1, 4.2.2)		
4.2.8 is the same as National Standard GB 14881-2013 (table 1, 4.2.4.1 and 4.2.4.4)		
4.2.9 is the same as National Standard GB 20799-2016 (table 3, 9.2) and the same as National Standard GB 12694-2016 (table 3, 11.2.4)		

CHINESE LEGISLATION: NATIONAL STANDARD GB 19303	EU LEGISLATION REGULATION (EC) NO 853/2004	IMPLEMENTING RULES AND COMPARATIVE EVALUATION
4.2.10 is the same as National Standard GB 12694-2016 (table 3, 5.3.2)		
4.3 Sanitary facilities 4.3.1 is the same as National Standard GB 14881-2013 (table 1, 5.1.1) and the same as National Standard GB 12694-2016 (table 3, 5.1.2)		
4.3.2 is the same as National Standard GB 14881-2013 (table 1, 5.1.4) and the same as National Standard GB 12694-2016 (table 3, 5.8.1)		
4.3.3 is the same as National Standard GB 12694-2016 (table 3, 5.8.1) and the same as National Standard GB 19479-2019 (table 3, 6.1.2.1)		
4.3.4 is the same as National Standard GB 14881-2013 (table 1, 5.1.5) and the same as National Standard GB 20575-2019 (table 3, 6.3.3)		
4.3.5.1 is the same as National Standard GB 14881-2013 (table 1, 5.1.5.4) and the same as National Standard GB 20575-2019 (table 3, 6.2.3 and 6.5.2)		
4.3.5.2 is the same as National Standard GB 14881-2013 (table 1, 5.1.5.4 and 5.1.5.5) and the same as National Standard 20575-2019 (table 3, GB 6.4.1)		
4.3.6.1 is the same as National Standard GB 14881-2013 (table 1, 5.2.1.2) and the same as National Standard GB 19479-2019 (table 3, 6.1.3.3)		
4.3.6.2 The factory is equipped with a cleaning and disinfection room, and there are hot water disinfection or other effective disinfection facilities for disinfection of tools and containers. is the same as National Standard GB 19479-2019 (table 3, 6.1.3.3 and 6.1.3.4)	**Regulation (EC) No 852/2004, Annex II, Chapter V:** 1. All articles, fittings and equipment with which food comes into contact are to: (a) be effectively cleaned and, where necessary, disinfected. Cleaning and disinfection are to take place at a frequency sufficient to avoid any risk of contamination; (b) be so constructed, be of such materials and be kept in such good order, repair and condition as to minimise any risk of contamination; (c) with the exception of non-returnable containers and packaging, be so constructed, be of such materials and be kept in such good order, repair and condition as to	

CHINESE LEGISLATION: NATIONAL STANDARD GB 19303	EU LEGISLATION REGULATION (EC) NO 853/2004	IMPLEMENTING RULES AND COMPARATIVE EVALUATION
	enable them to be kept clean and, where necessary, to be disinfected; and (d) be installed in such a manner as to allow adequate cleaning of the equipment and the surrounding area. **Regulation (EC) No 853/2004, Annex III, Section I, Chapter III:** Food business operators must ensure that cutting plants handling meat of domestic ungulates: 5. have facilities for disinfecting tools with hot water supplied at not less than 82 °C, or an alternative system having an equivalent effect.	
4.3.6.3 There are vehicle washing facilities in the garage or carport.	**Regulation (EC) No 852/2004, Annex II, Chapter IV:** 1. Conveyances and/or containers used for transporting foodstuffs are to be kept clean and maintained in good repair and condition to protect foodstuffs from contamination and are, where necessary, to be designed and constructed to permit adequate cleaning and/or disinfection.	
4.3.7 is the same as National Standard GB 12694-2016 (table 3, 5.6) and the same as National Standard GB 14881-2013 (table 1, 5.1.7)		
4.3.8 is the same as National Standard GB 14881-2013 (table 1, 5.1.6) and the same as National Standard GB 20575-2006 (table 3, 6.6.1)		
4.4 Processing equipment 4.4.1 is the same as National Standard GB 14881-2013 (table 1, 5.2.1.2), the same as National Standard GB 12694-2016 (table 3, 5.4.2) and the same as National Standard GB 19479-2019 (table 3, 6.2.3)		
4.4.2 is the same as National Standard GB 19479-2019 (table 3, 6.2.2)		
4.4.3 is the same as National Standard GB 19479-2019 (table 3, 6.2.1) and the same as National Standard GB 14881-2013 (table 1, 5.2.1.1)		
4.4.4 is the same as National Standard GB 12694-2016 (table 3, 5.8.1)		

CHINESE LEGISLATION: NATIONAL STANDARD GB 19303	EU LEGISLATION REGULATION (EC) NO 853/2004	IMPLEMENTING RULES AND COMPARATIVE EVALUATION
4.4.5 The design, installation, operation and maintenance of pressure vessels such as double pots and sterilization pots shall comply with the pressure vessel safety standards stipulated by the state. Sterilization equipment shall be provided with temperature and time indicating devices. is the same as National Standard GB 14881-2013 (table 1, 6.1)	Regulation (EC) 852/2004, Annex II, Chapter V Equipment requirements 1. All articles, fittings and equipment with which food comes into contact are to: (b) be so constructed, be of such materials and be kept in such good order, repair and condition as to minimise any risk of contamination; (d) be installed in such a manner as to allow adequate cleaning of the equipment and the surrounding area. 2. Where necessary, equipment is to be fitted with any appropriate control device to guarantee fulfilment of this Regulation's objectives. Chapter XI - Heat treatment: 1. any heat treatment process used to process an unprocessed product or to process further a processed product is: (a) to raise every party of the product treated to a given temperature for a given period of time; and (b) to prevent the product from becoming contaminated during the process; 2. to ensure that the process employed achieves the desired objectives, food business operators are to check regularly the main relevant parameters (particularly temperature, pressure, sealing and microbiology), including by the use of automatic devices; 3. the process used should conform to an internationally recognised standard (for example, pasteurisation, ultra-high temperature or sterilisation).	
4.4.6 is the same as National Standard GB 14881-2013 (table 1, 5.1.1.2 and 5.1.1.3)		
4.5 Storage and transportation equipment 4.5.1 is the same as National Standard GB 12694-2016 (table 3, 5.7.1 and 5.7.2), the same as National Standard GB 17236-2019 (table 3, 6.2.1) and the same as National Standard GB 14881-2013 (table 1, 10.4)		

CHINESE LEGISLATION: NATIONAL STANDARD GB 19303	EU LEGISLATION REGULATION (EC) NO 853/2004	IMPLEMENTING RULES AND COMPARATIVE EVALUATION
4.5.2 is the same as National Standard GB 20575-2019 (table 3, 10.2.3, 10.2.4 and 10.2.5)		
4.5.3 is the same as National Standard GB 20575-2019 (table 3, 10.2.4 b), the same as National Standard GB 31621-2014 (table 1, 5.5) and the same as National Standard GB 12694-2016 (table 3, 8.2.2)		
4.5.4 is the same as National Standard GB 28640-2012 (table 3, 6.6)		
4.5.5 is the same as National Standard GB 12694-2016 (table 3, 8.2.6 and 8.2.7)		
4.6 Hygienic quality control facilities 4.6.1 is the same as National Standard GB 19479-2019 (table 3, 7.3) and the same as National Standard GB 17237-2008 (table 3, 5.5)		
4.6.2 The on-site testing equipment for technicians and health quality control personnel should not be used; the equipment include at least: central thermometer, effective chlorine detection, pH meter, temperature and humidity meter.		
5 Hygiene management 5.1.1 The factory shall, in accordance with the requirements of each part of this code, formulate the implementation rules for sanitary management of this factory and each workshop. The content should include the contents of personal hygiene, environmental sanitation, cleaning, disinfection, waste disposal, and dangerous goods management covered by this code, and a specific inspection, reward and punishment system should also be formulated. is the same as National Standard GB 12694-2016 (table 3, 11.1.1, 11.1.3, 11.2.1 and 11.2.4).	**Regulation (EC) No 852/2004, Article 5:** 1. Food business operators shall put in place, implement and maintain a permanent procedure or procedures based on the HACCP principles. 2. The HACCP principles referred to in paragraph 1 consist of the following: … (g) establishing documents and records commensurate with the nature and size of the food business to demonstrate the effective application of the measures outlined in subparagraphs (a) to (f).	**Guidance document Commission Notice 2016/C 278/01** *provides specific examples for pre-requisite programmes such as standard sanitisation procedures and HACCP plans that must be documented and made available for official inspection.*
5.1.2 The factory shall be equipped with trained full-time health management personnel, and each workshop shall be equipped with part-time or full-time health inspectors. The health management personnel and health inspectors shall be responsible for supervising the implementation of this specification by	**Regulation (EC) No 852/2004, Article 5:** 1. Food business operators shall put in place, implement and maintain a permanent procedure or procedures based on the HACCP principles. **Annex II, Chapter VIII:**	**Guidance document Commission Notice 2016/C 278/01**, *Chapter 7 - Training:* *Staff should be supervised and instructed and/or trained in food hygiene matters appropriate to their role, and those responsible for developing and maintaining the food safety management system should be suitably*

CHINESE LEGISLATION: NATIONAL STANDARD GB 19303	EU LEGISLATION REGULATION (EC) NO 853/2004	IMPLEMENTING RULES AND COMPARATIVE EVALUATION
all employees in accordance with the prescribed powers and responsibilities Relevant regulations. is the same as National Standard GB 14881-2013 (table 1, 6.3.1.1)	1. Every person working in a food-handling area is to maintain a high degree of personal cleanliness and is to wear suitable, clean and, where necessary, protective clothing. 2. No person suffering from, or being a carrier of a disease likely to be transmitted through food or afflicted, for example, with infected wounds, skin infections, sores or diarrhoea is to be permitted to handle food or enter any food-handling area in any capacity if there is any likelihood of direct or indirect contamination. Any person so affected and employed in a food business and who is likely to come into contact with food is to report immediately the illness or symptoms, and if possible their causes, to the food business operator. CHAPTER XII Training Food business operators are to ensure: 1. that food handlers are supervised and instructed and/or trained in food hygiene matters commensurate with their work activity; 2. that those responsible for the development and maintenance of the procedure referred to in Article 5(1) of this Regulation or for the operation of relevant guides have received adequate training in the application of the HACCP principles; and 3. compliance with any requirements of national law concerning training programmes for persons working in certain food sectors.	*trained in the application of PRPs and HACCP principles.* *The Food Business Operator shall make sure that staff taking part in the relevant processes demonstrate sufficient skills and are aware of the hazards identified (if any) and of the critical points in the production, storage, transport and/or distribution process. They must also show awareness of the corrective measures, the preventive measures and monitoring and recording procedures applicable in the business, in accordance with Chapter XII of Annex II to Regulation (EC) No 852/2004. A distinction can be made between trainings on hygiene in general (all employees) and specific HACCP trainings. The employees who handle/manage critical control points (CCPs) should be trained in the procedures based on the HACCP principles appropriate to their tasks (for example, a waiter/waitress will need hygiene training, while a cook will need additional training in the procedures based on the HACCP principles). Possible refresher training and its frequency should be considered according to the needs of the establishment and demonstrated skills.* *PRP and HACCP training of staff in food businesses should be proportionate to the size and the nature of the business.* **Annex I, 2. Examples of PRPs:** 2.9 Personnel (hygiene, health status) a) Personnel should be aware of hazards from gastro-intestinal infections, hepatitis and wounds with appropriate exclusion from food handling or suitable protection; relevant health problems should be reported to the manager. Special consideration should be given to temporary workers who might be less familiar with potential hazards.
5.2 Equipment repair and maintenance The factory shall regularly maintain and maintain the workshops and equipment involved in 4.2, 4.3, 4.4, and 4.5 in good condition. The above-mentioned workshop	**Regulation (EC) No 852/2004, Annex II, Chapter V:** 1. All articles, fittings and equipment with which food comes into contact are to:	

CHINESE LEGISLATION: NATIONAL STANDARD GB 19303	EU LEGISLATION REGULATION (EC) NO 853/2004	IMPLEMENTING RULES AND COMPARATIVE EVALUATION
and equipment shall be inspected and maintained at least once a year. Is the same as National Standard GB 14881-2013 (table 1, 5.2.3)	(b) be so constructed, be of such materials and be kept in such good order, repair and condition as to minimise any risk of contamination;	
5.3 Cleaning, disinfection Is the same as National Standard GB 12694-2016 (table 3, 5.4.2) and the same as National Standard GB 14881-2013 (table 1, 6.5)		
5.4 Waste treatment Is the same as National Standard GB 12694-2016 (table 3, 5.8.1)		
5.5 Environmental hygiene Special personnel should be set up to maintain the environmental sanitation of the plant area and the area adjacent to the plant area, and to keep the plant area and the road environment clean and in good condition.	**Regulation (EC) No 852/2004, Annex II, Chapter I** 1. Food premises are to be kept clean and maintained in good repair and condition.	
5.6 Pest control 5.6.1 and 5.6.2 is the same as National Standard GB 14881-2013 (table 1, 6.4) and the same as National Standard GB 31621-2014 (table 1, 5.10).		
5.6.3 Is the same as National Standard GB 12694-2016 (table 3, 3.3.4).		
5.7 Dangerous goods management Is the same as National Standard GB 12694-2016 (table 3, 7.8), the same as National Standard GB 14881-2013 (table 1, 7.3.3) and the same as National Standard GB 31621-2014 (table 1, 5.11).		
5.8 Personnel hygiene 5.8.1 Is the same as National Standard GB 14881-2013 (table 1, 12)		
5.8.2 Is the same as National Standard GB 14881-2013 (table 1, 6.3.1) and the same as National Standard GB 12694-2016 (table 3, 10.2)		

CHINESE LEGISLATION: NATIONAL STANDARD GB 19303	EU LEGISLATION REGULATION (EC) NO 853/2004	IMPLEMENTING RULES AND COMPARATIVE EVALUATION
5.8.3.1 Is the same as National Standard GB 14881-2013 (table 1, 6.3.1.3)		
5.8.3.2 Persons with the diseases listed in 5.8.3.1 should immediately stop the work of contacting the meat. After the diagnosis and elimination of the above-mentioned diseases or the recovery from treatment, they can continue to participate in the original work after reporting to the local health administrative department for approval. 5.8.3.3 Any production personnel who have been injured by a knife or other trauma shall immediately take appropriate measures to bandage and protect, and shall be temporarily transferred from work in contact with meat.	**Regulation (EC) No 852/2004, Annex II, Chapter VIII:** 1. Every person working in a food-handling area is to maintain a high degree of personal cleanliness and is to wear suitable, clean and, where necessary, protective clothing. 2. No person suffering from, or being a carrier of a disease likely to be transmitted through food or afflicted, for example, with infected wounds, skin infections, sores or diarrhoea is to be permitted to handle food or enter any food-handling area in any capacity if there is any likelihood of direct or indirect contamination. Any person so affected and employed in a food business and who is likely to come into contact with food is to report immediately the illness or symptoms, and if possible their causes, to the food business operator.	
5.8.4 Hand washing requirements Production staff wash their hands, disinfect, and start working when one of the following occurs; after going to the toilet, after handling contaminated raw materials; after engaging in other activities not related to production. Personnel who come into contact with cooked meat products should wash their hands and disinfect before leaving the processing area and returning again. Is the same as National Standard GB 14881-2013 (table 1, 6.3.2.4)	Regulation (EC) No 852/2004, Annex II Chapter I: An adequate number of washbasins is to be available, suitably located and designated for cleaning hands. Washbasins for cleaning hands are to be provided with hot and cold running water, materials for cleaning hands and for hygienic drying. Where necessary, the facilities for washing food are to be separate from the hand-washing facility.	
5.8.5 When cooked meat product processing personnel need to wear gloves, they should wash their hands before wearing. Gloves should be clean and hygienic, and should be replaced and washed every shift. Disposable gloves should be used when handling cooked products.	**Regulation (EC) No 852/2004, Annex II, Chapter VIII:** 1. Every person working in a food-handling area is to maintain a high degree of personal cleanliness and is to wear suitable, clean and, where necessary, protective clothing.	
5.8.6 Personal hygiene Is the same as National Standard GB 14881-2013 (table 1, 6.3.2 and 6.3.3).		

CHINESE LEGISLATION: NATIONAL STANDARD GB 19303	EU LEGISLATION REGULATION (EC) NO 853/2004	IMPLEMENTING RULES AND COMPARATIVE EVALUATION
5.8.6.5 Is the same as National Standard GB 31621-2014 (table 1, 8.5).		
6 Processing 6.1.1.1 Is the same as National Standard GB 12694-2016 (table 3, 6.2.2 and 6.2.3) and the same as National Standard GB 20799-2016 (table 3, 5.2).		
6.1.1.2 Is the same as National Standard GB 14881-2013 (table 1, 7.2, 9.4 and 14.1.1.1).		
6.1.1.3 is the same as National Standard GB 14881-2013 (table 3, 5.1.1.1 and 5.1.1.2).		
6.1.1.4 Food additives should be used in accordance with the varieties specified in GB 2760. It is prohibited to use food additives beyond the scope and standard.	**Regulation (EC) No 1333/2008, Article 4:** 1. Only food additives included in the Community list in Annex II may be placed on the market as such and used in foods under the conditions of use specified therein.	
6. 1.2 Storage of raw materials 6.1.2.1 Cold storage and normal temperature storage used for raw material storage should always be kept clean and hygienic. Meat storage should be stored separately according to the batch and date of production, and the packaging items should be separated from the non-packaging items, and the raw meat should be separated from the sundries. Cleaning or disinfection should be done when cleaning the warehouse, but pesticides or other toxic substances should not be used to kill insects and disinfect. is the same as National Standard GB 14881-2013 (table 1, 10) and the same as National Standard GB 12694-2016 (table 3, 8.2.3).	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter VII:** 5. Exposed meat must be stored and transported separately from packaged meat, unless stored or transported at different times or in such a way that the packaging material and the manner of storage or transport cannot be a source of contamination for the meat	**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs:** f) Clearly defined storage facilities should be available for raw material, receptacles for food and packaging materials. Only products that may be added to food (e.g. additives) should be stored in the same area, excluding common storage with toxic products (e.g. pesticides).
6.1.2.2 is the same as National Standard GB 20799-2016 (table 3, 6.3 and 6.4), is the same as National Standard GB 17236-2019 (table 3, 6.2.2) and the same as National Standard GB 12694-2016 (table 3, 8.2.2 and 8.2.3).		

CHINESE LEGISLATION: NATIONAL STANDARD GB 19303	EU LEGISLATION REGULATION (EC) NO 853/2004	IMPLEMENTING RULES AND COMPARATIVE EVALUATION
6.1.2.3 is the same as National Standard GB 14881-2013 (table 1, 7.4.3) and the same as National Standard GB 31621-2014 (table 1, 5.8).		
6.1.2.4 is the same as National Standard GB 31621-2014 (table 1, 5.3) and the same as National Standard GB 17236-2019 (table 3, 6.2.2).		
6.1.2.5 is the same as National Standard GB 17236-2019 (table 3, 6.2.1) and the same as National Standard GB 12694-2016 (table 3, 8.1.4).		
6.2 Prevent cross contamination 6.2.1 is the same as National Standard GB 12694-2016 (table 3, 4.1.6, 5.4.1, 5.4.3, 6.3.7, 6.4.3, 7.5, 8.2.3 and 11.2.4) and the same as National Standard GB 14881-2013 (table 1, 6.6.4).		
6.2.2 Processing personnel of raw materials or semi-finished products should avoid direct or indirect contact with the final product. Personnel who process raw materials and semi-finished products should thoroughly clean and disinfect their hands before changing the work clothes when they need to contact the final product. is the same as National Standard GB 12694-2016 (table 3, 10.4 and 11.2.4).	**Regulation (EC) No 852/2004, Annex II, Chapter VIII:** 1. Every person working in a food-handling area is to maintain a high degree of personal cleanliness and is to wear suitable, clean and, where necessary, protective clothing.	**Guidance document Commission Notice 2016/C 278/01, Annex I, 2. Examples of PRPs:** Lay-out should strictly separate between contaminated (low care) and clean areas (high care) (or separation in time and suitable cleaning in between); suitable arrangements of rooms should be made for one-direction production flow and cooled rooms or heating facilities should be insulated. 2.9 Personnel (hygiene, health status) b) At least ready-to-eat food should preferably be handled with gloves suitable to come into contact with food and the gloves should be regularly renewed. Hands should be washed before putting on gloves and after glove removal. c) Hands should be washed (+ disinfected) regularly, as a minimum, before starting to work, after using the lavatory, after breaks, after rubbish disposal, after coughing or sneezing, after handling of raw materials, …

CHINESE LEGISLATION: NATIONAL STANDARD GB 19303	EU LEGISLATION REGULATION (EC) NO 853/2004	IMPLEMENTING RULES AND COMPARATIVE EVALUATION
6.3 Processing 6.3.1 is the same as National Standard GB 14881-2013 (table 1, 6 and 8) and is the same as National Standard GB 12694-2016 (table 3, 11).		
6.3.2 is the same as National Standard GB 14881-2013 (table 1, 5.2.1.3.1, 6.1.1, 6.1.3 and 6.1.4).		
6.3.3 is the same as National Standard GB 14881-2013 (table 1, 5.2.1.1 and 10.3) and the same as National Standard GB 12694-2016 (table 3, 5.4.6)		
6.3.4 The design of each process should follow the principle of preventing large-scale growth and reproduction of microorganisms. The general conditions that should be followed are as follows. The center temperature of refrigerated food should be 0 ℃ ～ 7 ℃; the frozen food should be below -18 ℃; the sterilization temperature should reach 70 ℃ above the center temperature, and the center temperature of the heat preservation and storage meat should be kept above 60 ℃; Room temperature should be controlled at 2 ℃, 4 ℃. is the same as National Standard GB 17236-2019 (table 3, 6.2.2) and the same as National Standard GB 17237-2008 (table 3, 5.1.2, 5.10.1 and 5.10.2).	*Process control and food safety criteria are defined for microbiological hazards in Regulation (EC) No 2073/2005. Necessary treatments can be different temperature/time combinations.*	
6.3.5 is the same as National Standard GB 14881-2013 (table 1, 6.3 and 13).		
6.3.6 is the same as National Standard GB 14881-2013 (table 1, 7.2.1, 7.2.2 and 8.4.2).		
6.3.7 is the same as National Standard GB 14881-2013 (table 1, 7.3.1 and 7.4.3).		
6.3.8 Animal casings used for enema products should be scrubbed and cleaned to remove odors. The use of non-animal casings must use varieties approved by the provincial health authority.	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter IV:** 18. When destined for further handling: (a) stomachs must be scalded or cleaned; (b) intestines must be emptied and cleaned;	

CHINESE LEGISLATION: NATIONAL STANDARD GB 19303	EU LEGISLATION REGULATION (EC) NO 853/2004	IMPLEMENTING RULES AND COMPARATIVE EVALUATION
6.3.9 Low-turpentine hardwood (wood chips) should be used for all types of smoked products.	In the EU the use of smoke is regulated in separate legislation, i.e. **Regulation (EC) No 2065/2003 on smoke flavourings used or intended for use in or on foods**. Article 4: 1. The use of smoke flavourings in or on foods shall only be authorised if it is sufficiently demonstrated that — it does not present risks to human health, — it does not mislead consumers. Each authorisation may be subject to specific conditions of use. 2. No person shall place on the market a smoke flavouring or any food in or on which such a smoke flavouring is present if the smoke flavouring is not a primary product authorised in accordance with Article 6, or if is not derived therefrom, and if the conditions of use laid down in the authorisation in accordance with this Regulation are not adhered to. **Article 5:** 1.The wood used for the production of primary products shall not have been treated, whether intentionally or unintentionally, with chemical substances during the six months immediately preceding felling or subsequent thereto, unless it can be demonstrated that the substance used for the treatment does not give rise to potentially toxic substances during combustion.	**Implementing Regulation (EU) No 1321/2013, Article 1:** The list of the smoke flavouring primary products authorised to the exclusion of all others in the Union for use in or on foods and/or for the production of derived smoke flavourings, as referred to in Article 6 of Regulation (EC) No 2065/2003, is laid down in the Annex to this Regulation.
6.3.10 is the same as National Standard GB 14881-2013 (table 1, 7.4.3), the same as National Standard GB 12694-2016 (table 3, 8.2.2) and the same as National Standard GB 20799-2016 (table 3, 6.5).		
6.3.11 The temperature, time and other parameters of the final product sterilization link should be recorded in batches. is the same as National Standard GB 31621-2014 (table 1, 5.4 and 11.1) and the same as National Standard GB 14881-2013 (table 1, 14.1.1.2).	**Regulation (EC) No 852/2004, Article 5:** 1. Food business operators shall put in place, implement and maintain a permanent procedure or procedures based on the HACCP principles. 2. The HACCP principles referred to in paragraph 1 consist of the following: … (g) establishing documents and records commensurate with the nature and size of the food business to	

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	demonstrate the effective application of the measures outlined in subparagraphs (a) to (f).	
6.3.12 The processing of various cooked products shall not be carried out in the open air.	**Regulation (EC) No 852/2004, Annex II, Chapter IX:** 3. At all stages of production, processing and distribution, food is to be protected against any contamination likely to render the food unfit for human consumption, injurious to health or contaminated in such a way that it would be unreasonable to expect it to be consumed in that state.	
6.4 Packaging 6.4.1 Clean and disinfect the operation room before packaging cooked meat products, and check the personnel hygiene and equipment operation is the same as National Standard GB 31621-2014 (table 1, 5.1)		
6.4.2 and 6.4.3 are the same as National Standard GB 12694-2016 (table 3, 8.1.2).		
6.4.4 is the same as National Standard GB 14881-2013 (table 1, 14.1) and the same as National Standard GB 19479-2019 (table 3, 9.1.2).		
6.5 Storage 6.5.1 is the same as National Standard GB 31621-2014 (table 1, 5.4, 5.6 and 5.8).		
6.5.2 is the same as National Standard GB 31621-2014 (table 1, 5.3 and 5.4) and the same as National Standard GB 17236-2019 (table 3, 6.2.2).		
6.6 Transportation 6.6.1 is the same as National Standard GB 14881-2013 (table 1, 10.1)		
6.6.2 is the same as National Standard GB 12694-2016 (table 3, 8.2.6) and the same as National Standard GB 28640-2012 (table 3, 6.5).		
6.6.3 is the same as National Standard GB 14881-2013 (table 1, 10.3) and the same as National Standard GB 12694-2016 (table 3, 8.2.8).		

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6.6.4 is the same as National Standard GB 12694-2016 (table 3, 12.4).		
7 Hygienic quality control **7.1 Institutions and personnel** is the same as National Standard GB 14881-2013 (table 1, 6.1.2, 6.1.3, 9.1, 13.2 and 13.3)		
7.2 Management system **The health quality control agency must formulate a management system related to the control of the health quality owl. The management system should be practical, easy to operate and inspect. The management system should include at least the following aspects.** 7.2.1 The management system for raw material identification and quality inspection, intermediate product inspection, and finished product inspection technical regulations, such as quality specifications, inspection items, evaluation standards, sampling and inspection methods. 7.2.2 The verification system of the production process and operation process verification system and the temperature and time parameter recording system of the final product sterilization link. 7.2,3 Observation system for keeping samples. 7.2.4 Various original records and batch production records management system. 7.2,5 Technical file management system. 7.2.6 Laboratory management system. 7.2.7 Inspection system for sanitation and cleaning, equipment repair and maintenance, pest control, dangerous goods management, personal hygiene management, etc.	**Regulation (EC) No 852/2004, Article 4:** 2. Food business operators carrying out any stage of production, processing and distribution of food after those stages to which paragraph 1 applies shall comply with the general hygiene requirements laid down in Annex II and any specific requirements provided for in Regulation (EC) No 853/2004. 3. Food business operators shall, as appropriate, adopt the following specific hygiene measures: (a) compliance with microbiological criteria for foodstuffs; (b) procedures necessary to meet targets set to achieve the objectives of this Regulation; (c) compliance with temperature control requirements for foodstuffs; (d) maintenance of the cold chain; (e) sampling and analysis. **Article 5:** 1. Food business operators shall put in place, implement and maintain a permanent procedure or procedures based on the HACCP principles.	**Guidance document Commission Notice 2016/C 278/01, Annex II:** Procedures based on the hazard analysis and critical control points (HACCP) principles and guidelines for their application **9. Verification (and validation) procedures** (Principle 6) Verification procedures may include: — Audits of HACCP-based procedures and their records, — Inspection of operations (people compliance), — Confirmation that CCPs monitoring is implemented and maintained, — Review of deviations and product dispositions; corrective actions taken with regard to the product. Verification should comprise all of the following elements: — check on the correctness of the records and analysis of deviations, — check on the person monitoring processing, storage and/or transport activities, — physical check on the process being monitored, — calibration of instruments used for monitoring. **10. Documentation and record keeping** (Principle 7) Recommended documentation includes: — PRPs applied, working instructions, standard operational procedures, control instructions; — Description of the preparatory stages (before 7 principles); — Hazard analysis;

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		— CCP (+/- oPRPs) identification; — Critical limit determination; — Validation activities; —Corrective actions anticipated; — Description of planned monitoring and verification activities (what, who, when); — Record forms; — Modifications to the HACCP-based procedures; — Supporting documents (generic guides, scientific evidence, …).
7.3 Raw materials is the same as National Standard GB 14881-2013 (table 1, 7.2.1, 7.2.2 and 7.2.6).		
7.4 The most hygienic control of the processing process is the same as National Standard GB 14881-2013 (table 1, 14.1 and 14.2) and the same as National Standard GB 12694-2016 (table 3, 11.2.1 and 12).		
7.5 Hygienic quality control of finished products 7.5.1. Is the same as National standard GB 28640-2012 (table 3, 6.6).		
7.5.2 Each batch of products shall have a reserve sample, which shall be stored in a special reserve sample warehouse (or area) classified by variety and lot number, and shall be clearly marked. Retained samples should be retained at least until the product shelf life is exceeded.	**Regulation (EC) No 2073/2005, Article 3:** 2. As necessary, the food business operators responsible for the manufacture of the product shall conduct studies in accordance with Annex II in order to investigate compliance with the criteria throughout the shelf-life. In particular, this applies to ready-to-eat foods that are able to support the growth of Listeria monocytogenes and that may pose a Listeria monocytogenes risk for public health. **Annex II** The studies referred to in Article 3(2) shall include: — specifications for physico-chemical characteristics of the product, such as pH, aw, salt content, concentration of preservatives and the type of packaging system, taking into account the storage and processing	

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	conditions, the possibilities for contamination and the foreseen shelf-life	
7.5.4 Is the same as National standard GB 28640-2012 (table 3, 6.4).		
7.5.5 Is the same as National standard GB 31621-2014 (table 1, 5.8).		
7.6 Other contents of the most controlled hygiene 7.6.1 Is the same as National standard GB 14881-2013 (table 1, 5.2.2).		
7.6.2 Is the same as National standard GB 19479-2019 (table 3, 8.3.21) and the same as National standard GB 28640-2012 (table 3, 8.4.2).		
7.6.3 Is the same as National standard GB 12694-2016 (Table 3, 5.1.1).		
7.6.4 Is the same as National standard GB 14881-2013 (table 1, 14.1.3).		
7.6.5 Is the same as National standard GB 12694-2016 (Table 3, 12.4 and 12.5)		
7.6.6 Is the same as National standard GB 31621-2014 (table 1, 8.2) and the same as National standard GB 14881-2013 (table 1, 9.2 and 9.4).		
8 Personnel management Points 8.1, 8.2, 8.3, 8.4, 8.5, 8.6.	**Regulation (EC) No 178/2002, Article 17:** 1. Food and feed business operators at all stages of production, processing and distribution within the businesses under their control shall ensure that foods or feeds satisfy the requirements of food law which are relevant to their activities and shall verify that such requirements are met. Regulation (EC) No 852/2004, Annex II, Chapter XII - Training: Food business operators are to ensure: 1. that food handlers are supervised and instructed and/or trained in food hygiene matters commensurate with their work activity;	In the guidance document (Commission Notice 2016/C 278/01) **heading 7. Training** states: Staff should be supervised and instructed and/or trained in food hygiene matters appropriate to their role, and those responsible for developing and maintaining the food safety management system should be suitably trained in the application of PRPs and HACCP principles.

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	2. that those responsible for the development and maintenance of the procedure referred to in Article 5(1) of this Regulation or for the operation of relevant guides have received adequate training in the application of the HACCP principles; and 3. compliance with any requirements of national law concerning training programmes for persons working in certain food sectors.	
8.7 Is the same as National standard GB 14881-2013 (table 1, 6.3) and the same as National standard GB 31621-2014 (table 1, 8.2, 8.3, 8.4, 8.5 and 8.6).		
8.8 The factory shall establish various personnel technical training and assessment files. Is the same as National standard GB 14881-2013 (table 1, 12) and the same as National standard GB 31621-2014 (table 1, 9).		

3) Microbial contaminants

GB 29921 - Pathogen limits for food;
GB 2726 – microbial limit values for heat treated products and products eaten raw;
GB 16869 - microbial limit values for chilled and frozen poultry products;
GB 9959.2 - microbial limit values for chilled pork products;
GB 9961 - microbial limit values for mutton carcasses.

These standards specify regulatory limits and testing methods for various categories of fresh meat and poultry as well as food products including pre-packed foods, except canned food.

EU requirements are laid down on Regulation (EC) No 2073/2005 in the form of Process hygiene Criteria that must be met during the production process of fresh meat in slaughter houses and cutting plants, and Food Safety Criteria that must be met throughout the food production and distribution chain and are applicable to products placed on the market throughout their shelf life.

A violation of Process hygiene criteria must lead to a review and improvement of production practices. The violation of Food Safety Criteria renders a product unfit for human consumption and it must be recalled or re-processed (Article 7 of Regulation (EC) No 2073/2005). Food business operators must ensure through scientifically sound evidence that food safety criteria will be met throughout the shelf life of their product (Article 3). The Chinese food law does not define process hygiene criteria. EU rules provide for specific limit values applicable to minced meat and mechanically separated meat, while the Chinese law provides no specific standards for these particularly sensitive product categories.

There are differences in the sampling protocols and indicator organisms used: In the EU, *Enterobacteriaceae* serve as a broad category of indicators of fecal contamination, rather than testing slightly more specifically for coliform bacteria, as required by Chinese standards. Samples are taken from skin swabs (beef and pork) or neck skin (poultry) in the EU, while the sample site is not specified in the Chinese standard. In China, specific testing for *E.coli* O157: H7 is required for beef carcasses, which is not a legal requirement in the EU (but this organism is nonetheless included in most testing protocols of EU operators).

For chilled poultry products, Chinese law requires testing of aerobic colony count, coliform bacteria and E. coli O157:H7, which are not legally required in the EU, while in the EU, process hygiene controls in poultry slaughtering plants must include *Campylobacter* testing, which is not required in China. Chilled poultry is not a product category that is relevant in EU-China trade, however.

In the EU, microbial standards are supplemented by programmes to reduce the microbial load on animals arriving at the slaughtering plant (see above, Regulation (EC) No 853/2004, Annex III, Section I, Chapter IV, point 4: ‘Animals must be clean’) and by specific farm control programmes to eliminate human pathogenic *Salmonella* species from poultry and pig herds pursuant to Regulation (EC) No 2160/2003 on the control of salmonella and other specified food-borne zoonotic agents.

The following table compares the provisions of both standards as far as they are relevant for meat, poultry and their products. The conclusion is justified that the range of end points addressed by microbial standards and the overall level of scrutiny are very similar in the EU and in China. Meat or poultry produced in compliance with EU legislation that are exported to China will also meet Chinese microbial standards.

CHINESE NATIONAL STANDARD GB 29921 AND 2726	EU REGULATION (EC) NO 2073/2005
1 Scope This standard provides the indexes for pathogen in foods, limits and testing methods.	**1 Scope** This Regulation lays down the microbiological criteria to be complied with by food business operators. The competent authority shall verify compliance with the rules and criteria laid down in this Regulation, without prejudice to its right to undertake further sampling and analyses for the purpose of detecting and measuring other micro-organisms, their toxins or metabolites, either as a verification of processes, for food suspected of being unsafe, or in the context of a risk analysis.
2 Principles for implementation **2.1 With or without pathogen limits, the food producers, processors and traders shall take control measures to reduce the pathogen level in foods and the possibility of causing risks.** **2.2 After taking samples according to provisions of the GB 4789.1, the sample shall be tested according to the testing methods in the table 1 shown below.**	**Article 3**: General requirements 1. Food business operators shall ensure that foodstuffs comply with the relevant microbiological criteria. To this end the food business operators at each stage of food production, processing and distribution, including retail, shall take measures, as part of their procedures based on HACCP principles together with the implementation of good hygiene practice, to ensure the following: (a) that the supply, handling and processing of raw materials and foodstuffs under their control are carried out in such a way that the process hygiene criteria are met, (b) that the food safety criteria applicable throughout the shelf-life of the products can be met under reasonably foreseeable conditions of distribution, storage and use. 2. As necessary, the food business operators responsible for the manufacture of the product shall conduct studies in accordance with Annex II in order to investigate compliance with the criteria throughout the shelf-life. In particular, this applies to ready-to-eat foods that are able to support the growth of Listeria monocytogenes and that may pose a Listeria monocytogenes risk for public health. **Article 4:** Testing against criteria 1. Food business operators shall perform testing as appropriate against the microbiological criteria, when they are validating or verifying the correct functioning of their procedures based on HACCP principles and good hygiene practice. 2. The sampling frequency shall be at least that provided for in the Regulation. **Article 5:** Specific rules for testing and sampling: 1. The analytical methods and the sampling plans and methods in Annex I shall be applied as reference methods. 2. Samples shall be taken from processing areas and equipment used in food production, when such sampling is necessary for ensuring that the criteria are met. In that sampling the ISO standard 18593 shall be used as a reference method. Food business operators manufacturing ready-to-eat foods, which may pose a *Listeria monocytogenes* risk for public health, shall sample the processing areas and equipment for Listeria monocytogenes as part of their sampling scheme.
Chinese National standard GB 29921 **Table 1**	**EU Regulation EC No 2073/2005**
Meat products cooked (heat treated) and meat products intended to be eaten raw.	**Food Safety Criteria applicable to products placed on the market during their shelf life :**

CHINESE NATIONAL STANDARD GB 29921 AND 2726	EU REGULATION (EC) NO 2073/2005
***Listeria monocytogenes*:** **Absence in 25 g in all 5 samples**	Absence in 25 g of in all 5 samples of ready-to-eat foods (before the food has left the immediate control of the food business operator, who has produced it); Less than 100 cfu /g of ready-to-eat foods placed on the market during entire shelf life.
***Salmonella*:** **Absence in 25 g in all 5 samples**	Absence in 25 g of in all 5 samples of meat products intended to be eaten raw and of meat products made from poultry meat intended to be eaten cooked.
***Staphylococcus aureus*:** **Between 100 and 1000 cfu/g in 1 of 5 samples**	Limit values defined for dairy products and fishery products.
***Escherichia coli* O 157:H7** **Absence in 25 g in all 5 samples (only for beef products)**	Limit values defined for *E. coli* as process hygiene criteria for the production of minced meat, mechanically separated meat and meat preparations of all species. . Minced meat and mechanically separated meat: No more than two out of five samples between 50 and 500 cfu/g. Meat preparations: No more than two out of five samples between 500 and 5000 cfu/g.
Chinese National standard GB 29921 Table 2 (as per GB 2726)	**EU Regulation EC No 2073/2005**
Cooked meat products produced with fresh (frozen) livestock and poultry products	**Process hygiene criteria in slaughtering establishments for carcasses of cattle, sheep, goats and horses after dressing, but before chilling taken at least once a week:**
Total bacterial colonies: **2 out of 5 samples are allowed to be between 10^4 and 10^5 cfu/g**	*Aerobic colony count:* Satisfactory if all samples are below 3,5 log cfu/cm^2 daily mean before chilling. Unsatisfactory if one sample is above 5,0 log cfu/cm^2. This applies to samples taken by the destructive method of four tissue samples of 5 carcasses (four sites on each carcass). The samples are pooled.
Coli group **2 out of 5 samples are allowed to be between 10 and 10^2 cfu/g**	*Enterobacteriaceae* Satisfactory if all samples are below 1,5 log cfu/cm^2 daily mean before chilling. Unsatisfactory if one sample is above 2,5 log cfu/cm^2. This applies to samples taken by the destructive method of four tissue samples of 5 carcasses (four sites on each carcass). The samples are pooled. *Salmonella*: Absent in the area tested per carcass 2 out of 50 samples are allowed to be positive (a rolling window calculation method should be used).

Specific GB Standards that define microbial limit values for individual product categories.

CHINESE NATIONAL STANDARD GB 16869-2005	EU REGULATION (EC) NO 2073/2005
This standard applies to chilled product that is a result of slaughtering, processing and precooling procedure of live poultry; including whole and eviscerated poultry, segmented portions of whole poultry (poultry meat, poultry wings, poultry drumsticks, etc.), poultry by-products (poultry head, neck, innards, feet (claws), etc.). This standard refers also to product that is a result of slaughtering, processing and freezing procedure of live poultry; including whole and eviscerated poultry, segmented portions of whole poultry (poultry meat, poultry wings, poultry drumsticks, etc.), poultry by-products (poultry head, neck, innards, feet (claws),	
***Salmonella* should not be detected in 25g in 5 samples** *No microbial criteria laid down in China standards* **Fresh poultry products :** **Aerobic colony count (CFU/g): Below 1 * 10^4** **Frozen poultry products:** **Aerobic colony count (CFU/g): Below 5 * 10^5** **Fresh poultry products** **Coliform (MPN/100g): Below 1 * 10^4** **Frozen poultry products** **Coliform (MPN/100g): Below 5 * 10^3** ***EHEC (O157: H7)* should not be detected in 25g in 5 samples**	**Process hygiene criteria in slaughtering establishments for poultry carcasses after chilling:** *Salmonella* sp on carcasses of broilers and turkeys: Not detected in 25 g of a pooled sample of neck skin. 5 out of 50 samples are allowed to be positive (a rolling window calculation method should be used). **Food safety criteria** - Fresh poultry meat, minced poultry meat and poultry products: *Salmonella sp* 5 samples of at least 25 g are negative for products placed on the market during their shelf-life. ***Campylobacter* sp of carcasses of broilers** **1000 cfu/g (carcass after chilling).** **15 out of 50 samples are allowed to be positive (a rolling window calculation method should be used).** *No microbial criteria laid down in EU legislation.*

CHINESE NATIONAL STANDARD GB/T 9961	EU REGULATION (EC) NO 2073/2005
This standard applies to fresh and frozen mutton carcass, products from slaughtering, processing, inspection and quarantine of healthy live sheep.	
Aerobic colony count **(CFU/g): Below 5 * 10^4**	Process hygiene criteria in slaughtering establishments for carcasses of cattle, sheep, goats and horses after dressing, but before chilling taken at least once a week: *Aerobic colony count:* Satisfactory if all samples are below 3,5 log cfu/cm^2 daily mean before chilling. Unsatisfactory if one sample is above 5,0 log cfu/cm^2. This applies to samples taken by the destructive method of four tissue samples of 5 carcasses (four sites on each carcass). The samples are pooled.
Coliform **(MPN/100g): Below 1* 10^4**	*Enterobacteriaceae* Satisfactory if all samples are below 1,5 log cfu/cm^2 daily mean before chilling. Unsatisfactory if one sample is above 2,5 log cfu/cm^2. This applies to samples taken by the destructive method of four tissue samples of 5 carcasses (four sites on each carcass). The samples are pooled.
Salmonella **should not be detected**	*Salmonella:* Absent in the area tested per carcass 2 out of 50 samples are allowed to be positive (a rolling window calculation method should be used)
Shigella **should not be detected**	*No microbial criteria laid down in EU legislation.*
Staphylococcus **should not be detected**	Limit values defined for dairy products and fishery products
Diarrheogenic E. Coli **should not be detected.**	Limit values defined for *E. coli* as process hygiene criteria for the production of minced meat, mechanically separated meat and meat preparations.

CHINESE NATIONAL STANDARD GB 9959.2	EU REGULATION (EC) NO 2073/2005
This standard applies to chilled (fresh) or frozen pork lean meat that are processed after it was segmented in parts from whole pig carcass	
Aerobic colony count (CFU/g): Below 1 * 10^4	Process hygiene criteria in slaughtering establishments for carcasses of cattle, sheep, goats and horses after dressing, but before chilling taken at least once a week: *Aerobic colony count:* Satisfactory if all samples are below 4 log cfu/cm^2 daily mean before chilling. Unsatisfactory if one sample is above 5,0 log cfu/cm^2. This applies to samples taken by the destructive method of four tissue samples of 5 carcasses (four sites on each carcass). The samples are pooled. *Enterobacteriaceae* Satisfactory if all samples are below 2 log cfu/cm^2 daily mean before chilling. Unsatisfactory if one sample is above 3 log cfu/cm^2. This applies to samples taken by the destructive method of four tissue samples of 5 carcasses (four sites on each carcass). The samples are pooled.
***Salmonella* should not be detected**	*Salmonella:* Absent in the area tested per carcass. 3 out of 50 samples are allowed to be positive (a rolling window calculation method should be used)

4) Environmental contaminants

For the purpose of this document, only requirements related to contaminants in meat and meat products/preparation will be considered.

Chinese legislation: National standard 2762	EU legislation: Regulation (EC) No 1881/2006	Implementing rules and comparative evaluation
1.Scope National Food Safety Standard Maximum Levels of Contaminants in Foods, GB 2762 This standard sets limits in meat or meat products for lead, cadmium, mercury, arsenic, chromium, Benzo[a]pyrene and N-nitrosodimethylamine.	**Scope** Regulation (EC) No 1881/2006 sets maximum levels in meat and meat products for lead, cadmium, dioxins and Benzo(a)pyrene.	Chinese Standards and European Legislation pursue the same objectives and limit values defined are largely identical. Arsenic, mercury or nickel are no environmental toxicants of concern for meat or meat products in the European Union. Based on monitoring data, limit values were defined for mercury in fishery products and for arsenic in rice. Monitoring data for nickel are established since 2015 in an EU-wide programme. The European Food Safety Authority is re-evaluating exposure levels and an opinion can be expected by End 2020. Where no specific limit values are defined, contaminants must be kept at levels as low as reasonably possible (ALARA), in accordance with codes of good practice and the Precautionary Principle laid down in the General Food Law of Regulation (EC) No 178/2002, Article 7.
2.Terms and Definitions **2.1 Contaminants** Hazardous chemical substance, not intentionally added to food, but brought into such foods in food production (crop growing, animal husbandry and veterinary medicine), processing, packaging, storage, transportation, distribution, and consumption, or introduced a result of environmental contamination. Contaminants in this standard refer to contaminants other than pesticide residue, veterinary drug residue, biotoxin, and radionuclides. **2.2 Edible part** The part of food material for edible use, which is the remaining part after mechanical processing that removes the non-edible part (such as grain husk,	**Definitions "Contaminant",** means any substance that is not intentionally added to a foodstuff but is present in it as production residue (including treatments applied to crops and livestock and in the practice of veterinary medicine), manufacture, cessation, preparation, treatment, conditioning, packaging, transport or storage of said food or as a result of environmental contamination. Foreign matter such as, for example, fragments of insects, animal hair and other materials are not covered by this definition. Regulation (EC) No 1881/2006, Article 1 2. The maximum levels specified in the Annex shall apply to the edible part of the foodstuffs concerned, unless other-wise specified in the Annex.	

Chinese legislation: National standard 2762	EU legislation: Regulation (EC) No 1881/2006	Implementing rules and comparative evaluation
fruit peeling, nut shell, bones in meat/fish, shell of shellfish). Note 1: the non-edible parts cannot be removed by non-mechenical means (such as refining of crude vegetable oil); Note 2: quantity of the edible parts may vary when different production techniques are used to produce the same food materials. For example, the edible part could be 100% when processing cereal and whole-wheat flour from wheat, while the edible part is calculated by the actual flour extraction rate when producing wheat flour from wheat.		
3. Principles of (Standard) Application **3.1 Regardless of existence of the contaminant limits, the food producers and processors should take control measures to keep the contaminant content in foods at the minimum level.** **3.2 This standard lists the contaminants that may pose high risks to the public health; the foods with contaminant limits are foods that pose higher impact on consumers' dietary exposure.** **3.3 Explanation of the Food Categories (Appendix A) is for defining scope of application of the contaminant limits, and is only applicable to this standard. When a contaminant limit is applied to a certain food category, all types of foods in the food category are subject to the limit unless otherwise specified.** **3.4 Levels of contaminants in foods are calculated based on the edible parts of the food unless otherwise specified.** **3.5 When there are limits sets on processed products, the contaminant limits for dried foods are calculated by the dehydration ratio or the concentration ratio of the corresponding fresh**		Chinese Standards and European Legislation pursue the same objectives and limit values defined are largely identical.

Chinese legislation: National standard 2762	EU legislation: Regulation (EC) No 1881/2006	Implementing rules and comparative evaluation
foods. The dehydration ratio or the concentration ratio could be determined by analysis of the food, by the information provided by the producer, or by other available data, unless otherwise specified.		

Table 4a Comparison between the maximum limits of contaminants imposed by European and Chinese legislation regarding meat and meat products.

Contaminant	Product	GB 2762-2017 Limit		Regulation 1881/2006 Limit
Lead	Meat (excluding viscera of livestock and poultry)	0.2 mg/kg		0,10 mg/kg
	Viscera of livestock and poultry	0.5 mg/kg		0,50 mg/kg
	Meat products	0.5 mg/kg		values applicable for raw materials apply
Cadmium	Meat (excluding viscera of livestock and poultry)	0.1 mg/kg		0,050 mg/kg
	Liver of the livestock and poultry	0.5 mg/kg		0.5 mg/kg
	Kidney of the livestock and poultry	1 mg/kg		1 mg/kg
	Meat products (excluding liver products, kidney products)	0.1 mg/kg		values applicable for raw materials apply
	Liver products	0.5 mg/kg		values applicable for raw materials apply
	Kidney products	1 mg/kg		values applicable for raw materials apply
Mercury	Meat and Meat products	0.05 mg/kg		Mercury is not a relevant environmental contaminant for meat or meat products in the EU
Arsenic	Meat and meat products	Total	Inorganic	Arsenic is not a relevant environmental contaminant for meat or meat products in the EU
		0.5 mg/kg	----------	

Contaminant	Product	GB 2762-2017 Limit		Regulation 1881/2006 Limit	
	Reference to Fat and its products	0.1 mg/kg	----------	----------	
Tin	Foods (excluding beverages, formula for infants and young children, complementary foods for infants and young children)	250 mg/Kg Only apply to foods packaged in containers of tinned plate sheet		200 mg	
Nickel	Meat products not mentioned, References to: Fat and its products Products mainly produced of hydrogenated vegetable oil and hydrogenated vegetable oil	1 mg/kg		Nickel is not a relevant environmental contaminant for meat or meat products in the EU	
Benzo[a]pyrene	Meat and meat products Smoked, roasted, grilled meat	5 µg/kg		Benzo[a]pyrene	Sum of benzo (a) pyrene, benz (a) anthracene, benzo (b) fluoranthene and chrysene
				2 µg/kg	12 µg/kg
N-Nitrosodimethylamine	Meat products (excluding canned meat) Dried cooked meat products	3.0 µg/kg		EU regulates limits for nitrates and nitrite in meat products.Regulation (EC) No 1333/2008 limits the maximum amount of nitrites and nitrates that may be added to meat products to 150 mg/kg, which excludes the formation of problematic levels of nitrosamines.	

5) Drinking Water Quality

CHINESE LEGISLATION: NATIONAL STANDARD GB 5749	EU LEGISLATION: COUNCIL DIRECTIVE 98/83/EC	EVALUATION
1. Scope **GB 5749-2006** **Standards for Drinking Water Quality** The sanitary requirements of the drinking water and its source, centralized water supply unit, secondary water supply and health security products related to drinking water as well as water quality monitoring and testing methods. This standard applies to drinking water from all kinds of centralized water supply in urban and rural areas, and also applies to decentralized drinking water supply.	**Scope** This Directive apllies to the quality of water intended for human consumption in all food chain.	Chinese Standards and European Legislation pursue the same objectives and limit values defined are largely identical. Under harmonized EU law there are fewer potential contaminants listed for obligatory monitoring by all Member States. However, all authorities must monitor potential hazards that might be relevant under local conditions (Article 5 of Directive 98/83). Guiding principle is the high level of protection and precaution set forth by the General Food Law in Regulation (EC) no 178/2002, in particular Articles 5 and 7.
3 Terms and Definitions **3.1 Drinking water** Water and domestic water for people to live. **3.2 Type of water supply** 3.2.1 Central water supply The method of getting water from the source and then deliver it to the user or public water supply spot through the water transport and distribution network, including self-built water supply facilities. The water supply stations providing daily drinking water for users and water supply for public places and residents community also belong to central water supply. 3.2.2 Secondary water supply Centralized water goes through storage, high pressure and disinfection or deep processing once again before delivering to the users through pipes or containers.	**Definitions** In Council Directive 98/83/EC of 3 November 1998, definitions are listed in Article 2 1. 'water intended for human consumption' shall mean: (a) all water either in its original state or after treatment, intended for drinking, cooking, food preparation or other domestic purposes, regardless of its origin and whether it is supplied from a distribution network, from a tanker, or in bottles or containers; (b) all water used in any food-production undertaking for the manufacture, processing, preservation or marketing of products or substances intended for human consumption unless the competent national authorities are satisfied that the quality of the water cannot affect the wholesomeness of the foodstuff in its finished form; 2. 'domestic distribution system' shall mean the pipework, fittings and appliances which are installed between the taps that are normally used for human consumption and the distribution	Definitions are compatible. For the purpose of this document the most relevant provision is that water used in processing of food products must all food production must be monitored and fulfill the quality criteria established.

CHINESE LEGISLATION: NATIONAL STANDARD GB 5749	EU LEGISLATION: COUNCIL DIRECTIVE 98/83/EC	EVALUATION
3.2.3 Small central water supply Daily water supply is less than 1000 ma in rural area (or water supply population is under 10000). 3.2.4 Non-central water supply Getting water directly from the water source by dispersive residents with no or just simple facilities. **3.3 Regular indices** The index that can reflect the basic drinking water quality. **3.4 Non-regular indices** Drinking water quality indices that need to be adopted according to the region, time or special circumstances.	network but only if they are not the responsibility of the water supplier, in its capacity as a water supplier, according to the relevant national law.	
4. Hygiene requirements for drinking water **4.1 The quality of drinking water should meet the following basic requirements to ensure the safety of users.** 4.1.1 Pathogenic microorganisms should not be contained in the drinking water. 4.1.2 Chemicals in drinking water should not be harmful to human health. 4.1.3 Radioactive substances in drinking water should not be harmful to human health. 4.1.4 Sensory properties of drinking water should be good. 4.1.5 Drinking water should be through sterilization processing. 4.1.6 The drinking water quality shall meet the hygienic requirements in table 1 and table 3. The disinfectant limit of drinking water from centralized water supply factory and the disinfectant residue in the finished water and want in the	Council Directive 98/83/EC Article 4 -General obligations: Member States shall take the measures necessary to ensure that water intended for human consumption is wholesome and clean. For the purposes of the minimum requirements of this Directive, water intended for human consumption shall be wholesome and clean if it: (a) is free from any micro-organisms and parasites and from any substances which, in numbers or concentrations, constitute a potential danger to human health, and (b) meets the minimum requirements set out in Annex I, Parts A and B of this Directive. Article 5: Quality standards 3. A Member State shall set values for additional parameters not included in Annex I where the protection of human health within its national territory or part of it so requires. Article 6: Point of compliance	The

CHINESE LEGISLATION: NATIONAL STANDARD GB 5749	EU LEGISLATION: COUNCIL DIRECTIVE 98/83/EC	EVALUATION
end of pipe network shall meet the requirements in Table 2. 4.1.7 Due to some restrictions, some quality indices of water from small centralized and decentralized water supply should be temporarily implemented in accordance with Table 4. While the rest of the index should still refer to Table 1, 2 and 3. 4.1.8 In the event of unexpected public events impacting water quality, sensory properties and general chemical indicators can be eased appropriately with the approval of the municipal people's government at or above. 4.1.9 When drinking water contains the indicators listed in Table A.1 in Appendix A, the limit in this table can be referred to for evaluation.	1. The parametric values set shall be complied with: … (d) in the case of water used in a food-production undertaking, at the point where the water is used in the undertaking. Annex II Monitoring: 1. Monitoring programmes for water intended for human consumption must: (a) verify that the measures in place to control risks to human health throughout the water supply chain from the catchment area through abstraction, treatment and storage to distribution are working effectively and that water at the point of compliance is wholesome and clean; (b) provide information on the quality of the water supplied for human consumption to demonstrate that the obligations set out in Articles 4 and 5, and the parametric values laid down in Annex I, are being met; (c) identify the most appropriate means of mitigating the risk to human health. 2. Pursuant to Article 7(2), competent authorities shall establish monitoring programmes complying with the parameters and frequencies set out in Part B of this Annex which consist of: (a) collection and analysis of discrete water samples; or (b) measurements recorded by a continuous monitoring process. In addition, monitoring programmes may consist of: (a) inspections of records of the functionality and maintenance status of equipment; and/or (b) inspections of the catchment area, water abstraction, treatment, storage and distribution infrastructure.	

CHINESE LEGISLATION: NATIONAL STANDARD GB 5749	EU LEGISLATION: COUNCIL DIRECTIVE 98/83/EC	EVALUATION
	3. Monitoring programmes may be based on a risk assessment as set out in Part C. 4. Member States shall ensure that monitoring programmes are reviewed on a continuous basis and updated or reconfirmed at least every 5 years	
6. Hygiene requirements for centralized water supply unit The Sanitation requirements of centralized water supply unit should refer to Hygienic Standard for the Drinking Water Centralized Supply Unit promulgated Ministry of Health.	See above. Monitoring programmes must ensure that water complies with the standards set forth at all points throughout the distribution network.	
7. Hygiene requirements for secondary water supply Secondary water supply facilities and treatment requirements shall follow conditions regarding the type of disinfectant to be used, and the operating procedure, as well as limits, residues in the final water and still residues in the water at the end of the net.	See above. Monitoring programmes must ensure that water complies with the standards set forth at all points throughout the distribution network.	
8. Hygiene requirements for health security products related to drinking water **8.1 Chemical treatment agents with the functions of flocculation, coagulation, disinfection, oxidation, and adsorption,** **pH adjustment, rust prevention, anti-scaling, etc. which are used for treating the drink water should not pollute** **the water.** **8.2 Water transport and distribution equipment, protective materials and treatment materials of drinking water** **should not pollute drinking water**	Council Directive 98/83/EC Article 4 -General obligations: Member States shall take the measures necessary to ensure that water intended for human consumption is wholesome and clean.	
9. Water quality monitoring	See above. Monitoring programmes must ensure that water complies with the standards set forth at all points throughout the distribution network.	

CHINESE LEGISLATION: NATIONAL STANDARD GB 5749	EU LEGISLATION: COUNCIL DIRECTIVE 98/83/EC	EVALUATION
9.1 Water quality detection of the water supply unit 9.1.1 Non-regular water quality indicators of water supply unit should be decided after the negotiation between local water supply administrative department at or above the county level and the administrative department of health. 9.1.4 Test results of the water of the water supply unit should be submitted to the local administrative department of health regularly; the contents and method that submitted should be agreed upon by the local administrative department of water supply and the health administrative department. 9.1.5 When the quality of drinking water is abnormal, it should be reported to the local water supply administrative department and the administrative department of health in time. **9.2 Water quality monitoring of health supervision** 9.2.1 The health administrative departments at all levels should periodically implement water quality supervision and monitoring towards all kinds of water supply units according to the actual need. 9.2.2 In the event of unexpected public events impacting water quality, the health administrative department at or above the county level shall make plans on drinking water supervision and monitoring according to needs. 9.2.3 Water quality monitoring scope, project, frequency of health supervision should be determined by the health administrative department at or above the local municipal.		

Table 5a: Limit values for drinking water parameters

The table below shows the differences in parameters and values between European and Chinese legislation.

MAIN INDICATORS FOR WATER QUALITY: EU INDICATORS AND LIMITS AS PER COUNCIL DIRECTIVE 98/83/EC FOR COMPARISON WITH GB STANDARD GB 5749-2006 FOR REGULAR AND NON-REGULAR WATER		
Main indicators	**Eu limits**	**GB5749-2006 limits**
COD (chemical oxygen demand) mg/l	Not mentioned	3, (5 when restricted to water source when original COD is over 6 mg/l)
Petroleum mg/l	Not mentioned	0.3 mg/l
pH	Not mentioned	6.5<x<8.5
TOC Total organic carbon	No abnormal changes	5 mg/l
TDS (Total dissolved Solids)	Not mentioned	1000 mg/l
Total hardness (as CaCo3) mg/l	Not mentioned	450 mg/l
Barium (Ba)	Not mentioned	0.7 mg/l
Beryllium (Be)	Not mentioned	0.002 mg/l
Boron (B)	1.00 mg/l	0.5 mg/l
Copper (Cu)	2.0 mg/l	1 mg/l
Molybdenum (Mo)	Not mentioned	0.07 mg/l
Silver (Ag)	Not mentioned	0.05 mg/l
Thallium	Not mentioned	0.0001 mg/l
Zinc (Zn)	Not mentioned	1 mg/l
Chlorite	Not mentioned	0.7 mg/l
Cyanogen chloride	Not mentioned	0.07 mg/l
Chlorate	Not mentioned	0.7 mg/l
Bromodichloromethane	Not mentioned	0.06 mg/l
Chlorodibromomethane	Not mentioned	0.1 mg/l
Methylene chloride	Not mentioned	0.02 mg/l
Fluoride (F)	1.5 mg/l	1.0 mg/l

MAIN INDICATORS FOR WATER QUALITY: EU INDICATORS AND LIMITS AS PER COUNCIL DIRECTIVE 98/83/EC FOR COMPARISON WITH GB STANDARD GB 5749-2006 FOR REGULAR AND NON-REGULAR WATER				
Nitrate (NO3) (conversion factor nitrogen to nitrate; 4.43)	50 mg/l		As (N) 10 mg/l, or 20 mg/l when restricted by ground water	
Escherichia coli	0 in 250 ml		0 in 100 ml	
Enterococci	0 in 250 ml		0 in 100 ml	
Pseudomonas aeruginosa	0 in 250 ml		0 in 100 ml	
Giardia	Not mentioned		< 1 per 10l	
Cryptosporidium	Not mentioned		< 1 per 10l	
Dichloroacetic acid	Not mentioned		0.05 mg/l	
Trichloroacetic acid	Not mentioned		0.1 mg/l	
Trihalomethane(the total of chloroform, chlorodibromomethane, bromodichloromethane,and methyl bromide)	Not mentioned		The sum of the ratio of the concentration of various compounds to their own limits should not exceed 1mg/l	
Trichloroethane	Not mentioned		2 mg/l	
Trihalomethanes	0.1 mg/l		0.06 mg/l	
Volatile phenols mg/l	Not mentioned		0.002 mg/l	
Radioactivity index	Tritium	100 Bq/l	Total radioactivity α	0.5 Bq/l
	Total indicative dose	0.10 mSv/year	Total radioactivity β	1 Bq/l