A comparison of hygiene legislation and Food Safety Standards applicable to casings in the People's Republic of China and in the European Union

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LIST OF NATIONAL STANDARDS ASSESSED

GB 14967-2015 - National Food Safety Standard for Collagen Enteric Casings;

GB/T 7740-2006 - Natural casings;

GB/T 22637-2008 - Good manufacturing practice of the natural sausage casings processing;

GB/T 20572-2019 - Evaluating specification on the HACCP certification of the natural casings processing;

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 hygiene and food safety standards applicable to these products. 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.

The focus of this particular study is on casings.

European Union (EU) Regulations pertinent to food hygiene in general and casings 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, for example on microbiological criteria applicable to food (Regulation (EC) 2073/2005). In addition, various guidelines assist food business operators with implementing the legislative requirements, which are published as Commission notices (Commission Notice 2022/C 355/01) and as Community guides (Community guide to good practice for hygiene and the application of the HACCP principles in the production of natural sausage casings).

The basic legislation in China pertinent to food hygiene and safety of casings is laid down and published in four Food Safety Standards that were examined in detail. The present document compares EU legislation applicable to the production of casings with the respective legal requirements of the People's Republic of China.

RESULTS AND CONCLUSIONS

The Chinese national standards specifying the sanitary control management guidelines and basic requirements for the processing of casings were assessed and compared to the pertinent requirements laid down in current European legislation.

Casings are defined in Regulation (EU) 2020/692 (Article 2, definition 45) as: "the bladders and intestines that after cleaning have been processed by tissue scraping, defatting and washing and have been treated with salt or dried". EU legislation does not make specific provisions for the handling and treatment of casings. All edible parts of an animal, including offal, viscera or blood are falling under the definition of 'meat' in accordance with Regulation (EC) No 853/2004 and must be treated accordingly. Chinese national standards make more detailed provisions. However, the requirements laid down in the Chinese national standard are in line with the general provisions related to hygiene practice in food production in GB 14881 and to hygiene rules for slaughter, processing and transport in GB 12694 which are equivalent to requirements laid down for meat in European legislation[1].

Minor differences were noted, such as more detailed definitions in the Chinese national standards, or criteria for quality assessment, which are not laid down in EU Legislation. Minor differences also exist in the requirements for microbiological monitoring. However, these minor differences are not considered relevant for the hygiene or the safety of products consumed. It is concluded that casings produced according to EU standards comply with the food safety requirements of China as laid down in the national standards studied.

[1] Detailed, comparative analyses of National Standard GB 14881 - General Hygiene Practice for food production and GB-12694 - Specific hygiene rules for slaughter, processing and transport of livestock and poultry can be found in the document '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' dated 17 November 2020, Ref C02-2020.

TABULATED COMPARISON OF MAIN ELEMENTS OF CHINESE AND EU STANDARDS

Subject	Evaluation result
GB/T 7740-2006 - Natural casings	EU legislation does not make specific provisions for the handling and treatment of casings. All edible parts of an animal, including offal, viscera or blood are falling under the definition of 'meat' in accordance with Regulation (EC) No 853/2004, and are subject to official controls applicable to meat. The Chinese national standard provides detailed definitions for many product categories of casings and includes technical and visual quality criteria, while EU standards mainly address the hygiene objective, i.e. the strict avoidance of contamination. The European Natural Sausage Casings Association (ENSCA) has published in line with Article 9 of Regulation (EC) No 852/2004 a Community guide to good practice for hygiene and the application of the HACCP principles in the production of natural sausage casings, which is implemented industry-wide and provides practical details concerning the processing of natural casings. The Chinese Standard does not introduce any hygiene-related provisions or criteria that would not be fulfilled by casings produced and processed in accordance with EU rules.
GB 14967-2015 - National Food Safety Standard for Collagen Enteric Casings	This standard applies to edible artificial sausage casings produced by adding auxiliary materials, chemically and mechanically treated into collagen "masses". EU legislation mentions only natural casings and does not mention artificial sausage casings. The microbiological requirements mentioned in the Chinese food standard and the ENSCA guide to good practice are similar, except that additional limits for moulds are listed in the Chinese food standard and additional limits for *Clostridium perfringens* and *Bacillus cereus* are listed in the ENSCA guide. These minor differences are not considered to affect the comparative safety assessment of the product.
GB/T 22637-2008 - Good manufacturing practice of the natural sausage casings processing	Chinese food hygiene requirements with regard to good manufacturing practice for the production of casings are fully addressed by applicable EU legislation. Approved establishments in the EU that produce or process casings fulfil Chinese hygiene standards.
GB/T 20572-2019 - Evaluating specification on the HACCP certification of the natural casings processing	The Chinese general requirements related the Hazard Analysis and Critical Control Points in the production of casings is fully addressed by applicable EU legislation and guidance.
GB/T 17030-2019 - Polyvinylidene chloride (PVDC) flat-film for food-packaging	Standard GB/T 17030-2019 is not relevant for casings. PVDC films can be used to wrap sausages, meat or other food products, but the wrapping itself is not eaten.

DETAILED ANALYSIS

Chinese legislation: National standard GBT 7740-2006 Natural casings	EU legislation: Regulation (EC) No 853/2004	Guides to good practice and comparative evaluation
1. Scope This standard specifies the terms and definitions, product classification and name, requirements, test methods, packaging, marking, storage and transport of natural casings. This standard applies to all types of natural casings.	**Article 1 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.	*EU legislation does not make specific provisions for the handling and treatment of casings. All edible parts of an animal, including offal, viscera or blood are falling under the definition of 'meat' in accordance with Regulation (EC) No 853/2004 and must be treated accordingly.*
2. Normative references	Not present in EU legislation	
3. Terminology and definitions The following terms and definitions are applicable to this standard. **3.1 Natural casings** Animal tissues such as oesophagus, stomach, small intestine, large intestine and bladder of healthy livestock, specially processed and salted or dried to preserve the tissues, which are used as casings for sausage infusion. **3.2 Salted casings** Natural casings specially salted. **3.3 Dried casings** Natural casings that have been cured, washed and then dried or dried. **3.4 Single bundle**	**Regulation (EC) No 853/2004, Annex I** 1.1. 'Meat' means edible parts of the animals referred to in points 1.2 to 1.8, including blood. 1.11. 'Offal' means fresh meat other than that of the carcase, including viscera and blood. 1.12. 'Viscera' means the organs of the thoracic, abdominal and pelvic cavities, as well as the trachea and oesophagus and, in birds, the crop. 7.9. 'Treated stomachs, bladders and intestines' means stomachs, bladders and intestines that have been submitted to a treatment such as salting, heating or drying after they have been obtained and after cleaning. **Regulation (EU) 2020/692, Article 2 Definitions** (45) 'casings' means the bladders and intestines that after cleaning have been processed by tissue scraping, defatting and washing and have been treated with salt or dried;	*The Chinese national standard provides more detailed definitions. EU standards designate all edible parts as 'meat' and focus on the general objective that must be achieved, i.e. strict avoidance of contamination.* *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. More detailed definitions concerning casings are not laid down in EU legislation.* *The European Natural Sausage Casings Association (ENSCA) has published in line with Article 9 of Regulation (EC) No 852/2004 a Community guide[1] to good*

Chinese legislation: National standard GBT 7740-2006 Natural casings	EU legislation: Regulation (EC) No 853/2004	Guides to good practice and comparative evaluation
A single bundle of salted pig or sheep casings with a total length of 12.5 m, not exceeding 3 sections. **3.5 Double bundle** Commonly known as a small bundle, consisting of two single bundles of salted pork sausages put together. **3.6 Large hank** Pork and sheep casings with a total length of 91.5 m per hank, not exceeding 18 sections. **3.7 Starting length minimum length** 1m or more for small hanks; 2 m or more for large hanks; 0.94 m or more for short hanks. **3.8 Veins** A network of structures formed by the submucosa. **3.9 Whiskers** whisker the tendons that hang from the gut coat. **3.10 caecum** the part of the cecum of pigs, cows and sheep. **3.11 Lamb stomach** Commonly known as the lamb's milk stomach, the complete stomach pouch of a lamb taken from lactation, with 2cm to 3cm of oesophagus and duodenum. **3.12 Salt burn** A red or pink spot produced on the wall of the intestinal coat.		*practice, which has been developed during numerous meetings by representatives from the various national organisations dealing with casings. In the end they agreed on a guide with a set of rules practicable for the sectors to which they refer throughout the Community (see Article 9, 3, b).* *In the guide to good practice a definition is given for natural (sausage) casings:* Casings means intestines and bladders, that after cleaning, have been processed by tissue scraping, defatting and washing, and have been treated with salt". Additional comments to the definition: • The intestines and bladders are derived from farmed animals, which comprise of pigs (*Sus scrofa*), sheep (*Ovis aries*), goats (*Capra hircus*), cattle (*Bos taurus, Bos indicus*) and horses (*Equus caballus*); • In EU legislation casings are not defined as such, but they are regarded to be part of the group-definition of treated stomachs, bladders and intestines (as laid down in Regulation (EC) No 853/2004, Annex I, 7.9). [1] *Community guide to good practice for hygiene and the application of the HACCP principles in the production of natural sausage casings (version VI, January 2017; available on the EU website:*

Chinese legislation: National standard GBT 7740-2006 Natural casings	EU legislation: Regulation (EC) No 853/2004	Guides to good practice and comparative evaluation
3.13 Flat calibre The width of a dried casing casing measured at 10 cm from each end when it is flattened. **3.14 Black spot** A black or dark blue spot produced on the surface of a casing. **3.15 Hard hole** A hole in the wall of the casing with a diameter of 1 mm to 3 mm, which does not expand when water is collected. **3.16 Hole** A hole in the wall of the intestinal casings with a diameter of 3 mm or more. **3.17 Soft hole** A hole in the wall of the casing that continues to expand when water is collected. **3.18 Pin hole** Holes in the wall of the casing with a diameter of 1 mm or less. **3.19 Bung** Rectal end with hairs. **3.20 Dried tubed casing** Dried tubed casing made from salted casings that have been rinsed, broken into batches, pasted, cooled and tied.		*https://food.ec.europa.eu/safety/biological-safety/food-hygiene/guidance-platform_en).*

<table>
<tr><th>Chinese legislation: National standard GBT 7740-2006 Natural casings</th><th>EU legislation: Regulation (EC) No 853/2004</th><th>Guides to good practice and comparative evaluation</th></tr>
<tr><td>3.21 Handkerchief
A dried handkerchief made by rinsing, breaking, gluing, cooling and tying of salted casings in sheets.

3.22 Wider calibre
The calibre of the casing is too large, exceeding the specified calibre by 1 mm.

3.23 Too narrow calibre
The calibre of the casing is too narrow, less than 1 mm below the specified calibre.

3.24 Diameter
The maximum diameter of the casing when filled with water.</td><td></td><td></td></tr>
<tr><td>4. Product classification and name
4.1 Salt casing
(a) salted pork casing (salted hog casing).
(b) salted sheep casing (salted sheep casing).
(c) salted goat casing (salted goat casing).
(d) salted horse casing (salted horse casing).
(e) salted beef casing (salted beef casing).
(f) salted pork fat ends (salted hog fat ends).
(g) salted pork fat sausage (salted hog chitterling).
(h) salted pork caecum (salted hog caecum).
(i) salted beef caecum (salted beef caecum).
j) salted lamb stomach (salted lamb stomach).
k) salted beef large intestines (salted beef large intestines).
(l) salted pork bladder (salted hog bladder).
4.2 Dried sausage casings
a) dried pork intestines (dried hog casing).</td><td></td><td>In the guide to good practice produced by ENSCA in 2017 a summary is given of the species / organ / treatment combinations that are to be regarded as natural casings:
<table>
<tr><td></td><td colspan="2">intestine</td><td colspan="2">bladder</td></tr>
<tr><td>species</td><td>S[1]</td><td>D[2]</td><td>S</td><td>D</td></tr>
<tr><td>pig</td><td>x</td><td>x</td><td>x</td><td>x</td></tr>
<tr><td>cattle</td><td>x</td><td>x</td><td>x</td><td>x</td></tr>
<tr><td>Sheep/ goat</td><td>x</td><td>x</td><td></td><td></td></tr>
<tr><td>horse</td><td>x</td><td></td><td></td><td></td></tr>
</table>
[1]: salted natural casings
[2]: dried natural casings (after salting)</td></tr>
</table>

<table>
<tr><th>Chinese legislation: National standard GBT 7740-2006 Natural casings</th><th>EU legislation: Regulation (EC) No 853/2004</th><th>Guides to good practice and comparative evaluation</th></tr>
<tr><td>b) dried beef casing (dried beef casing).
c) dried pork bladder (dried hog bladder).
d) dried sheep/goat casing (dried sheep/goat casing).
e) dried pork casing tubed (dried hog casing tubed).
f) dried sheep casing tubed (dried sheep casing tubed).</td><td></td><td></td></tr>
<tr><td>5 Technical requirements

5.1 Raw materials
The raw material for the casings should come from healthy animals in safe, non-infected areas, slaughtered in officially approved slaughterhouses and qualified for pre-slaughter and post-slaughter quarantine.
5.2 Processing
It shall comply with national food hygiene requirements.
5.3 Quality
5.3.1 Colour and lustre
Shall conform to the provisions of Table 1.
<table>
<tr><th>Name</th><th>Colour</th></tr>
<tr><td>Salted pork sausage casing</td><td>White, creamy white, light pink, light yellowish white, yellowish white</td></tr>
<tr><td>Salted sheep casing</td><td>White, greenish-white, yellowish-white, off-white</td></tr>
<tr><td>Salted goat casing</td><td>White, greenish white, yellowish white, off-white</td></tr>
<tr><td>Salted pork fat ends [a]</td><td>White, creamy white, pale pink, pale yellowish white</td></tr>
<tr><td>Salted Pork chitterling</td><td>White, creamy white, pale pink, pale yellowish white</td></tr>
</table>
</td><td>Regulation (EC) No 853/2004, Article 1 Scope
6. This Regulation shall apply without prejudice to:
(a) relevant animal and public health rules, including more stringent rules laid down for the prevention, control and eradication of certain transmissible spongiform encephalopathies;
(b) animal welfare requirements; and
(c) requirements concerning the identification of animals and the traceability of products of animal origin.</td><td>Regulation (EC) No 853/2004 lays down rules for food hygiene does not provide criteria for technical or visual quality. The characteristics mentioned in the Chinese national standard under point 5.3 all deal with quality issues.</td></tr>
</table>

Chinese legislation: National standard GBT 7740-2006 Natural casings		**EU legislation: Regulation (EC) No 853/2004**	**Guides to good practice and comparative evaluation**
Salted pork's abalone head	Milky white, pale pink, pale yellowish white		
Salted lamb stomach	Milky white, pale pink, pale yellowish white		
Salted pork's bladder	Milky white, pale yellowish white, pale greyish white		
Salted beef large intestings	White, milky white, pale red, yellowish white, off-white		
Salted beef casing	White, creamy white, pale red, yellowish white, off-white		
Dried beef casing	Pale yellow, brownish yellow		
Dried pork intestines	Yellow, silvery white, pale yellow		
Dried sheep sausage	Yellow, silvery white, pale yellow		
Dried pork bladder	Pale pink, pale yellow		
Dried pork tubed casing	Milky white, pale yellow, yellow		
Dried sheep tubed casing	Milky white, beige, silvery white		
Dry pork handkerchief	Milky white, pale yellow, yellow		
Dried sheep handkerchief	Milky white, beige, silvery white		
a	The head of the pig's large intestine refers to the rectal part.		
5.3.2 Odours			

<table>
<tr><th>Chinese legislation: National standard GBT 7740-2006 Natural casings</th><th>EU legislation: Regulation (EC) No 853/2004</th><th>Guides to good practice and comparative evaluation</th></tr>
<tr><td>
5.3.2.1 Salted sausage casings
Free from rancidity and other undesirable odours.
5.3.2.2 Dried sausage casings
Free from mouldy and other undesirable odours.
5.3.3 Substance
Shall conform to the provisions of Table 2.
<table>
<tr><th>Name</th><th>Substance</th></tr>
<tr><td>Salted pork casing
Salted sheep casing
Salted goat casing</td><td>Clean, tough intestinal walls, transparent when filled with water, without significant sinew.
No visible corrosion marks, no soft holes, no broken holes, no more than 2 hard holes per handful (in salted pig casings, hard holes of up to 2mm in diameter are allowed).</td></tr>
<tr><td>Salted pork fat ends
Salted Pork Fatty Intestine
Salted Pork Bladder</td><td>Clean and hygienic, with fresh and elastic skin, with hair rings on the head of the pig intestine.
No knife wounds, no serious red spots.
No knife wounds, with neck tube, clean and hygienic.</td></tr>
<tr><td>Salted lamb stomach
Salted pork's abductor</td><td>Clean intestinal walls, de-greased, no holes, no cuts.</td></tr>
</table>
</td><td></td><td></td></tr>
</table>

Chinese legislation: National standard GBT 7740-2006 Natural casings	**EU legislation: Regulation (EC) No 853/2004**	**Guides to good practice and comparative evaluation**

Salted Beef Large intestines Salted Beef Intestine	
Dried sausage casings	Tough and shiny intestine walls; free of impurities and holes.
Dried pork bladder	Bladder with neck tube, grease removed.

5.3.4 Length

Shall be in accordance with Table 3.

Name	**Length, number of sections**			
	per handle	No more than	Each section not shorter than /m	18 sections (up to 34mm bore)
salted pork casing	Hank: 91.5m ±2m	18 sections (34mm calibre or less) 16 sections (34mm calibre or more)	2	-

Chinese legislation: National standard GBT 7740-2006 Natural casings	EU legislation: Regulation (EC) No 853/2004	Guides to good practice and comparative evaluation

	Double bundle: 25m ±0.3m	6 sections	1	-
Salted sheep casing	91.5m	18 sections	2	-
Salted goat casing	91.5m	18 sections	2	-
salted pork fat ends	5 sections	-		0.6m 0.85m 1.15m ~1.5m
salted hog chitterling	10m	6 sections	1	-
salted beef casing	25m	8 sections	1	-
salted beef large intestines	25m	13 sections	0.5	-
dried beef casing	50m	18 sections	1	-

Chinese legislation: National standard GBT 7740-2006 Natural casings	**EU legislation: Regulation (EC) No 853/2004**	**Guides to good practice and comparative evaluation**

dried pork bladder	10 pcs	-	-	15cm~20cm 20cm~25cm 25cm~30cm 30cm~35cm ≥35cm
dried pork casing tubed dried sheep casing tubed	25 pcs 50pcs	-	-	-

[a] Dried pig bladder length from the beginning of the bladder neck to the top.

5.3.5 Calibre and flat diameter
shall conform to the provisions of Tables 4 and 5.

Name	Bore Diameter
salted pork casing /mm	24~26;26~28;28~30;30~32;32~34 34~36; ≥36 36~40;40~.44 36~38; ≥38 38~40; ≥40 ≥44

The guide to good practice produced by ENSCA in 2017 provides some information on grading:
At selection the calibre, length per strand and quality (e.g. holes) of the natural casings is determined. To assess this, casings are filled with water (small ruminant, hog) or air (ruminant). The calibre is measured with an electronic instrument, a

Chinese legislation: National standard GBT 7740-2006 Natural casings		**EU legislation: Regulation (EC) No 853/2004**	**Guides to good practice and comparative evaluation**
	Not more than 10% per too narrow calibre, not more than 5% per wider calibre		calibre block or a so-called piano. The natural casings are graded in different calibres in steps of 2 to 3 mm.
salted sheep casing /mm	12~14;14~16;16~18;18~20;20~22;≥22 22~24;24~26; ≥26 15~17;17~19;19~21;21~23; ≥23 Not more than 10% per wider calibre, not more than 5% per too narrow calibre		
salted sheep casing /mm	12~14;14~16;16~18;18~20;20~22;22~24;24~26;≥22 15~17;17~19;19~21;21~23; ≥23 Not more than 10% per wider calibre, not more than 5% per too narrow calibre		
salted lamb stomach	Extra Large (XL), each weighing 150g or more, including 150g Large (L), each mass 100g or more, including 100g Small (S), each mass over 50g incl. 50g Small No.2 (S, B) of 25g or more each, including 25g		
salted pork chitterling /mm	40~44;44~48;48~52;52~56;56~60;60~64;64~68 68~72; ≥50;≥72		
salted beef casing /mm	≤30;30~35;35~40;40~45; ≥45		
salted beef large	≤40;40~45;45~50;50~55; ≥55		

Chinese legislation: National standard GBT 7740-2006 Natural casings	EU legislation: Regulation (EC) No 853/2004	Guides to good practice and comparative evaluation

intestines /mm

Name	Flat Diameter
salted pork fat ends /mm	≥50; ≥55; ≥60; ≥65; ≥70
dried pork bladder /mm	15~20;20~25;25~30; 30~35; ≥35
dried beef casing /mm	≤34;34~36;36~40;40~44; 44~48; ≥55

5.4 Physical and chemical indicators
shall be in accordance with Table 6.

Item	Maximum residue limit /(μg/kg)
Hexahexahexa (BHC)	300
DDT (DDT)	1000
Hexachlorobenzene (hexachlorobenzent)	200
Plumbum (plumbum)	1000
Cadmium (cadmium)	1000
Arsenic (Arsenic)	1000
Mercury (Mercury)	1000
Furazolidone (Furazolidone)	Not detectable (ND)
Nitrofurazone (nitrofurazone)	Non-detectable (ND)
Furaltadone (furaltadone)	Non-detectable (ND)
Nitrofurantoin (nitrofurantoin)	Non-detectable (ND)
Chloramphenicol (Chloramphenicol)	Not allowed to be detected (ND)

China or the importing country on the physical and chemical residue items and maximum residue limits of enteric coated regulations have changed, according to the latest regulations.

Regulation (EU) 2017/625, Article 1
1. This Regulation lays down rules for:
(a) the performance of official controls and other official activities by the competent authorities of the Member States;
Etc.
2. This Regulation shall apply to the official controls performed for the verification of compliance with the rules, whether established at Union level or by the Member States, to apply Union legislation, in the areas of:
(a) food and food safety, integrity and wholesomeness at any stage of production, processing and distribution of food, including rules aimed at ensuring fair practices in trade and protecting consumer interests and information, and the manufacture and use of materials and articles intended to come into contact with food;

The guide to good practice produced by ENSCA in 2017 provides information on chemical hazards as part of the HACCP procedure (see also below for the assessment of Chinese national standard GB/T 20572-2019). In summary:

hazard	relevant
Chemical residues in primary product	
Herbicides, pesticides, insecticides	no
Dioxins, furans, PCB's	No
Heavy metals	No
Antibiotics	No
Hormones	no
Melamine	No
Contamination during production process	
PAH's	No
Nitrate/nitrite	No
Heavy metals	No
Colorants	No
Lubricants	No
Cleaning and disinfection agents	No
Coolants	No
Toxins from packaging material	No

Chinese legislation: National standard GBT 7740-2006 Natural casings	EU legislation: Regulation (EC) No 853/2004	Guides to good practice and comparative evaluation
6 Test methods **6.1 Preparation for inspection** Identify the basis, test items and methods for the inspection of the batch of casings and arrange for qualified inspection personnel. **6.2 Inspection content** Including quality, hygiene, specifications, quantity, quality, packaging, labelling, marking and markings. **6.3 Inspection methods** The inspection of sausage casing takes the form of supervision and management of the production and processing process combined with the inspection and quarantine of the finished product. **6.4 Sampling** 6.4.1 Before sampling, verify the name, specification, quantity, packaging, etc., and prepare containers for sampling. 6.4.2 Sampling methods: Sampling should be representative. 6.4.2.1 Sampling of barrels 6.4.2.1.1 Sampling quantity, according to the number of lots submitted for inspection and different calibres according to the following provisions: below 10 barrels 30%; 10 barrels to 20 barrels 25%; 20 barrels to 30 barrels 20%; 30 barrels or more, each additional 10 barrels, an additional barrel, less than 10 barrels, no increase in the number of samples.		*Regulation (EU) 2017/625 dealing with official controls does not specifically mention controls concerning casings. However, casings are 'fresh meat' and must be derived from animals that are subject to the full range of official controls that are applicable to fresh meat.*

Chinese legislation: National standard GBT 7740-2006 Natural casings	EU legislation: Regulation (EC) No 853/2004	Guides to good practice and comparative evaluation
6.4.2.2 Sampling of unloaded casks, the number of samples shall be converted to the base number of loaded casks. 6.4.3 Open barrel samples may be taken at the top, middle and bottom of the barrel. 6.4.4 Samples for calibre, length and substance items may be taken at a rate of 1 to 3 per cent of the number of barrels. 6.4.5 The sample taken is divided into two parts, one for testing; one for review samples. 6.4.6 Laboratory sampling 6.4.6.1 Contamination of samples should be avoided and special sample bags should be used to store samples. 6.4.6.2 The sampling personnel should know the source of the casings and use casings from the same origin as the sampling base. A minimum of 5 samples of casings from the same casings processing enterprise should be combined into 1 mixed sample, each mixed sample should be at least 300g. 6.4.6.3 After sampling, seal the container or sample bag containing the sample, affix a label indicating the name of the sample, sample number, quantity, sampling location, sampler and date of sampling, and complete and accurately fill in the sampling/sampling voucher for the sausage casing. 6.4.6.4 Sample delivery The sampling personnel shall fill in the sample delivery form for intestinal coating samples and indicate the test items to be sent to the relevant laboratory together with the samples. **6.5 Testing**	**Regulation (EU) 2020/692, Article 152 Specific requirements for entry into the Union of casings** Consignments of casings that do not fulfil the requirements provided for in Article 148 shall only be permitted to enter the Union if they have undergone the following risk-mitigating treatments set out in Part 2 of Annex XXVI: (a) treatments 'Casing 1' or 'Casing 2', where the bladders and intestines used for the processing of the casings originate from bovine animals, ovine animals, caprine animals or kept porcine animals; (b) treatments 'Casing 3', 'Casing 4' or 'Casing 5' where the bladders and intestines used for the processing of the casings originate from animals of species other than those referred to in point (a). **Regulation (EU) 2020/692, Annex XXVI** 2. Risk mitigating treatments for casings Casing 1 = Salting with sodium chloride (NaCl), either dry or as saturated brine (aw < 0,80), for a continuous period of 30 days or longer, at a temperature of 20 °C or above. Casing 2 = Salting with phosphate supplemented salt containing 86,5 % NaCl, 10,7 % Na2HPO4 and 2,8 % Na3PO4 (weight/weight/weight), either dry or as saturated brine (aw < 0,80), for a continuous period of 30 days or longer, at a temperature of 20 °C or above. Casing 3 = Salting with NaCl for 30 days Casing 4 = Bleaching	

Chinese legislation: National standard GBT 7740-2006 Natural casings	EU legislation: Regulation (EC) No 853/2004	Guides to good practice and comparative evaluation
6.5.1 Quality and specification inspection 6.5.1.1 Colour inspection The colour and appearance should be checked in natural light, avoiding direct light or sunlight. The appearance of the casings should be clean and of a uniform colour, without indigo spots or salt red, and should not have a colour other than that specified in the quality requirements. 6.5.1.2 Odour inspection After opening the sausage casing package, inspect the colour and colour items and smell for odour such as rot and mould. 6.5.1.3 Physical inspection 6.5.1.3.1 Salted casings The casing is filled with water to check the cleanliness of the casing walls, scars, tendons and resistance to water pressure, and the calibre of the casing is tested. 6.5.1.3.2 Dried casings Observe the casing wall for serious sinew, fat, impurities, air bubbles and wrinkled skin. The sausage casing wall should be of uniform thickness, dry and tough, with the paste layer meeting the requirements. Observe carefully for mould and insect infestation. 6.5.1.4 Salt-crushed sausage casing calibre inspection 6.5.1.4.1 Equipment and utensils a) A rigid plastic inspection table engraved with a metre scale. b) Flat, straight-ended taps made of non-rusting material. c) Calipers for calibre. Calipers for pig intestine coats.	Casing 5 = Drying after scraping.	

Chinese legislation: National standard GBT 7740-2006 Natural casings	EU legislation: Regulation (EC) No 853/2004	Guides to good practice and comparative evaluation
24 mm, 26 mm, 28 mm, 30 mm, 32 mm, 34 mm, 36 mm, 38 mm, 40 mm, 42 mm, 44 mm. Calipers for sheep gutting. 12 mm, 14 mm, 15 mm, 16 mm, 17 mm, 18 mm, 19 mm, 20 mm, 21 mm, 22 mm, 23 mm, 24 mm, 25 mm, 26 mm, 27 mm, 28 mm. d) Non-toxic containers marked with a road score. 6.5.1.4.2 Method To test the calibre, dismantle the casings, wash away the salt, fill the casings with water for about 1m so that the casings are full, then pull the casings to observe the calibre of the casings, whether the cortex is tough, whether there is dirt adhering to the inside and outside of the casings, whether there are wounds and thicker tendons. When you find that the calibre changes, gather the water inwards with both hands to about 30cm (about 25cm for sheep casings), hold both ends of the casings, copy the water-filled casings and measure them vertically against the calibre calipers according to the bow formed by the natural curvature. a) Salted pork casings The casing is tough and does not break easily under water pressure. (b) When measuring calibre, the pressure should not be increased excessively, otherwise there is a risk that the calibre will be small. Loose intestine casing tissue, when water pressure, easy to expand. When measuring the calibre, you cannot increase the pressure to expand without restriction, otherwise, the calibre has the possibility of being on the large side; the intestinal coating tissue is soft and thin, and water penetrates quickly, usually when pulling intestines, and the calibre is identified by eye.		

Chinese legislation: National standard GBT 7740-2006 Natural casings	EU legislation: Regulation (EC) No 853/2004	Guides to good practice and comparative evaluation
b) Salted sheep and goat casings Sheep intestine casing tissue is thin and soft, water is easy to seep, when measuring the calibre, must be rapid, in order to be accurate. The appearance of sheep intestine casing tissue is ring-shaped horizontal lines, after the expansion of water, is straight, tough; goat intestine casing tissue appearance is reticulated lines, after the expansion of water, is curved shape, brittle and easy to break. 6.5.1.4.3 Measuring the calibre to report the score a) If the full card is not astringent, the pig intestine casing is double points and the goat intestine casing is single points. b) For loose-skinned casings that are enlarged by water, points should be reported according to the degree of enlargement. c) For sprinkling without enlargement, points shall be reported for this cardway. Note: For 4m or more, no points shall be reported for less than 1m with large and small, and they shall be assigned to this route separately. 6.5.1.4.4 Calculation method The length of the band large (with small) is calculated according to formula and the value is expressed in %: L max (or min) = Σ L max (or L min)/L x 100 Where: L max - indicates with a large length; L min - indicates with a small length; L - indicates the total length. 6.5.1.5 Length test 6.5.1.5.1 Equipment and utensils a) Measuring table.		

Chinese legislation: National standard GBT 7740-2006 Natural casings	EU legislation: Regulation (EC) No 853/2004	Guides to good practice and comparative evaluation
b) Non-toxic container with water. 6.5.1.5.2 Method The length test can be carried out either by joint articulation measurement, testing the calibre of the casings while measuring the length, or by measuring the length on a measuring table with a single measurement. The water in the casings should be stroked out and the length should be measured with even force. Too light a force makes it easy to over-loosen and make the length too long; too heavy a force artificially stretches the length, making it insufficient and affecting the results. Whichever way the length is measured. a) A handful of casings should all be of essentially the same colour and should not have a colour other than that specified in the standard. b) Each handful of casings should have no more than the specified number of knots. c) Each section of casings should not be shorter than the starting length. Note: Length refers to the total length of each casing and the shortest length of each section of casing. 6.5.1.6 Specification inspection of dried sausage casings 6.5.1.6.1 Equipment and utensils Metre ruler, flat board. 6.5.1.6.2 Method a) Dried pig and beef casings are measured for length at the same time as the flat diameter. When measuring the length, count the number of casings per small handful, then pull them apart and straighten them, measure the length with a ruler, then dismantle the casings and check the number of synthetic sections and the starting		

Chinese legislation: National standard GBT 7740-2006 Natural casings	EU legislation: Regulation (EC) No 853/2004	Guides to good practice and comparative evaluation
length. b) Dry pig bladders are measured in length with a ruler from the start of the neck of the bladder in the folded four layers to the top. c) Dry casing casings are measured one by one for their flat diameter and length using a ruler, with the flat diameter measured 10cm below the opening. 6.5.2 Laboratory tests 6.5.2.1 Laboratory tests shall be carried out in accordance with the test items specified in the sample delivery form for the casings or the test items listed in 5.4 of this Standard. a) Arsenic: tested according to the method of GB/T 5009.11. b) Lead: according to GB / T 5009.12 methods of detection. c) Mercury: According to GB / T 5009.17 methods of detection. (d) Cadmium: tested according to the method of GB/T 5009.15. (e) Hexachlorobenzene, DDT and hexachlorobenzene: tested according to the method of SNO126. (f) Nitrofurans: test for nitrofuran residues in casings according to the method recommended by the competent national authorities. (g) chloramphenicol: according to the test method recommended by the competent national authorities for the detection of chloramphenicol residues in enteric coats. 6.5.2.2 The laboratory shall complete the test within the specified time, issue a test report and make test records. 6.6 Determination of results	Contaminants must be checked in accordance with provisions applicable to meat laid down in Regulation (EC) No 1881/2006. Arsenic, lead, mercury or cadmium are no environmental toxicants of concern for meat in the European Union. 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.	

Chinese legislation: National standard GBT 7740-2006 Natural casings	EU legislation: Regulation (EC) No 853/2004	Guides to good practice and comparative evaluation
6.6.1 The test records shall include the name of the enterprise, name, batch number, specification, number (quality), packaging and sampling, test time, location, test basis, test results, laboratory test reports, results determination and other basic elements. 6.6.2 test records should be true and comprehensive to reflect the actual situation of the whole process of testing. Inspection personnel in the inspection process should be carefully and accurately fill out the record and sign, the record should be reviewed by the signature, the record should be kept for 2 years. 6.6.3 The test conforms to this standard shall be judged as qualified, and those that do not shall be judged as unqualified. **7 Packaging, marking, storage and transport** **7.1 Packaging requirements** 7.1.1 The packaging containers and materials of the sausage casing shall be strong and durable and meet the requirements of food hygiene. 7.1.2 Salted sausage casing shall be fully sprinkled with salt for sausage casing and filled with saturated salt brine when loaded into the packaging container. The dried casings shall be packed with a sprinkling of pepper. **7.2 Marking** 7.2.1 The top surface of the packaging container of salted sausage casing shall be attached with a distinctive card indicating the name, calibre length and quantity. 7.2.2 The outside of the sausage casing packaging container should be marked with the company code and the name, name, calibre and number of the company.	*In the guide to good practice produced by ENSCA in 2017 storage and transport is described as follows:* Natural casings are stored and transported in closed containers, either in dry salt or fully saturated brine (≥ 22 °Baumé), preferably at temperatures around or below 20 °C without exposure to direct sunlight. Once cleaned, cured and properly salted natural casings can be kept in storage for a prolonged period of time without loss of quality or increased microbiological counts. The shelf life period of natural casings is at least 4 years. *In the guide to good practice produced by ENSCA in 2017 a short paragraph describes:* **3.6 Transportation**	*In the guide to good practice produced by ENSCA in 2017 sorting operations are described:* **2.3.2 Sorting operations** **Receiving** Sorting operations either receive natural casings from cleaning operations or distribution centres. **Storage/ Transport** For selection and grading operations, natural casings can be transported to other locations, either stored in dry salt or saturated brine. **Rinsing/ Desalting** Prior to sorting the natural casings are rinsed in water and de-salted to facilitate these operations.

Chinese legislation: National standard GBT 7740-2006 Natural casings	EU legislation: Regulation (EC) No 853/2004	Guides to good practice and comparative evaluation
7.3 Storage 7.3.1 Salted sausage casing should be stored at 0℃～10℃ in a clean and hygienic warehouse with a relative humidity of 85%～90%, and the salt brine should be changed once every six months. 7.3.2 Store dried sausage casings in a dry, ventilated, clean and hygienic warehouse free of flies and insects for no more than 1 year. **7.4 Transport** 7.4.1 Transport should be by refrigerated or insulated vehicles that meet hygienic requirements.	Products should be transported in closed packaging. All vehicles used for transportation of raw, semi-processed or finished products to and from the premises should be suitable for their purpose (e.g. closed, climate-controlled) and kept in an appropriate state of cleanliness, repair and condition. 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 or effective cleaning between loads to avoid the risk of contamination.	**Selection/ Grading/ Classification** At selection the calibre, length per strand and quality (e.g. holes) of the natural casings is determined. To assess this, casings are filled with water (small ruminant, hog) or air (ruminant). The calibre is measured with an electronic instrument, a calibre block or a so-called piano. The natural casings are graded in different calibres in steps of 2 to 3 mm. **Salting/ Curing (Dry or in brine)/ Packing** After selection and grading, the natural casings are re-packed as bundles in dry salt or saturated brine. Alternatively, natural casings can also be shirred manually or mechanically as individual strands on plastic flexible tubes or rigid pipes and packed in saturated brine. This facilitates sausage production as the casings can now be loaded directly onto the sausage filling horn without further handling by the sausage producer. As described under Cleaning Operations, salted natural casings are put in bundles or nets and stored in closed casks. **Dispatch** After sorting, natural casings are transported to either a distribution centre or directly to the customer. **2.3.3 Distribution (repacking) centres** Distribution centres can receive natural casings from slaughterhouses, cleaning operations or sorting operations. Depending

Chinese legislation: National standard GBT 7740-2006 Natural casings	EU legislation: Regulation (EC) No 853/2004	Guides to good practice and comparative evaluation
		on the kind of establishment where the natural casings come from, a specific process step is executed and the natural casings are transported to the next step in the production chain as described above.

Chinese legislation: National standard GB 14967-2015 Collagen enteric casings	**EU legislation: Regulation (EC) No 853/2004**	**Guides to good practice and comparative evaluation**
1 Scope This standard applies to edible artificial sausage casings made of collagen fibres from the dermal layer of pig or cow skin, added with auxiliary materials, chemically and mechanically treated into collagen "masses", then extruded, aerated, dried and heat set for the production of Chinese and Western sausages.	**Article 1 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.	*The standard applies to edible artificial sausage casings produced by adding auxiliary materials, chemically and mechanically treated into collagen "masses". These materials are no 'casings' as defined in the EU food law.* *However, collagen is a meat product and the EU food law applies, including all relevant provisions related to hygiene, food additives, processing aids and official controls.*
2 Technical requirements **2.1 Raw material requirements** The dermal layer of fresh skin of pigs and cattle after dehairing treatment, which has been qualified by quarantine. The use of tanned hides from tanneries is prohibited. **2.2 Sensory requirements** 2.2.1 Shape Seamless and tubular, without holes or adhesions. 2.2.2 Colour Primary coloured casings are off-white to light brown, with no other colour spots and no mould spots; coloured casings have the corresponding colour of the colouring agent and no other colour spots. 2.2.3 Odour It has the characteristic odour of collagen and has no strange smell. **2.3 Physical and chemical indicators** Physicochemical indicators shall conform to the provisions of the table.		*The European Natural Sausage Casings Association (ENSCA) has published in line with Article 9 of Regulation (EC) No 852/2004 a Community guide[1] to good practice (see Article 9, 3, b).* *[1] Community guide to good practice for hygiene and the application of the HACCP principles in the production of natural sausage casings (version VI, January 2017; available on the EU website: https://food.ec.europa.eu/safety/biological-safety/food-hygiene/guidance-platform_en).* *The guide to good practice produced by ENSCA in 2017 mentions:*

Chinese legislation: National standard GB 14967-2015 Collagen enteric casings	EU legislation: Regulation (EC) No 853/2004	Guides to good practice and comparative evaluation

Table: Physical and chemical indicators

Item		Indicators	Test methods
Moisture (g/100g)	≤	25	GB 5009.3
Ash (g/100g)	≤	3.5	GB 5009.4
Protein (g/100g)	≥	40	GB 5009.5
Pb (mg/kg)	≤	1.5	GB 5009.12
As (mg/kg)	≤	0.5	GB 5009.11

2.4 Microbiological limits

Microbiological limits shall comply with the provisions of the table.

Table: Microbiological limits

Item	Sampling scheme[a] and limits (all expressed as CFU/g, if not specified)				Test methods
	n	c	m	M	
Coliform bacteria	5	1	10	100	GB 4789.3 Second method
Salmonella	5	0	0/25g	-	GB 4789.4
Staphylococcus aureus	5	1	100	1000	GB 4789.10 Second method
Moulds ≤	50				GB 4789.15

[a] Sampling and handling of samples is carried out in accordance with GB4789.1.

The microbiological recommendations for salted natural casings as incoming product at meat processing establishments (entrance control) are listed in the table below.

Table: Recommendations microbiological values (CFU per gram)

CFU = Colony Forming Units

	Fully acceptable	Maximum value	Reference
Total aerobic count	$< 1.0 \times 10^5$	$< 5.0 \times 10^6$	ISO 4833
Enterobacteriaceae	$< 1.0 \times 10^2$	$< 1.0 \times 10^4$	ISO 21528-2
Staphylococcus aureus	$< 1.0 \times 10^2$	$< 1.0 \times 10^3$	ISO 6888-1
Clostridium perfringens	$< 1.0 \times 10^2$	$< 1.0 \times 10^3$	ISO 7937
Bacillus cereus	$< 1.0 \times 10^4$	$< 1.0 \times 10^5$	ISO 7932

Chinese legislation: National standard GB 14967-2015 Collagen enteric casings	EU legislation: Regulation (EC) No 853/2004	Guides to good practice and comparative evaluation
2.5 Food additives 2.5.1 The quality of food additives shall comply with the corresponding standards and relevant regulations. 2.5.2 The variety and quantity of food additives used shall comply with the provisions of GB2760.	**Regulation (EC) No 1333/2008, Regulation (EU) No 231/2012 and Regulation (EU) No 1130/2011 related to food additives and processing aids apply.**	

Chinese legislation: National standard GBT 22637-2008 Good manufacturing practice of the natural sausage casings processing	**EU legislation: Regulation (EC) No 853/2004**	**Guides to good practice and comparative evaluation**
1 Scope This standard specifies the requirements for the plant environment, plant design, facilities and equipment, procurement and transport of raw materials, hygiene during processing, packaging of finished products, storage, transport and personnel management for natural sausage casing processing enterprises. This standard applies to natural sausage casing processing enterprises.	**Article 1 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.	*The guide to good practice[1] produced by ENSCA provides information on prerequisite requirements in section 3 (pages 16-22).* *[1] Community guide to good practice for hygiene and the application of the HACCP principles in the production of natural sausage casings (version VI, January 2017; available on the EU website: https://food.ec.europa.eu/safety/biological-safety/food-hygiene/guidance-platform_en).*
2 Normative reference documents The provisions in the following documents become the provisions of this standard by reference to this standard. Where references are dated, all subsequent amendments (excluding errata) or revisions are not applicable to this standard, however, parties to agreements under this standard are encouraged to investigate the possibility of using the latest versions of these documents. Where references are undated, the most recent version of the document is applicable to this standard. GB 5749 Sanitary standards for drinking water for domestic use GB/T 7740-2006 Natural sausage casings GB 9683 Hygienic standards for composite food packaging bags GB 9687 Hygienic standard for polyethylene moulded products for food packaging	Not present in EU legislation.	

Chinese legislation: National standard GBT 22637-2008 Good manufacturing practice of the natural sausage casings processing	**EU legislation: Regulation (EC) No 853/2004**	**Guides to good practice and comparative evaluation**
GB 9688 Hygienic Standard for Polypropylene Moulded Products for Food Packaging GB 9689 Hygienic standard for polystyrene moulded products for food packaging QB/T 2606 Enteric-coated salt Hygienic Standard for Drinking Water Quality for Domestic Purposes, Ministry of Health, 1 September 2001		
3 Terminology and definitions The following terms and definitions apply to this standard. 3.1 Natural casings The use of healthy livestock oesophagus, stomach, small intestine, large intestine and bladder and other organs, after special processing, the retained tissues for salting or drying of animal tissue, is the casing of sausage. [GB/T 7740-2006, definition 3.1] 3.2 Intestine The unscraped small intestine of healthy livestock.	**Regulation (EU) 2020/692, Article 2 Definitions** (45) 'casings' means the bladders and intestines that after cleaning have been processed by tissue scraping, defatting and washing and have been treated with salt or dried; **Regulation (EC) No 853/2004, Annex I** 7.9. 'Treated stomachs, bladders and intestines' means stomachs, bladders and intestines that have been submitted to a treatment such as salting, heating or drying after they have been obtained and after cleaning.	**Regulation (EC) No 853/2004, Article 1** 6. This Regulation shall apply without prejudice to: (a) relevant animal and public health rules, including more stringent rules laid down for the prevention, control and eradication of certain transmissible spongiform encephalopathies; (b) animal welfare requirements; and (c) requirements concerning the identification of animals and the traceability of products of animal origin. **Regulation (EC) No 853/2004, Annex III, Section XIII Treated stomachs, bladders and intestines** Food business operators treating stomachs, bladders and intestines must ensure compliance with the following requirements. 1. Animal intestines, bladders and stomachs may be placed on the market only if: (a) they derive from animals which have been slaughtered in a slaughterhouse, and which have been found fit for human

Chinese legislation: National standard GBT 22637-2008 Good manufacturing practice of the natural sausage casings processing	**EU legislation: Regulation (EC) No 853/2004**	**Guides to good practice and comparative evaluation**
		consumption following ante-mortem and post-mortem inspection;
4 Plant environment 4.1 The plant should be built in an area where the surrounding environment is free of food hygiene hindrances and where there is no side business, production or storage of other products that hinder food hygiene. It should be easily accessible and have adequate water supply. 4.2 Main roads should be paved with hard surfaces suitable for vehicular traffic (e.g. concrete or asphalt surfaces, etc.) that are smooth, easy to wash and free from stagnant water. 4.3 The layout and design are reasonable and the production area and living area should be strictly separated. There should be storage places and facilities for raw materials, auxiliary materials, finished products, packaging materials, chemicals, etc., as well as temporary storage places and facilities for waste and rubbish, which are in line with the production capacity and meet the hygiene requirements, so as to avoid cross-contamination.	**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: (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. 3. An adequate number of flush lavatories are to be available and connected to an effective	**Commission Notice on the implementation of food safety management systems covering Good Hygiene Practices and procedures based on the HACCP principles 2022/C 355/01** 3.1. Infrastructure (building, equipment) 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, etc. should be taken into account. This should also be considered for primary production (fields). f) Clearly defined storage facilities should be available for raw material, and receptacles for food and packaging materials. Only products that may be added to food (e.g. additives) should be stored in the area with the food, excluding common storage with toxic products (e.g. pesticides). *The **guide to good practice** produced by ENSCA in 2017 states:* 3.2 Establishment: design and facilities 3.2.1 Location The location of the establishments should be carefully chosen and protective measures (e.g. alarm system, guards) should be taken to prevent any

Chinese legislation: National standard GBT 22637-2008 Good manufacturing practice of the natural sausage casings processing	EU legislation: Regulation (EC) No 853/2004	Guides to good practice and comparative evaluation
4.4 The drainage system is smooth and the discharge or disposal of waste water and waste materials should comply with the relevant national regulations. 4.5 Toilets should have facilities for flushing, hand washing, fly-proofing, insect-proofing and rodent-proofing, and wainscoting should be constructed of light-coloured, smooth, impervious and corrosion-resistant materials that are easy to washing and keeping clean. 4.6 There should be no piles of waste equipment or goods, no bare piles of rubbish or other sites and facilities that affect hygiene. Dirt (waste after processing) should be removed or disposed of in a timely manner, stored away from the production hall and located downwind or sidewind of the production hall.	drainage system. Lavatories are not to open directly into rooms in which food is handled. **Regulation (EC) No 852/2004, Annex II, Chapter VI Food waste** 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,	threat to food safety or suitability. Production equipment should be located in a way that enables its intended use, adequate maintenance and facilitates good hygiene practices. **Commission Notice 2022/C 355/01:** 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 and strategically placed signs informing about the obligation, when applicable, to remove protective clothing before using the toilets. 3.9. 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.

Chinese legislation: National standard GBT 22637-2008 Good manufacturing practice of the natural sausage casings processing	**EU legislation: Regulation (EC) No 853/2004**	**Guides to good practice and comparative evaluation**
4.7 Animals unrelated to production and processing are not allowed to be kept, and rodents and insects should be exterminated regularly. 4.8 Cleaning and disinfection facilities for transport vehicles should be provided.	and is not to constitute a direct or indirect source of contamination. **Regulation (EC) No 852/2004, Annex II, 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. **Regulation (EC) No 852/2004, Annex II, Chapter IV Transport** 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.	j) Barriers should be in place to avoid access of stray animals. 3.3. Pest control: emphasis on preventive activities a) External walls should be free of cracks or chinks, surroundings should be neat and free from debris which could provide harborage from pests, and areas for cleaning should be accessible. Access by pets or wild animals must be prohibited/ prevented. f) A pest control programme should be available. *The **guide to good practice** produced by ENSCA in 2017 states:* 3.6 Transportation Products should be transported in closed packaging. All vehicles used for transportation of raw, semi-processed or finished products to and from the premises should be suitable for their purpose (e.g. closed, climate-controlled) and kept in an appropriate state of cleanliness, repair and condition.
5 Plant design, facilities and equipment **5.1 Plant design** 5.1.1 There should be a raw material storage, a treatment workshop, a processing workshop and a finished product storage.	**Regulation (EC) No 852/2004, Annex II, Chapter II Specific requirements in rooms where foodstuffs are prepared, treated or processed** 2. Adequate facilities are to be provided, where necessary, for the cleaning, disinfecting and	**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

Chinese legislation: National standard GBT 22637-2008 Good manufacturing practice of the natural sausage casings processing	**EU legislation: Regulation (EC) No 853/2004**	**Guides to good practice and comparative evaluation**
	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.	harmful deterioration and protect them from contamination.
5.1.2 The area of the workshop should be appropriate to the production capacity, with a reasonable layout of the process flow, smooth drainage and good ventilation.	**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; 5. There is to be suitable and sufficient means of natural or mechanical ventilation.	*The **guide to good practice** produced by ENSCA in 2017 states:* The internal product flow should be developed in such a way that prevents crosscontamination between "clean" products and "dirty" areas. The design of the establishment should be logical and supportive to this goal.
5.1.3 The raw sausage treatment workshop should be strictly separated from other workshops, with independent cleaning and disinfection facilities, sewage discharge and treatment systems.	8. Drainage facilities are to be adequate for the purpose intended. **Regulation (EC) No 853/2004, Annex III, Section XIII Treated stomachs, bladders and intestines** Food business operators treating stomachs, bladders and intestines must ensure compliance with the following requirements. 1. Animal intestines, bladders and stomachs may be placed on the market only if: (b) they are salted, heated or dried; and (c) after the treatment referred to in (b), effective measures are taken to prevent re-contamination.	**Commission Notice on the implementation of food safety management systems covering Good Hygiene Practices and procedures based on the HACCP principles 2022/C 355/01** b) Lay-out should strictly separate contaminated (high risk) from clean areas (low risk) (or there should be a 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.

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5.2 Entrance to the workshop 5.2.1 Hand washing, disinfection and hand drying facilities appropriate to the production capacity should be provided at the entrance of the workshop and at appropriate locations within the workshop, with hand washing taps with non-manual switches. The concentration of disinfectant should be such that effective disinfection can be achieved. The drainage from the hand washing facilities should be connected to a downpipe. 5.2.2 A shoe and boot disinfection pool and buffer room should be provided at the entrance to the workshop.	**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.	**Commission Notice 2022/C 355/01:** i) Hand washing facilities should be positioned conveniently between toilets/ changing rooms and the food handling area, not excluding the possible need for additional wash hand basins in production areas near work stations; 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. *The **guide to good practice** produced by ENSCA in 2017 states:* Facilities for personal hygiene and lavatories should be suitably located and designated. Lavatories should be of appropriate hygienic design and adequate changing facilities for personnel should be available. Wash basins with a supply of hot and cold (or suitably temperature controlled) water for hygienically washing of hands, materials for cleaning hands, and facilities for drying of hands should be easily accessible. **Commission Notice 2022/C 355/01:** 3.1. g) The specific clothes changing room(s) should be clean and ordered and, where possible, not used as a refectory or a smoking room. A separation between normal clothing, clean work clothing and used work clothing should be facilitated.

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		3.11 d) Protective clothing should preferably not be worn when using the toilets or when wheeling the rubbish bins onto the street. **Commission Notice 2022/C 355/01:** 3.1. 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 and strategically placed signs informing about the obligation, when applicable, to remove protective clothing before using the toilets.
5.2.3 The entrance to the workshop should have changing rooms and toilets connected to the workshop and adapted to the number of production personnel, with facilities and layout that are free from potential contamination of the workshop. There should be separate changing rooms for the different cleaning areas. Toilet doors should be able to close automatically and doors and windows should not open directly onto the workshop and be closed tightly; toilets should have hand-washing, disinfection and hand-drying facilities, and have exhaust and fly-proofing devices to ensure cleanliness and hygiene.	**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. 9. Where necessary, adequate changing facilities for personnel are to be provided.	
5.2.4 The entrance and exit of the workshop, the drainage outlet connected with the outside world and the ventilation should be installed with anti-rodent, anti-fly and anti-insect facilities.	**Regulation (EC) No 852/2004, Annex II, Chapter IX** 4. Adequate procedures are to be in place to control pests.	**Commission Notice 2022/C 355/01:** 3.3. b) Insect screen should be placed at windows. When electronic devices are used for insect control, the device has to be used according to its specification. c) Doors should be kept closed except when loading and/or unloading. Gaps between doors and floors should be pest-proofed.
5.3 Windows, walls, ceilings, floors and passages 5.3.1 Building materials such as floors, walls and ceilings in workshops should be non-toxic, light-coloured, waterproof, mould-resistant, non-dislodging and easy to clean, with curved corners of walls, floors and ceilings.	**Regulation (EC) No 852/2004, Annex II, Chapter II** 1. In rooms where food is prepared, treated or the design and layout are to permit good food hygiene practices, including protection against	

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	contamination between and during operations. In particular: (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; (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; (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 mould and the shedding of particles; (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	
5.3.2 Where workshop windows have internal sills, the sills should be set above 1m from the ground and the internal sills should be sloped down by about 45°; workshop doors and windows should be made of light-coloured, smooth, easy-to-clean, impermeable, corrosion-resistant and robust materials with a tight structure.		**Commission Notice 2022/C 355/01:** d) Doors should have smooth and non-absorbent surfaces. Automatic opening and closing should be considered to avoid contamination by touching.

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	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 non-absorbent surfaces unless food business operators can satisfy the competent authority that other materials used are appropriate;	
5.3.3 The workshop floor should be non-slip, solid, impermeable, non-waterlogged, without cracks, easy to clean and disinfect and keep clean; the slope of the floor drainage is 1°~2°. 5.3.4 Access to the workshop should be smooth and easy for transport and sanitary protection facilities to be installed.		**Commission Notice 2022/C 355/01:** 3.1. c) Non-slippery floors should be constructed with waterproof, non-absorbent material, and should be washable and without fissures. Walls should be likewise at least up to appropriate height. It is also recommended that walls and floors are in light colors that facilitate visual hygiene assessment.
5.4 Water supply and drainage facilities 5.4.1 The water supply system should be able to adapt to the needs of production, with reasonable and effective facilities, always kept open, with effective measures to prevent contamination of water sources and the infiltration of rodents and insects into the workshop through the drainage pipes. 5.4.2 Tap water, well water or ground water for processing should be equipped with additional water quality treatment facilities (such as softening devices, chlorination devices, etc.) according to the characteristics of local water quality. 5.4.3 Self-supplied water storage equipment should have protective facilities and be cleaned regularly.	**Regulation (EC) No 852/2004, Annex II, Chapter** **VII 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; 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.	**Commission Notice 2022/C 355/01:** 3.10. 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. b) If community water is held in a tank prior to use, the tank must be part of a regular cleaning schedule. c) As a general rule, only potable water may be used on food of animal origin. At least clean water or where applicable clean sea water should be used in other cases.

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5.4.4 The workshop should be set up to clean the table, equipment, pipelines, utensils and places of taps; the number of taps should be adapted to the needs of the workshop cleaning. 5.4.5 Water supply pipe materials in direct contact with production water should all be non-toxic, non-hazardous and anti-corrosive. Pipes for process water should have anti-siphon or anti-backflow devices and should not be connected to non-potable water pipes with distinctive markings to avoid cross contamination. 5.4.6 Drainage systems should have devices to prevent solid waste from entering, the bottom corners of drains should be curved, and drains should have water-sealing devices to prevent rodents and odour spillage. The flow of drains should be from areas of high cleanliness to areas of low cleanliness.	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. **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.	
5.5 Electricity and lighting 5.5.1 The electricity supply should meet production needs. Power lines and lighting lines should be separate. The power supply lines in the workshop must be installed by means of trunking or other means and there should be no open lines. Emergency lighting should be provided in the workshop if necessary. 5.5.2 There should be moderate lighting in the workshop and the light should not change the original colour of the sausage coat. The lighting intensity of the inspection	**Regulation (EC) No 852/2004, Annex II, Chapter I** 7. Food premises are to have adequate natural and/or artificial lighting.	**Commission Notice 2022/C 355/01:** 3.1. e) There should be sufficient lighting in all areas, with special attention paid to the 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.

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post should be maintained at 5401x above; the lighting intensity of the production workshop should be maintained at 2201x or above; the lighting intensity of other processing and storage areas should be maintained at 1101x or above. 5.5.3 Lighting facilities shall be fitted with protective covers. **5.6 Ventilation and temperature control facilities** 5.6.1 The workshop shall be provided with ventilation facilities and maintained in good working order, and there shall be no condensation on the ceiling. 5.6.2 Ventilation openings shall be fitted with rain, dust and fly protection. 5.6.3 Temperature and humidity meters should be available in processing workshops, storage rooms, etc. and be regularly calibrated.	**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 mould on surfaces; **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	**Commission Notice 2022/C 355/01:** 3.10. e) Ventilation systems should be robust and reliable. Ventilation systems should be 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. f) Condensation is mostly the result of poor ventilation. Condensation should be avoided in areas where food is being produced, handled or stored, especially if exposed or not packed. 3.1. k) Equipment and monitoring/recording devices (e.g. thermometers) should be clean and the equipment suitable for contact with food products. 3.12. a) Temperature and humidity should be (automatically) recorded where relevant.

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5.7 Waste disposal facilities 5.7.1 Separate waste disposal facilities should be provided in different areas of the workshop, and the area where waste is generated and the disposal facility should not be too far apart. 5.7.2 Waste containers should be made of impermeable materials and be clearly distinguishable from containers for products. 5.7.3 Waste should be cleaned up in a timely manner and waste containers should be cleaned and disinfected on a regular basis.	handling during preparation, transport, storage, display and service of food, provided that it does not result in a risk to health. Food businesses manufacturing, handling and wrapping processed foodstuffs are to have suitable rooms, large enough for the separate storage of raw materials from processed material and sufficient separate refrigerated storage. **Regulation (EC) No 852/2004, Annex II, Chapter** **VI Food waste** 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.	**Commission Notice 2022/C 355/01:** 3.9. 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. *The **guide to good practice** produced by ENSCA in 2017 states:* 3.4.4 Waste management A suitable provision should be made for the removal and storage of waste. There should be no accumulation of waste in production areas. Waste stores should be kept appropriately clean. Waste should be stored separate from any foodstuffs to avoid cross-contamination.

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5.8 Equipment 5.8.1 The layout of the processing equipment should be in accordance with the process flow requirements and should be easy to operate, install, maintain and clean and disinfect to prevent cross contamination during processing. 5.8.2 Equipment and utensils such as operating tables, conveyor belts, transport trolleys, etc. in the workshop should be non-toxic, odourless, non-absorbent, corrosion-resistant, rust-free, easy to clean and disinfect, robust and with a smooth and flat surface. The use of bamboo and wood utensils during processing is prohibited.	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. **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; (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. 2. Where necessary, equipment is to be fitted with any appropriate control device to guarantee fulfilment of this Regulation's objectives. 3. Where chemical additives have to be used to prevent corrosion of equipment and containers,	**Commission Notice 2022/C 355/01:** 3.1. k) Equipment and monitoring/recording devices (e.g. thermometers) should be clean and the equipment suitable for contact with food products. l) 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 uses) for raw products and cooked products (chopping boards, knives, dishes, clothing of staff, thermometers etc.). m) There should be an appropriate number of monitoring devices to measure critical parameters e.g. temperature. *The **guide to good practice** produced by ENSCA in 2017 states:* 3.2.3 Equipment Equipment and containers (other than single-use containers and packaging material) coming into contact with foodstuffs, should be designed and constructed to

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	they are to be used in accordance with good practice.	ensure that, they can be adequately cleaned, disinfected and maintained to avoid the contamination of foodstuffs. For equipment designed for cooling or freezing foodstuffs the temperature should be monitored and controlled as well as the time it takes to reach the right temperature. Measuring devices (e.g. salometer) should be calibrated at least once per year and results recorded and filed. Containers for waste and inedible substances should be specifically identifiable, suitably constructed and made of impervious material. Containers used to hold dangerous substances should be identified and are kept locked when not in use to prevent malicious or accidental contamination of foodstuffs
6 Procurement and transportation of raw materials **6.1 Raw materials** 6.1.1 Raw materials for enteric coating shall be sourced from designated slaughterhouses (plants) and shall be required to provide a valid certificate of veterinary inspection of animal products issued by the animal epidemic prevention and supervision agency of the place of origin and a certificate of disinfection of the means of transport of animals and animal products. Imported enteric coated raw materials should come from foreign manufacturers registered by the State, and have the quarantine certificate of the official veterinary department of the exporting country or region as well as	**Regulation (EC) No 853/2004, Annex III, Section** **XIII Treated stomachs, bladders and intestines** Food business operators treating stomachs, bladders and intestines must ensure compliance with the following requirements. 1. Animal intestines, bladders and stomachs may be placed on the market only if: (a) they derive from animals which have been slaughtered in a slaughterhouse, and which have been found fit for human consumption following ante-mortem and post-mortem inspection;	*The **guide to good practice** produced by ENSCA in 2017 states:* 3.3 Control of operation 3.3.2 Key aspects of hygiene control systems Until natural casings have been salted for the first time, it is necessary to maintain storage in cooled areas (max. 3 °C). Systems should be in place to ensure that temperature is controlled effectively where it is critical to the safety and suitability of foodstuffs. Measures should be taken to prevent cross-contamination between cleaned preserved intestines and salted natural casings, e.g. separation (physically

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the inspection and quarantine certificate of the port of entry. 6.1.2 Raw materials should be refrigerated during transport. The internal surfaces of vehicles and containers used for the transport of raw materials are hygienic, smooth and easy to clean and disinfect.	(b) they are salted, heated or dried; and (c) after the treatment referred to in (b), effective measures are taken to prevent re-contamination. 2. Treated stomachs, bladders and intestines that cannot be kept at ambient temperature must be stored chilled using facilities intended for that purpose until their dispatch. In particular, products that are not salted or dried must be kept at a temperature of not more than 3 °C.	or by time), (intermediate) cleaning / disinfection, personal hygiene. There should be systems in place to prevent the physical and chemical contamination of natural casings (e.g. knife policy, glass policy, pallet policy). 3.3.3 Incoming material requirements All natural casings or cleaned preserved intestines should come from EU-approved establishments, either located in EU Member States or in third countries that show compliance with the EU legislation. Al suppliers of incoming goods should be listed. Al incoming goods should be registered and inspected before processing. Stocks should be controlled by an effective stock rotation system such as "first in, first out" (FIFO).
6.2 Auxiliary materials 6.2.1 Processing salt should meet the requirements of QB / T2606, and has a certificate of inspection. Salt for processing should be stored in a special store and kept clean and hygienic and free from contamination. 6.2.2 Other auxiliary materials for the processing of casings (such as sleeves, compressed sheets, mesh bags, etc.) shall comply with food hygiene requirements. 6.2.3 Raw materials that have exceeded their shelf life should not be used for production.	← *The **guide to good practice** produced by ENSCA in 2017 states:* Salting (and Curing) The main purpose of the salting and curing process is to reduce the water content in the natural casings and replace it by a high salt concentration. This way little water remains available for bacterial growth and bacteria are actively killed due to the high salt concentrations. Casings may be salted by hand or with a machine. The bundles of casings may then be left to drain overnight or be centrifuged (dry salting), or directly packed in a container	*The **guide to good practice** produced by ENSCA in 2017 states:* 4.5 There are two ways of salting: dry salting and the usage of brine. 4.6.1 Microbiological contamination of the natural casings is according to the risk matrix a high risk. Apart from salting (CCP2) the natural casings correctly, the salting period is of great importance to eliminate a possible microbiological contamination. Natural casings are required to be salted with NaCl (dry salt or saturated brine) during a continuous period of at least 30 days

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	with salt-water brine (slush salting). For dry salting the bundles are shaken to remove salt after curing, and then they are thoroughly rubbed with salt until they absorb the maximum quantity of salt. When natural casings have been stored in dry salt or saturated brine for a minimum period of 30 days, potentially pathogenic bacteria are no longer present, with the exception of bacterial spores. However, these spores will remain inert as long as the existing storage conditions remain intact and therefore pose little risk. During this initial 30-day salting period or any other subsequent storage period, no specific storage temperatures are required to obtain the desired bacterial risk reduction.	before they are dispatched to sausage producers. *The **guide to good practice** produced by ENSCA in 2017 states:* 3.3.4 Packaging The packaging design and materials should provide adequate protection for natural casings to minimize contamination, prevent damage and accommodate proper labelling. Only food grade packaging materials should be allowed. Reusable packaging should be suitably durable, easy to clean and disinfected.
6.3 Packaging materials 6.3.1 They should meet the requirements of hygiene standards and be kept clean and hygienic. 6.3.2 They should not contain toxic or harmful substances and should not be easily discoloured.		*The **guide to good practice** produced by ENSCA in 2017 states:* Packing Salted natural casings are put in bundles or nets and stored in closed casks. All packaging material (casks, liners etc.) and other products (rings, nets, tubes, etc.) that come directly into contact with the natural casings need to be clean and suitable for use in contact with foodstuffs.
7 Hygienic requirements for the processing **7.1 Hygiene of water used for production** 7.1.1 The water used for processing should meet the requirements of GB5749 or the Code of Hygienic Practice for Drinking Water Quality, and public health epidemic prevention testing of the water used for	**Regulation (EC) No 852/2004, Annex II, Chapter** **VII Water** 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;	*The **guide to good practice** produced by ENSCA in 2017 states:* 3.3.5 Water Only potable water should be used in the handling and processing of natural casings. Ice used should be produced from potable water and protected from contamination

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processing should be conducted no less than twice a year. 7.1.2 Water used for production processing and cleaning should be flowing water.	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.	during production, handling and storage. Quality tests on the water used for the production of foodstuffs should be done in accordance to the parameters and frequencies listed in Council Directive 1998/83/EC. **Commission Notice 2022/C 355/01** *states:* 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.
7.2 Prevention of cross-contamination 7.2.1 The structure of the production workshop shall be reasonably laid out, with no cross-flow of people, goods and air. And according to the production process and product characteristics, the raw materials, semi-finished products handling and processing, cleaning and disinfection of utensils, finished products inside and outside the packaging, inspection and storage of different cleanliness requirements of the area (workroom) set apart. The population of the workshop should have signage and warning signs. 7.2.2 Production equipment, tools, containers, sites, etc. should be strictly cleaned and disinfected, and containers holding casings should not be in direct contact with the ground.	**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. **Regulation (EC) No 852/2004, Annex II, Chapter V**	**Commission Notice 2022/C 355/01** *states:* e) Storage conditions at the establishment itself should take into account any instructions provided by the supplier, 'first in, first out' or 'first expired, first out' principles, accessibility for inspection from all sides

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7.2.3 Containers for different purposes should be clearly marked and should not be mixed to avoid cross-contamination. **7.3 Prevention of contamination by foreign substances** 7.3.1 The casings, product contact surfaces and packaging materials should not be contaminated by lubricants, fuels, pesticides, cleaning agents, metal flakes or other chemical or physical contaminants. 7.3.2 Raw materials, auxiliary materials, semi-finished and finished products are stored in separate areas where they will not be contaminated.	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 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 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,	(e.g. not placed directly on the ground, against walls, etc.). *The **guide to good practice** produced by ENSCA in 2017 states:* 3.3.4 Packaging The packaging design and materials should provide adequate protection for natural casings to minimize contamination, prevent damage and accommodate proper labelling. Only food grade packaging materials should be allowed. Reusable packaging should be suitably durable, easy to clean and disinfected.

Chinese legislation: National standard GBT 22637-2008 Good manufacturing practice of the natural sausage casings processing	**EU legislation: Regulation (EC) No 853/2004**	**Guides to good practice and comparative evaluation**
7.4 Control of toxic and hazardous substances 7.4.1 Special storage cabinets for toxic and hazardous substances should be established and clearly marked. A list of toxic and hazardous substances and storage and use management procedures should be established, and records of their use should be maintained. 7.4.2 Strictly implement the regulations on the storage and use management of toxic and hazardous substances to ensure that toxic and hazardous substances are effectively controlled to avoid contamination of the enteric coating, product contact surfaces and packaging materials.	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 prevent harmful deterioration and protect them from contamination. **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 X** 8. Hazardous and/or inedible substances, including animal feed, are to be adequately labelled and stored in separate and secure containers.	**Commission Notice 2022/C 355/01** *states:* 3.6. Physical and chemical contaminations from production environment a) The frequency of the control of physical hazards (such as glass, plastic and metal) should be determined using a riskbased 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 the breakage of glass, hard plastic, knives, etc. 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) Lubricants must be food grade when used in environments in which foods are processed and where there is the possibility of accidental contact with food. e) Possible chemical hazards should only be dealt with by specialized, trained staff. Weighing scales for additives should be preferably automatic. *The **guide to good practice** produced by ENSCA in 2017 states:*

Chinese legislation: National standard GBT 22637-2008 Good manufacturing practice of the natural sausage casings processing	EU legislation: Regulation (EC) No 853/2004	Guides to good practice and comparative evaluation
7.5 Cleaning and disinfection 7.5.1 Work utensils in the processing workshop should be cleaned and disinfected in a special cleaning and disinfection room. The cleaned and disinfected work utensils should be placed on special shelves to drain and be set aside. 7.5.2 The processing site, utensils and workstations shall be cleaned and disinfected before and after processing, and a person shall be appointed to inspect them and keep records of the inspection.	**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;	3.3.1 Control of food hazards The natural casing industry controls food hazards through the use of the HACCP system. **Commission Notice 2022/C 355/01** *states:* 3.2. Cleaning and disinfection a) What, when, how and by who to clean and disinfect should be considered. b) Typical steps should be the removal of visible dirt, followed by cleaning, followed by rinsing, followed by disinfection and rinsing again. c) Cleaning should start in high-risk areas and should end in low-risk areas. Materials and equipment for cleaning equipment should be different between low and high-risk areas and in any case never move from a high contaminated area to a low one. Special attention must be paid to the contamination of disinfected surfaces due to splash when rinsing other surfaces. *The **guide to good practice** produced by ENSCA in 2017 states:* 3.4.1 Maintenance and cleaning Establishments and equipment should be kept in an appropriate state of repair and condition by the implementation of a maintenance plan. Cleaning of the workshops and premises should be done according to an implemented cleaning and disinfection programme. The maintenance

Chinese legislation: National standard GBT 22637-2008 Good manufacturing practice of the natural sausage casings processing	**EU legislation: Regulation (EC) No 853/2004**	**Guides to good practice and comparative evaluation**
7.6 Microbiological control In order to control microbiological contamination of natural sausage casings, the following operations should be noted during processing. a) The temperature of the workshop should be controlled at 25°C or below. b) During the salting process, the sausage casings should be prevented from sticking together to ensure uniform salting. c) The salt brine concentration (wet salt on salt) during the salting process is 25°Be' (Baume degrees).	**Regulation (EC) No 853/2004, Annex III, Section I, Chapter IV:** 18. Unless intended for use as animal by-product in accordance with Regulation (EC) No 1069/2009 of the European Parliament and of the Council (1): (a) stomachs must be scalded or cleaned; (b) intestines must be emptied and cleaned; **Regulation (EC) No 853/2004, Annex III, Section XIII:** Food business operators treating stomachs, bladders and intestines must ensure compliance with the following requirements.	plan and cleaning and disinfection programme should prevent contamination (physical, chemical, biological) of the natural casings. 3.4.2 Cleaning programme The cleaning and disinfection programme should ensure that all parts of the establishment are appropriately clean, including cleaning equipment. To monitor the suitability and effectiveness of the cleaning activities periodical verification should done via hygiene inspections (e.g. daily) and microbiological sampling (e.g. weekly). *The **guide to good practice** produced by ENSCA in 2017 states:* Casings may be salted by hand or with a machine. The bundles of casings may then be left to drain overnight or be centrifuged (dry salting), or directly packed in a container with salt-water brine (slush salting). For dry salting the bundles are shaken to remove salt after curing, and then they are thoroughly rubbed with salt until they absorb the maximum quantity of salt. When natural casings have been stored in dry salt or saturated brine for a minimum period of 30 days, potentially pathogenic bacteria are no longer present, with the exception of bacterial spores. However, these spores will remain inert as long as the

Chinese legislation: National standard GBT 22637-2008 Good manufacturing practice of the natural sausage casings processing	EU legislation: Regulation (EC) No 853/2004	Guides to good practice and comparative evaluation
	1. Animal intestines, bladders and stomachs may be placed on the market only if: (b) they are salted, heated or dried; and (c) after the treatment referred to in (b), effective measures are taken to prevent re-contamination. 2. Treated stomachs, bladders and intestines that cannot be kept at ambient temperature must be stored chilled using facilities intended for that purpose until their dispatch. In particular, products that are not salted or dried must be kept at a temperature of not more than 3 °C.	existing storage conditions remain intact and therefore pose little risk. 2.2 Natural casings are stored and transported in closed containers, either in dry salt or fully saturated brine (≥ 22 °Baumé), preferably at temperatures around or below 20 °C without exposure to direct sunlight. Once cleaned, cured and properly salted natural casings can be kept in storage for a prolonged period of time without loss of quality or increased microbiological counts. The shelf-life period of natural casings is at least 4 years.
7.7 Requirements for inspection 7.7.1 An inspection department should be established to match the production capacity, with correspondingly qualified inspectors. Equipped with the necessary facilities and equipment for inspection, and in accordance with the provisions of the metrological verification. 7.7.2 entrusted to social laboratories to undertake the inspection work, should be signed with the contract, the laboratory should have the appropriate qualifications and capabilities.	**Regulation (EU) 2017/625 on official controls and other official activities performed to ensure the application of food and feed law, rules on animal health and welfare, plant health and plant protection products.** **Article 4 designation of competent authorities** 1. For each of the areas governed by the rules referred to in Article 1(2), Member States shall designate the competent authority or authorities on which they confer the responsibility to organise or perform official controls and other official activities. **Article 5 General obligations concerning the competent authorities and the organic control authorities**	

Chinese legislation: National standard GBT 22637-2008 Good manufacturing practice of the natural sausage casings processing	**EU legislation: Regulation (EC) No 853/2004**	**Guides to good practice and comparative evaluation**
7.7.3 The inspection shall maintain inspection records. **7.8 Control of non-conforming products** Non-conforming products, products that have fallen to the ground and waste shall be temporarily stored in clearly marked special containers and disposed of in a timely manner under the supervision of quality inspection personnel.	1. The competent authorities and the organic control authorities shall: (a) have procedures and/or arrangements in place to ensure the effectiveness and appropriateness of official controls and other official activities; (d) have, or have access to, an adequate laboratory capacity for analysis, testing and diagnosis; (f) have appropriate and properly maintained facilities and equipment to ensure that staff can perform official controls and other official activities efficiently and effectively; **Article 13 Written records of official controls** 1. Competent authorities shall draw up written records of every official control that they perform. Those records may be on paper or in electronic form. **Regulation (EC) No 852/2004, Annex II, Chapter** **VI Food waste** 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	**Commission Notice 2022/C 355/01** *states:* 3.9. 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. *The **guide to good practice** produced by ENSCA in 2017 states:* 3.4.4 Waste management

Chinese legislation: National standard GBT 22637-2008 Good manufacturing practice of the natural sausage casings processing	**EU legislation: Regulation (EC) No 853/2004**	**Guides to good practice and comparative evaluation**
	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	A suitable provision should be made for the removal and storage of waste. There should be no accumulation of waste in production areas. Waste stores should be kept appropriately clean. Waste should be stored separate from any foodstuffs to avoid cross-contamination.
8 Packaging, storage and transport of finished products 8.1 Inner packaging materials should comply with the provisions of GB 9683, GB 9687, GB 9688, GB 9689 and related regulations and standards. 8.2 Packaging materials should be stored in a special warehouse (cabinet), and internal and external packaging materials should be stored separately without contamination. The packaging material room should be dry and ventilated. 8.3 Finished products should be stored in special storage, and products that may cause mutual contamination or taste conspiracy should not be stored in the same storage. Dried casings should be stored in a ventilated and dry place. Cured casings should be kept refrigerated at a temperature below 10°C. The temperature in the warehouse should be recorded regularly. 8.4 The warehouse should be disinfected regularly and kept hygienic, clean and tidy. There should be anti-mould, anti-rodent and anti-insect facilities in the	**Regulation (EC) No 852/2004, Annex II, Chapter** **X Provisions applicable to the wrapping and packaging of foodstuffs** 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. **Chapter IX Provisions applicable to foodstuffs** 2. Raw materials and all ingredients stored in a food business are to be kept in appropriate	**Commission Notice 2022/C 355/01** *states:* 3.4. 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. *The **guide to good practice** produced by ENSCA in 2017 states:* 3.3.4 Packaging The packaging design and materials should provide adequate protection for natural casings to minimize contamination, prevent damage and accommodate proper labelling. Only food grade packaging materials should be allowed. Reusable packaging should be suitably durable, easy to clean and disinfected. 3.4.1 Maintenance and cleaning Establishments and equipment should be kept in an appropriate state of repair and

Chinese legislation: National standard GBT 22637-2008 Good manufacturing practice of the natural sausage casings processing	**EU legislation: Regulation (EC) No 853/2004**	**Guides to good practice and comparative evaluation**
storehouse to ensure that there is no mould, rodent or insect pests. 8.5 Items in the warehouse should be stored off the wall and off the floor, in piles, at a distance of at least 30 cm from the wall and at a distance of at least 10 cm from the floor. 8.6 Raw and auxiliary materials, finished products transport tools should be disinfected, kept clean and hygienic, and equipped with waterproof, dustproof, heat preservation and other facilities according to the characteristics of the products.	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. 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.	condition by the implementation of a maintenance plan. Cleaning of the workshops and premises should be done according to an implemented cleaning and disinfection programme. The maintenance plan and cleaning and disinfection programme should prevent contamination (physical, chemical, biological) of the natural casings. 3.6 Transportation Products should be transported in closed packaging. All vehicles used for transportation of raw, semi-processed or finished products to and from the premises should be suitable for their purpose (e.g. closed, climate-controlled) and kept in an appropriate state of cleanliness, repair and condition. 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 or effective cleaning between loads to avoid the risk of contamination. **Commission Notice 2022/C 355/01** *states:* 3.4 Raw materials e) Storage conditions at the establishment itself should take into account any instructions provided by the supplier, 'first in, first out' or 'first expired, first out' principles,

Chinese legislation: National standard GBT 22637-2008 Good manufacturing practice of the natural sausage casings processing	EU legislation: Regulation (EC) No 853/2004	Guides to good practice and comparative evaluation
		accessibility for inspection from all sides (e.g. not placed directly on the ground, against walls, etc.).
9 Personnel management 9.1 Adequate number of qualified professionals should be available for health and quality management. 9.2 Production, quality management and inspection personnel shall be trained and assessed before they are allowed to work and their duties shall be clearly defined. 9.3 A staff training plan shall be developed and the effectiveness of the training plan shall be regularly reviewed. 9.4 A health check-up plan shall be drawn up and production and quality management personnel shall undergo an annual health check-up and, if necessary, a temporary health check-up, and shall be allowed to take up their duties only after passing the medical examination. Anyone suffering from a disease affecting the hygiene of the product must be transferred out of production. 9.5 Production and quality management personnel shall keep their personal cleanliness and shall not bring into the workshop objects that are not related to production. No jewellery, watches or make-up shall be worn at work. Wash hands, disinfect and put on work clothes, hats and shoes when entering the workshop. A special laundry shall be set up in the factory. Work clothes, hats and shoes shall be managed centrally, cleaned and disinfected in a uniform manner and distributed in a uniform manner.	**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. 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. **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	**Commission Notice 2022/C 355/01** *states:* 3.11. Personnel 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. b) Hands should be washed regularly (and disinfected if necessary), as a minimum, before starting work, after using the lavatory, after breaks, after rubbish disposal, after coughing or sneezing (in a disposable paper or, if no alternative, into your elbow), after handling of raw materials, between tasks, etc. Disposable gloves used hygienically can be effective in preventing cross contamination when handling ready-to-eat foods. Hands must be washed thoroughly before and after use. Gloves must be used only once and should be changed between tasks to prevent cross contamination. c) Hair covers (and beard snoods) should be considered and appropriate clothing with high degree of cleanliness, minimum of pockets, absence of jewelry and watches.

Chinese legislation: National standard GBT 22637-2008 Good manufacturing practice of the natural sausage casings processing	**EU legislation: Regulation (EC) No 853/2004**	**Guides to good practice and comparative evaluation**
9.6 Personnel in different areas and positions should wear different coloured work clothes, caps or other distinctive signs. Personnel in different areas are not allowed to work in tandem. 9.7 Operators with traumatic injuries to their hands shall not be allowed to touch finished products or raw materials and shall be allowed to participate in work not in direct contact with food only after bandaging and treatment with protective gloves.	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.	The use by workers of clothing or items of clothing with different colors is recommended in different microbiological risk areas. d) Protective clothing should preferably not be worn when using the toilets or when wheeling the rubbish bins onto the street. e) Eating, drinking and/or smoking rooms should be separated and clean. f) First aid kits should be easily accessible and available for immediate use. *The **guide to good practice** produced by ENSCA in 2017 states:* 3.5.2 Personal cleanliness and behaviour Personnel and visitors should maintain a high degree of personal cleanliness and wear suitable protective clothing, head covering, and footwear in production areas. Cuts and wounds, where personnel are permitted to continue working, should be covered by suitable waterproof dressings. Personnel and visitors should wash their hands when personal cleanliness may affect food safety (e.g. at the start of foodstuff handling activities, before and after each break, after toilet use). Visible personal items (e.g. jewellery and watches) are not allowed in production areas. Behaviour that could result in contamination of foodstuffs (e.g. smoking, spitting, chewing or eating) is not allowed in the production area.

Chinese legislation: National standard GB/T 20572-2019 HACCP application specification for the production of natural sausage coatings	**EU legislation: Regulation (EC) No 852/2004**	**Guides to good practice and comparative evaluation**
1 Scope This standard specifies the requirements for a Hazard Analysis and Critical Control Point (HACCP) system for natural sausage casing enterprises. This standard applies to the establishment, implementation, updating and improvement activities of the HACCP system for natural sausage casing enterprises.	**Regulation (EC) No 852/2004, Article 1** 1. This Regulation lays down general rules for food business operators on the hygiene of foodstuffs, taking particular account of the following principles: (d) general implementation of procedures based on the HACCP principles, together with the application of good hygiene practice, should reinforce food business operators' responsibility;	*The European Natural Sausage Casings Association (ENSCA) has published in line with Article 9 of Regulation (EC) No 852/2004 a Community guide[1] to good practice applicable throughout the European Union (see Article 9, 3, b).* *[1] Community guide to good practice for hygiene and the application of the HACCP principles in the production of natural sausage casings (version VI, January 2017; available on the EU website: https://food.ec.europa.eu/safety/biological-safety/food-hygiene/guidance-platform_en).*
2 Normative reference documents The following documents are essential for the application of this document. Where a reference document is dated, only the dated version is applicable to this document. Where a reference document is not dated, the latest version (including all amendment sheets) applies to this document. GB/T 7740 Natural sausage casings GB 14881 National Standard for Food Safety General Hygiene Practice for Food Production GB/T 19000 Quality Management System Basics and Terminology GB/T 19080 Food and beverage industry GB/T 19001-2000 Application guide GB/T 19538 Hazard Analysis and Critical Control Point (HACCP) System and its Application Guide	*Not present in EU legislation.*	

Chinese legislation: National standard GB/T 20572-2019 HACCP application specification for the production of natural sausage coatings	**EU legislation: Regulation (EC) No 852/2004**	**Guides to good practice and comparative evaluation**
GB/T 22637 Good Practice for the Processing of Natural Sausage Coats GB/T 27341 Hazard Analysis and Critical Control Point (HACCP) system General requirements for food production enterprises QB/T 2606 Enteric-coated salt		
3 Terms and definitions GB/T 7740, GB/T 19000, GB/T 19080, GB/T 19538 defined as well as the following terms and definitions apply to this document. 3.1 Natural casings Using the oesophagus, stomach, small intestine, large intestine and bladder organs of healthy livestock, after special processing, the retained tissues are salted or dried animal tissues, is the coating of infused meat products. Note: Rewrite GB/T 7740-2006, definition 3.1.	**Regulation (EC) No 853/2004, Annex I** 7.9. 'Treated stomachs, bladders and intestines' means stomachs, bladders and intestines that have been submitted to a treatment such as salting, heating or drying after they have been obtained and after cleaning.	*The **guide to good practice** produced by ENSCA in 2017 states:* 2.1 Definition of natural (sausage) casings "Casings means intestines and bladders, that after cleaning, have been processed by tissue scraping, defatting and washing, and have been treated with salt" (as included in the OIE Terrestrial Animal Health Code). The casing industry generally uses the phrase "natural casings" to define intestines that have been processed after cleaning. − Cleaning is defined as content removal from the intestine or bladder and rinsing with water; − Processing is defined as flushing and / or defatting and / or scraping (removal of internal / external tissue layers). After processing has been completed, as defined above, the product can be called a natural casing. Subsequent salting for at least 30 days, using dry salt (NaCl) or brine (saturated salt solution), produces the so-called finished product. Only natural casings

Chinese legislation: National standard GB/T 20572-2019 HACCP application specification for the production of natural sausage coatings	**EU legislation: Regulation (EC) No 852/2004**	**Guides to good practice and comparative evaluation**
3.2 Standard operating procedure; SOP In order to guarantee the quality of products, the equipment and process operation norms that enterprises should follow during the processing of products.		as finished products will become available for human consumption. **Commission Notice 2022/C 355/01** *states:* 3.13. Working methodology Work instructions or standard operation procedures should be clear, accurate and simple, visible or easily accessible.
4 HACCP system **4.1 General requirements** 4.1.1 The enterprise shall plan, establish, document, implement, maintain, update and continuously improve the HACCP system and ensure its effectiveness in accordance with the requirements of this standard. 4.1.2 The management of the enterprise shall give full responsibility commitment and support for the establishment, implementation, validation, updating and improvement of the HACCP system. 4.1.3 The HACCP system should fully reflect the 7 principles in GB/T 19538. **4.2 Documentation requirements** 4.2.1 The HACCP system documentation	**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. **Regulation (EC) No 852/2004, Annex II, Chapter XIa Food Safety Culture** 1. Food business operators shall establish, maintain and provide evidence of an appropriate food safety culture by fulfilling the following requirements: (a) commitment of the management, in accordance with point 2, and all employees to the safe production and distribution of food; (b) leadership towards the production of safe food and to engage all employees in food safety practices; (c) awareness of food safety hazards and of the importance of food safety and hygiene by all employees in the business; **Regulation (EC) No 852/2004, Article 5** 2. The HACCP principles referred to in paragraph 1 consist of the following:	**Commission Notice 2022/C 355/01, Annex II Procedures based on the hazard analysis and critical control points (HACCP) principles and guidelines for their application** *provides detailed guidelines for implementation from pages 23 to 38.* *The **guide to good practice** produced by ENSCA in 2017 provides in section 4 detailed guidance:* 4. HACCP plan for the production of natural casings *(pages 23 to 41).*

Chinese legislation: National standard GB/T 20572-2019 HACCP application specification for the production of natural sausage coatings	**EU legislation: Regulation (EC) No 852/2004**	**Guides to good practice and comparative evaluation**
It should include the following. a) The food safety policy that forms the document. b) The HACCP manual. c) The documented procedures required by this standard. d) documentation required by the enterprise to ensure effective planning, operation and control of the HACCP system process. e) the records required by this Standard. 4.2.2 HACCP manual The enterprise shall prepare and maintain a HACCP manual which shall include, as a minimum a) the scope of the HACCP system, including the natural casings or categories thereof covered, the operational steps and premises, and the relationship to other steps in the casings production chain b) The HACCP system procedures document or references to it. c) the formulation of the HACCP system processes and their interactions 4.2.3 Control of documented information The documentation required by the HACCP system shall be controlled Procedures for the formation of documentation shall be prepared to provide for the controls required for a) approval of the documentation prior to release to ensure that it is adequate, appropriate and valid. b) documents are reviewed and updated, if necessary, and re-approved	(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). **Regulation (EC) No 852/2004, Annex II, Section II Objectives of HACCP-based procedures** 1. Food business operators operating slaughterhouses must ensure that the procedures that they have put in place in accordance with the general requirements of Article 5 of Regulation (EC) No 852/2004 meet the requirements that the hazard analysis shows to be necessary and the specific requirements listed in point 2.	**Commission Notice 2022/C 355/01, Annex II, 11. Documentation and record keeping** (principle 7) 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. 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 reviewed and signed and any deviation should be recorded and followed up by the person responsible for HACCP in the business. Recommended documentation includes: — GHP documentation, see Annex I, Section 6. — Description of the preparatory stages (before 7 principles); — Hazard analysis, including hazard identification;

Chinese legislation: National standard GB/T 20572-2019 HACCP application specification for the production of natural sausage coatings	**EU legislation: Regulation (EC) No 852/2004**	**Guides to good practice and comparative evaluation**
c) Ensuring that changes and the current revision status of documents are identified. d) ensuring that valid versions of applicable documents are available at the point of use e) Ensure that documentation remains clear and easily identifiable. f) ensuring that external documents related to the HACCP system are identified and their distribution is controlled g) prevent the unintended use of obsolete documents and appropriately mark obsolete documents to be retained. h) Records should be established and maintained to provide evidence of compliance with requirements and effective operation of the HACCP system.		— CCP (and OPRP) identification; — Critical limit (action criteria) 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, etc.). A systematic, integrated approach can be taken by using worksheets for the development of the HACCP plan as provided in the Annex to CXC 1-1969, Diagram 3. Starting from the flow diagram, at each step of processing the potential hazards are described, relevant control measures (GHP) listed, CCP identified (if appropriate based on the hazards analysis) along with their critical limits, monitoring procedures, corrective actions and available records. The documentation should be kept permanently available in any format for the HACCP team and at the request of the competent authorities e.g. for auditing purposes. Record examples are:

Chinese legislation: National standard GB/T 20572-2019 HACCP application specification for the production of natural sausage coatings	**EU legislation: Regulation (EC) No 852/2004**	**Guides to good practice and comparative evaluation**
		— Outcome of monitoring activities on control measures; — Observed deviations and executed corrective actions; — Outcome of verification activities. Records should be kept for an appropriate period of time in any format. 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 and should therefore be kept long enough for the performance of official controls by competent authorities.
5 Management responsibilities The enterprise shall comply with the relevant requirements of GB/T 27341.	**Regulation (EC) No 852/2004, Annex II, Chapter XIa Food Safety Culture** 1. Food business operators shall establish, maintain and provide evidence of an appropriate food safety culture.	
6 Prerequisite plans **6.1 General principles**	**Regulation (EC) No 852/2004, Annex II, Chapter XIa Food Safety Culture**	**Commission Notice 2022/C 355/01, Annex II, 2. General principles**

Chinese legislation: National standard GB/T 20572-2019 HACCP application specification for the production of natural sausage coatings	**EU legislation: Regulation (EC) No 852/2004**	**Guides to good practice and comparative evaluation**
The enterprise shall establish and implement an appropriate prerequisite plan in accordance with the relevant requirements of GB/T 27341, taking into account the specific conditions of the enterprise. **6.2 Good Practices (GMP)** Natural sausage coating enterprises shall establish and implement suitable GMPs for their enterprises in accordance with relevant laws and regulations and the requirements of GB 14881 and GB/T 22637. **6.3 Sanitary Standard Operating Procedures (SSOP)** The enterprise shall establish and implement SSOPs that meet the relevant requirements of GB/T 27341 and are appropriate for the enterprise.	1. Food business operators shall establish, maintain and provide evidence of an appropriate food safety culture by fulfilling the following requirements: (a) commitment of the management, in accordance with point 2, and all employees to the safe production and distribution of food; (b) leadership towards the production of safe food and to engage all employees in food safety practices; (c) awareness of food safety hazards and of the importance of food safety and hygiene by all employees in the business; (d) open and clear communication between all employees in the business, within an activity and between consecutive activities, including communication of deviations and expectations; (e) availability of sufficient resources to ensure the safe and hygienic handling of food.	Prior to application of the HACCP-based procedures to any business, the food business operator should have implemented GHP (See Annex I) and other relevant PRP (See Section 5 of the main document). *The **guide to good practice** produced by ENSCA in 2017 states:* The HACCP system is not a replacement for other food hygiene requirements, but a part of a package of food hygiene measures that must ensure food safety. As a prerequisite control measure the natural casings are constantly visually checked during the production process and several policies are implemented. A prerequisite control measure ensures regular inspection rounds and maintenance of the building and machinery and limits this risk to an acceptable level. **Commission Notice 2022/C 355/01, Annex I**
6.4 Standard Operating Procedures (SOP) 6.4.1 Procurement 6.4.1.1 Supplier evaluation The following requirements shall be met. a) A comprehensive evaluation of the supplier's supply capability and product quality assurance capability shall be carried out to identify qualified suppliers, establish and maintain a supplier evaluation form and a schedule	**Regulation (EC) No 852/2004, Annex II, Chapter** **IX Provisions applicable to foodstuffs** 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	3.4. Raw materials 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 an agreement on specifications (e.g. microbiological) and hygiene assurance

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of qualified suppliers, and procure from qualified suppliers. b) A dynamic and comprehensive evaluation shall be conducted on the capability, performance and supply quality of qualified suppliers, and relevant quality records shall be established and maintained.	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.	and/or the request for a certified quality management system can be taken into account in respect of the extent of details on the GHP and HACCP plan of the establishment itself. c) Apart from agreements with and the 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 the agreed delivery period, accuracy of the 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 delivery checks.
6.4.1.2 Raw and auxiliary materials for enteric coating The following requirements shall be met. a) Raw materials for enteric coating shall be sourced from healthy livestock and be accompanied by relevant certificates such as animal quarantine certificates, in compliance with relevant national regulations.	**Regulation (EC) No 853/2004, Annex II, Section XIII Treated stomachs, bladders and intestines** Food business operators treating stomachs, bladders and intestines must ensure compliance with the following requirements. 1. Animal intestines, bladders and stomachs may be placed on the market only if: (a) they derive from animals which have been slaughtered in a slaughterhouse, and which	

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b) Salt for processing shall be used for enteric coating that meets the requirements of QB/T2606 and has a certificate of conformity for inspection.	have been found fit for human consumption following ante-mortem and post-mortem inspection;	*The **guide to good practice** produced by ENSCA in 2017 states:* 4.5 CCP 2 Salting 4.5.1 Identification of critical control point 2 Microbiological contamination of the natural casings is according to the risk matrix a high risk. This hazard is eliminated by salting and therefore salting is a CCP. There are two ways of salting that are both covered in this CCP, dry salting and the usage of brine. 4.5.2 Critical limits at critical control point As a result of the dry salting process visible salt crystals should be present on the cleaned natural casings at inspection to ensure sufficient saturation. The salt concentration in brine should be at least 22 ° Baumé.
c) Other auxiliary materials used for the processing of casings shall comply with food hygiene requirements.	**Regulation (EC) No 852/2004, Annex II, Chapter II Specific requirements in rooms where foodstuffs are prepared, treated or processed** (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 **guide to good practice** produced by ENSCA in 2017 states:* 4.3 Prerequisite Control Measures PCM1 Cleaning and disinfection procedure Cleaning and disinfection is done according to agreed procedures. Daily checks aided by checklists and weekly checks with sampling are carried out by the responsible person. Where necessary corrective action such as re-cleaning, rinsing or new instructions for cleaning employees can be taken. Checks and corrective actions are recorded and evaluated.

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6.4.2 Acceptance of incoming goods 6.4.2.1 The acceptance personnel shall request and check the relevant certificates of incoming raw materials of enteric coating, enteric salt and other auxiliary materials in accordance with the requirements of 6.4.1.2, and accept them after meeting the requirements. 6.4.2.2 The inspection personnel shall check the incoming raw materials of enteric coating, enteric salt and other auxiliary materials in accordance with the relevant regulations, verify the quantities and fill in the incoming inspection records.	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. **Regulation (EC) No 852/2004, Annex II, Chapter IX Provisions applicable to foodstuffs** 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 (EU) 2017/625 on official controls and other official activities performed to ensure the application of food and feed law, rules on animal health and welfare, plant health and plant protection products.** **Article 5 General obligations concerning the competent authorities and the organic control authorities** 1. The competent authorities and the organic control authorities shall:	*The **guide to good practice** produced by ENSCA in 2017 states:* 3.3.3 Incoming material requirements All natural casings or cleaned preserved intestines should come from EU-approved establishments, either located in EU Member States or in third countries that show compliance with the EU legislation. All suppliers of incoming goods should be listed. All incoming goods should be registered and inspected before processing. Stocks should be controlled by an effective stock rotation system such as "first in, first out" (FIFO).

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6.4.3 Processing of natural casings 6.4.3.1 Processing process Take salted sausage casing processing as an example, it is appropriate to refer to the following process: raw material acceptance of raw sausage → raw material collection, storage and transportation → raw sausage soaking and rinsing → scraping → irrigation inspection → measuring code → salt → semi-finished natural sausage casing packaging → storage, transportation → semi-finished raw material acceptance → dipping and washing → dismantling → graded by road → measuring code → salt → draining brine → winding → barrel → inspection → storage, transportation. 6.4.3.2 Raw material acceptance of raw sausage (6.4.1.2a) requirements should be met. 6.4.3.3 Collection and storage of raw sausage materials Raw sausage materials should be refrigerated during collection and storage. Containers and packaging containers, means of transport should meet the relevant health requirements. 6.4.3.4 Soaking and rinsing of the raw intestine	(a) have procedures and/or arrangements in place to ensure the effectiveness and appropriateness of official controls and other official activities; (d) have, or have access to, an adequate laboratory capacity for analysis, testing and diagnosis; (f) have appropriate and properly maintained facilities and equipment to ensure that staff can perform official controls and other official activities efficiently and effectively;	*The **guide to good practice** produced by ENSCA in 2017 provides a flow chart:* **Annex II Flowcharts production process natural casings** *The **guide to good practice** produced by ENSCA in 2017 states:* 2.3 Processing of natural casings 2.3.1 Cleaning operations Receiving from slaughter line After the intestines have been carefully separated from the attached organs (stomach, spleen, etc.) they can be cleaned by a cleaning operation on-site at the slaughterhouse ("gut room") or transported to a cleaning operation elsewhere. Before

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Soak and rinse the sausages in water at the right temperature. 6.4.3.5 Scraping Scrape away the unused parts of the intestine, such as the inner and outer mucous membranes, to obtain a transparent primary casing. 6.4.3.6 Irrigation check After scraping, a tap can be inserted into one end of the preliminary sausage casing to irrigate and check for leaking holes. 6.4.3.7 Measuring yards Measure into different sizes to meet the needs of the customer or production.		transportation to a cleaning operation on a different location, the intestines are pulled from the mesentery, applicable SRM removed and the manure is stripped out. These cleaned preserved intestines are transported in chilled water (< 3 °C) or as frozen goods. Pulling and cleaning The cleaning operation starts by placing the intestinal tract on a pulling table after reception from the slaughter line. The intestines are pulled from the mesentery either by hand, with an (air-operated) knife or by a machine depending on the species and processing technique. From the pulling table the intestines are transferred to the manure stripper, the first step in the casing cleaning line. Casing cleaning equipment consists mainly of conveyor belts, holding (soak) tanks, water sprinklers, rollers and scrapers through which the casings are transported. The holding tanks are operated at temperatures, usually at about 40 °C, because this temperature facilitates the cleaning process. Water sprinklers supply fresh potable water to rinse the casings. The rollers may consist of various materials. A high standard of equipment cleaning and disinfection procedures should be applied here to reduce the risk of cross-

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6.4.3.8 Salting The following requirements should be met. a) Dry salting: the casings, which have been measured into handles, are spread out and salted evenly with casings salt. The curing should be done in one go, and after the curing is done, the casing should be rewound and placed in a turnover basket. The turnover basket full of casings should be placed on the leaching pond layer		contamination with micro-organisms. After manure stripping the intestines go through a series of steps removing the mucosa and musculary and serosa layers. Sheep casings, due to their more delicate structure, are fermented first to facilitate the removal of the different layers. This process may take from one day to a week, depending on the water temperature (21 to 1 °C). Beef casings are turned inside out to facilitate this operation, but pig and sheep intestines are not inverted and the loose mucosa is stripped out. After the finishing machine the casings are cooled off in a cold water bath or a cold salt brine tank to reduce bacterial growth and to wash out any remaining blood. Here the casings are bundled and prepared for the next step. Salting (and Curing) The main purpose of the salting and curing process is to reduce the water content in the natural casings and replace it by a high salt concentration. This way little water remains available for bacterial growth and bacteria are actively killed due to the high salt concentrations. Casings may be salted by hand or with a machine. The bundles of casings may then be left to drain overnight or be centrifuged (dry salting), or directly packed in a container with salt-water brine

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by layer so that the brine drains out and the brine is drained at the right time so that the casings are cured through so that salt crystals can be seen on the casings. (b) Wet brine brining: the main method of brining with wet brine is to use saturated brine, the concentration of which should not be less than 22°Be', measured by a Pommie's gravimeter to keep the concentration constant. 6.4.3.9 Packaging of semi-finished natural sausage casings Semi-finished natural sausage casings are either wrapped or bagged and stored in airtight drums.		(slush salting). For dry salting the bundles are shaken to remove salt after curing, and then they are thoroughly rubbed with salt until they absorb the maximum quantity of salt. When natural casings have been stored in dry salt or saturated brine for a minimum period of 30 days, potentially pathogenic bacteria are no longer present, with the exception of bacterial spores. However, these spores will remain inert as long as the existing storage conditions remain intact and therefore pose little risk. During this initial 30-day salting period or any other subsequent storage period, no specific storage temperatures are required to obtain the desired bacterial risk reduction. Packing Salted natural casings are put in bundles or nets and stored in closed casks. All packaging material (casks, liners etc.) and other products (rings, nets, tubes, etc.) that come directly into contact with the natural casings need to be clean and suitable for use in contact with foodstuffs. Dispatch After cleaning the natural casings are either transported to a sorting operation or a distribution centre. 2.3.2 Sorting operations Receiving Sorting operations either receive natural casings

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6.4.3.10 Storage, transport In accordance with the relevant provisions of GB / T7740. 6.4.3.11 Acceptance of semi-finished raw materials Normal colour and colour for sensory inspection, no odour, in accordance with the relevant requirements of 6.4.12a) 6.4.3.12 Soaking and washing The semi-finished natural casings are placed in water and soaked to remove the salt from the casings. 6.4.3.13 Dismantling Unwrap the cleaned semi-finished natural sausage casings and straighten the casings. 6.4.3.14 Sorting and grading The dismantled casings are filled with water to check whether there are any holes in the casings on the one hand, and on the other hand they are sorted and graded according to the size of the casings and the different grades. 6.4.3.15 Measuring The measuring personnel will assign the head and measure the code of the graded casings, and the specific requirements will be in accordance with the relevant provisions of GB/T 7740.		from cleaning operations or distribution centres. Storage/ Transport For selection and grading operations, natural casings can be transported to other locations, either stored in dry salt or saturated brine. Rinsing/ Desalting Prior to sorting the natural casings are rinsed in water and de-salted to facilitate these operations. Selection/ Grading/ Classification At selection the calibre, length per strand and quality (e.g. holes) of the natural casings is determined. To assess this, casings are filled with water (small ruminant, hog) or air (ruminant). The calibre is measured with an electronic instrument, a calibre block or a so-called piano. The natural casings are graded in different calibres in steps of 2 to 3 mm. Salting/ Curing (Dry or in brine)/ Packing After selection and grading, the natural casings are re-packed as bundles in dry salt or saturated brine. Alternatively, natural casings can also be shirred manually or mechanically as individual strands on plastic flexible tubes or rigid pipes and packed in saturated brine. This facilitates sausage production as the casings can now be

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6.4.3.16 Salting Salt on dry salt and salt on wet salt conform to the relevant requirements of 6.4.3.7. Curing period: The natural casings shall be cured continuously in dry salt or saturated salt brine for a period of not less than 30 d before being shipped to the customer. this 30 d period, starting with the salting of the natural casings after cleaning and processing, may include the storage and transport time before shipment to the customer. 6.4.3.17 Wrapping Wrap the drained sausage casings. If there are any parallel strips, re-salt them, untie any dead knots and wrap them tightly. 6.4.3.18 Barrel filling The following requirements should be met. (a) Packaging: Natural casks (plastic casks lined with plastic bags) for the packaging of casings should be robust and meet food hygiene requirements. The drums should be fully sprinkled with enteric salt or filled with saturated salt brine. (b) Marking: Each barrel containing casings should have a distinctive card attached to the top surface, with the name, calibre length and quantity marked on the card; the outside of the barrel should be marked with the name, calibre, number and mark; the mark should be marked with the batch number and production date of the product to ensure product traceability. 6.4.3.19 Inspection The following requirements shall be met.		loaded directly onto the sausage filling horn without further handling by the sausage producer. As described under Cleaning Operations, salted natural casings are put in bundles or nets and stored in closed casks. Dispatch After sorting, natural casings are transported to either a distribution centre or directly to the customer. 2.3.3 Distribution (repacking) centres Distribution centres can receive natural casings from slaughterhouses, cleaning operations or sorting operations. Depending on the kind of establishment where the natural casings come from, a specific process step is executed and the natural casings are transported to the next step in the production chain as described above. **Commission Notice 2022/C 355/01, Annex I** 3.13. Working methodology

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(a) Inspection during the process: quality inspectors shall carry out random inspection of calibre, grade, measuring code, salting, winding handle, barrel filling and other process links, and meet the relevant requirements. (b) Finished product inspection: it shall comply with the relevant provisions of GB/T 7740. 6.4.3.20 Storage, transport shall comply with the relevant provisions of GB/T 7740. 6.4.4 Control of non-conforming products 6.4.4.1 The enterprise shall develop control documents for non-conforming products to prevent unintended use of non-conforming products. 6.4.4.2 Non-conforming products found in the process of raw material procurement, processing and product inspection of enteric coating shall be handled and recorded in accordance with the relevant provisions of the non-conforming products control document.	**Regulation (EC) No 852/2004, Annex II, Chapter IX Provisions applicable to foodstuffs** 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,	Clear instructions should be provided on 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, etc. Work instructions or standard operation procedures should be clear, accurate 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, etc. **Commission Notice 2022/C 355/01, Annex I** 4. Monitoring, validation and verification of GHP Records should be kept on the results of monitoring, validation and verification procedures. Corrective action in case of deviation from set food safety standards should at least result in a revision of the implementation of the GHP. The need for withdrawal and recall should be assessed on a case by case

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6.5 Human resource security plan The enterprise shall formulate and implement a human resource security plan to ensure that personnel engaged in the production and management of enteric coating are competent. The plan shall meet the following requirements. a) Personnel engaged in the processing, inspection and management of enteric coating shall be provided with continuous training in the HACCP system, relevant professional and technical knowledge and operational skills and laws and regulations, or other measures shall be taken to ensure the necessary competence of personnel at all levels. b) evaluate the effectiveness of the training provided or other measures taken. c) maintain appropriate records of the education, training, skills and experience of personnel.	the final product would be unfit for human consumption. **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; 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.	basis, in particular in the case of deviation from GHP requiring greater attention. In case non-compliances and deviations are observed frequently, the risk should be reassessed and control measures possibly reviewed. *The **guide to good practice** produced by ENSCA in 2017 states:* 3.8 Training All (temporary) personnel engaged in foodstuff operations who come directly or indirectly into contact with foodstuffs should be trained, and/or instructed in food hygiene principles and practices to a level appropriate to the operations they are to perform (e.g. on-the-job training by supervisor, external training programme for all personnel every 2 years). Designated personnel should be trained in handling strong cleaning chemicals or other potentially hazardous chemicals safely. There should be annual assessments of the effectiveness of training and instruction programmes, as well as routine supervision and checks to ensure that procedures are being carried out effectively. Training programmes should be reviewed at least once per year and updated if appropriate. Repeated training programmes ensure that

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		all food production employees remain aware of all procedures and the necessary knowledge and skills to maintain the safety and suitability of foodstuffs.
6.6 Maintenance plan The enterprise shall formulate and implement a maintenance plan for the plant, factory, facilities and equipment to keep them in good condition and to prevent contamination of the casings.		**Commission Notice 2022/C 355/01, Annex I** 3.5. Technical maintenance and calibration a) The maintenance plan should be considered with a technical specialist. The plan should include 'emergency' procedures when equipment is defective and instructions for preventive replacement of seals, gaskets, etc. b) Attention should be paid to hygiene during maintenance operations.
6.7 Traceability and recall 6.7.1 Product traceability 6.7.1.1 A traceability system shall be established and implemented to ensure that product batches and their relationship to raw material batches, production and delivery records can be identified. The traceability shall be maintained for a specified period. Traceability records shall be maintained for a specified period of time to allow the system to be evaluated and to enable potentially unsafe products to be addressed. Traceability records shall comply with legal and regulatory requirements.	**Regulation (EC) No 178/2002, Article 18 Traceability** 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	

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6.7.1.2 The information requirements for traceability shall be specified. 6.7.1.3 It is appropriate to establish a supply chain traceability technical system, including a coding and marking system, a carrier system and a data sharing system. 6.7.2 Product recall 6.7.2.1 A product recall system shall be established in accordance with relevant national regulations. 6.7.2.2 Recalled products shall be harmlessly disposed of or destroyed to prevent their unintended use or flow into the food chain.	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. **Regulation (EU) No 931/2011** *specifies the traceability requirements.* **Regulation (EC) No 178/2002, Article 19 Responsibilities for food: food business operators** 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	

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6.8 Contingency planning Enterprises shall identify and determine potential enteric coating emergencies, develop emergency plans including but not limited to the relevant requirements of GB/T 27341, and respond when necessary to reduce the impact of possible safety hazards. Records of the implementation of the emergency plan shall be maintained, and its effectiveness shall be regularly rehearsed and verified.	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. **Regulation (EU) 2017/625, Article 5 General obligations concerning the competent authorities and the organic control authorities** (i) have contingency plans in place, and be prepared to operate such plans in the event of an emergency, where appropriate, in accordance with the rules referred to in Article 1(2).	*The **guide to good practice** produced by ENSCA in 2017 states for the FBO to implement:* 4.1 Hazard Identification The HACCP system is not a replacement for other food hygiene requirements, but a part of a package of food hygiene measures that must ensure food safety. Potential biological, chemical and physical hazards in the production of natural casings are discussed in the guide. 4.5.5 Verification procedures Annual audits on the results of production procedures and monitoring procedures are taken. Evaluation of production procedures and monitoring procedures may lead to the adjustment of procedures.
7 Establishment and implementation of the HACCP plan **7.1 General rules** Natural sausage coating enterprises shall establish and implement an appropriate HACCP plan in accordance with the relevant requirements of GB/T 27341, combined with the specific requirements of the enterprise.	**Regulation (EC) 852/2004, 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:	

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7.2 Preparatory steps for the establishment of a HACCP plan 7.2.1 Formation of HACCP working group The capacity of the HACCP team should meet the technical requirements of the enterprise's enteric coating production. The composition of the team should meet the requirements of the professional coverage of the enteric coating production enterprise and be composed of multi-disciplinary personnel, including health and quality control personnel, production technicians, engineering technicians, quality control personnel, facility and equipment management personnel, raw intestine and auxiliary materials procurement, storage and transportation management personnel. If necessary, external experts may be used. Members of the team shall have professional and technical knowledge and experience related to the enteric coated products, processes, hazards involved, and be properly trained. 7.2.2 Product description and determination of the intended use of the product The primary task of the HACCP team is to describe the product for which the HACCP system is to be managed, to determine the intended use of the product and to identify and determine the following applicable information required to carry out the hazard analysis. a) The name of the product.	(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 (a) to (e) are working effectively; (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.	**Commission Notice 2022/C 355/01, Annex II, 4. Preliminary activities** 4.1. 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 the overall FSMS. Where necessary, the team should be assisted by specialists who will help it to solve difficulties in the development and implementation of the HACCP-based procedures. 4.2. 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;

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b) The raw materials and main ingredients of the product. c) The physical and chemical properties of the product and how it is processed and handled. d) Packaging method. e) storage conditions. f) shelf-life; and g) marketing method; and h) marketing area. i) epidemiological information on the safety of the product (if necessary). j) the intended use of the product and the population for whom it is intended to be consumed k) the manner in which the product is intended to be consumed or used. l) Unintended (but highly likely) ways in which the product may be consumed or used. m) Other information as necessary. Records of product descriptions, intended uses should be maintained. 7.2.3 Mapping and validating the process flow 7.2.3.1 The HACCP team shall go into the production line to gain a detailed understanding of the production and processing of the casings and shall depict a processing flow diagram for the casings based on the operational requirements of the casings, this diagram shall include a) each step and its corresponding operation. b) The sequence and interrelationship between these steps.		— 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. 4.3. Identification of intended use 4.4. Construction of a flow diagram (description of manufacturing process) All steps involved in the process should be studied in sequence and presented in a detailed flow diagram. 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

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c) the points of rework. d) the external processes. e) the points of input of raw materials and auxiliaries. f) the point of discharge of waste. The development of the flow chart should be complete, accurate and clear. The operational requirements and process parameters for each processing step should be set out in the process description. Where applicable, a plant location map, plant plan, workshop plan, pedestrian flow and logistics map, water supply and drainage network map, pest control distribution map, etc. shall be provided. 7.2.3.2 On-site verification of all operational steps in their operational state shall be carried out by HACCP personnel familiar with the enteric coating operational process to confirm and verify consistency with the developed flow chart and to make modifications where necessary. The confirmed flowchart should be maintained. See Figure A.1 in Appendix A for an		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) and the disposal of waste/by-products; — 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). The nature of the business will define the complexity of the required flow diagram, which might be very simple in certain businesses. 4.5. 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.

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example of a flowchart for the processing of sausage casings (salted). **7.3 Steps for establishing a HACCP plan** 7.3.1 Hazard analysis and development of control measures 7.3.1.1 General rules Enterprises manufacturing enteric-coated products shall carry out hazard analysis and develop control measures in accordance with the relevant requirements of GB/T 27341. Information on chemical contaminants (e.g. veterinary drug residues, etc.), bacteria, viruses and their toxins, parasites and harmful biological factors, suitable conditions for microbial reproduction, foreign bodies, etc. should also be considered when implementing hazard analysis. For significant hazards caused by human damage or deliberate contamination, etc., the enteric coating manufacturer shall also establish a protection plan for the enteric coating and fraud prevention as a control measure. 7.3.1.2 List of hazard analysis tables The HACCP team should provide a documented hazard analysis table based on the results of the process flow, hazard identification, hazard assessment and control measures, including the processing steps, potential hazards considered, the basis for judging significant		**Commission Notice 2022/C 355/01, Annex II, 5. Hazard analysis (principle 1)** 5.1. Identification of relevant hazards A hazard is a biological, chemical (including allergens) or physical agent in food or feed with the potential to cause an adverse health effect. *The **guide to good practice** produced by ENSCA in 2017 states:* 4.1 Hazard Identification The HACCP system is not a replacement for other food hygiene requirements, but a part of a package of food hygiene measures that must ensure food safety. Potential biological, chemical and physical hazards in the production of natural casings are listed in 3 tables on pages 23, 24 and 26 of the guide. The risks for microbiological and physical contamination and their classification and control are listed in 2 tables on pages 28 and 29 of the guide. *The **guide to good practice** produced by ENSCA in 2017 states:* 4.2 Hazard Analysis All biological, chemical and physical hazards in the production of natural casings are evaluated according to the Risk Matrix (see table on page 27 of the guide) and the

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hazards, control measures, and a clear interrelationship between the factors. The HACCP team should update or revise the HACCP table as necessary if the results of the hazard analysis are affected by any factors. A documented Hazard Analysis Form should be maintained. See Table A.1 for an example of a hazard analysis sheet for enteric coating (salted). 7.3.2 Identification of critical control points 7.3.2.1 The HACCP team shall identify appropriate steps for control of each significant hazard based on the relationship between the significant hazards provided by the hazard analysis and the control measures to identify Critical Control Points (CCPs) to ensure that all significant hazards are effectively controlled. Companies should use appropriate methods to identify CCPs, such as the logical reasoning method of the Judgement Tree in Appendix B. However, the following factors should be considered when using the CCP judgement tree table. a) The judgement tree table is only a tool to assist in determining CCPs and is not a substitute for professional knowledge. b) The judgement tree table is used after the hazard analysis and at the step where significant hazards are identified.		"Decision Tree to identify CCPs". Depending on their severity and probability of occurrence significant hazards are either classified as Moderate risk requiring a Prerequisite Control Measure (PCM) or High risk requiring a Critical Control Point (CCP). **Commission Notice 2022/C 355/01, Annex II, 5. Hazard analysis (principle 1)** *discusses:* 5.2. Control measures 5.3. Hazard analysis worksheet **6. 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 CCP 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 as significant and no control measure exists at that step, or at any other step 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;

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c) Subsequent processing steps may be more effective in controlling hazards and may be the more appropriate CCP to select. d) More than one step in processing can control a hazard. When significant hazards or control measures change, the HACCP team should re-perform the hazard analysis and determine the CCP. the basis and documentation for the CCP determination should be maintained. If it is analysed that control by standard operating procedures (SOPs) can be equivalent to CCP control, the basis, parameters and documentation identified by the SOPs are to be maintained. See Table A.1 for examples of critical control points for sausage coatings (salting). 7.3.2.2 The following factors are considered in determining critical control points. a) Acceptance of raw sausage materials is appropriate considering, but not limited to, the following important production control processes and factors: Raw sausage materials should be sourced from healthy livestock and be accompanied by relevant certificates such as animal quarantine certificates. Acceptance should be subject to satisfactory testing. b) It is advisable to consider, but not limited to, the following important production control processes and factors: dry salt on salt can be seen on the sausage casing, wet salt on salt brine concentration should be no less than 22°Be' and the curing time should be no less than 30d.		establish and implement principles 3 to 7 of the procedures based on the HACCP principles at each CCP. CCP are intended to address only significant hazards in an establishment. In addition, for each control measure, the systematic approach shall include an assessment of the feasibility of: — establishing measurable/observable critical limits and/or measurable/observable action criteria; — monitoring to detect any failure to remain within critical limit and/or measurable/observable action criteria; — applying timely corrections in case of failure. A comparison of GHP, OPRP and CCP is provided in Appendix 5 of the Commission notice. 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 significant hazard. Application should be flexible, considering the whole manufacturing process. Training in the application of a method to identify CCP is recommended. *The **guide to good practice** produced by ENSCA in 2017 identifies 3 CCP's:*

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c) Acceptance of semi-finished raw materials is appropriate considering, but not limited to, the following important production control processes and factors: normal colour, no odour such as rotten odour, and provision of relevant certificates such as animal quarantine certificates. Acceptance shall be subject to satisfactory testing.		CCP 1 Removal of SRM 4.4.1 Identification of critical control point 1 The presence of Specified Risk Material (SRM) after pulling is a hazard with a high risk. Therefore, according to the decision tree the removal of SRM during pulling is a CCP. The ileum of small ruminants and the last four meters of the small intestine, the caecum and the mesentery of the bovine intestinal tract is designated as SRM. CCP 2 Salting 4.5.1 Identification of critical control point 2 Microbiological contamination of the natural casings is according to the risk matrix a high risk. This hazard is eliminated by salting and therefore salting is a CCP. There are two ways of salting that are both covered in this CCP, dry salting and the usage of brine. CCP 3 Salting period 4.6.1 Identification of critical control point 3 Microbiological contamination of the natural casings is according to the risk matrix a high risk. Apart from salting (CCP2) the natural casings correctly, the salting period is of great importance to eliminate a possible microbiological contamination. Natural casings are required to be salted with NaCl (dry salt or saturated brine) during a continuous period of at least 30 days before they are dispatched to sausage

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7.3.3 Establishment of critical limits for each critical control point 7.3.3.1 The HACCP team shall establish critical limits for each CCP. A CCP may have one or more critical limits. 7.3.3.2 The establishment of critical limits shall be scientific, intuitive and easy to monitor to ensure that the safety hazards of the product are effectively controlled without exceeding acceptable levels. The determination of critical limits shall be based on science and references may be derived from scientific journals, regulatory guidance, experts and pilot studies, etc. The basis and references used to determine the limits shall be part of the supporting documentation for the HACCP system. 7.3.3.3 Perception-based critical limits should be monitored and determined by personnel who have been assessed and are competent to do so. To prevent or		producers. This 30-day period can start as soon as the natural casings are salted at a cleaning operation and can include any storage or transport period before being finally shipped to the sausage producers. However, the possible risk will not become apparent to the consumer as natural casings are generally not consumed as such but are produced into sausages. Therefore, the CCP is applicable in a sorting or distribution operation, not a cleaning operation. **Commission Notice 2022/C 355/01, Annex II, 7. Critical limits at CCP (principle 3)** Each control measure associated with a critical control point should give rise to the specification of critical limits. 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 within critical limits. They should be based on substantiated evidence that the chosen values will result in the correct application of a control measure. Examples of such parameters include temperature, time, pH, moisture content, amount of an additive or salt, sensory

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reduce deviations from critical limits, it is appropriate for the HACCP team to establish operational limits for the CCP. Records should be maintained of the basis and results of critical limit determinations. 7.3.3.4 Key limit value indicators for sausage casings include salting time, salt brine concentration, inspection reports, quarantine certificates and organoleptic indicators. See Table A.2 for examples of key limits for sausage casings (salted). 7.3.3.5 Considerations for determining critical limits are the same as 7.3.2.2.		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 not exceeded. Critical limits should be validated and should have clear, specific values. *The **guide to good practice** produced by ENSCA in 2017 states the following critical limits for the 3 CCP's:* 4.4.2 Critical limits at critical control point 1 There is a zero tolerance on the presence of SRM in natural casings. 4.5.2 Critical limits at critical control point 2 As a result of the dry salting process visible salt crystals should be present on the cleaned natural casings at inspection to ensure sufficient saturation. The salt concentration in brine should be at least 22 ° Baumé. 4.6.2 Critical limits at critical control point 3 At least 30 days. In practice this period of 30 days will be covered by the period needed for storage, dispatch and transport of the natural casings.

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7.3.4 Establish a system for monitoring each critical control point 7.3.4.1 The company shall develop and implement effective monitoring measures for each CCP to ensure that the CCP is under control. The monitoring measures include monitoring targets, monitoring methods, monitoring frequency and monitoring personnel. Monitoring enables the detection of loss of control at critical control points. In addition, monitoring provides the necessary information to adjust the production process in time to prevent critical limits from being exceeded. Examples of sausage casings (salted) can be found in Table A.2. 7.3.4.2 The design of a monitoring system should identify the following elements. a) The object to be monitored: it should include the critical limits involved in each CCP. b) Monitoring methods: should be accurate and timely, physical and chemical tests can be carried out more quickly than microbiological tests, commonly used physical and chemical test indicators include time and temperature combinations, sensory tests, etc. c) Frequency of monitoring: continuous monitoring should generally be implemented, and if discontinuous monitoring is used, the frequency should be such that the CCP is controlled, and continuous monitoring is feasible for many physical or chemical parameters. d) Monitoring personnel: personnel carrying out CCP monitoring include those on the assembly line, equipment operators, supervisors, maintenance		**Commission Notice 2022/C 355/01, Annex II, 8. Monitoring procedures at CCP (principle 4)** An essential part of HACCP-based procedures is a programme of observations or measurements performed at each CCP to ensure compliance with specified critical limits. Observations or measurements must be able to detect deviation at CCP and provide information in time for corrective action to be taken such that unsafe food is not placed on the market. Where possible, process adjustments should be made when monitoring results indicate a trend towards deviation 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. Observations or measurements can be made continuously or periodically. When observations or measurements are not continuous, it is necessary to establish a frequency of observations or measurements which detect deviations in time for corrective actions to be taken. Monitoring procedures for CCP should be capable of timely

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personnel, quality control personnel, etc. Personnel responsible for CCP monitoring should be trained in CCP monitoring techniques, understand the purpose and importance of CCP monitoring, be familiar with monitoring operations and record and report monitoring results in a timely and accurate manner. When monitoring indicates a deviation from a critical limit, the monitoring personnel should immediately stop the operation of that operation step and take corrective action in time to prevent deviation from the critical limit. Monitoring records should be maintained.		detection of a deviation from the critical limit to allow isolation of the affected products. The method and frequency of monitoring should take into account the nature of the deviation (e.g. a broken sieve, deviation from pasteurization conditions, or a gradual increase of temperature in cold storage). Where possible, monitoring of CCP should be continuous. The HACCP plan should describe the methods, the frequency of observations or measurements and the recording procedure for monitoring at CCP: — who is to perform monitoring and checking; — when monitoring and checking is performed; — how monitoring and checking is performed. Records associated with monitoring CCP must be signed by the person(s) doing the monitoring and when records are verified by staff of the company responsible for reviewing. *The **guide to good practice** produced by ENSCA in 2017 states the following monitoring procedures for the 3 CCP's:* 4.4.3 Monitoring procedures at critical control point 1

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		The cleaning supervisor executes daily regular visual controls of the SRM to make sure all of it is removed. • After pulling the sheep or goat casings from the mesentery, the ileum is separated from the small intestines and marked for destruction. Daily production is divided into batches based on a fixed time period. The number of ilea removed per period must match the number of sets pulled from the mesentery. One set contains the entire length of small intestines removed per animal. Optimally it consists of one end. • For the production of beef casings the situation is more complex as three specified parts need to be separated and destroyed. However, a similar approach as used for sheep casings can be applied (division in batches / time unit), as the individual number of removed small intestinal four meter sections, caeca and mesentery must match the number of sets (beef rounds / beef middles) produced. A comprehensive report on the removal of SRM from the bovine intestinal tract and mesentery under slaughterhouse conditions, for animals originating from Member States or third countries with a controlled or undetermined BSE risk is made available since mid-2016 on the DG SANTE website, using the SRM

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		pulldown menu. This report includes 5 instruction videos 4.5.3 Monitoring procedures at critical control point 2 The CCP can be monitored at two distinctly separate production steps: 1. During salting and packing (see flow charts in Annex II) where salt or freshly produced brine is added to the natural casings; 2. During the entrance inspection when the salted natural casings are received from a cleaning or sorting operation. In essence the same critical limits apply in both situations. Therefore, the same CCP can be applicable to both situations or two CCPs can be designated as the corrective actions, documentation and record keeping can be different for each specific situation. A specifically assigned, qualified operator monitors the (automated) brine production several times a day (e.g. using a salometer). Checking of casks during entrance inspection is a statistical process; the number of casks to be checked cannot be prescribed. For dry salting, a visual inspection should show visible salt crystals homogeneously spread over the natural casings.

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7.3.5 Establishing corrective measures 7.3.5.1 The company shall establish corrective measures for deviations from each critical limit of the CCP in advance so that they can be implemented in the event of a deviation. 7.3.5.2 The corrective measures shall include the following elements. a) The personnel implementing the corrective measures and responsible for the release of the affected product. The corrective personnel shall be familiar with the product, the HACCP plan, appropriately trained and authorised. b) Identification and elimination of causes of deviations, when the monitoring results of a key limit repeatedly deviate or the cause of deviation involves the control capacity of the corresponding control measures, the HACCP team should re-evaluate the effectiveness and appropriateness of the relevant control measures and, if necessary, improve and update them. c) Isolation, assessment and disposal of affected products. In assessing affected products, measurements or tests of biological, chemical or physical properties may be carried out, and if the verification results indicate		4.6.3 Monitoring procedures at critical control point 3 Before any batch of natural casings is dispatched, the duration of the salting period is checked by a qualified operator based on the documents that accompany the natural casings concerned. **Commission Notice 2022/C 355/01, Annex II, 9. 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: — identification of the person(s) responsible for the implementation of the corrective action; — means and action required to correct the observed deviation in the process; — action(s) to be taken with regard to products that have been manufactured during the deviation; — written record of measures taken indicating all relevant information (for example: date, time, type of action, actor and subsequent verification check); — consideration of (long term) actions to avoid repetition of the deviation.

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that the hazards are within acceptable indicators, the products may be released to subsequent operations; otherwise, they should be reworked, downgraded, reused, discarded, etc. Corrective measures should ensure that the CCP is brought back under control. d) Document the corrective action, including a description of the deviation, the final disposition of the affected product, the name of the person taking the corrective action, and the results of any necessary assessment. See Table A.2 for an example of sausage casing (salted).		Monitoring may indicate that preventive measures (GHP or their robustness) or the process and its CCP shall have to be reviewed if corrective actions for the same procedure have to be taken repeatedly. Root cause analysis should be a generic corrective action as very often it is impossible to know the cause of the deviation in advance. If the critical limit is exceeded, there is an analysis of the situation to identify the causes and implement the most appropriate corrective actions. However, in the case of a one-off incident, it may happen that the analysis of the situation does not allow the precise identification of the cause; generic corrective actions can then be implemented to cover several suspected causes. If the incident is repeated, then the information collected can be cross-referenced and this can help better understand the situation and identify the most likely cause. *The **guide to good practice** produced by ENSCA in 2017 states the following corrective action for the 3 CCP's:* 4.4.4 Corrective actions for CCP 1 When SRM is not completely removed, the matching batch is designated for destruction. The pulling procedure is examined for the cause of the incomplete removal of SRM

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7.3.6 Establishment of validation and verification procedures 7.3.6.1 The enterprise shall establish and implement a validation and verification procedure for the HACCP plan to confirm the completeness, suitability1 and effectiveness of the HACCP plan. 7.3.6.2 The validation process shall include confirmation of the effectiveness of all elements of the HACCP plan. The confirmation shall be prior to the implementation of the HACCP plan or after changes have been made. 7.3.6.3 The validation procedure shall include: the basis and methods of validation, the frequency of validation,		and corrected. The processing manager should further investigate the origin of the problem. 4.5.4 Corrective actions for CCP 2 When the salt content drops below the critical limit, all natural casings salted between the last measurement with a correct result and the moment the transgression of the limit was detected, should be re-inspected / re-measured and if necessary, salt should be added. At the same time, the salting procedure is examined for the cause of the lack of salt. The processing manager should further investigate the origin of the problem and take corrective action. 4.6.4 Corrective actions for CCP 3 When the period after salting has not exceeded the minimally required 30 days the natural casings have to be stored until the 30 days have passed. **Commission Notice 2022/C 355/01, Annex II, 10. Validation and verification procedures (principle 6)** At the start of a new process or in case of a change to an existing process that is likely to affect food safety, the HACCP team should carry out validation activities, in particular gather evidence to confirm the capability of all elements of the HACCP plan, even if not

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the personnel to be validated, the content of validation, the results of validation and the measures taken, and the validation records. The results of validation need to be entered into the management review to ensure that these important data resources are properly considered and contribute to the continuous improvement of the overall HACCP system; corrective actions should be taken and revalidation carried out when the validation results do not meet the requirements. 7.3.6.4 Confirmation and validation, shall include, but not be limited to, the following a) Calibration of monitoring equipment such as Pomay's gravimeter and thermometer to ensure accuracy of measurement, audit of calibration records of monitoring equipment and, where necessary, technical validation of the required control equipment and methods through a qualified inspection body and provision of a documented technical validation report. b) The inspection of the preservation and packaging effects of the enteric coating. c) The enteric coating manufacturer shall carry out inspection of the enteric coating products leaving the factory in accordance with the requirements of relevant regulations or standards. Through validation, review and inspection (including random sampling and testing), it is determined whether the HACCP plan is operating effectively. See Table A.2 for examples of sausage casings (salted).		explicitly mentioned in Article 5 of Regulation (EC) No 852/2004. Such evidence includes scientific publications, in-house testing (sampling and testing to see if biological and chemical hazards are under control), predictive microbiology, guidance developed by competent authorities, … demonstrating that the critical limits set, will 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 programme); 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. After the procedures based on the HACCP principles have been implemented, the

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		HACCP team should establish verification procedures to confirm that the HACCP-based procedures are working correctly. Methods for verification may include: — random sampling and analysis, reinforced analysis or tests at selected critical points: — intensified analysis of intermediate or end products e.g. on compliance with microbiological criteria; — process hygiene criteria for spoilage bacteria such as aerobic colony count; — Time/Temperature hazard reduction/elimination: follow up of relevant pathogens in heat-treated food products e.g. absence of *Listeria monocytogenes*, *Salmonella* etc.; — Damaged packages: testing for the most likely bacterial or chemical contamination a product might be exposed to if its package was damaged; — surveys on actual condition (e.g. temperature) during storage, distribution and sale and on actual use of the product; — internal audits of HACCP-based procedures and their records; — inspection of operations (people compliance); — confirmation that CCP monitoring is implemented and maintained by:

Chinese legislation: National standard GB/T 20572-2019 HACCP application specification for the production of natural sausage coatings	**EU legislation: Regulation (EC) No 852/2004**	**Guides to good practice and comparative evaluation**
		— control of the procedures/instructions; — physical check on the process being monitored; — verifying the calibration of instruments used for monitoring; — verification of records (frequency, outcome of measuring results over period of time); — review of deviations and product dispositions; corrective actions taken with regard to the product; — check on the person monitoring processing, storage and/or transport activities. 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. When the verification detects failures in the HACCP system, review of the system must be carried out. *The **guide to good practice** produced by ENSCA in 2017 states:* 4.5.5 Verification procedures

Chinese legislation: National standard GB/T 20572-2019 HACCP application specification for the production of natural sausage coatings	**EU legislation: Regulation (EC) No 852/2004**	**Guides to good practice and comparative evaluation**
7.3.7 Establishing record files Sausage casing manufacturers should maintain records related to the HACCP plan and other relevant records in accordance with the relevant requirements of GB/T 27341. See Appendix A for an example of sausage casing (salted).		Annual audits on the results of production procedures and monitoring procedures are taken. Evaluation of production procedures and monitoring procedures may lead to the adjustment of procedures. **Commission Notice 2022/C 355/01, Annex II, 11. Documentation and record keeping (principle 7)** 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. 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 reviewed and signed and any deviation should be recorded and followed up by the person responsible for HACCP in the business. The documentation should be kept permanently available in any format for the

Chinese legislation: National standard GB/T 20572-2019 HACCP application specification for the production of natural sausage coatings	EU legislation: Regulation (EC) No 852/2004	Guides to good practice and comparative evaluation
		HACCP team and at the request of the competent authorities e.g. for auditing purposes. Records should be kept for an appropriate period of time in any format. 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. *The **guide to good practice** produced by ENSCA in 2017 states:* 4.4.6 Documentation and record keeping for CCP 1 Record keeping, using a process control checklist, is done on: • the number of sets produced per day, • the number of ilea (sheep & goat), • small intestinal four meter sections, caeca and mesentery (cattle) which are to be condemned and possible corrective actions taken. 4.5.6 Documentation and record keeping for CCP 2 The daily measurement / inspection results and possible corrective actions are recorded on the process control checklist and entrance inspection forms. 4.6.6 Documentation and record keeping for CCP 3 The day of salting of a batch of natural casings has to be recorded in documents

Chinese legislation: National standard GB/T 20572-2019 HACCP application specification for the production of natural sausage coatings	EU legislation: Regulation (EC) No 852/2004	Guides to good practice and comparative evaluation
		that accompany the casings during storage and transport.
8 Update and continuous improvement of the HACCP system **8.1 Continuous improvement** The top manager shall ensure that the company evaluates the HACCP system according to the planned time through communication, management review, internal audit, control measures, corrective measures and other related activities, considers the need to update the implemented Good Practice (GMP), each prerequisite plan and each element of the HACCP plan, and updates the system through a series of activities to continuously improve the effectiveness of the HACCP system. **8.2 Updating** The top manager shall ensure the continuous updating of the HACCP system. To this end, the HACCP team shall evaluate the HACCP system at planned intervals, shall consider the need for hazard analysis and HACCP plans, shall consider the need to update the implemented Good Practice (GMP), the prerequisite plans and the various elements of the HACCP plan, and shall update the system through a series of activities, which shall be documented and reported in an appropriate form.	**Regulation (EC) No 852/2004, Annex II, Chapter XIa Food safety culture** 2. Management commitment shall include: (a) ensuring that roles and responsibilities are clearly communicated within each activity of the food business; (b) maintaining the integrity of the food hygiene system when changes are planned and implemented; (c) verifying that controls are being performed timely and efficiently and documentation is up to date; (d) ensuring that the appropriate training and supervision are in place for personnel; (e) ensuring compliance with relevant regulatory requirements; (f) encouraging continual improvement of the food safety management system of the business, where appropriate, taking into account developments in science, technology and best practices	

Chinese legislation: National standard GB/T 20572-2019 HACCP application specification for the production of natural sausage coatings	EU legislation: Regulation (EC) No 852/2004	Guides to good practice and comparative evaluation
Appendix A (Informative Appendix) **Natural Sausage Coat HACCP Plan Model Table** **A.1 Product processing flow chart**		*The European Natural Sausage Casings Association (ENSCA) has published in line with Article 9 of Regulation (EC) No 852/2004 a* Community guide to good practice for hygiene and the application of the HACCP principles in the production of natural sausage casings *(version VI, January 2017; available on the EU website), which shows a flow chart in:* **Annex II Flowcharts production process natural casings**
A.2 Hazard analysis table		The ENSCA Community guide to good practice for hygiene and the application of the HACCP principles in the production of natural sausage casings *(version VI, January 2017; available on the EU website) shows several* **tables** *listing biological, chemical and physical hazards, a risk matrix and a summary of risks for microbiological or physical contamination and their classification and control.*
A.3 HACCP schedule		The ENSCA Community guide to good practice for hygiene and the application of the HACCP principles in the production of natural sausage casings *describes the application of a HACCP plan for the production of natural casings.*
Appendix B (Informative Appendix) **Judgement Tree and CCP Identification Sequence Diagram**		The ENSCA Community guide to good practice for hygiene and the application of the HACCP principles in the production of

Chinese legislation: National standard GB/T 20572-2019 HACCP application specification for the production of natural sausage coatings	**EU legislation: Regulation (EC) No 852/2004**	**Guides to good practice and comparative evaluation**
		natural sausage casings *(version VI, January 2017; available on the EU website) shows a decision tree in:* **Annex III Decision Tree to identify CCPs**

Chinese legislation: National standard GB/T 17030-2019 Polyvinylidene chloride (PVDC) flat film for food packaging - Sheet enteric coated film	**EU legislation: Regulation (EC) No 852/2004**	**Guides to good practice and comparative evaluation**
1 Scope This standard specifies the classification, technical requirements, test methods, inspection rules, marking, packaging, transport and storage of polyvinylidene chloride (PVDC) film for food packaging. This standard applies to polyvinylidene chloride (PVDC) film for food packaging (hereinafter referred to as enteric coated film), which is made of polyvinylidene chloride resin as the main raw material and is produced by the blow moulding method.	Vinyl chloride monomer has been approved in **Regulation (EU) No 10/2011, Article 13** as a plastic material intended to come into contact with food, provided it complies with the restrictions and specifications mentioned in Annex I of the Regulation. **Annex I** lays down the restrictions and specifications (such as migration limits) for the use of poly (vinyl chloride) (PVC) as a food contact material.	*Standard GB/T 17030-2019 is not relevant for the casings that are subject to our comparative assessment, since the PVDC films can be used to wrap sausages, meat or other food products, but the wrapping itself is not eaten.* *PVDC films are not 'casings', under EU or Chinese definitions.*