



DEAS 84-2:2021

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## **DRAFT EAST AFRICAN STANDARD**

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**Meat grades and meat cuts — Specification — Part 2: Ovine**

## **EAST AFRICAN COMMUNITY**

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## Foreword

Development of the East African Standards has been necessitated by the need for harmonizing requirements governing quality of products and services in the East African Community. It is envisaged that through harmonized standardization, trade barriers that are encountered when goods and services are exchanged within the Community will be removed.

The Community has established an East African Standards Committee (EASC) mandated to develop and issue East African Standards (EAS). The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the public and private sector organizations in the community.

East African Standards are developed through Technical Committees that are representative of key stakeholders including government, academia, consumer groups, private sector and other interested parties. Draft East African Standards are circulated to stakeholders through the National Standards Bodies in the Partner States. The comments received are discussed and incorporated before finalization of standards, in accordance with the Principles and procedures for development of East African Standards.

East African Standards are subject to review, to keep pace with technological advances. Users of the East African Standards are therefore expected to ensure that they always have the latest versions of the standards they are implementing.

The committee responsible for this document is Technical Committee EASC/TC 004, Meat and meat products.

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## Meat grades and meat cuts — Specification — Part 2: Ovine

### 1 Scope

This Draft East African Standard specifies methods of grading and grades of lamb and mutton, quality requirements, safety requirement and methods of sampling and test for lamb and mutton carcasses and cuts meant for human consumption.

### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EAS 39, *Hygiene in the food and drink manufacturing industry - Code of practice.*

ISO 22000, *Food safety management systems - Requirements for any organization in the food chain.*

EAS 151, *Hazard analysis critical control points (HACCP).*

CAC/MRL 2, *Maximum Residue Limits for Veterinary Drugs in Food*

EAS 38, *Labelling of pre-packaged foods*

ISO 4832, *Microbiology of food and animal feeding stuffs -- Horizontal method for the enumeration of coliforms — Colony-count technique.*

ISO 16649-2, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of beta-glucuronidase-positive Escherichia coli — Part 2: Colony-count technique at 44 degrees C using 5-bromo-4-chloro-3-indolyl beta-D-glucuronide.*

ISO 6888-1, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) — Part 1: Technique using Baird-Parker agar medium.*

ISO 6579, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection of Salmonella spp.*

ISO 7937, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of Clostridium perfringens — Colony-count technique.*

ISO 11290 – 1, *Microbiology of the food chain - Horizontal method for the detection and enumeration of Listeria monocytogenes and other Listeria spp. -- Part 1: Detection method*

CAC/RCP 58-2005, *Codex code of hygienic practice for meat.*

EAS 12, *Specification for potable water*

ISO 17604, *Microbiology of food and animal feeding stuffs- carcass sampling*

ISO/TS 17728, *Microbiology of food and animal feeding stuffs- sampling techniques for microbiological analysis of foods and feeds.*

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ISO 16654, *Microbiology of food and animal feeding stuffs- Horizontal method for the detection of Escherichia coli 0157:H7*

### 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at <http://www.iso.org/obp>

#### 3.1 Lamb

refers to the carcass of young ovine animals (sheep) of both sexes whose age is 12 months and under.

#### 3.2 Yearling Lamb

Carcass from young sheep normally ranging from 12 months to 20 months old.

#### 3.4 Mature Mutton

carcass from both males (castrated or uncastrated) and females of ovine species (sheep) that are over 20 months of age at the slaughter time.

#### 3.5 carcass

body of any slaughtered animal after bleeding and dressing.

#### 3.6 dressed

The removal of head, hide or skin, viscera, genital, gums, urinary bladder and feet up to the carpal and tarsal joints and udder of lactating animals that have calved or are in advanced pregnancy and where necessary splitting of the carcass lengthwise.

#### 3.7 Splitting

dividing the carcass lengthwise into two sides.

#### 3.8 Ageing (Conditioning or Maturation)

is the holding of carcasses or primal joints at refrigerated temperatures (0 to 4 °C) to improve eating quality (particularly tenderness and flavour)

#### 3.9 Conformation

is the overall thickness of muscle and fat in relation to the size of an animal's skeleton

#### 3.10 Eating quality

refers to the organoleptic factors influencing consumer acceptance and enjoyment of the product."

#### 3.11 Carcass weight

is the weight (kg) of the dressed body of an animal at the end of the slaughter line.

##### 3.11.1 Hot dressed weight (HDW)

is the weight (kg) of the dressed body of an animal (carcass) at the end of the slaughter line within one hour of slaughter.

##### 3.11.2 Cold dressed carcass weight (CDW)

weight of the carcass following chilling

#### 3.11 Primal cuts

are large sections of a carcass from which prime cuts and retail cuts are made

#### 3.12 Grading

is the categorization of a carcass according to quality standards.

#### 3.13 Retail cuts

is portions of meat prepared for sale to the consumer in the raw state.

### 3.14 Prime cuts

cuts that are considered to be of high quality

## 4 Grading specification of lamb and mutton

**4.1 Grading** — Grading of lamb and mutton shall be done in accordance with the grading regulations approved by the relevant authority as shown below.

**4.2 Lamb Grades** — Eligible slaughter stock are lambs of all breeds.

**4.2.1 Prime lamb** — Cold dressed weight: 12 kg to 17.99 kg. Fat cover: Smooth, firm, of moderate depth and excellent quality and evenly distributed.

Age: 6 months

Dentition: Temporary incisors

### 4.2.3 Choice lamb

Cold dressed weight: 18 kg to 21 kg. Fat cover: 12 mm depth and evenly distributed. Measure 3 cm from the spinal process of the 10<sup>th</sup> rib towards flank.

Age: 6 months.

Dentition: Temporary incisors.

**4.2.3 Standard lamb** — Cold dressed weight: 12 kg to 21 kg. Fat cover: Uneven and irregular distribution.

Dentition: Temporary incisors.

## 4.3 Lamb grade descriptions (includes Yearling lamb)

**4.3.1 Prime Lamb** — Carcasses shall be of good conformation.

The carcass shall be compact and blocky, short, with thick plump legs, broad backs, thick well fleshed loins, ribs and chucks, well-proportioned breasts, and full thick flanks. All fats are firm and of excellent quality. The outer covering of fat being smooth of moderate depth and evenly distributed over the back and sides. The fat covering is interspersed with trips of pink flesh. Interior fats are plentiful but not excessive or wasteful. The lean flesh is firm in all parts, fine grained and cut surfaces feel smooth and velvety to touch.

**4.3.2 Choice Lamb** — the carcass shall be very well proportioned and have a rounded appearance and shall be dry and firm to the touch. It shall be well fleshed with well-developed short hind legs, broad loins and shoulders, well covered ribs and thick flank and a short, fairly thick neck.

**4.3.3 Standard Lamb** — the carcass shall be medium well-proportioned and shall be dry, reasonably firm to the touch. The fat can be off-colour and irregular without excessive fat in the tail region. Kidneys can be exposed. The carcass shall be free from blemishes which may depreciate its value.

## 4.4 Mutton grades and descriptions

**4.4.1 Mutton A** — Eligible slaughter stock: Wethers and unlambed ewes of all breeds.

The carcass shall be well proportioned and well fleshed and shall have an even fat cover which shall not be excessively yellow. The carcass shall be firm and free from all but very superficial blemishes.

This grade may include lamb carcasses which have not qualified for 'Lamb' grade.

CDW Limits: Maximum 28 kg.



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Fat Cover: Maximum 14 mm: measured for 'Lamb' grade.  
Dentition: Maximum four permanent incisors.

**4.4.2 Mutton B** — Eligible slaughter stock: Wethers and ewes of all breeds.  
The carcass shall be fairly well proportioned and fairly well fleshed and have a fairly even covering of fat. It shall be free from extensive and penetrating blemishes affecting the prime joints.

This grade may include unfinished lambs.

CDW Limits: No limit.  
Fat cover: Maximum 17 mm: Measured as for 'Lamb' grade.  
Dentition: Maximum six permanent incisors.

**4.4.3 Mutton C** — Eligible slaughter stock: Wethers and ewes of all breeds.  
The carcass shall be of plain appearance and shall have average fleshed and some covering of fat, but not excessive, and shall be free from very extensive and penetrating blemishes.

CDW Limits: No limit.  
Fat Cover: No limit.  
Dentition: No limit.

**4.4.4 Mutton D** — Eligible slaughter stock: Wethers, ewes and rams of all breeds.

The carcass is of lower quality compared to the other grades.

CDW Limits: No limit.  
Fat cover: No limit.  
Dentition: No limit.

## 5 Preparation of mutton and lamb carcasses and cuts

Lamb and mutton carcasses shall be properly dressed, washed, butchered, trimmed, weighed, properly packaged and labelled and shall be free from bruises or blemishes of any kind.

**5.1 Temperature treatment** - Mutton and lamb carcasses and cuts shall be subjected to the following temperature treatment.

**5.1.1 Chilling** - Fresh lamb and mutton carcass sides or cuts shall be brought to a temperature of between 1 °C and 3 °C within 24 hours. Carcasses and cuts meant for chilling shall be further chilled to temperatures of -2 °C to 4 °C and should be consumed within a period of 4 weeks.

**5.1.2 Freezing and Storage** - The lamb and mutton carcasses sides or cuts shall be pre-chilled before freezing and the freezing shall be at minus (-) 18 °C and (-) 12 °C at the highest, within three days. The lamb and mutton carcasses and cuts shall be stored at minus (-)12 °C at the highest. The frozen product shall be consumed within 12 months.

**5.2** The carcass/cuts shall be of the following types in relation to temperature treatment:

**5.2.1 Fresh Carcass** —the deepest part of the carcass near the bone shall be cooled to the atmospheric temperature when delivered and shall show no evidence of deterioration.

**5.2.2 Fresh-chilled Carcass** — the carcass shall be chilled so that the temperature at the deepest portion of the flesh near the bone shall be between 1 °C and 3 °C and shall show no evidence of deterioration.

**5.2.3 Fresh-Frozen Carcass** —the carcass shall be frozen solid at -18 °C when delivered and they shall show no evidence of deterioration.

**5.2.4 Lamb and Mutton Cuts, Fresh** — shall be prepared from fresh carcass (7.2.1) and Cooled to the atmospheric temperature. The cuts shall be well trimmed and clean with the surplus fat remove.

**5.2.5 Lamb and Mutton Cuts, fresh, chilled** —these shall be obtained from fresh carcasses (7.2.1) and chilled as under Clause 7.2.2 or from fresh-chilled carcasses (7.2.2).

**5.2.6 Lamb and mutton Cuts, Fresh, Frozen** —these shall be obtained from the fresh carcasses (7.2.1) and frozen solid (see 7.2.3). The cuts shall show no evidence of refreezing or deterioration.

### 5.3 General requirements

**5.3.1** Animals from which lamb and mutton is derived shall be slaughtered in a hygienically managed slaughter-house in accordance with CAC/RCP 58. The slaughter shall be supervised by a competent authority. The ovine animals and carcasses thereof shall be subjected to ante mortem and post mortem veterinary inspection as prescribed in CAC/RCP 58 and lamb and mutton carcasses and cuts thereof shall be certified as being sound and free from contagious and infectious diseases and fit for human consumption.

**5.3.2** The certified carcasses shall bear an approval marks of such inspection, the symbol or number or name of the establishment or slaughter house where they were prepared and the legend “PASSED” denoting wholesomeness and denoting the grade or quality. The marking fluid used shall be of food grade.

**5.3.3** The mutton and lamb shall be prepared pin a plant which is regularly operated under supervision of the relevant competent authority. The mutton and lamb shall be prepared, handled fresh or chilled or frozen and then delivered fresh or chilled or frozen, under hygienic conditions

## 6 Quality characteristics of lamb/mutton

**6.1** Quality - A characteristic of the flesh and the fat included therein. It pertains primarily to the thickness, firmness and strength in muscle fibre and connective tissue. It also involves the quality, consistency and character of juice and extractives which are contained in the muscle fibre and the fat surrounding the connective tissue. A break joint is a sure and simple way of identifying lamb.

**6.2** High quality lamb and mutton have a smooth covering of clear, white brittle fat over most of the exterior.

**6.2.1** Lamb – the lean is pinkish-red in colour, texture is fine grained and velvety while the bones are porous and reddish in colour. In young lamb, the forefeet when broken off expose light-well defined ridges known as the break joint.

**6.2.2** Yearling Lamb - the lean is dark pink to light red, the bones and break joint are hard and white in appearance

**6.2.3** Mutton – the lean is deeper red in colour, the bones are hard and white in appearance and break joints are hard to break

**6.3** Low quality meats from all ovine animals have darker flesh, and the grain is coarse. The general appearance is soft, watery and fibrous.

## 7 Hygiene

**7.1** Lamb and mutton shall be produced, handled and stored in accordance with CAC/RCP 58 and EAS 39

**7.2** Lamb and mutton carcass and cuts shall comply with the microbiological requirements given in Table 1 and Table 2.

**Table 1 — Microbiological limits for lamb, mutton carcasses and cuts**

S/No.	Micro-organism	Limit	Test method
i.	Aerobic colony count, cfu/g, max.	10 <sup>6</sup>	ISO 4833
ii.	<i>Escherichia. Coli</i> , cfu/g, max.	10 <sup>2</sup>	ISO 16649-2
iii.	<i>Staphylococcus aureus</i> , cfu/g, max.	10 <sup>3</sup>	ISO 6888-1
iv.	<i>Clostridium perfringenes</i> (For vacuum packed products) per 25 g	Absent	ISO 7937
v.	<i>Salmonella ssp.</i> per 25 g	Absent	ISO 6579
vi.	<i>Listeria monocytogenes</i> per 25 g	Absent	ISO 11290-1

7.3 Aged lamb, mutton meat cuts shall comply with the microbiological requirements given in Table 2.

**Table 2 — Microbiological limits for Aged lamb, mutton carcasses and cuts**

S/No.	Micro-organism	Max. limits	Test method
i.	<i>Escherichia coli</i> 0157:H7 per g	Absent	ISO 16654
ii.	<i>Salmonella sp.</i> , per 25g	Absent	ISO 6579
iii.	<i>Listeria monocytogenes</i> , per 25 g	Absent	ISO 11290-1

## 8 Ageing

8.1 Chilled fresh lamb may be aged for a period of at least 14 days at a temperature of between 0°C and 4 °C.

8.2 Dry aged primal and bone in fabricated cuts shall be the aged at 0 °C to 4 °C for a minimum period of at least 14 days after slaughter.

8.3 Vacuum packed primal and fabricated cuts shall be aged at 0 °C to 4 °C for at least 14 days ensuring that the vacuum is intact the whole time.

## 9 Contaminants

### 9.1 Veterinary drug residue

Product shall have a maximum Residual limit for veterinary drugs in accordance with CAC/MRL- 2.

### 9.2 Pesticide residues

Product shall have a maximum pesticide residues limit as in accordance with Codex Alimentarius standards.

## 10 Heavy metals

10.1 Lamb, mutton meat cuts shall not contain heavy metal contaminants in excess of the limits given in Table 3 when tested by methods mentioned.

**Table 3 — Heavy metal contaminants limits for lamb, mutton meat cuts**

S/No.	Contaminants limits	Maximum limits ppm	Test method
i	Arsenic (As)	0.1	ISO 17294-2
ii	Lead (Pb)	0.1	ISO 6633
iii	Cadmium (Cd)	0.05	ISO 5961
iv	Mercury (Hg)	0.03	ISO 6637

## 11 Packaging

### 11.1 Packing and transport

**11.1.1** Fresh, chilled and frozen products shall be wrapped in suitable food grade material permitted by health authorities for use in packaging foods. The products if wrapped may be packed in wax cartons or other approved containers.

**11.1.2** Fresh and chilled products shall be handled and transported as per meat transport regulations in the respective Partner States.

**11.1.3** Vacuum-packed cuts shall be delivered intact.

**11.1.4** All the meat shall be handled and delivered in clean and hygienic conditions. The frozen material shall be moved to refrigerated transport and the packages shall be handled with due care of preserving the quality and safety of the products. The packages shall not be exposed to direct sun or rain.

## 12 Labelling

**12.1** Labelling of lamb and mutton carcasses and cuts packages shall be done in accordance with the requirements stipulated in EAS 38. In addition, it shall include the following:

- a) name of the product (lamb and mutton carcasses as appropriate);
- b) for aged products declare “aged”;
- c) name, location and address of manufacturer;
- d) net weight, in g or kg;
- e) date of production/packaging;
- f) expiry date;
- g) batch number;
- h) storage conditions;
- i) country of origin; and
- j) approval veterinary mark for cuts.

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12.2 The labeling, promotion and presentation of a material or article shall not mislead the consumers.

### **13 Sampling**

Samples shall be taken in accordance with the provisions of ISO/TS 17728.

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