MEAT & LIVESTOCK AUSTRALIA

MSA Standards Manual

Processors

Section 7

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1 Introduction

The Meat Standards Australia (MSA) Standards Manual is divided into a number of sections. Each section is a standalone document that is issued and amended independently of sections.

Australian Meat Industry Language and Standards Committee (AMILSC) is the custodian of the MSA Standards.

All sections of the MSA Standards Manual must be used collectively. Certain sections may not be applicable for a specific business, operation, facility or activity. It is the user's responsibility to determine which section is appropriate for their operation.

1.1 Instructions for control of this document

This Standards Manual, available online from MSA, is a controlled document.

Updates to this Standard will occur from time to time. All printed and/or saved copies are uncontrolled and may not be the latest version.

1.2 Owner confirmation

The owner or controller, as registered with the Authorised Authority, shall be informed of any updates relating to the information contained in this Standard. Attached to any updates regarding this Standard will be a form for notification of changes to the owner or controller of the Standard.

1.3 Amendments and updates

Amendments to this Standard will be issued by way of a formal amendment notification where required.

1.4 Document control confirmation

Change history

Date	Change description	Issue no.
03 May 2013	Initial draft	0.1
18 July 2013	Second draft	0.2
03 September 2013	Third draft	0.3
27 November 2013	Initial release	1.0
20 March 2015	Second release inclusion of Led Steer Pathway and tamper evident label requirements.	2.0
25 November 2015	Third release inclusion of tamper evident label requirements in sheep/lamb specific sections of the standard.	3.0
15 November 2016	Fourth release – standard updated to remove AUS-MEAT, meat colour as an MSA minimum requirement. Updated training modules for beef in line with current and historical versions. Removed grade code 6 as an input option for Meets MSA fails company specification, format change only to 8.5 Minimum MSA requirements regarding transport – no content change in this area.	4.0
March 2020	Standard updated to reflect the release of MSA beef model V2.0.	5.0
July 2025	Updates to include the release of the MSA sheepmeat cut x cook model V3, use of objective measurement technology for grading in beef and sheepmeat and changes to the MSA beef saleyard pathway	6.0
August 2026	Update to include new long duration transport pathway for cattle, updates to boat and Led Steer Pathways	7.0

7 Processing Enterprises

7.1 Quality Management System

Each Enterprise where required by an Authorised Authority, as defined by their licence application, must incorporate these Standards and maintain a Quality Management System.

An Authorised Authority must approve all Quality Management System documentation, including the Quality Management System Manual. The Enterprise must ensure that the documentation is reviewed from time to time to conform to any variations in these Standards or an Authorised Authority's requirements.

The Enterprise must establish and maintain a program of internal quality audits of the Enterprise's MSA procedures as documented in their Enterprise's approved Quality Management System.

The Enterprise must establish procedures for corrective and preventative action to be implemented in response to identified or emerging problems. Detailed records of actions taken and follow up activities must be maintained.

All Enterprises must be AUS-MEAT accredited.

7.2 Planning and design

The MSA program requirements of the Enterprises should be integrated into existing Enterprise's quality system manuals and procedures. It is not a requirement to establish a separate Quality Management System Manual.

7.3 Quality Management System elements

The Quality Management System Manual must contain procedures or information that addresses the following elements:

7.3.1 Management responsibility

The Enterprise must define and document the responsibility, authority and inter-relations of personnel who manage, perform and verify work relating to the Enterprise's MSA systems.

7.3.2 Contract review

The Enterprise must establish and maintain documented procedures for reviewing contracts relating to its MSA systems and MSA product. A detailed record of each review must be maintained.

7.3.3 Document control

The Enterprise must establish and maintain documented procedures for controlling specified documents relating to its MSA systems. A list of controlled MSA documents as specified by an Authorised Authority must be maintained.

7.3.4 Product identification and traceability

The Enterprise must establish and maintain documented procedures to ensure that practices relating to its MSA systems and MSA product are accurately identified and traceable. The method of identification must be recorded.

7.3.5 Process control

The Enterprise must establish and maintain documented procedures to ensure that processes, which directly affect the Enterprise's MSA systems and MSA product, are carried out under controlled conditions.

7.3.6 Inspection and testing

The Enterprise must establish and maintain documented procedures for inspection and testing of practices relating to the Enterprise's MSA systems and MSA product.

7.3.7 Control of non-conforming product

The Enterprise must establish and maintain documented procedures to ensure that non-conforming product is prevented from unintended use or dispatch. All MSA non-conformances must be documented.

7.3.8 Corrective and preventative action

The Enterprise must establish and maintain documented procedures to ensure that effective corrective and preventative action is taken concerning the Enterprise's MSA practices.

7.3.9 Handling, storage, preservation, packaging and delivery

The Enterprise must establish and maintain documented procedures to ensure that MSA product is correctly handled, stored, preserved, packaged and delivered in accordance with the requirements of the MSA program.

7.3.10 Quality records

The Enterprise must establish and maintain documented procedures to ensure records, which verify compliance with MSA program requirements and effective operation of the Quality Management System, are maintained.

The following records must be kept in accordance with the specified minimum mandatory time frames:

a. Vendor declarations – six months
b. Training records – two years.

7.4 MSA coordinator and trained operatives

The Enterprise must appoint one or more MSA coordinators, who are management representatives, with the responsibility and authority to ensure that the integrity of the MSA program is maintained in the Enterprise.

The MSA coordinator and operatives must be trained, as determined by an Authorised Authority and demonstrate, to the satisfaction of the Authorised Authority, competence in all aspects of the MSA program, which are relevant to the Enterprise.

7.4.1 Internal quality audits

Each Enterprise must establish and maintain documented procedures to ensure that its MSA practices are internally audited. A record of each internal audit must be retained for a minimum of two years.

7.4.2 Duties of the MSA coordinator

The MSA coordinator must:

a. Ensure that the Enterprise conforms with all MSA program requirements
b. Ensure that the Enterprise has in place a documented, approved Quality Management System which addresses all requirements of MSA program
c. Ensure that a program of internal audits takes place to verify the effectiveness of the Enterprise's Quality Management System procedures
d. Ensure that all MSA product produced by the Enterprise, which does not conform to a customer's requirements, is rejected, re-worked to conform or redirected to another customer (provided that the product is in conformity with that customer's specifications)
e. Complete at a minimum, all on-site training modules and meat science course
f. Without limiting paragraph 7.4.5, ensure maintenance of an approved training program and records to ensure that sufficient trained staff are available to undertake work when required for the MSA program
g. Verify the competence of trained personnel who are operating in the Enterprise's MSA system
h. Ensure there are sufficient staff trained to perform the Enterprise's MSA program requirements
i. Maintain skill levels and training to ensure that new technology is incorporated as appropriate
j. Ensure that at all times a sufficient number of persons are on duty at the Enterprise to ensure correct administration of the Quality Management System
k. Ensure that all Quality Management System records are correct and complete, and that action is promptly taken to remedy any defects in them
l. Ensure that the identity of described product produced by the Enterprise is maintained
m. Ensure that prompt action is taken in accordance with all notifications from an Authorised Authority; and
n. Accompany, or delegate an appropriately qualified staff member to assist the auditor during an audit.

7.4.3 Duties of operatives performing MSA related activities

For each Enterprise sector, in which an operative is responsible, they are required to:

a. Assist the MSA coordinator to ensure that the Enterprise conforms to MSA program requirements
b. Ensure that descriptions used and measurements taken are accurate
c. Ensure that graders are current in On-Site Correlation and Practice System (OsCap) for chiller assessment and MSA grading parameters to be permitted to assign MSA grades
d. Ensure that the Quality Management System is maintained
e. Ensure that carcase assessments, tickets, carton labels and markings and other wraps are in accordance with MSA program requirements and customer requirements
f. Ensure that all MSA product produced by the Enterprise, which does not conform to MSA specifications, is brought to the attention of the MSA coordinator.

7.4.4 Maintenance of skills

The ongoing maintenance of skills, required to maintain the MSA program, will be verified by audits of the Enterprise's MSA procedures. If an Authorised Authority considers that a MSA coordinator ceases to demonstrate the levels of competency required for the position it may suspend the person's approval to act as an MSA coordinator.

7.4.5 Trained personnel

The Enterprise must provide sufficient trained personnel to ensure that all requirements of the MSA program are effectively maintained and that all aspects are in place to properly administer the Quality Management System.

Details of the training and staff records must be identified in the Quality Management System Manual and approved by an Authorised Authority.

7.5 MSA minimum requirements and responsibilities – beef

The following Standards shall be adhered to:

- Vendor declaration checked against lot to ensure accuracy of information
- Water available on arrival at the abattoir
- Groups of cattle not to be mixed in lairage
- No drafting of cattle on plant
    i. Eligible consigned mobs may be reduced in size (or splitting) for purposes of yarding (not to be confused with drafting or mixing)
    ii. Once split, these animals may remain as separate mobs or re-joined as the original mob
- Lot or animal identification to be maintained at all times throughout the production process.

7.5.1 Direct consignment

a. Slaughter within 48 hours from the property of dispatch providing the following requirements are met for road transport:
    i. The total truck transport time from property dispatch to arrival at the abattoir is not to exceed 36 hours
    ii. Up to a 12 hour rest period can occur during the 36 hour trucking period, however, if a 12 hour rest period is taken then the maximum time cattle can spend on a truck is 24 hours
    iii. This pathway allows for up to 12 hours in lairage prior to slaughter
b. Boat transport
    i. Cattle are to be slaughtered within 48 hours from property of dispatch.
    ii. No mixing of unfamiliar mobs is to occur. Rejoining of familiar mobs is permitted in lairage for the purpose of rest and feeding.

7.5.1.1 Long duration land transport including truck and rail

Long duration land transport is defined as a road and/or rail journey longer than 48 hours from original property of dispatch to slaughter. This pathway needs to comply with *Australian Animal Welfare Standards and Guidelines*.

Requirements:

1. Slaughter is to occur within 120 hours from the cattle leaving the property of dispatch and the following requirements are to be met:
    a. The total truck/rail journey from the property of dispatch to the abattoir does not exceed 84 hours.
    b. Lairage does not exceed 48 hours prior to slaughter, and it is recommended that it be at least six hours (see lairage time recommendations in the below table).

2. Cattle are to have access to good quality hay or dry feed and water at all **rest points** longer than 2 hours where cattle are not on the truck or train.
3. The number of total load/unload events cannot exceed three events in total. A loading event includes cross-loading of trailers.
4. **Lairage** requirements are to ensure cattle have access to water. If time in lairage exceeds four hours, cattle are to have access to both good quality hay or dry feed and water.
5. Plants must be able to provide documentary evidence of compliance to the above requirements. The evidence must include identification of a person responsible for ensuring compliance.

Recommendations:

1. Adhere to the recommended guidelines for lairage requirements for adequate pre-slaughter rest period:

Time from property to plant (hours)	Minimum lairage (hours)
48	6
64	12
84	24

2. Time where cattle are held on a stationary truck after loading is to be kept to a minimum e.g. standard/routine stock check time.

Note: These Standards and recommendations are based on research involving Bos indicus influenced cattle from Northern Australian production systems. These Standards apply to cattle that need to be moved long distances due to a lack of proximity to abattoir facilities.

7.5.2 Saleyard pathway

a. The saleyard or livestock exchange must be MSA accredited
b. Cattle to be slaughtered within 48 hours after dispatch from the farm or property
c. A 5 CMQ4 point deduction will be made for livestock exchange or Saleyard consignment groups within the grading model
d. Milk fed vealers consigned through livestock exchange or saleyard facilities are ineligible for MSA grading
e. The saleyard field in the MSA grading software is to be 'Y'
f. The MSA member number of the saleyard or livestock exchange as provided on the MSA vendor declaration is to be used in the Saleyard No field when uploading grading data to MSA.

7.5.3 Led Steer Pathway

In addition to MSA cattle eligibility requirements:

a. All carcases need to meet minimum requirements for MSA grading for pHu and rib fat
b. All animals to be slaughtered within 24 hours of dispatch from the showground
c. All animals are to have unrestricted access to water in lairage
d. A 5 CMQ4 point deduction will be applied for Led Steer groups, by having the "saleyard" field in the MSA grading software set to 'Y'
e. The MSA member number of the showground, provided on the MSA vendor declaration sent from the showground, is to be used when uploading the data
f. Unled cattle associated with competitions are not eligible for this pathway.

7.5.4 Slaughter floor

a. During breaks or breakdowns, MSA eligible carcases are not to remain stationary on the slaughter floor for a time period extending longer than 20 minutes, unless evidence can be shown that there is no adverse effect on the rate of pH and temperature decline
b. Slaughter process is required to maintain the temperature and pH decline relationship within the required 'window'. Refer to National Accreditation Standards: Appendix 6 – Accelerated Conditioning and section 2.5.5 Controlled pH decline requirements
c. All pH decline results must be available to MLA Staff via e-mail or via the myMSA portal within 48 hours of the decline being conducted.

7.5.5 Controlled pH decline requirements

These requirements are designed to minimise meat toughening through cold and heat shortening. Each Enterprise must incorporate procedures within its approved quality system to achieve a pH/temperature window in accordance with the requirement. Refer to AUS-MEAT National Accreditation Standards: Appendix 6 – Accelerated Conditioning.

This is including but not limited to the following requirements:

7.5.5.1 MSA beef pH/temperature testing procedures

The acceptable pH temperature decline must ensure the pH of the M.longissimus dorsi:

- Remains at or above pH 6.0 while temperature of the muscle is at or above 35°C
- Be below pH 6.0 prior to the temperature of the muscle falling below 15°C.

The following monitoring is required for a controlled pH decline approval and is to be conducted by a trained operative. They are:

- Monthly monitoring:
  a. pH temperature declines must be conducted on a minimum of 15 bodies per cattle type on a rotating chiller basis
  b. Where there is less than 15 head killed per lot, the entire lot must be used in the decline. A significant change in cattle type is defined as a group with different:
- Weights
- Fat depths
- Changes in feed types (grass, grain with grain further defined by days on feed)

A satisfactory result will show that 90% of the carcases have passed through the appropriate window.

- Weekly monitoring:

a. A sample of five carcases per chiller for each significant change in cattle type slaughtered.

7.5.5.1.1 Corrective action

Where a pH monitoring exercise does not meet the MSA requirements, modifications may be made by the Enterprise to adjust the rate of pH and temperature fall.

A further pH decline will be carried out after each modification so that the results can be validated. The Quality Management System will be updated to reflect any modifications for MSA carcases.

7.5.5.2 Training requirements

	MSA licensed processor
Onsite training conducted prior to August 2015	
1B. Cattle handling	✓
2B. MSA pre-slaughter requirements	✓
3B. MSA beef slaughter systems	✓
4B. pH measurement and decline in beef*	✓
5B. MSA beef chiller requirements	✓
6. MSA grading** (graders only)	✓
7B. MSA beef boning room requirements	✓
8B. MSA beef load out requirements	✓
Onsite training conducted from August 2015	
B1. MSA pre-slaughter requirements	✓
B2. Processing MSA beef	✓
B3. MSA product integrity	✓
B4. pH decline and measurement beef*	✓
Other training & licensing requirements	
9. MSA meat science *** (MSA coordinator only)	✓
Initial plant survey	✓
Technology updates	✓
In-plant monitoring	✓
MSA coordinator appointed	✓
QA system including QA manual	✓

* National unit of competency MTMP405B or AMPA404 – Conduct and validate pH temperature declines to MSA Standards
** National unit of competency MTMP3095B or AMPA3092 – Grade beef carcases using Meat Standards Australia standards
*** MSA module 9 or national unit of competency MTMP404B or AMPA403 – Apply meat science

Beef carcase specifications

Only graders, that are current as defined by AUS-MEAT chiller assessment criteria and MSA grader criteria, are permitted to assign MSA grades. Minimum requirements for carcases to be MSA eligible include:

a. All AUS-MEAT chiller assessment pre-conditions are to be adhered to
b. Carcases may be assessed at any ribbing site from 5th to 13th rib. The rib at which the measurement was performed must be nominated in company records
c. Ultimate pH (pHμ) less than or equal to 5.70
d. Loin temperature less than 12°C
e. Minimum subcutaneous rib fat depth of 3mm and P8 fat depth of 5mm if using P8 fat for calculating rib fat in on-plant MSA systems
f. Even fat distribution over all major primals
g. Hide puller damage for areas greater than 10cm x 10cm on a single primal are excluded.
h. Beef grading data must be sent within 24 hours of conclusion of grading to the Authorised Authority.

7.6 MSA Minimum requirements and responsibilities – lamb and sheepmeat

This section refers to the 2005 release of Eating Quality of Australian Lamb and Sheepmeat only.

The Enterprise must only permit trained staff to coordinate MSA sheepmeat product and must ensure that each operative meets the criteria set out below.

7.6.1 Direct consignment

a. Total time off feed not greater than 48 hours before slaughter
b. Time spent in lairage yards at processing plant to be not greater than 24 hours
c. Livestock must have access to water at all times, except during transport
d. If livestock are carried over until next processing shift in a holding paddock and fed at the processing plant, the processor must demonstrate that animals through this pathway meet pH/temperature window requirements and Ultimate pH (pHμ) requirements as outlined in these Standards
e. No sick or injured animals to be included as MSA eligible
f. Maintain livestock identification
g. Livestock are not to be mixed in lairage.

7.6.2 Saleyard pathway

a. Animals through the Saleyard pathway must meet pH/temperature window requirements as outlined in these Standards.
b. Each Saleyard pathway must demonstrate that the livestock can meet the MSA sheepmeat pH/temperature window requirements (See 2.6.3.1 and 2.6.3.2 for detail).

7.6.3 Slaughter floor

a. Stunning is to be effective
b. Carcase identification is to be maintained
c. Slaughter process to maintain a temperature and pH relationship within the required ‘window’ (See 2.6.3.1 Controlled pH decline requirements for ‘window’ parameters)
d. All pH decline results must be uploaded to myMSA no later than 48 hours after the decline was conducted
e. The time off feed to slaughter will be taken from the National Vendor Declaration.

7.6.3.1 Controlled pH decline requirements

These requirements are designed to minimise meat toughening through cold and heat shortening, plus allow for the increase of tenderness through ageing. Each Enterprise must incorporate procedures within its approved Quality Management System to achieve a pH/temperature window in accordance with the table below.

Table 1: MSA sheepmeat pH/temperature window parameters

MSA sheepmeat pH/temperature window		
Hang method	**Temperature @pH6**	**Minimum ageing before consumption/display/sale**
Achilles tendon	18 to 35°C *a*	5 days
Achilles tendon	8 to 18°C *b*	10 days
Tenderstretch	8 to 35°C	5 days

a best and most reliably achieved with electrical stimulation
b likely scenario if not using electrical stimulation*

7.6.3.2 MSA sheepmeat pH/temperature testing procedures

The following monitoring is required for a controlled pH decline approval.

Monthly monitoring is a complete test of the rate of decline involving pH hourly (stimulated) and two hourly (unstimulated) temperature measurements on a minimum of 20 carcases per category.

A significant change in sheep category is defined as a group with different:

- Weights
- Fat depths
- Changes in feed types (grass, grain with grain further defined by days on feed)
- Different consignment pathway (saleyard, direct).

A satisfactory result will show that 90% of the carcases have passed through the appropriate window shown in the Table 1.

Carried over livestock:

a. If livestock are held over in a holding paddock and fed at the processing plant, until the next processing shift, the processor must demonstrate that the animals through this pathway meet the pH/temperature window.
b. 90% of the carcases in the decline must comply with pH/temperature window.

Saleyard pathway:

a. Each saleyard pathway must demonstrate that the livestock can meet the MSA sheepmeat pH/temperature window requirements.
b. 90% of the carcases in the decline must comply with pH/temperature window.

7.6.3.2.1 Corrective action

Where a pH monitoring exercise does not meet the MSA requirements, modifications may be made by the Enterprise to adjust the rate of pH and temperature fall.

A further pH decline will be carried out after each modification so that the results can be validated. The Quality Management System will be updated to reflect any modifications for MSA carcases.

7.6.4 Training requirements

	MSA licensed processor
Training requirements	
S1. Sheep handling and MSA pre slaughter requirements	✓
S2. MSA sheep slaughter systems	✓
S3. pH measurements and decline in sheep and MSA chiller requirements	✓
9. MSA meat science* (coordinator only)	✓
S5. MSA sheepmeat integrity	✓
Other Enterprise requirements	
Technology updates	✓
Initial plant survey	✓
In-plant monitoring	✓
MSA coordinator assigned	✓

* MSA module 9 or National unit of competency MTMP404B or AMPA403 – Apply meat science

7.6.5 Sheepmeat compliance data

Submission of grading compliance data must be recorded in the myMSA portal within 48 hours of carcase assessment.

A reason for non-compliance is a coded observation for which the carcase has met or failed an MSA requirement. The reasons for compliance and non-compliance are as follows:

0 Meets all MSA requirements

1 Under minimum carcase weight

2 Inadequate fat distribution (min fat class 2)

3 CWT + fat

4 Company spec/brand spec

5 Pelt removal damage

6 Excessive trim

7 Animal health condemnations

7.7 MSA Minimum requirements and responsibilities – lamb and sheepmeat cuts-based grading

This section refers to Version 3.0 of the MSA model for sheepmeat only.

The Enterprise must only permit trained staff to coordinate MSA sheepmeat product and must ensure that each operative meets the criteria set out below.

7.7.1 Direct consignment

a. Total time off feed not greater than 48 hours before slaughter
b. Time spent in lairage yards at processing plant to be not greater than 24 hours
c. Livestock must have access to water at all times, except during transport
d. No sick or injured animals to be included as MSA eligible
e. Entre males or animals showing secondary sexual characteristics are not eligible for MSA grading
f. Maintain livestock identification
g. Livestock are not to be mixed in lairage.

7.7.2 Saleyard pathway

a. The saleyard or livestock exchange must the MSA accredited
b. Sheep shall be slaughtered within 48 hours after dispatch from the farm or property
c. A 3 CMQ4 point deduction will be made for livestock exchange or Saleyard consignment groups within the grading model
d. The saleyard field in the MSA grading software is to be 'Y'
e. The MSA member number of the saleyard or livestock exchange as provided on the MSA vendor declaration is to be used in the SaleyardNo field when uploading grading data to MSA
f. Animals through the Saleyard pathway must meet pH/temperature window requirements as outlined in these Standards.
g. Each Processor must demonstrate that the livestock can meet the MSA sheepmeat pH/temperature window requirements (See 7.6.3.1 and 7.6.3.2 for detail).

7.7.3 Slaughter floor

a. Stunning is to be effective
b. Carcase identification is to be maintained
c. Slaughter process to maintain a temperature and pH relationship within the required 'window' (See 7.6.3.1 Controlled pH decline requirements for 'window' parameters)
d. All pH decline results must or uploaded to myMSA no later than 48 hours after the decline was conducted
e. The time off feed to slaughter will be taken from the National Vendor Declaration.

7.7.4 Controlled pH decline requirements

These requirements are designed to minimise meat toughening through cold and heat shortening, plus allow for the increase of tenderness through ageing. Each Enterprise must incorporate procedures within its approved Quality Management System to achieve a pH/temperature window in accordance with the table below.

Table 2: MSA sheepmeat pH/temperature window parameters

MSA sheepmeat pH/temperature window		
Hang method	**Temperature @pH6**	**Stimulation**
Achilles tendon	18 to 35°C	Yes
Achilles tendon	8 to 18°C	No

a. MSA sheepmeat pH/temperature testing procedure

The following monitoring is required for a controlled pH decline approval and is to be conducted by a trained\ operative. They are:

- Monthly monitoring:

a. Monthly monitoring is a complete test of the rate of decline involving pH hourly (stimulated) and two hourly (unstimulated) temperature measurements on a minimum of 20 carcases per category on a rotating chiller basis.

b. Where there is less than 20 head killed per lot, the entire lot must be used in the decline.

c. A significant change in carcase type is defined as a group with different:

- Weights – <20kg, 20kg–25kg, >25kg
- Changes in feed types (grass and grain)

d. A satisfactory result will show that 90% of the carcases have passed through the appropriate window.

- Weekly monitoring:

a. A sample of ten (10) carcases per chiller for each significant change in animal type slaughtered.

b. A significant change in sheep category is defined as a group with different:

i. Weights eg. heavy, light

ii. Changes in feed type – grass and grain

7.7.4.1 Corrective action

Where a pH monitoring exercise does not meet the MSA requirements, modifications may be made by the Enterprise to adjust the rate of pH and temperature fall.

A further pH decline will be carried out after each modification so that the results can be validated. The Quality Management System will be updated to reflect any modifications for MSA carcases.

7.7.5 Training requirements

	MSA licensed processor
Training requirements	
S1. Sheep handling and MSA pre slaughter requirements	✓
S2. MSA sheep slaughter systems	✓
S3. pH measurements and decline in sheep and MSA chiller requirements	✓
9. MSA meat science* (coordinator only)	✓
S5. MSA sheepmeat integrity	✓
Other Enterprise requirements	
Technology updates	✓
Initial plant survey	✓
In-plant monitoring	✓
MSA coordinator assigned	✓

* MSA module 9 or National unit of competency MTMP404B or AMPA403 – Apply meat science

7.7.6 Sheepmeat carcase specifications

Only trained staff, that are current as defined by AUS-MEAT are permitted to assign MSA grades. Minimum requirements for carcases to be MSA eligible are:

Carcase specifications				
Category/cipher	**Dentition (permanent incisors)**	**HSCW**	**Fat score**	**GR**
YL Young Lamb	0	≥ 16kg	≥ 2	≥6mm
L Lamb (excluding entire males)	0 permanent incisor teeth in wear	≥ 18kg	≥ 2	≥6mm
H Hogget, Yearling Mutton or Yearling Sheepmeat	1 but no more than 2 permanent incisor teeth in wear	≥ 18kg	≥ 2	≥6mm
M,*W*, *E* Mutton, Ewe Mutton or Wether Mutton	Ineligible			
Ram *R*	Ineligible			

Sheepmeat grading data must be sent within 48hrs of conclusion of grading to the Authorised Authority

7.8 Chiller assessment and carcase measuring equipment

All measurement equipment used for MSA Beef and Sheepmeat grading at an Enterprise must be approved.

a. Where MSA beef grading is performed, with the assistance of chiller assessment measurement equipment,the operator must be a current AUS-MEAT chiller assessor and current MSA grader.
b. Where MSA grading (beef and/or sheepmeat) is performed, with the assistance of chiller assessment or other measurement equipment, the grading system must meet the technical requirements to produce a grade outcome as outlined in MSA Standards – Section 4 Software Development
c. Where MSA sheepmeat grading is performed, with the assistance of measurement equipment, the operator must be trained for that equipment and also complete relevant MSA sheepmeat on-site training.
d. Approved quality systems which monitor the use, maintenance and performance of chiller assessment or other measurement equipment must be in place at each licensed Enterprise.
e. The hardware and software versions, and system settings of Chiller Assessment or other Measurement Equipment must only be those currently approved by AUS-MEAT and/or MLA.
f. A copy of the relevant approval and conditions must be held on file and be available to the Enterprise CASO, MSA coordinator, Operator and AUS-MEAT Auditors.
g. MLA reserves the right to apply to AUS-MEAT to remove or suspend any Chiller Assessment or other Measurement Equipment Approvals granted.
h. Enterprises need to demonstrate, through audit evidence, compliance to National Accreditation Standard 5.12.
i. MLA endorses the AUS-MEAT Operating Conditions and Audit and Correlation Standards outlined in Section 5.12 of the National Accreditation Standards.

7.9 MSA carcase identification

MSA compliant carcases are to be clearly identified with the relevant MSA stamp or approved identification for accurate segregation. For whole carcases, relevant MSA eating quality information must also accompany the carcases.

7.10 Boning room

Sufficient segregation must be maintained at boning room changeovers to ensure integrity.

7.11 MSA primal identification

MSA inserts, tamper evident labels, or printed packaging issued, and/or approved by an Authorised Authority may only be applied at the Enterprise to which the inserts were issued.

MSA certified primals must be identified with approved printing on or approved tamper evident label on, or approved MSA inserts within, vacuum bags.

Enterprises using approved tamper evident labels to identify MSA certified primals must adhere to the following requirements:

- Each label must:
  a. be tamper evident

b. have the establishment number, where the product originated, printed on it
c. have a unique sequential identification code printed on it
d. have minimum of 47mm x 36mm dimensions
e. have removal perforations and label 'face cuts'.

For an example of an acceptable tamper evident label refer to 2.20.2 MSA generic tamper evident label

- The Enterprise must:
  a. have an effective system for recording the sequence numbers used for any production, including a minimum of, the first number used, the last number used and the production date
  b. have an effective system, for control of use and traceability of labels, documented within their Quality Management System manual and approved by MSA prior to implementation
- All use of tamper evident labels must be approved by MLA prior to implementation.

7.12 MSA description on carton labels

MSA carton product which is intended to be sold as MSA graded, must display the approved label on the end panel. AUS-MEAT Accredited Enterprises licensed in the MSA program are required to include the MSA grade, cooking method/s and required days ageing or release date on the carton label. The MSA information is additional to existing mandatory and optional trade description information and will be subject to verification during routine AUS-MEAT audits.

Prior label approval will be required from AUS-MEAT before MSA information can be included in any trade description approved additions in existing labels.

MSA Grade and Cooking Method can be included within the carton label or carton panel trade description, these are described below.

1. MSA Identification

- Appears on the end of the cut description line (not mandatory).

2. Eating Quality Information – Must include:

- Grade
  - MSA3, MSA4 or MSA5
- Cook Method
  - minimum of 1 cook method as recommended.
- Ageing requirements
  - Required ageing period to meet quality grade
- To be reformatted as:
  - [Cook method]: MSA Grade [3, 4 or 5] @ [days age value] days.
  - [Cook method]: MSA Grade [3, 4 or 5] at [days age value] days.
  - [Cook method]: MSA Grade [3, 4 or 5] @ 5 days, MSA Grade [3, 4 or 5] @ [days age value] days.
  - [Cook method]: MSA Grade [3, 4 or 5] at 5 days, MSA Grade [3, 4 or 5] at [days age value] days.

3. Additional information (optional)
   - MQ4 outcome calculated at 5 days ageing only may be included after the initial MSA Grade.
   - MQ4 value to be displayed as a whole number.
   - To be formatted as:
     - [Cook method]: MSA Grade [3, 4 or 5] (MQ4 over [MQ4 value]) @ 5 days or
     - [Cook method]: MSA Grade [3, 4 or 5] (MQ4 over [MQ4 value]) at 5 days

Refer to section 7.20.3 Examples of MSA descriptions on carton labels for examples.

7.13 Cutting/fabrication/preparation

MSA product must at all times be cut, fabricated and prepared in accordance with the MSA Standards. If there is any failure to do so, product must not be sold as MSA Certified Product.

Where the Enterprise prepares MSA product for consumption, the Enterprise should prepare the MSA Certified Product as follows:

Cook method	Software descriptions	Alternate label descriptions	Recommended cut dimensions	Cook style	Beef	Sheepmeat (2005)	Sheepmeat (V3.0)
Grill	GRL	GRL, Grill	Beef – minimum 21 mm Sheepmeat – minimum 15mm	Dry	X	X	X
Roast	RST	RST, Roast	Whole primal	Dry	X	X	X
Roast Combi	RSC	RSC, Roast Combi	Whole primal	Steam	X		
Stir Fry	SFR	SFR, Stir Fry	10mm (W) x 10mm (H) x 75mm (L)	Dry	X		
Thin Slice 2mm	TSL	TSL 2mm, Thin Slice 2mm	2mm thin slice	Dry	X		
Roast thin slice cold	RC2	RC2mm	2mm thin slice	Dry	X		
Roast slice cold	RCT	RCT	10mm slice	Dry	X		
Slow Cook*	SC	SC, Slow Cook, CASS, Cass, Casserole	20mm cube	Wet	X	X	X
Slow Cook 4h	SC4	CASS4, Cass4, Casserole 4h, SC4, Slow Cook 4h	20mm cube	Wet			X
Sous Vide (diced)	SVD	SVD	20mm cube	Wet	X		
Corn	CN	CRN, Corn	Whole primal	Wet	X		
Yakiniku	YAK	YAK, Yakiniku	4mm thin slice	Dry	X		
Shabu Shabu	SSB	SSB, Shabu Shabu	2mm thin slice	Wet	X		
Low and Slow BBQ	LSB	LSB, Low and Slow BBQ	Pulled	Dry			X

* Slow cook labels for Sheepmeat must also include '2h' as part of the description

7.13.1 Beef product packaged in Modified Atmospheric Packaging (MAP)

Where the Enterprise prepares MSA beef product to be packaged in 80:20 oxygen:carbon dioxide MAP and intends to identify as the MSA eating quality on product labelling, the Enterprise should prepare the MSA Certified Product as follows:

Cook method	Software descriptions	Alternate label descriptions	Recommended cut dimensions	Cook style
Grill	GRL	MAP GRL, MAP Grill	Beef – minimum 21 mm	Dry
Roast	RST	MAP RST, MAP Roast	Whole primal	Dry
Roast Combi	RSC	MAP RSC, MAP Roast Combi	Whole primal	Steam
Stir Fry	SFR	MAP SFR, MAP Stir Fry	10mm (W) x 10mm (H) x 75mm (L)	Dry
Thin Slice	TSL	MAP TSL 2mm, Thin Slice 2mm	2mm thin slice	Dry
Roast thin slice cold	RC2	MAP RC2mm	2mm thin slice	Dry
Roast slice cold	RCT	MAP RCT	10mm slice	Dry
Slow Cook	SC	MAP CASS, MAP Cass, MAP Casserole	20mm cube	Wet
Sous Vide dice	SVD	MAP SVD	20mm cube	Wet
Corn	CN	MAP CRN, MAP Corn	Whole primal	Wet
Yakiniku	YAK	MAP YAK, MAP Yakiniku	4mm thin slice	Dry
Shabu Shabu	SSB	MAP SSB, MAP Shabu Shabu	2mm thin slice	Wet

The Enterprise must ensure that the product:

- is identified as MAP eligible for the appropriate cook method on the cut by cook report
- has been aged to the minimum days age for the relevant cut by cook and eating auality outcome prior to being packed into MAP.

7.13.2 Sheepmeat product packaged in Modified Atmospheric Packaging (MAP)

Where the Enterprise prepares MSA lamb product to be packaged in 80:20 oxygen:carbon dioxide MAP and intends to identify as the MSA eating quality on product labelling, the Enterprise should prepare the MSA Certified Product as follows:

Cook method	Software descriptions	Alternate label descriptions	Recommended cut dimensions	Cook style
Grill	GRL	MAP GRL, MAP Grill	Minimum 15mm	Dry
Roast	RST	MAP RST, MAP Roast	Whole primal	Dry
Stir Fry	SFR	MAP SFR, MAP Stir Fry	6mm (W) x 15mm (H) x 60mm (L)	Dry
Slow Cook 2h	SC2	MAP SC2, MAP Slow Cook 2h	20mm cube	Wet
Slow Cook 4h	SC4	MAP SC4, MAP Slow Cook 4h	20mm cube	Wet
Low and Slow BBQ	LSB	MAP LSB, MAP Low and Slow BBQ	Pulled	Dry

The Enterprise must ensure that the product:

- is identified as MAP eligible for the appropriate cook method on the cut by cook report
- has been aged to the minimum days age for the relevant cut by cook and eating auality outcome prior to being packed into MAP.

7.13.3 Freezing of MSA beef and sheepmeat

Where MSA beef and/or sheepmeat is to be delivered and/or sold as frozen, the minimum ageing requirements for the cut to become MSA eligible must be met prior to freezing. This includes but is not limited to the minimum five days ageing requirement on all MSA product.

7.14 Dispatch/sale

Where MSA products are delivered and sold as MSA product, authenticating documentation identifying the eating quality outcome must accompany the product.

Where authenticating documentation is lost or damaged, product must not be sold as MSA product.

MSA licensees are required to include their MSA licence number on all authenticating documentation where MSA Certified Product is being listed.

If the Enterprise is not distinguishing between eating quality outcomes, for example MSA 3, 4 or 5, the authenticating documentation must still state MSA and product description.

MSA carton labels or MSA plant carton labels must be attached to the cartons and all primals and portions must include MSA inserts, approved tamper evident label or approved printing.

Where MSA primals are sold to an MSA supplier, authenticating documentation must be supplied with the product together with details of the appropriate cook method for the grade and ageing requirements.

Where MSA product is sold to a wholesaler, processor or retailer which is not an MSA supplier, it must not be on sold as MSA product.

Where branded products are underpinned by MSA and the MSA Trade Mark is used, these products must contain only MSA product.

7.15 Feedback requirements

7.15.1 Beef

Producer feedback

Carcases that have been presented for MSA grading shall have MSA feedback provided to the owner (producer). There are two methods that are used to provide feedback to the owner (producer), these are:

1. The processing Enterprise shall provide to the vendor (producer) the minimum MSA requirements in addition to the mandatory AUS-MEAT feedback.
2. A producer can login to the myMSA.com.au web site and access full MSA feedback.

The minimum MSA requirements to include are:

a. Kill date
b. Body number
c. HSCW
d. Sex
e. Hump height
f. Ossification
g. MSA marbling
h. AUS-MEAT marbling
i. Subcutaneous rib fat depth
j. Ultimate pH (pHμ)

Information available through feedback provided at the myMSA web site includes:

a. Kill date
b. Body number
c. NLIS number
d. RFID number
e. Hang method
f. Ossification
g. MSA marbling
h. AUS-MEAT marbling
i. AUS-MEAT meat colour
j. AUS-MEAT fat colour
k. Milk fed vealer status
l. Subcutaneous rib fat
m. Saleyard status
n. HGP
o. Vascular rinse status
p. HSCW
q. Tropical breed content
r. Hump height
s. Sex
t. Eye muscle area
u. pHu
v. Loin temperature
w. Fat distribution
x. Hide puller damage
y. MSA Index
z. MSA opportunity Index

7.15.2 Sheepmeat

This section refers to Version 3.0 of the MSA model for sheepmeat only.

Producer feedback

Carcases that have been presented for MSA cuts-based grading shall have MSA feedback provided to the owner (producer). There are two methods that are used to provide feedback to the owner (producer), these are:

1. The processing Enterprise shall provide to the owner (producer) the minimum MSA requirements in addition to the mandatory AUS-MEAT feedback.
2. A producer can login to the myMSA.com.au website and access full MSA feedback. The minimum MSA requirements to include are:

a. Kill date
b. Body number (or other unique carcase ID)
c. HSCW
d. Intramuscular Fat percentage (IMF%)
e. Fat class
f. GR fat (if applicable)
g. Lean Meat Yield percent (LMY%)
h. Category

Information available through feedback provided at the myMSA website includes:

a. Kill date
b. Body numbers (or other unique carcase ID)
c. NLIS number (if applicable)
d. RFID number (if applicable)
e. HSCW
f. Intramuscular Fat percent (IMF%)
g. Fat class
h. GR fat (if applicable)
i. Lean Meat Yield percent (LMY%)
j. Dentition (if applicable)
k. Category
l. Pelt puller damage
m. Excessive trim
n. Fail miscellaneous
o. MSA Sheepmeat Index
p. MSA Sheepmeat Opportunity Index

7.15.3 Processor and MSA operator feedback

Processors and MSA operators will have access to the feedback and measurements available to producers. In addition, a MSA Processor Index for beef and sheepmeat will be generated and available in myMSA. The Processor Index includes the impact of processing interventions on eating quality in addition to the beef and sheepmeat MSA Indexes.

The MSA Beef Processor Index and MSA Sheepmeat Processor Index is not for use on producer feedback or in marketing/sales claims.

7.16 Other requirements

The Enterprise must comply with and do all things necessary or desirable to give effect to the requirements set out. In the event of any inconsistency between these Standards and the appendices, these Standards prevail.

7.17 Beef grading

The Enterprise must only permit Graders to grade MSA product in accordance with this Standard and must ensure that each Grader meets the criteria set out below.

7.17.1 Accreditation of Graders

Nominated persons must apply to an Authorised Authority to become accredited to grade carcases to MSA requirements.

7.17.2 Approval to grade carcases

Applicants must hold a 'Statement of Attainment MSA Grading', or equivalent, and must demonstrate to an Authorised Authority, satisfactory competence in grading through an initial correlation prior to accreditation.

Upon receiving a 'Statement of Attainment MSA Grading', or equivalent, an applicant must, within four weeks demonstrate, using the OsCap program to an Authorised Authority, competence in an on-line correlation prior to the commencement of MSA grading.

A copy of each Grader's 'Statement of Attainment MSA Grading', or equivalent, must be included in the Enterprise's Quality Management System records.

The MSA coordinator on site is issued with a password that can oversee staff details on OsCap. This person will be required to use OsCap during audits to demonstrate the currency of their staff.

7.17.3 Maintenance of beef grading status

All personnel grading beef carcases must demonstrate competence to the satisfaction of an Authorised Authority through a correlation regime determined by the Authorised Authority.

If an Authorised Authority considers that an MSA coordinator ceases to demonstrate the levels of competency required for the position it may suspend the person's approval to act as an MSA coordinator.

To retain current status, a Grader must be a current AUS-MEAT chiller assessor and demonstrate competence, to the satisfaction of an Authorised Authority, through successful correlation via OsCap and any other requirements of an Authorised Authority. A frequency of once in every eight week period will be maintained.

Records of all correlations must be kept or be accessible for each Grader's performance.

To regain currency within six months of being non-current, a grader must complete to the satisfaction of an Authorised Authority a correlation of 40 images on OsCap, for all relevant attributes, and comply with all other requirements.

To regain current status after being non-current for a period of or in excess of six months, a grader must undertake retraining during which the grader must complete, to the satisfaction of an Authorised Authority, a chiller correlation on two runs of 20 carcases. In addition, the Grader must demonstrate, to the satisfaction of an Authorised Authority, competence in the requirements of the MSA program through a written examination and comply with any other requirements of the Authorised Authority.

7.17.4 Loss of current status as a Grader

A Grader may have their grader status withdrawn in the following circumstances:

a. voluntarily upon receipt by an Authorised Authority of written notification from the Grader
b. for failing to comply with MSA grader requirements e.g. currency
c. for failure to comply with an Enterprise's Quality Management System procedures
d. in any other circumstances determined by an Authorised Authority which in its opinion may adversely affect the integrity of the MSA program
e. for failing to comply with the AUS-MEAT Chiller Assessment Standard.

7.17.5 Attribute correlation

A Grader must show competence in accordance with the listed performance standards during a grader correlation. Where an Enterprise is hot grading, the Authorised Authority may place time constraints on the initial correlation process.

7.17.5.1 Ossification

On a correlation run of 20 carcases, the variation between the assessment standard and the person correlating must not vary by more than 30% of the sample. No assessment may vary by more than a single score step. A score step is defined as a difference in the MSA ossification scores as shown in the 7.17.4 Ossification standards table - beef.

7.17.5.2 MSA marbling

The variation between the standard and the person correlating must not vary by more than 30% of the sample. On a correlation run of 20 carcases, the variation must not vary by more than:

a. 14 carcases scored within 50 of the assessor
b. the remaining six carcases must not vary by more than 100 points
c. no carcases can vary by 110 points or more.

7.17.5.3 Tropical breed content of live animals

The assessment made by the person assuming the position of the standard will facilitate training in relation to identification of tropical breed content as determined by the Authorised Authority.

7.17.5.4 Hump height

The assessment made by the person assuming the position of the standard and the person being correlated must not vary on the correlation run by more than one score step for all carcases. A score step is defined as a difference of 10mm in the hump height from the correlator's score.

7.17.5.5 Fat distribution

The assessment made by the person correlating must not vary from the standard on any carcases.

7.17.6 Provision of resources

7.17.6.1 Instruments and facilities

The Enterprise must ensure that:

a. All measuring and weighing instruments are adequate to perform the measurements required, are in good working order and are accurate
b. Adequate facilities are available to enable all measurements to be accurately taken and recorded.

7.17.6.2 MSA beef stamps and inserts

The Enterprise must only apply carcase stamps, inserts, approved tamper evident labels and/or approved printed packaging, for the purpose of MSA grading, approved by an Authorised Authority unless, with respect of carcase stamps, the Enterprise receives a written exemption from the Authorised Authority.

Carcase stamps issued by an Authorised Authority may only be applied at the Enterprise to which the stamps were issued.

An Authorised Authority may withdraw or prevent the Enterprise from using, for the period determined by the Authorised Authority, carcase stamps, approved tamper evident labels, approved printed packaging or inserts issued by the Authorised Authority.

Without limiting the circumstances in which this action may be taken, is where the Authorised Authority considers that the integrity of the MSA stamps, approved tamper evident labels, approved printed packaging or inserts are at risk or any of those stamps, approved tamper evident labels, approved printed packaging or inserts have been incorrectly applied to carcases or cuts.

Carcase stamps issued remain the property of the Authorised Authority. Inserts can be purchased through the Authorised Authority. In some circumstances, an Enterprise can apply to the Authorised Authority for approval to use their own inserts.

Tamper evident labels and pre-printed packaging cannot be purchased through the Authorised Authority. An Enterprise can apply to MLA for approval to use these items.

7.17.6.3 MSA grading inputs

The following is a list of carcase measurements collected as inputs for the MSA grading model to determine eating quality outcomes. For carcases that fail minimum MSA requirements, cut by cook scores and an MSA Index will not be assigned.

Instead an MSA Opportunity Index will be generated in myMSA on the basis of demonstrating potential MSA Index that could have been achieved if reasons for non-compliance were rectified.

7.17.6.4 Carcase measurements

- Milk fed vealer (MFV)
  a. Milk fed vealer is defined as a calf that is still suckling and sent direct to slaughter (This is identified as a lot rather than individuals).
- Saleyard (SY)
  a. Identifies animals that have been sold through an MSA licensed saleyard program (this is identified as a lot rather than individuals).
- Body number
  a. Each carcase shall be identified with a number, which can be used as identification of an individual carcase.
- HSCW
  a. Hot Standard Carcase Weight (HSCW) in kilograms.
  b. Refer to AUS-MEAT – National Accreditation Standards; Appendix IV.
- Sex
  a. Each sex of the carcase shall be recorded as (M) male or (F) female.
  b. Refer to AUS-MEAT – National Accreditation Standards; Appendix IV.
- Hang method (AT/TL/TX/SS)
  a. There are four current approved methods of hanging carcases:
    i. AT – hanging by the Achilles tendon.
    ii. TL – hanging by the iliosacral ligament, which is more commonly known as the sacro-sciatic ligament.
    iii. TX – hanging by the 'Pope's Eye' or 'Aitch bone'.
    iv. SS – Superstretch – in addition to hanging in tenderstretch method, the hind limb is further extended to be connected to the ribs.

A dual anchor point may be used in addition to these hanging points, the primary anchor point is to be used as the grading input.

- Tropical breed content (TBC)
  a. Tropical breed content shall be recorded, as determined on the MSA vendor declaration. (This is identified as a lot rather than individual).
  b. Where cattle lots are presented for grading with mixed or unknown TBC or, TBC greater than 0%, hump height measurement can be used exclusively by utilising the 'X' function in the TBC field.
- Hump height (Hump)
  a. Method of hump height measurement
    i. The ruler is held horizontally and parallel with the surface of the sawn chine.
    ii. The ruler is moved to the position of the greatest hump width and the measurement is taken by viewing from a site that eliminates parallax errors.
    iii. The measurement includes all of the meat across the hump from the line formed by the dorsal ends of the spinous processes and extended cranially along the dorsal edge of the ligamentum nuchae, across to the dorsal surface of the rhomboideus muscle.
    iv. Hump height is recorded in gradients of 5mm.
- Ossification (OSS)
  a. Ossification is a measure of the physiological maturity of the carcase being assessed. It is assessed visually and measured in increments with the lowest score being 100 and the highest being 590. Refer to table in Reference materials, section 2.20.3 Ossification standards table – beef, p 7-31.
  b. The maturity of a beef carcase is evaluated by the degree of ossification of the vertebral spinous processes as well as the shape and colour of the rib bones.
  c. Where possible both sides of a carcase should be evaluated during assessment and the score of the more mature side is to be used for grading.
  d. Maturity is the development of bone in the cartilage at the end of the spinous process.
  e. The amount of development determines the ossification score.

f. Development starts in the sacral vertebrae (tail or caudal end) and works towards the thoracic vertebrae (head or cranial end).
g. Maturity begins as red spots and as it becomes more developed, progresses into yellow, porous bone.
h. Maturity can be measured pre and post chilling. Where the measurement is taken pre chilling, the score is adjusted by an addition of one score point (10).

- AUS-MEAT marbling (AUSMB)
  a. Assessment of marbling is at the M. longissimus dorsi using the AUS-MEAT and MSA marbling Reference Standards.
  b. Refer to: Marbling, in the AUS-MEAT National Accreditation Standard- Standards for Chiller Assessment.
  c. Graders must carry visual standards for marbling and determine each score independently.
- MSA marbling (MSA MB)
  a. MSA marbling provides an indication of distribution as well as the amount of marbling. Each MSA MB standard photograph is divided into tenths for grading, creating a score range from 100 to 1190 in increments of 10.
  b. Marbling is assessed at the M. longissimus dorsi at the ribbing site of the carcase.
  c. Graders must carry visual standards for marbling and determine each score independently.
- AUS-MEAT meat colour (MC)
  a. Meat colour is assessed in the M. longissimus dorsi at the ribbed site using AUS- MEAT Standard colour references.
  b. Refer to: Meat colour in the AUS-MEAT National Accreditation Standard – Standards for Chiller Assessment.
- Subcutaneous rib fat (RF)
  a. Measured in millimetres as the depth of subcutaneous fat over the M. longissimus dorsi.
  b. A minimum of 3mm is required, measured at the AUS-MEAT standard site.
  c. Refer to: Rib fat measurements in the AUS-MEAT National Accreditation Standard - Standards for Chiller Assessment.
- P8 fat (P8) (if applicable)
  a. P8 fat is the measurement of subcutaneous fat in millimetres at the P8 site. A minimum of 5mm is required, measured at the AUS-MEAT standard site.
  b. Refer to: Fat measurements P8 site, in the AUS-MEAT National Accreditation Standard – Appendix 4 Carcase.
- Fat distribution (FatDist)
  a. The coverage and distribution of fat over primals is required to be adequate as assessed by the grader.
  b. Carcases are identified as having adequate (Y) or inadequate (N) fat distribution.
- Ultimate pH (pHμ)
  a. Ultimate pH is a measurement of lactic acid within the muscle. Measurements are taken in the eye muscle (M. longissimus dorsi) at the quartering site in conjunction with temperature.
  b. MSA requirements for pHμ are below or equal to 5.70.
  c. Ultimate pH measurements must be taken with a meter fitted with a temperature adjustment (Bendall Equation) to 7° Celsius.
- Loin temperature (Temp)
  a. Loin temperature must be recorded on each carcase at the time of grading and must be below 12°C.
- Rinse
  a. Rinse is defined as carcases that have undergone vascular infusion or carcase rinsing (This is identified as a lot rather than individual).
- Hide puller damage (HidePD)
  a. The coverage and distribution of fat over primals is required to be assessed by the grader as adequate.
  b. Areas of hide puller damage are identified as:

     0 Meets MSA requirements

     1 Damage to butt

     2 Damage to rump

     3 Damage to loin

     4 Ungrade.

  c. Where major carcase primals are void of fat greater than 10cm x 10cm (100cm^2), on a single primal, due to damage caused by the removal of the hide, is identified as 1, 2, 3.
  d. Where excessive hide damage occurs the entire carcase is ungraded, and is identified as 4. Grade code 9 to be entered in grade code field.
- Hormone growth promotant (HGP)
  a. Records of hormone growth promotant (HGP) treatment shall be recorded against each carcase.
  b. This information can be taken from the National Vendor Declaration or newer versions of the MSA vendor declaration (this is

identified as a lot or individual).

c. HGP status must be recorded accurately at grading, by lot, as stated on the National Vendor Declaration (NVD) and versions of the MSA vendor declaration that have provisions for HGP declaration.

- MSA fail miscellaneous (FailMisc)

  0 Meets MSA requirements

  1 Ecchymosis, make an ungrade, grade code 7 to be entered in grade code field

  2 Excessive bruising, make an ungrade, grade code 7 to be entered in grade code field

  3 All other reasons not previously provided for, make an ungrade, grade code 7 to be entered in grade code field.

7.17.6.5 Reasons for non-compliance

A reason for non-compliance means a code to identify the reason for which a carcase has failed to meet minimum MSA requirement. The MSA reasons for non-compliance are as follows:

0 Meets MSA requirements

1 Subcutaneous fat depth out of specification

3 Inadequate fat distribution

4 pHμ greater than 5.70

7 MSA Miscellaneous (e.g. ecchymosis, bruising)

8 Fails to meet AUS-MEAT specifications (e.g. Loin temperature exceeding 12°C)

9 Fails to meet hide puller damage specifications.

7.17.6.6 Site operational requirements

The following operational site requirements must be met:

- Ability to identify, record and validate mobs of cattle eligible for MSA grading.
  This includes the recording and validating of livestock source PIC, LPA number and MSA member number and the livestock owner PIC (if applicable), LPA number and MSA member number at the time of livestock procurement or arrival and before kill agenda or slaughter. This needs to include the NVD and/or MSA declaration serial numbers.
  This could be through kill lots and destination or other methods that identify that those cattle have had a MSA vendor declaration and that certain criteria are met on both the MSA vendor declaration and LPA National Vendor Declaration. This includes identification of saleyard cattle, milk fed vealers, HGP treatment status and MSA producer registration number.
- Recording of certain measured parameters at carcase labelling such as body number, kill date, lot, HSCW, sex, hang method and destination.
- Recording of measured parameters by carcase labelling if utilising hot data collection such as ossification, hump height, and P8 fat depth.
- Where 3rd party grading applications are used, have the ability to transfer slaughter data in MSA published formats in advance of carcase assessment and grading for beef for use by MSA for validation of grading eligibility.
- Recording of certain measured parameters at time of carcase chiller assessment/grading.
- Calculation at time of carcase chiller assessment/grading of all cut/cook/days values and record against each carcase number.
- Stratify individual carcases into Plant Boning Runs based on minimum requirements for a set of cut/cook/days age values.
- Recording of correct reasons for non-compliance against each carcase number.
- The collected and processed MSA data, subsequent cut by cook calculated data and nominated Plant Boning Runs must be complete, fully processed, validated and closed off. Once closed off, the file must be uploaded either manually or automatically to the nominated MSA data submission URL. The closed off MSA data file must be in the specified MSA data file nominated format (either XML or CSV) and naming convention. The submitted MSA data file is automatically validated and notifications submitted to the sender for either success or failure. Should there be a failure the record details and nature of the failure will be stated.
- Where Objective Measurement technology is in use, a record of the use of the technology and the measured result are to be recorded in the format defined by the Industry Objective Metadata Standard (endorsed by AMISLC) and be uploaded to MSA via the MSA specific transport method and at a similar time as the MSA datafile is uploaded.
- Have the ability to generate a reconciliation report on demand showing all livestock sources and counts, slaughter records and boning records to show carton counts that is MSA packed against livestock counts and HSCW from the slaughter floor.
- Generation of producer feedback.
- The MSA licensee must have suitable operational and quality assurance procedures and systems in place to provide the necessary evidence of operational records and internal audit records of compliance with all of the above MSA Plant Boning Run requirements and these records must be available to the Authorised Authority for audit.

7.18 MSA lamb and sheepmeat classification

This section refers to the 2005 release of Eating Quality of Australian Lamb and Sheepmeat Pathway.

The MSA coordinator must demonstrate to the satisfaction of an Authorised Authority competence in these Standards requirements through an initial desktop audit.

7.18.1 Approval to classify carcases

A copy of all Operatives' relevant 'Statement of Attainment' as documented within this Standard must be included in the Enterprise's Quality Management System records.

7.18.2 Maintenance of sheepmeat MSA coordinator status

To retain current status, an Operative must demonstrate competence to the satisfaction of an Authorised Authority through internal and external audits and any other requirements of an Authorised Authority.

Records of all audits will be kept for each operatives' performance and feedback will be provided directly to the Operative at the time of the audit.

The Authorised Authority will maintain records for 12 months prior to archive.

Where an Operative transfers between Enterprises or has not been actively participating in the application of this Standard a refresher course may be requested by the Authorised Authority.

At any stage an Operative must demonstrate to the satisfaction of an Authorised Authority competence in the requirements of the MSA sheepmeat program through a verbal examination and comply with any other requirements of an Authorised Authority.

7.18.3 Loss of current status as a MSA sheepmeat Operative

An Operative may have their status as current MSA sheepmeat Operative withdrawn in the following circumstances:

- Voluntarily upon receipt by an Authorised Authority of written notification from the Operative
- For failing to comply with MSA sheepmeat requirements
- For failing to comply with the Enterprise's MSA sheepmeat Quality Management System procedures
- In any other circumstances determined by an Authorised Authority which in its opinion may adversely affect the integrity of the MSA sheepmeat program
- For failing to comply with the AUS-MEAT National Accreditation Standards.

7.18.4 Provision of resources

The Enterprise must ensure that

- All measuring and weighing instruments are adequate to perform the measurements required, are in good working order and are accurate
- Adequate facilities are available to enable all measurements to be accurately taken and recorded.

7.18.5 MSA Sheepmeat stamps and inserts

The Enterprise must only apply carcase stamps, inserts, approved tamper evident labels and/or approved printed packaging for the purpose of the MSA sheepmeat program approved by an Authorised Authority unless, in respect of carcase stamps, the Enterprise receives a written exemption from the Authorised Authority.

Carcase stamps and inserts issued by an Authorised Authority may only be applied at the Enterprise to which the stamps or inserts were issued.

An Authorised Authority may withdraw from the Enterprise for the period determined by the Authorised Authority carcase stamps, approved tamper evident labels, approved printed packaging or inserts issued by the Authorised Authority. Without limiting the circumstances in which this action may be taken, where the Authorised Authority considers that the integrity

of the MSA sheepmeat stamps, approved tamper evident labels, approved printed packaging or inserts are at risk or any of those stamps, approved tamper evident labels, approved printed packaging or inserts have been incorrectly applied to carcases or cuts.

Carcase stamps issued remain the property of the Authorised Authority.

Inserts can be purchased through the Authorised Authority. In some circumstances, an Enterprise can apply to the Authorised Authority for approval to use their own inserts.

Tamper evident labels and pre-printed packaging cannot be purchased through the Authorised Authority. An Enterprise can apply to the Authorised Authority for approval to use these items.

7.18.6 Lamb and sheepmeat carcase measurements

Carcase specifications				
Category/cipher	**Dentition (permanent incisors)**	**HSCW**	**Fat score**	**GR**
YL Young Lamb	0	≥ 16kg	≥ 2	≥6mm
L Lamb (excluding entire males)	0 permanent incisor teeth in wear	≥ 18kg	≥ 2	≥6mm
H Hogget, Yearling Mutton or Yearling Sheepmeat	1 but no more than 2 permanent incisor teeth in wear	≥ 18kg	≥ 2	≥6mm
M,*W*, *E* Mutton, Ewe Mutton or Wether Mutton	1 or more permanent incisor teeth in wear	≥ 18kg	≥ 2	≥6mm
Ram *R*	Ineligible			

7.18.6.1 Fat class measurement

A fat class or measurement is the responsibility of an Enterprise employee under the supervision of an accredited person as defined by AUS-MEAT. The Authorised Authority will audit the Enterprise's quality system procedures for monitoring the accuracy of measurements.

The minimum is fat class 2. This is equivalent to at GR site measurement of 6mm.

The GR site, approved instruments and measurement and assessment methods are defined in the AUS-MEAT National Accreditation Standards.

7.18.6.2 Dentition

Dentition assessment is the responsibility of an abattoir employee under the supervision of an Accredited Person as defined by AUS-MEAT.

The Authorised Authority will audit the procedures for monitoring the accuracy of dentition.

Age of sheep is determined either by eruption of mandibular molar teeth (for the alternative category young lamb) or by eruption of permanent incisors (for lamb, hogget and mutton). Refer to the AUS-MEAT Language for details.

7.18.6.3 Sex

Sex description of carcases is the responsibility of an abattoir employee under the supervision of an accredited person as defined by AUS-MEAT. The Authorised Authority will Audit the Enterprises.

Quality system procedures for monitoring the accuracy of sex category. Refer to the AUS-MEAT language for more details.

7.18.6.4 Hang method

There are two current approved methods of hanging MSA carcases:

- AT: hanging by the Achilles tendon
- TS: Hanging by the iliosacral ligament which is more commonly known as the sacro-sciatic ligament.

7.18.7 MSA carcase and primal identification for lamb and sheepmeat

Options for carcase and primal ID	Detail
Carcases:	
MSA company roller brand	Include the letters 'MSA' or MSA symbol into a company roller brand and apply to all carcases that meet MSA standards
MSA carcase stamp	Approved 'MSA' carcase stamp that can be applied to carcases that meet MSA standards
Company own brand with signed MSA brand licence	MSA licensed brand that meets MSA standards
Primals:	
MSA approved inserts	Use MSA inserts to identify MSA eligible primals from approved MSA carcases
Approved 'brand' printed primal bags	Use MSA approved company branded / printed primal bag to identify MSA eligible primals from approved MSA carcases
MSA approved tamper evident labels	Use MSA approved tamper evident labels to identify MSA eligible primals from approved MSA carcases

7.19 MSA sheepmeat classification – cuts-based grading

This section refers to Version 3.0 of the MSA model for sheepmeat only.

The MSA coordinator must demonstrate to the satisfaction of an Authorised Authority competence in these Standards requirements through an initial desktop audit.

7.19.1 Approval to classify carcases

A copy of all Operatives' relevant 'Statement of Attainment' as documented within this Standard must be included in the Enterprise's Quality Management System records.

7.19.2 Maintenance of sheepmeat MSA coordinator status

To retain current status, an Operative must demonstrate competence to the satisfaction of an Authorised Authority through internal and external audits and any other requirements of an Authorised Authority.

Records of all audits will be kept for each operatives' performance and feedback will be provided directly to the Operative at the time of the audit.

The Authorised Authority will maintain records for 12 months prior to archive.

Where an Operative transfers between Enterprises or has not been actively participating in the application of this Standard a refresher course may be requested by the Authorised Authority.

At any stage an Operative must demonstrate to the satisfaction of an Authorised Authority competence in the requirements of the MSA sheepmeat program through a verbal examination and comply with any other requirements of an Authorised Authority.

7.19.3 Loss of current status as an MSA sheepmeat Operative

An Operative may have their status as current MSA sheepmeat Operative withdrawn in the following circumstances:

- Voluntarily upon receipt by an Authorised Authority of written notification from the Operative
- For failing to comply with MSA sheepmeat requirements
- For failing to comply with the Enterprise's MSA sheepmeat Quality Management System procedures
- In any other circumstances determined by an Authorised Authority which in its opinion may adversely affect the integrity of the MSA sheepmeat program
- For failing to comply with the AUS-MEAT National Accreditation Standards.

7.19.4 Provision of resources

The Enterprise must ensure that

- All measuring and weighing instruments are adequate to perform the measurements required, are in good working order and are accurate
- Adequate facilities are available to enable all measurements to be accurately taken and recorded.

7.19.5 MSA Sheepmeat stamps and inserts

The Enterprise must only apply carcase stamps, inserts, approved tamper evident labels and/or approved printed packaging for the purpose of the MSA sheepmeat program approved by an Authorised Authority unless, in respect of carcase stamps, the Enterprise receives a written exemption from the Authorised Authority.

Carcase stamps and inserts issued by an Authorised Authority may only be applied at the Enterprise to which the stamps or inserts were issued.

An Authorised Authority may withdraw from the Enterprise for the period determined by the Authorised Authority carcase stamps, approved tamper evident labels, approved printed packaging or inserts issued by the Authorised Authority. Without limiting the circumstances in which this action may be taken, where the Authorised Authority considers that the integrityof the MSA sheepmeat stamps, approved tamper evident labels, approved printed packaging or inserts are at risk or any of those stamps, approved tamper evident labels, approved printed packaging or inserts have been incorrectly applied to carcases or cuts.

Carcase stamps issued remain the property of the Authorised Authority.

Inserts can be purchased through the Authorised Authority. In some circumstances, an Enterprise can apply to the Authorised Authority for approval to use their own inserts.

Tamper evident labels and pre-printed packaging cannot be purchased through the Authorised Authority. An Enterprise can apply to the Authorised Authority for approval to use these items.

7.19.6 Lamb measurements

7.19.6.1 Body number

Each carcase shall be identified with a number, which can be used as identification of an individual carcase.

7.19.6.2 Hot Standard Carcase Weight (HSCW)

Hot Standard Carcase Weight is the reponsibilty of an abattoir employee under the supervision of an Accredited Person as defined by AUS-MEAT.

The minimum HSCW for young lamb is 16kg. The minimum HSCW for lamb is 18kg.

7.19.6.3 AUS-MEAT Fat class

AUS-MEAT fat assessment is the responsibility of an abattoir employee under the supervision of an Accredited Person as defined by AUS-MEAT.

The minimum AUS-MEAT fat class is 2.

7.19.6.4 GR measurement (if applicable)

A GR measurement is the responsibility of an Enterprise employee under the supervision of an accredited person as defined by AUS-MEAT. The Authorised Authority will audit the Enterprise's quality system procedures for monitoring the accuracy of measurements.

GR measurement may also occur in addition to Fat class assessment. If GR is being measured the minimum GR site measurement is 6mm.

The GR site, approved instruments and measurement and assessment methods are defined in the AUS-MEAT National Accreditation Standards.

7.19.6.5 Dentition

Dentition assessment is the responsibility of an abattoir employee under the supervision of an Accredited Person as defined by AUS-MEAT.

The Authorised Authority will audit the procedures for monitoring the accuracy of dentition.

Age of sheep is determined either by eruption of mandibular molar teeth (for the alternative category young lamb) or by eruption of permanent incisors (for lamb, hogget and mutton). Refer to the AUS-MEAT Language for details.

7.19.6.6 Hang method

There is only one current approved method of hanging MSA carcases:

- AT: hanging by the Achilles tendon

7.19.6.7 Intramuscular fat percent (IMF%)

Intramuscular fat percent as measured by an AUS-MEAT accredited device. Carcases with IMF% values within the accredited range of the device are eligible for MSA. Carcases with IMF% greater than the accredited range of the device are eligible for MSA and are to be recorded in accordance with the AUS-MEAT accreditation. Carcases with IMF% below the accredited range are ineligible for MSA.

The Authorised Authority will audit the procedures for monitoring the accuracy of the device. Quality system procedures for monitoring the device must be in place.

7.19.6.8 Lean meat yield percent (LMY%)

Lean meat yield percent as determined by the Authorised Authority. This can include AUS-MEAT accredited devices.

Where an AUS-MEAT accredited device is used, the Authorised Authority will audit the procedures for monitoring the accuracy of the device. Quality system procedures for monitoring the device must be in place.

7.19.6.9 Pelt removal damage

The coverage and distribution of fat over primals is required to be assessed by the Operator as adequate.

Where excessive pelt removal damage has occurred, the entire carcase is ungraded.

7.19.6.10 Excessive trim

Where carcases have been excessively trimmed and no longer retain adequate coverage due to grass seeds or other reasons, the entire carcase is ungraded.

7.19.6.11 Animl health condemnations

Where carcases have been condemned for animal health reasons, the carcase record is to be included in the MSA dataset.

7.19.6.12 MSA fail Miscellaneous

Where a carcase is to be an ungrade and no previous reason has been provided for, it is to be reported in the MSA fail miscellaneous field.

7.19.7 Reasons for non-compliance

A reason for non-compliance means a reason for which a carcase has failed to meet a minimum MSA requirement. The MSA reasons for non-compliance are as follows:

- meets MSA minimum requirements
- outside MSA minimum hot standard carcase weight requirement
- fat class out of specification
- pelt removal damage
- excessive trim
- animal health condemnations
- MSA Miscellaneous – failed miscellaneous
- objective measurement not recorded.

7.19.8 Site operational requirements

The following operational site requirements must be met:

- Ability to identify, record and validate mobs of sheep eligible for MSA grading.
  This includes the recording and validating of livestock source PIC, LPA number and MSA member number and the livestock owner PIC (if applicable), LPA number and MSA member number at the time of livestock procurement or arrival and before kill agenda or slaughter. This needs to include the NVD serial numbers.
  This could be through kill lots and destination or other methods that identify that those sheep are identified on the LPA National Vendor Declaration. This includes identification of MSA producer registration number.
- Recording of certain measured parameters at carcase labelling such as body number, kill date, lot, HSCW, sex, fat class and destination.
- Recording of certain measured parameters at time of carcase assessment/grading such as IMF%.
- Calculation at time of carcase assessment/grading of all cut/cook/days values and record against each carcase number.
- Stratify individual carcases into Plant Boning Runs based on minimum requirements for a set of cut/cook/days age values.
- Recording of correct reasons for non-compliance against each carcase number.
- The collected and processed MSA data, subsequent cut by cook calculated data and nominated Plant Boning Runs must be complete, fully processed, validated and closed off. Once closed off, the file must be uploaded either manually or automatically to the nominated MSA data submission URL. The closed off MSA data file must be in the specified MSA data file nominated format and naming convention. The submitted MSA data file is automatically validated and notifications submitted to the sender for either success or failure. Should there be a failure the record details and nature of the failure will be stated.
- Where Objective Measurement technology is in use, a record of the use of the technology and the measured result are to be recorded in the format defined by the Industry Objective Metadata Standard (endorsed by AMISLC) and be uploaded to MSA via the MSA specific transport method and at a similar time as the MSA datafile is uploaded.
- Have the ability to generate a reconciliation report on demand showing all livestock sources and counts, slaughter records and boning records to show carton counts that is MSA packed against livestock counts and HSCW from the slaughter floor.
- Generation of producer feedback.
- The MSA licensee must have suitable operational and quality assurance procedures and systemin place to provide the necessary evidence of operational records and internal audit records of compliance with all of the above MSA Plant Boning Run requirements and these records must be available to the Authorised Authority for audit.

7.19.9 MSA carcase and primal identification for lamb

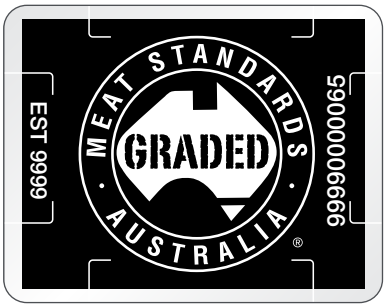
Options for carcase and primal ID	Detail
Carcases:	
MSA company roller brand	Include the letters 'MSA' or MSA symbol into a company roller brand and apply to all carcases that meet MSA standards
MSA carcase stamp	Approved 'MSA' carcase stamp that can be applied to carcases that meet MSA standards
Company own brand with signed MSA brand licence	MSA licensed brand that meets MSA standards
Primals:	
MSA approved inserts	Use MSA inserts to identify MSA eligible primals from approved MSA carcases
Approved 'brand' printed primal bags	Use MSA approved company branded / printed primal bag to identify MSA eligible primals from approved MSA carcases
MSA approved tamper evident labels	Use MSA approved tamper evident labels to identify MSA eligible primals from approved MSA carcases

7.20 Reference material

7.20.1 MSA generic insert



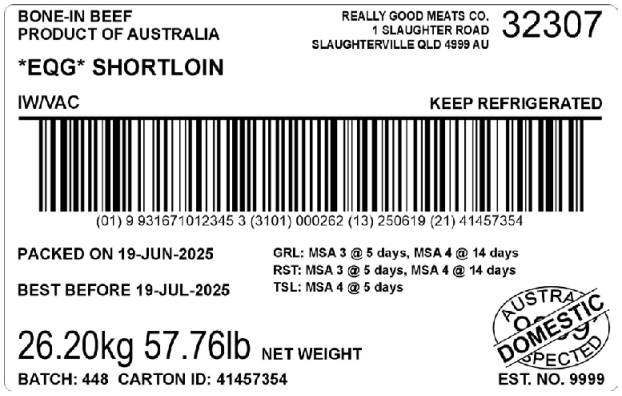
7.20.2 Example of an acceptable MSA tamper evident label



7.20.3 Examples of MSA descriptions on carton labels

















7.20.4 Ossification standards table – beef

Score	Approx age in months	Sacral vertebrae	Lumbar vertebral spinous characteristics	11th, 12th, 13th thoracic spinous process	1st – 10th thoracic spinous process characteristics	Rib bone characteristics
100	9	No distinct ossification separation	No ossification	No ossification	No ossification	Narrow and oval, lot of blood
110	10	Capping has started 10% to 20%	No ossification	No ossification	No ossification	Slightly narrow, slightly oval, lot of blood
120	13	Capping 30% to 40%, vertical gaps starting to close	No ossification	No ossification	No ossification	Slightly wide and flat, lot of blood
130	15	Advanced capping 50% to 70%, vertical gaps closing, some separation still visible	No ossification	No ossification	No ossification	Slightly wide, slightly flat, moderate blood
140	18	Advanced capping 80% to 90%, vertical gaps closing, some separation still visible	No or minor spots of ossification in one or two vertebrae	No ossification	No ossification	Slightly wide, slightly flat, moderate blood
150	20	Capping completed but some cartilage visible	No or small amounts of ossification in some vertebrae	No ossification	No ossification	Slightly wide, slightly flat, moderate blood
160	22	Capping completed but small amounts of cartilage visible	10% to 20% ossification in some vertebrae	No ossification	No ossification	Slightly wide, slightly flat, moderate blood
170	24	Capping completed, Almost complete fusing	30% to 40% ossification	No ossification	No ossification	Slightly wide, slightly flat, small amount of blood
180	27	Capping completed, Almost complete fusing	50% to 70% ossification in all vertebrae	No or minor spots of ossification in one or two vertebrae	No ossification	Slightly wide, slightly flat, small amount of blood
190	29	Capping completed, Almost complete fusing	80% to 90% ossification in all vertebrae	Less than 25% ossification in all three spinal processes, or 100% in any one spinal process	No ossification	Slightly wide, slightly flat, small amount of blood
200	30	Complete fusing	Almost complete ossification	>25% ossification in all three spinal processes, or 100% in any one spinal process	Minor ossification, slightly red chine	Slightly wide, slightly flat, small amount of blood
230		Complete fusing	Almost complete ossificationw	30% to 40% ossification in all three spinal processes, or 100% in any one spinal process	Minor ossification in some of the first six thoracic vertebrae, 10% to 20% in 7th to 10th vertebrae	Slightly wide, slightly flat, small amount of blood
250		Complete fusing	Almost complete to complete ossification	>50% ossification in all three spinal processes, or 100% in any one spinal process	10% to 20% ossification in some of the first six thoracic vertebrae, 30% to 50% in 7th to 10th vertebrae	Moderately wide, moderately flat, traces of blood

Score	Approx age in months	Sacral vertebrae	Lumbar vertebral spinous characteristics	11th, 12th, 13th thoracic spinous process	1st – 10th thoracic spinous process characteristics	Rib bone characteristics
280		Complete fusing	Complete ossification	>70% ossification in all three spinal processes, or 100% in any one spinal process	>30% in the 1st to 10th vertebrae	Moderately wide, moderately flat, traces of blood
300	42	Complete fusing	Complete ossification	80% to 90% ossification in all three spinal processes, or 100% in any one spinal process	More than 30% ossification in first six thoracic vertebrae, 50% to 70% in 7th to 10th vertebrae	Moderately wide, moderately flat, traces of blood
350		Complete fusing	Complete ossification	Almost complete to complete ossification	40% to 80% ossification involving all vertebrae	Wide and flat, no blood
400	72	Complete fusing	Complete ossification	Complete ossification, outlines barely visible	Almost complete ossification, outline plainly visible	Wide and flat, no blood
500	96	Complete fusing	Complete ossification	Complete ossification	Complete ossification, outline barely visible, white chine	Wide and flat, no blood
590		Complete fusing	Complete ossification	Complete ossification	Complete ossification, white chine	Wide and flat, no blood

7.20.5 LPA National Vendor Declaration – sheep

The following will be extracted from the National Vendor Declaration (Sheep and Lambs) for the purposes of MSA:

- time from dispatch to slaughter
- the breed content of animals
- hours off feed to slaughter
- month of shearing
- producer MSA registration number to be identified in Part A – section 7.



NATIONAL VENDOR DECLARATION (SHEEP AND LAMBS) AND WAYBILL S0720 38888888

Part A To be completed by the owner or person who is responsible for the husbandry of the sheep or lambs.

Owner of sheep or lambs (FULL TRADING NAME)

Property/place where the journey commenced (ROAD ADDRESS) (ADDRESS CONTINUED) (TOWN/SUBURB) (STATE)

Property Identification Code (PIC) of this property
This MUST be the PIC of the property that the stock is being moved from ABCD1234

Description of sheep or lambs

Number	Year born (DROP)	Description (BREED, SEX & TYPE E.G. CROSS-BRED, WETHER, LAMB)	Month of shearing	PIC or Brand on Ear Tags (IF DIFFERENT TO PIC SHOWN ABOVE)	Earmarks (IF PRESENT OR REQUIRED)
	Total	Use the Attachment Forms for consignments that require more lines to describe the stock. (See Explanatory Notes)			

A. Have PICs on all of the NLIS tags only on sheep in this consignment been listed in the Description table above (other than the PIC printed on this NVD)? – Yes ☐ OR

B. Have all sheep in this consignment been tagged with an NLIS tag with the PIC printed on this NVD or the associated WA brand as listed in the description table above – Yes ☐ AND/OR

Number of electronic NLIS devices in this consignment

Hours off feed and water before transporting

Consigned to (NAME OF PERSON OR BUSINESS) (ADDRESS) (TOWN/SUBURB) (STATE)

Destination (if different) of sheep or lambs (LOCATION ADDRESS)

Destination PIC (REQ: WA & TAS)

Details of other statutory documents relating to this movement e.g. health statement
DOCUMENT TYPE NUMBER OFFICE OF ISSUE / /20 EXPIRY DATE

1 Have these sheep or lambs been raised consistent with the rules of an independently audited QA program on the property the PIC of which is shown above?
Yes ☐ No ☐ If Yes, give details: NAME OF PROGRAM ACCREDITATION OR LICENSE NO.

2 Have all the sheep or lambs in this consignment been treated with a Scabby Mouth Vaccination either at marking or at least 14 days prior to their presentation for sale?
Yes ☐ No ☐

3 Were all of these sheep or lambs bred by the owner or vendor?
Yes ☐ No ☐ If No, how long ago were the sheep or lambs obtained or purchased?
(If purchased at different times, tick the box corresponding to the time of the most recent purchase.)
A. Less than 2 months ☐ B. 2–6 months ☐ C. 6–12 months ☐ D. more than 12 months ☐

4 Are any of the sheep or lambs in this consignment still within a Withholding Period (WHP) or Export Slaughter Interval (ESI) as set by APVMA or SAFEMEAT, following treatment with any veterinary drug or chemical?
Yes ☐ No ☐ If Yes, give details: (Record additional details in question 7)
CHEMICAL PRODUCT / /20 DATE APPLIED WHP ESI (IF SET)

5 In the past 60 days, have any of the sheep or lambs in this consignment consumed any material that was still within a withholding period when harvested, collected or first grazed?
Yes ☐ No ☐ If Yes, give details:
CHEMICAL PRODUCT / /20 DATE APPLIED GRAZING WHP / /20 DATE FIRST FED/GRAZED / /20 DATE FEEDING/GRAZING CEASED

6 Have the sheep or lambs in this consignment ever in their lives been fed feed containing animal fats? (See Explanatory Notes)
Yes ☐ No ☐

7 Please include any additional information below
eg: vaccination programs, animal health certification, additional declarations, etc.

Declaration

I FULL NAME FULL ADDRESS ADDRESS CONT.

declare that, I am the owner or the person responsible for the husbandry of the sheep or lambs and that all the information in part A of this document is true and correct.
I also declare that I have read and understood all the questions that I have answered, that I have read and understood the explanatory notes, and that, while under my control, the sheep or lambs were not fed restricted animal material (including meat and bone meal) in breach of State or Territory legislation.

Signature* Date* / /20
*Only the person whose name appears above may sign this declaration, or make amendments which must be initialled.

Tel no. Fax no.

Email.

Part B To be completed by the person in charge of the sheep or lambs while they are being moved. Completion of this part is optional in SA and VIC.

Movement commenced: / /20 : (am/pm)

Vehicle registration number(s)*:

I FULL NAME am the person in charge of the sheep or lambs during the movement and declare all the information in Part B is true and correct.

Signature Date / /20 Tel no.

*When more than one truck is carrying the sheep or lambs, other vehicle registration numbers are to be recorded.

SAMPLE

7.20.6 Lamb and sheepmeat – Approved cuts table for 2005 release of Eating Quality of Australian Lamb and Sheepmeat Pathway

Cuts and cooking methods

● Lamb (L) ● Hogget (H) ● Mutton (M)

Cut	HAM	Grill	Roast	Stir Fry	Casserole
Leg Chump / On	4800		●●		
Leg 'Easy Carve'	4821		●●		
Leg Chump / Off	4820		●●		
Chump	4790		●●		
Chop		●●●			
Hind Shank	5031				●●
Leg Chump / On (Boneless)	5060		●●		
Rolled / Tied			●●		
Topside	5073			●●	
Silverside	5071			●●●	
Thick Flank (Round)	5076	●●	●●	●●	
Chump (Rump)	5130	●●	●●	●●	●●
Topside (Den)	5077			●●	
Outside (Den)	5075			●●●	
Knuckle (Round)	5072	●●	●●	●●●	
Rump (Den)	5074	●●●	●●●	●●	●●

Cuts and cooking methods					
● Lamb (L) ● Hogget (H) ● Mutton (M)					
Cut	**HAM**	**Grill**	**Roast**	**Stir Fry**	**Casserole**
Loin	4860		● ● ●		
Shortloin	4880		● ● ●		
Rolled			● ● ●		
Noisettes		● ● ●	● ● ●		
Chop		● ● ●			
Eye of Shortloin	5150	● ● ●		● ● ●	
Rack	4932		● ● ●		
Rack Cap / Off (Frenched)	4756		● ● ●		
Cutlet		● ● ●			
Rack Cap / Off (Frenched)	4764		● ● ●		
Cutlet		● ● ●			
Backstrap	5109	● ● ●		● ● ●	
Eye of Rack	5153	● ● ●		● ● ●	
Forequarter	4972		● ●		
Square Cut Shoulder	4990		● ●		
Chop		● ●			
Shoulder Rack (Frenched)	4739		● ●		
Cutlet		● ●			
Fore Shank	5030				●
Oyster Cut Shoulder	4980		● ●		
Shoulder (Easy Carve)	4994		● ●		
Forequarter (Boneless)	5047		● ●		
Shoulder Rolled/Netted	5050		● ●		
Neck Fillet Roast	5059		● ●		
Eye of Shoulder	5151		● ●		
Tenderloin	5080	● ● ●			
Butt Tenderloin	5081	● ● ●			
Tenderloin / Butt Off	5082	● ● ●			
Breast and Flap	5010	No recommended cooking methods			
Neck	5020				
Spare Ribs	5015				

7.20.7 Invoices

Aussie Meat Trading Company

ABN: 11 222 333 444

Level 1, 40 Mount Street
North Sydney NSW 2059
Email: meatsales@meat.com.au

Meat Standards Australia
Licensed supplier A123

Invoice number	287795

Johnny's Quality Meats PO Box 3 Sydney NSW 2000	Ship To: 64 Smith Road Sydney NSW 2000

Salesperson: ST				Transport: MAC
Customer code	Date	Order number	Terms	Delivery
JQM	28/06/2018	119819	21 days	

Code	Description	No.	Weight (kg)	Unit price	Amount
EQGBC	EQG beef carcase	2	480	$7.50	$3600
YGBC	YG beef carcase	1	185	$6.30	$1165.5
LCMSA	L lamb carcases-MSA	5	110	$6.00	$660
HC012	H hogget carcases	3	75	$5.00	$750.00
Total	11	Total weight	850	Amount Ex. GST	$6175.50
				GST	0.00
				Freight	$50.00
Terms: Strictly as above				Total	$6225.50

Aussie Meat Trading Company

ABN: 11 222 333 444

Level 1, 40 Mount Street
North Sydney NSW 2059
Email: meatsales@meat.com.au

Meat Standards Australia
Licensed supplier A123

Invoice number	287795

Johnny's Quality Meats PO Box 3 Sydney NSW 2000	Ship To: 64 Smith Road Sydney NSW 2000

Salesperson: ST				Transport: MAC
Customer code	Date	Order number	Terms	Delivery
JQM	28/06/2018	119819	21 days	

Code	Description	No.cartons	Weight (kg)	Unit price	Amount
CUR610	YG MSA Cube roll 2.2kg+	5	122.5	$20.50	$2511.25
RMP513	PR Rump	4	102.4	$6.50	$665.60
OYST300	PR MSA Oyster blade	2	34.6	$17.00	$588.20
LEG100	L Lamb leg chump on-MSA	3	48	$10.00	$480.00
Total cartons	14	Total weight	307.5	Amount Ex. GST	$4245.05
				GST	0.00
				Freight	$50.00
Terms: Strictly as above				Total	$4295.05