



Australian Government

Australian Maritime Safety Authority

Design / Plan Assessment Checklist for new or existing livestock carriers applying for the issue of an Australian Certificate for the Carriage of Livestock

To be used at the plan assessment and initial survey stage to verify compliance with Marine Orders Part 43

Section A. Ship's identification

Ship's name	Flag
<input type="text"/>	<input type="text"/>
IMO No.	Official No.
<input type="text"/>	<input type="text"/>
Call Sign	Tonnage (1969 Int'l)
<input type="text"/>	<input type="text"/>
Class	Summer Dwt
<input type="text"/>	<input type="text"/>
Year Built (keel laid)	Year converted (where applicable)
<input type="text"/>	<input type="text"/>
Operator name	
<input type="text"/>	
Operator address	
<input type="text"/>	
Owner	
<input type="text"/>	

Safcon	Issued by:	<input type="text"/>
	Issued:	<input type="text"/>
	Expiry:	<input type="text"/>
ISM	Issued by:	<input type="text"/>
	Issued:	<input type="text"/>
	Expiry:	<input type="text"/>

Note: Copies of ISM certification and SAFCON should be attached to this checklist if available during the final inspection.

Section B. Preliminary Information

B1.	Reference is made to Australian Marine Order 43 (Cargo and Cargo Handling – Livestock) 2018, (hereinafter referred to as "MO43").
B2.	An ACCL remains valid for 5 years from the date of issue, subject to annual endorsement. The expiry date of the certificate will normally be aligned with the expiry date of the ship's Cargo Ship Safety Construction (SAFCON) Certificate. The survey for annual endorsement of the ACCL should be carried out, as far as practical, at the same time as annual survey for the endorsement of the SAFCON Certificate. If a vessel is a non-convention vessel or has had "National Tonnage" accepted by the Flag state which precludes the issue of a Safety Construction Certificate, then the ACCL should be aligned with the Certificate of Class
Note:	For the issue of an ACCL the vessel may only be classed by a Classification society which is a full member of IAC as required in section 25(1)(a) of the order.

Section C. Criteria for the application of the checklist

C1.	The checklist is to be used at the plan assessment and initial survey stage.	
C2.	The checklist is to be used in conjunction with MO43.	
C3.	Individual sections of the checklist are cross-referenced to the corresponding provisions of MO43.	
C4.	To use the checklist at the design stage, the following drawings are to be submitted to the Manager Ship Inspection Group:	
	a. General arrangement	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	b. Stability data for the vessel with livestock on board (including information mentioned in the schedule to MO 43	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	c. Design, materials, methods of construction and arrangement of fittings for the containment and movement of the livestock and housing of livestock services	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	d. Ventilation arrangements, including current test measurement together with the gross volume of enclosed spaces	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	e. Lighting arrangement	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	f. Storage and distribution systems for fodder and water	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	g. Drainage and bilge pumping arrangements, including waste water retention	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	h. Fire control and safety plan	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	i. Structural fire protection;(If not included in the Fire control Plan	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	j. Documented maintenance program	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	k. Copies of current statutory certificates including ISM documentation	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	l. Copy of class records, including outstanding conditions of class and latest enhanced survey report	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	m. Freeing ports arrangement where applicable	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	n. Tank details and their sounding arrangements	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
C4.	o. Copy of condition of load line assignment showing record of closing appliances	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	p. Record of equipment as required by section 35(1) of the order (the recommended format the record of equipment is contained on the AMSA website)	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	q. Schematic circuit diagrams of the primary, secondary and emergency sources of power	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
C5.	Circle the letter "Y" when item is checked and found in compliance with MO43.	
C6.	Circle the letter "N" when item is checked but deficiency found. For each item where "N" is circled, <i>Section V - Surveyor's comments</i> at the end of this document must be used and a relevant recommendation must be issued for each item circled "N".	
C7.	Circle the letter "NA" when item is not applicable.	
C8.	Each item must be checked.	

Section D. General requirements for the carriage of livestock – MO43 Division 4 & 5

D1.	In the carriage of livestock on any part of the vessel, the livestock, livestock fittings, livestock equipment or carrying arrangement do not:	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	i. obstruct access to any accommodation space, working space necessary for the safe running of the vessel; or the means of egress from any hold or under-deck space; or	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	ii. interfere with life-saving or fire-fighting appliances; or	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	iii. sounding of tanks or bilges; or	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	iv. operation of closing appliances; or	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	v. operation of freeing ports; or	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	vi. lighting or ventilation of other parts of the vessel; or	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	vii. safe and efficient navigation of the vessel.	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
D2.	If the casing or bulkhead of an engine room, boiler room or heated fuel tank forms the boundary of a space in which livestock is to be carried, is that casing or bulkhead effectively insulated?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
D3.	If livestock is to be carried over a hatchway, is the hatchway protected against consequent damage and are the hatchway covers secured against movement?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
D4.	If DG are to be carried are these stowed in a separate compartment or there is a 6m separation and the spillage of fume from the goods cannot affect the livestock? <i>In regards to fumes refer to section 2.4(5) of Schedule 2 of MO43</i>	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
D5.	Is the livestock carrying arrangement designed to carry livestock in more than one tier in any deck?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
D6.	If so, is approval sought for the carriage of sheep, goats and/or pigs only?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
D7.	Are livestock structures so manufacturers, assembled and positioned to protect livestock from injury avoid suffering and exposure to weather and sea?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
D8.	Are all fittings, fixtures and objects that are likely to come into contact with livestock so manufactured, assembled or positioned as to prevent injury to livestock?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
D9.	Are livestock structures, including decks and containment structures (but excluding arrangements for the carriage of livestock) Constructed of non-combustible material? <i>Refer to Part 1 of Schedule 1 of the FTP Code for Non-combustibility test.</i>	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
D10.	For converted vessels has the structural arrangement of the livestock been accepted by the ships classification society?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
D11.	Does the bridge visibility of the vessel comply with the requirements of SOLAS V/22?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
D12.	a. Does the vessel fully comply with SOLAS that applies to a vessel constructed or converted for the carriage of livestock after 30 September 1994?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	b. Does the vessel comply with section 2.5(2) of MO43?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A

Section E. Stability – MO43-11

E1.	Is the effect of the shift of livestock included in the stability calculations? <i>See section 1.1 Schedule 1 of MO43</i>	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
E2.	If fodder in pellet form is carried in bulk, is the effect of its shift included in the stability calculations? <i>See section 1.2 of Schedule 1 of MO43.</i>	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	Does the fodder information take into account degree of filling of tanks?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
E3.	Is the effect of wind included in the stability calculations? <i>See section 1.3 of Schedule 1 of MO43</i>	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	Does the wind heel information take into account all conditions of draft?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
E4.	Is the use of fuel oil, fresh water and fodder, the movement of ballast and the buildup of waste material taken into account in the stability calculations?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
E5.	Is the area under the righting lever curve not less than 3.15 metre-degrees (0.055 metre-radians) up to 30 degrees angle of heel and not less than 5.16 metres-degrees (0.09 metres-radians) up to 40 degrees angle of heel, or the angle of flooding if this angle is less than 40 degrees?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Note:	<i>The angle of flooding is that angle of heel at which openings in the hull, superstructures or deckhouses, that cannot be closed weather tight, immerse. Small openings through which progressive flooding cannot take place may be ignored in determining the angle of flooding.</i>	
E6.	Is the area under the righting lever curve between the angle of heel of 30 degrees and 40 degrees, or between 30 degrees and the angle of flooding if this angle is less than 40 degrees, not less than 1.72 metre-degrees (0.03 metre-radians)?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
E7.	Is the righting lever not less than 0.20 metre at an angle of heel equal to, or greater than 30 degrees?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
E8.	Does the maximum righting lever occur at an angle of heel not less than 25 degrees or greater?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
E9.	Is the initial metacentric height not less than 0.15 metre?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
E10.	Is the angle of heel due to wind not more than 10 degrees?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
E11.	Is the area under the righting lever curve, up to 40 degrees or the angle of flooding, whichever is less, in excess of the area under the heeling lever curve to the same limiting angle, not less than 1.03 metre-degrees (0.018 metre-radians) plus 20% of the area of the righting lever curve to the same limiting angle? <i>The heeling curve is obtained taking into account the effects of shift of livestock and fodder and the effect of wind.</i>	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
E12.	Is the stability information mentioned in Schedule 1 of MO43 available on board?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A

Section F. Livestock Services – MO43-6

F1.	Has the owner/operator submitted a risk assessment to demonstrate equivalence for any livestock services defined under section 4 of MO43?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Note:	<i>If the answer is “YES” the relevant section of sections G to K should be struck out. The risk assessment is to be assessed by the Ship Inspection Group for examination. If the answer is “NO”, all sections of the checklist are to be used.</i>	
F2.	Is arrangement of systems and equipment for the provision of livestock services sufficient to ensure adequate redundancy is provided such that a single failure of a major item of equipment will result on the loss of that service completely and/or reduction to a level where a service cannot be maintained at the level necessary for the welfare of the livestock?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A

Section G. Primary and secondary power sources – MO43-2, Part 1

G1.	Is the vessel provided with primary and secondary source of power for all livestock services requiring power?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
G2.	Is the primary source of power sufficient to supply continuous power to livestock services and services described in SOLAS II-1/40.1.1 for all that parts of a voyage during which livestock are on board in under the conditions required by SOLAS II-1/41?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Note:	<i>The primary source of power must be able to provide power to all ship and livestock services with any one generator out for maintenance. Where a vessel is fitted with shaft generators these cannot be counted for this purpose unless they are capable of being operated at all times during the voyage (i.e. can be unclutched from the shaft)</i>	
G3.	Is the secondary source of power located in a space each boundary of which is not contiguous with a boundary of any space containing the primary source of power and is It independent of any services supplied from or through the space containing the primary source of power?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
G4.	Are power supplies (primary and secondary) arranged in accordance with SOLAS II-1/45 in that cables from the power supplies do not pass through high risk areas?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
G5.	Is the secondary source of power capable of being readily started in accordance with section 1.2(2)(c) of Schedule 1 of the order?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
G6.	Is the secondary source of power capable, for a continuous period of three days, of delivering power to the services described in section 1.2(2)(d) of Schedule 2 of the order?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
G7.	Does the secondary source of power, in the event of a casualty involving the primary source of power, or part thereof, remain capable of complying with G.5 and G.6?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
G8.	Does the primary source of power, in the event of a casualty involving the secondary source of power, or part thereof, remain capable of complying with G.5 and G.6?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
G9.	Are the equipment, installation and the arrangement of the secondary source of power of a standard as to at least meet the minimum requirements of a Recognized Organization?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
G10.	Is the secondary source of power also used for livestock services alone? (If used for other services please detail in section V)	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
G11.	Is the secondary source of supply separate to the emergency generator required by SOLAS II-1/43 as required by SOLAS II-1/43.1.4?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Note:	<i>The emergency generator required by SOLAS II-1/43.1.1 may be used to power the starting arrangements for the secondary source of power provided it is accepted by the Recognized Organization</i>	
G12.	Are the changeover instruction between primary and secondary source of supply posted and illuminated by emergency lighting as required by section 1.2(2)(g) of Schedule 2?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A

Section H. Ventilation – MO43 Schedule 2, Part 2

H1.	Are enclosed spaces for the carriage of livestock provided with a mechanical ventilation system?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
H2.	Is the mechanical ventilation system mentioned in H.1 of sufficient capacity to change the air of enclosed spaces in its entire volume as follows; a. once every 3 minutes, if the minimum clear height of the space is 2.3 metres or more; b. once every 2 minutes, if the minimum clear height of the space is 1.8 metres or less; c. at a rate proportional to those specified in a. and b. above, if the minimum clear height of the space is between 1.8 and 2.3 metres?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Note:	<i>The volume of an enclosed space referred to in H.1 includes all that space contained between the ship's side plating, bulkheads, tank top or decks enclosing the space, less the volume of any tanks or trunks that are airtight within the space. No deduction is to be made in respect of space occupied by livestock, pens or other livestock fittings.</i>	
H3.	For a vessel constructed or converted for the carriage of livestock on or after 1 July 2018, is a livestock space, which is not an enclosed space, provided with a mechanical ventilation system that meets H2?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
H4.	For a vessel constructed or converted for the carriage of livestock before 1 July 2018 are the following spaces, which are not enclosed spaces, provided with a mechanical ventilation system? having an arrangement of pens with a breadth greater than 20 metres; or for which natural ventilation is restricted due to a partial enclosure.	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
H5.	Is the mechanical ventilation system mentioned in H4. capable of providing the capacity required under H2.a, b or c where the vessel was constructed on or after 27 May 2004?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
H6.	For a vessel constructed before 27 May 2004 is the mechanical ventilation system mentioned in H3 capable of providing 75% of the capacity required under H2.a, b or c where the vessel was constructed before 27 May 2004?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Note:	<i>The volume of a space which is not an enclosed space referred to in H.3 includes all that space contained between the extremities of a pen structure including passageways on the outboard sides or ends of the structure, less the volume of any tanks or trunks that are airtight within the pen structure. No deduction is to be made in respect of space occupied by livestock, pens or other livestock fittings.</i>	
H7.	Are air intakes so sited that air supplied to livestock spaces is as clean and fresh as practicable?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
H8.	Where the vessel was constructed on or after 27 May 2004 does the ventilation system provide a minimum velocity across any part of the pen of not less than 0.5m/s from a source of supply?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
H9.	Are exhaust outlets so located as to ensure fouled air will not be re-ingested by the ventilation system?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
H10.	Are exhaust outlets located clear of the accommodation?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
H11.	Is the height of coamings for air intakes and exhausts situated upon an exposed freeboard deck, raised quarter deck or exposed superstructure deck situated forward of a point located a quarter of the length of the vessel abaft the forward perpendicular not less than 4.5 metres above that deck?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
H12.	Is the height of coamings for air intakes and exhausts situated upon an exposed superstructure deck situated abaft a point located a quarter of the length of the vessel from the forward perpendicular not less than 2.3 metres above that deck?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
H13.	Are adequate spare parts for fans available on board as per section 2.5(1) of schedule 2?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A

H14.	Have tests been carried out to verify? a. adequate flow capacity; b. efficient distribution of air.	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
H15.	Is the arrangement of fans starters such that the failure of one group starter will not result in the loss of all ventilation in one areas as per section 2.5(3) of schedule 2?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
H16.	Is the arrangement of both power supplies to fans starters such that they are widely separated and do not pass through the space contained the other source of power as per section 2.5(2) of schedule 2?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A

Section I. Lighting – MO43 Schedule 2, Part 3

I1.	Are all parts of the vessel where livestock is carried, passageways between pens, beside pens and access routes to and from livestock spaces and between livestock spaces provided with lighting to give a level of illumination of not less than 20 lux?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Note:	<i>Where compliance is marginal action must be taken to improve lighting as natural degradation of paint work (reflective surfaces) and lights will result in the vessel being non-complaint in a very short time.</i>	
I2.	Is sufficient fixed or portable lighting provided in addition to that specified in I1, to give a level of not less than 110 lux in each livestock space?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Note:	<i>The details of this light are to be stipulated in the Record of Equipment and Arrangements.</i>	
I3.	Is an emergency lighting system:	
	a. Automatically activated on the failure of the main electrical installation and provided in all parts of the vessel where livestock is carried (passageways between pens and access routes between or from those parts)?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	b. Capable of giving a level of illumination of not less than 8 lux in all passageways and access routes for a continuous period of not less than 15 minutes?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
I4.	Are the lamp casings on light fittings for the emergency lighting system painted red for ease of identification?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
I5.	Are light fittings:	
	a. Waterproof	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	b. Of sufficient strength to resist damage by livestock, and	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	c. Placed beyond possible contact by livestock?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
I6.	Do lights and/or power points fitted for portable lighting in dust laden atmospheres comply with the requirements of section 4 and being:	
	a. of a type suitable for use in dust-laden atmosphere; and	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	b. controlled by switches situated on the navigating bridge or at the fodder-handling machinery control station and provided with indicator lights to show when power is supplied to the lighting system or power points.	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
I7.	If there is fixed lighting above the uppermost continuous deck can it be controlled from the bridge to limit the effect of back scatter of own lighting to enable a safe look out to be maintained in accordance with part B of the Collision regulations and in accordance with section 3.4 of Schedule 2?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A

Section J. Drainage of pens – MO43 Schedule 2, Part 4

J1.	Is a system provided on board for effectively draining fluids from each pen in which livestock is carried under all conditions of trim & heel?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Note:	<i>Drainage is not required from the upper tier of sheep pens for vessels constructed or converted before 27 May 2004. Ships constructed on or after this date must have drainage from all pens.</i>	
J2.	For a vessel constructed or converted for the carriage of livestock after 1 July 2018, The vessel must have drains at each corner of a pen or group of pens as follows:	
	a. for a vessel with a breadth of more than 20m b. at least 3 drains fitted in athwartships; and c. for every 5m that the vessel breadth exceeds 20m an additional drain d. no more than 20m apart longitudinally in each hold or livestock space e. for a drain that consists of pipes to the deck below on a vessel that carries livestock other than sheep or goats f. pipes with an internal diameter of at least 3000mm; and g. an outlet that is at least 250mm above the deck or well below	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
J3.	Are drainage pipes or channels fitted, as far as practicable, to carry the fluids drained from a pen clear of other pens?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
J4.	Are pumps or eductors for drainage tanks or wells capable of handling semi-solid matter?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
J5.	Is the installation of the pumps in accordance to maker's instructions/specifications?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
J6.	Are tanks or wells evacuated by lines other than the ship's bilge lines?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
J7.	Is there provision to prevent livestock effluent discharging to sea in restricted areas/ports?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
J8.	Are essential drainage tanks, wells and the top of drainage pipes accessible from outside livestock pens for the purpose of inspection and cleaning?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
J9.	Are drainage channels and the top of drainage pipes covered by a strainer plate if:	
	a. located inside a pen and which could, if left uncovered, could cause injury to an animal; or	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	b. located in a passageway and which could, if left uncovered, could cause injury to a person	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
J10.	Were tests of the pumping arrangement satisfactory?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
J11.	Is the vessel fitted with holding tank(s) for the purpose of complying with MARPOL Annex IV and are these tanks approved by the administration?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
J12.	Is all equipment fitted in respect of waste transfer within the livestock space and to the holding supported from the primary and secondary source of power?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
J13.	Is there adequate redundancy in waste transfer systems within the livestock space to ensure waste can be removed in the event of a failure in some part of the system?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A

Section K. Fodder and water arrangements – MO43-17 and Schedule 2, Part 5

K1.	If this vessel is covered by section 5.4(1) of schedule 2; Is the vessel designed to accommodate a three day supply of fresh water as calculated in accordance with the note below?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
K2.	If this vessel is covered by section 5.4(2) of schedule 2; Is the vessel designed to accommodate a seven day supply of fresh water as calculated in accordance with the note below: <i>Note: For the purposes of the initial approval and the capacity of the vessel to provide the necessary water reserve from tanks the days supply is to be calculated on the basis of 36 litres per m² of pen area per day for cattle and 6 litre per animal per day for sheep. If the capacity meets these requirements then any fresh water generator need not be supplied from the secondary source of power.</i>	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
K3.	If any part of the above capacity is supplied by a fresh water generator K4 applies	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
K4.	If the fresh water service is an automatic system, is the system so constructed as to be capable of: a. Minimizing, by control of the level of water, any spillage from receptacles? b. Preventing the return of water from receptacles to the fresh water tank?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
K5.	Is each part of a ship in which livestock is carried provided with a fresh water service designed to provide fresh water to livestock at all time while livestock are onboard?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
K6.	Is the arrangement of the fresh water systems such that it is not difficult or impractical for the master to comply with the obligation to ensure the water is in good condition and not contaminated?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
K7.	For the purpose of the 'reserve supply referred to in K1 is the vessel capable of supplying the necessary water from the vessels tanks?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Note:	<i>For the purposes of the initial approval and the capacity of the vessel to provide the necessary water reserve from tanks the days supply is to be calculated on the basis of 36 litres per m² of pen area per day for cattle and 6 litre per animal per day for sheep.</i>	
K8.	If the answer to K6 is "NO" , is the vessels fresh water generation system:	
	supplied by both the primary and secondary source of power?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	capable of operating despite a fire or other casualty in the space containing the primary source of power?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
K9.	Are two pumps provided that are capable of continuously supplying fresh water to livestock?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
K10.	Of the two pumps referred to in K9 is one pump:	
	a. located in a space outside the space containing the primary source of power; and	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	b. able to maintain the distribution of water if there is any interruption to the main source of power; and	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	c. capable of operating despite a fire or other casualty in the space containing the primary source of power?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Note:	<i>Where the plan approval is for an existing vessel undergoing modifications. Where such modifications do not related to the fresh water system the pump referred to in K9 may be a portable pump</i>	
K11.	Where fodder distribution systems are dependent on electrical power is the system capable of being powered from the primary and secondary source of power?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
K12.	Where fodder distribution systems are mechanical is there adequate redundancy to ensure animals can be fed in the event of a failure in some part of the system?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A

Note:	<i>Redundancy may be provided by having sufficient spares to repair any expected failure in the system. This can only be applied where is practical to repair the system in a short period (a matter of hours) without the need for outside assistance or the use of overhead cranes.</i>	
K13.	Are there at least 2 separate space designed for containing doffer which is stored in bulk on the vessel and other than hay?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
K14.	Is each pen, stall or similar fitting provided with receptacles for feeding and watering of livestock?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
K15.	Are receptacles (except where the fodder or water is provided by an automatic system) capable of containing at least 33% of the daily allowance of fodder and water for the number of animals contained in the pen, stall or fitting?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Note:	<i>Feeding receptacles are not required for a pen containing cattle, provided that: the pen adjoins a passageway and the cattle can conveniently consume hay distributed on the floor of the passageway; and urine, feces and water used in washing any pen is prevented from fouling in the passageway.</i>	
K16.	Are receptacles mentioned in K15:	
	a. suitable for the species of livestock;	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	b. readily accessible to the livestock;	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	c. capable of being serviced from outside the pen, stall or other fitting;	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	d. so installed as not to impede ventilation;	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	e. so constructed and positioned that fodder dust is not disturbed by the ventilation flow;	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	f. For adult sheep, the top of a trough used as a water or fodder receptacle should be not more than 550mm above the pen floor at the highest part of the receptacle;	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	g. so positioned (fixed troughs) that injury to livestock is prevented either in the pen or passageway?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
K17.	Is a pipe or rounded bar provided in pens where the trough is not inside the pen and portable in order to minimise fouling of the trough?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
K18.	Is the pipe or bar mentioned in K.17 at a suitable height to prevent or minimize fouling of the trough and at a horizontal distance of at least 75mm (for sheep) or 150mm (for cattle) from the edge of the trough?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
K19.	If the normal feeding and watering system is partly or wholly automated, are there sufficient crew to ensure feed and water supplies can be maintained in the event of a failure of the automated system(s) without endangering the safe operation of the vessel?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A

Section L. Fire Prevention and Extinction – MO43, Section 38-40

L1.	Are fire hydrants provided so that:	
	a. At least two jets of water from separate hydrants can be simultaneously directed to any part of a space or deck where livestock are located; and	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	b. One of those jets of water is provided by a single length of hose?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
L2.	Are fire hydrants permanently connected to the ship's fire main?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
L3.	Is each fire hydrant in an enclosed space provided with:	
	a. a fire hose with the necessary connections; and	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	b. a nozzle capable of directing water in the form of a spray and a jet?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
L4.	A fire hose, together with the necessary connections and a nozzle capable of directing water in the form of a spray and a jet must be provided:	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	a. In an enclosed space, for each hydrant; and	
	b. In any other space or on a deck, for each 50 metres length, or part thereof, of space or deck	
L5.	Are fire hoses capable of being connected to any hydrant and to any other hose other than hydrants and hoses within the engine room or accommodation spaces?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
L6.	Is each fire hose mentioned in L.3 placed, with its connections and nozzles, in a conspicuous position near the hydrant with which it is intended to be	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
L7.	Is each fire hose mentioned in L.4 placed, with its connections and nozzles, in a conspicuous position close to the entrances or stairways leading to the space or deck referred to or near the hydrant for which they are intended?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
L8.	If hay, straw or bhusa is carried or used in a space where livestock is located, is:	
	a. a portable fire extinguisher that uses water as the extinguishing medium provided as a minimum every 18 metres of that space; or	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	b. as an alternative, a fixed fire-extinguishing installation which uses water as the extinguishing medium?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Note:	<i>The fixed firefighting installation and its location are to be approved by AMSA.</i>	
L9.	Is one of the portable fire extinguishers mentioned in L8.or placed adjacent to an entrance to the space?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
L10.	Is an adequate number of portable fire extinguishers or a fixed fire-fighting installation suitable for use with electrical equipment provided in enclosed livestock spaces where electrical equipment different from lighting is fitted?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
L11.	Are hydrant, hoses, hose connections and nozzles, portable fire extinguishers and fixed fire-fighting installations of a standard equivalent to that required for the issue of the cargo ship safety equipment certificate?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
L12.	Are notices prominently displayed prohibiting smoking or the use of naked lights in spaces where hay, straw and other fodder or bedding of a flammable nature are carried?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A

Section M. Bulk fodder and dust laden atmospheres – MO43 – Section 41-42

Note: Where the vessel is not designed for the carriage of bulk fodder this section should be struck out.

M1.	Have the areas where flammable dust may be present been classified in accordance with 70079.10.2 (IEC 70079-10-2)?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
M2.	Is the lighting fitted in areas where flammable dust may be present: suitable for use in a dust-laden atmosphere as per AS 2381.1 and AS/NZS 61241.14 (IEC 61241-14); or	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
M3.	Are electric motors and associated electrical equipment permanently fitted in areas where flammable dust may be present (such as adjacent to pipe delivery outlets):	
	a. suitable for use in a dust-laden atmosphere as per AS 2381.1 and AS /NZS 61241.14 (IEC 61241-14); or	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	b. no smoking signs fitted adjacent to pipe delivery outlets?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A

Section N. Means of egress and access for persons – MO43, Section 48-49

N1.	Are accesses to livestock spaces for persons separated from livestock ramps by protective fencing?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
N2.	Is each space in which livestock is carried provided with not less than 2 means of egress widely separated and giving access to an open deck?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
N3.	If access for a person is combined with a ramp that is used for loading livestock onto the vessel, is the access designed as per section 48(4) of MO 43.	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
N4.	Are pens, stalls or similar fittings provided with a means of access for persons with a secure closing arrangement having a structural strength equivalent to the strength of that part of the pen, stall or fitting?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
N5.	If access is required between a ship's side and a pen , is a passageway provided with a clear width of not less than 750mm between the ship's rail or bulwark and the rails or receptacles of the pen stall or fitting?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Note:	<i>The clear distance referred to in N5 may be reduced to 550mm by obstructions outside the pen rail such as receptacles, pipe work etc.</i>	
Note:	<i>The clear distance referred to in N5 may be reduced to 550mm where the pen boundary is sheeted in steel or an equivalent material.</i>	
N6.	Do passageways and walkway in livestock areas:	
	a. in a ship engaged in carrying livestock from Australia before	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	b. 1 July 1983 - have a minimum height of 1.8m; or	
c. in any other vessel – have a minimum clear height of 2.0m		

Section O. Means of access for livestock – MO43, Section 52

O1.	Is a ramp or other suitable means of access provided for the loading and unloading of livestock?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Note:	<i>Ramp dimensions are to comply with section 52.2(2) of MO43. Refer to section P2 for sheep and Q3 for cattle.</i>	
O2.	Is the means of access mentioned in O1. designed to support a uniformly distributed load over the walking surface in accordance with Appendix 1 of this checklist?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
O3.	Is the means of access mentioned in O1 fitted with:	
	a. side panels free of protrusions and of sufficient strength and + height to prevent escape of livestock;	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	b. a walking surface of battens; and	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	c. A closing arrangement located as close as possible to the point of entry to the ship	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
O4.	If the means of access mentioned in O1. is intended to take persons during the movement of livestock , is it provided with a passage of not less than 550mm width that must be:	
	Fenced to a height of not less than 1 meter with an intermediate rail approximately 550mm above the walking surface; and	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	Fitted with treads at suitable stepping distance.	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
O5.	Is there no gap between the vessel and the top of the ship/shore means of access for livestock?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A

Section P. Design of pens and passageways (sheep) – MO43, Section 58

Note: Where the vessel is not designed for the carriage of sheep, goats or pigs this section should be struck out.

P1.	Does the construction of pens and of adjacent passageways comply with the provisions of Appendix 2 to this checklist?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
P2.	Does the deck within pens, passageways and ramps between decks provide a satisfactory non-slip foothold of a type that will not cause discomfort or injury to livestock?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
P3.	Is the closing arrangement at the point of entry (see O3.) capable of being quickly closed to control the movement of sheep from shore to ship or vice-versa?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
P4.	Are swinging or sliding gates or portable rails provided within the ship to control the movement of sheep to and from pens?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A

Section P1. Strength of pen fittings (sheep)

P1.1.	Are rail and stanchions forming a longitudinal (fore and aft) boundary of pens designed to have strength complying with Appendix 3 of this checklist?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
P1.2.	Are rail and stanchions forming a boundary of pens other than a longitudinal (fore and aft) boundary of substantially the same method of construction and of substantially the same scantling as required for longitudinal (fore and aft) boundaries?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
P1.3.	Are floor and floor supports of pens designed in accordance with Appendix 3 to this checklist? (<i>see note</i>)	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
P1.4.	Does a floor support of a pen that also forms a boundary of a lower pen comply with the requirements of P1.1, P1.2 and P1.3?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A

Note:	<i>In respect of a livestock pen structure above the uppermost continuous deck, the requirements of P1.1, P1.2 and P1.3 may be dispensed with if calculations are approved by AMSA showing that the rails and stanchions of the pens and the pen floor and floor supports of those pens in that structure are capable of withstanding appropriate design forces using the criteria specified by the Recognized Organization responsible for the design of the structure. (refer to section 59(7) 21.4 of MO43).</i>
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Section P2. Arrangement of pens (sheep) – MO43, Sections 53, 55-57, 60-61

P.2.1	If sheep are to be moved between decks, do ramps provide:	
	a. Have a clear width of 550 mm;	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	b. Have sides that are free from protrusions and extend to a height of not less than 900mm perpendicular to the ramp floor;	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	c. Fitted with foot battens in accordance with Table 3 of the order; and	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	d. Have a gradient not exceeding 1 in 2.	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
P2.2.	Is the means of closing livestock access to a pen provided?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
P2.3.	Is the means of closing device in P2.2 capable of: a. maintaining continuity of strength and the alignment of the adjoining boundary; and b. being secured against accidental lifting or removal?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
P2.4	If pens are on an exposed deck, are the uppermost pens fitted with a roof which: a. Has a height that provide at least the minimum clear height specified in Appendix 2 of this checklist for each pen: b. Is waterproof c. Extend not less than 450mm beyond the deck area occupied by the pens?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Note:	<i>Pens at the forward end of a livestock structure on or above the uppermost continuous deck and the feeding and watering arrangements provided for those pens must be effectively screened from sea spray. Suitable arrangements must be made to prevent the ingress of seawater to any part of the pens or stalls in any sea condition.</i>	
P2.5	Is a passageway provided on at least one side of each pen?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
P2.6	If a lower tiered pen on a deck has a water or food receptacle adjacent to a passageway, has the upper tiered pen fitted to the side adjoining the passageway a vertical plate or board of a height of not less than 225 mm that abuts the floor of the pen?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Note:	<i>This provision is intended to prevent the fouling of food and water of livestock in lower tiers.</i>	
P2.7	If pens are constructed in more than one tier on a deck, are walkways provided so that no pen floor is at a height of more than 1.5 metres above the deck or a walkway?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
P2.8	Are the walkways mentioned in P2.7 so constructed as to not interfere with the safe use of any passageway beneath a walkway?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Note:	<i>Where the protection required by P2.5 results in spaces being enclosed or partially enclosed they then need to be provided with a mechanical ventilation system in accordance with part 2 of schedule 2.</i>	

Section Q. Design of pens and passageways (cattle) – MO43, Section 62

Q1.	If cattle are carried in pens, does the construction of pens and of adjacent passageways comply with Appendix 4 to this checklist?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Q2.	Is there a maximum clear space of 300 mm between the rails of a pen or between a rail and the overhead structure of the ship (except that a rail need not to be placed at a height of more than 1.4 metres)?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Note:	<i>If a water or food receptacle is fitted to the outside of a pen or if fodder is distributed on the floor outside a pen in accordance section 62(4) of the order a clear vertical space of not more than 500mm, for the purpose of watering or feeding livestock in the pen, may be provided between adjacent rails on the side of the pen adjoining the passageway.</i>	
Q3.	Does the deck within pens, passageways and ramps between decks provide a satisfactory non-slip foothold for the cattle?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Q4.	Is the closing arrangement at the point of entry (see Q3.) a sliding gate that is capable of being quickly closed to control the movement of cattle from shore to ship or vice versa.	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Q5.	Are swinging, sliding gates or portable rails provided within the ship to control the movement of cattle to and from pens?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A

Section Q1. Design of stall when used for cattle – MO43, Section 66-67

Q1.1.	If cattle are carried in stalls, does the design and dimension of stalls comply with the provisions of Appendix 5 to this checklist?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Q1.2.	If cattle are carried in stalls, are rails and stanchions constructed of approved as per section 66 & 67 of MO43?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A

Section Q2. Strength of pen fittings (cattle) – MO43, Section 24

Q2.1	If cattle are carried in pens, are rail and stanchions forming a longitudinal (fore and aft) boundary of a cattle pen designed in accordance with Appendix 6 to this checklist? <i>(see note)</i>	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Q2.2	Are rail and stanchions forming a boundary of a pen other than a longitudinal (fore and aft) boundary of substantially the same method of construction and of substantially the same scantling as required for longitudinal (fore and aft) boundaries?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Q2.3	Are floor and floor supports of a pen designed in accordance with Appendix 6 to this checklist?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Q2.4	Does a floor support of a pen that also forms a boundary of a lower pen comply with the requirements of Q2.1, Q2.2 and Q2.3?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Note:	<i>In respect of a livestock pen structure above the uppermost continuous deck, the requirements of Q2.1, Q2.2 and Q2.3 may be dispensed with if calculations are approved by AMSA showing that the rails and stanchions of the pens and the pen floor and floor supports of those pens in that structure are capable of withstanding appropriate design forces using the criteria specified by the Recognized Organization responsible for the design of the structure. (refer to provision 63 of MO43)</i>	

Section Q3. Arrangement of pens and stalls (cattle) – MO43, Sections 53-57, 62, 64

Q3.1	If cattle are to be moved between decks , do ramps provide:	
	a. have a clear width of 750mm;	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	b. have sides that are free from protrusions and extend to a height of not less than 1400mm perpendicular to the ramp floor;	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	c. fitted with foot battens in accordance with section 28.3.(c) of the order;	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	d. have a gradient not exceeding 1 in 2; and	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A

	e. have a personnel ramp adjacent to each cattle ramp which complies with section 25.3.(e) of the order.	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Q3.2	Is the means of closing cattle access to a pen or stall a gate or portable rail capable of:	
	a. maintaining continuity of strength and the alignment of the adjoining boundary; and	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	b. being secured against accidental lifting or removal?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Q3.3	If pens or stalls are on an exposed deck , are the uppermost pens fitted with a roof which:	
	a. Has a height that provides at least the minimum clear height specified in Appendix 4 (pens) or 5 (stalls) of this checklist for each pen;	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	b. Is waterproof	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	c. Extend not less than 450 mm beyond the deck area occupied by the pens or stalls?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Q3.4	Are pens and stalls at the forward end of a livestock structure on or above the uppermost continuous deck and the feeding and watering arrangements effectively screened from sea spray?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Q3.5	Has a pen or stall floor a surface providing a satisfactory non-slip foothold for the cattle?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Q3.6	If cattle are carried in pens is a passageway and a means of access to pens provided?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Q3.7	If cattle are carried in stalls , is access provided to the rear of each stall?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Note:	<i>Where the protection required by Q3.4 results in spaces being enclosed or partially enclosed they then need to be provided with a mechanical ventilation system in accordance with part 2 of schedule.</i>	

Section R. Design of pens and passageways for horses – MO43, Section 65

R.1	If horses are carried in pens, is the construction of pens in accordance with section Q?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
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Section R1. Design of stalls (horses) – MO43, Section 66

R1.1	If horses are carried in stalls, does the construction of stalls and of adjacent passageways comply with Appendix 7 to this checklist?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
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Section R2. Strength of pen fittings (horses) – MO43, Section 27.2.1

R2.1	If horses are carried in pens, is the strength of pen fittings in accordance with section Q2 (section 63 of MO43)?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
R2.2	Is the closing arrangement at the point of entry a sliding gate that is capable of being quickly closed to control the movement of cattle from shore to ship or vice-versa (section 52(3) of MO43)?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A

Section R3. Strength of stalls (horses) – MO43, Section 67

R3.1	If horses are carried in stalls, are rails and stanchions of a stall constructed of approved materials giving a strength not less than that of heavy gauge tubular steel pipe of 50 mm nominal bore?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Note:	<i>Pipe complying with Australian Standard 1074 or an equivalent standard is acceptable for the purposes of this provision.</i>	

Section R4. Arrangement of pens and stalls (horses) – MO43, Section 53, 55, 68

R4.1	Is a passageway provided at the front of each horse stall?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
R4.2	Is each stall or pen so arranged that access is provided to the rear of each horse?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
R4.3	Is the means of closing horses access to a pen or stall a gate or portable rail capable of:	
	a. maintaining continuity of strength and the alignment of the adjoining boundary; and	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	b. being secured against accidental lifting or removal?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
R4.4	Is the floor of a stall or pen of adequate strength and so constructed as to facilitate drainage and cleaning; and	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	a. If the floor is constructed of wood:	
	i. in case of a stall, is the floor constructed of boards close fitting at the floor of the stall and spaced between 20 and 30 mm apart at the rear, effectively secured against lifting?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	ii. are foot battens of cross section not less than (50mm x 50mm) with edges well rounded provided at the front and rear of the stall or pen?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	b. If the floor mentioned in R.4.4 is constructed of concrete:	
	i. is the concrete well finished off to provide a non-slip surface; and	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	ii. are suitable standings provided?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	c. If the floor mentioned in R.4.4 is constructed of metal mesh:	
	i. is the metal mesh made of rods having a diameter between 8mm and 10 mm placed to provide apertures of not more than 50mm?; and	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	ii. are suitable standings provided?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Note:	<i>Standings are floor cushioning materials such as rubber strips or fibre matting</i>	
R4.5	If horses are to be moved between decks, do ramps provide:	
	a. a clear width of 750mm;	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	b. sides that are free from protrusions and extend to a height of not less than 2m perpendicular to the ramp floor;	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	c. fitted with foot battens in accordance with Table 3 of the order;	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	d. a gradient not exceeding 1 in 2	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
R4.6	If stalls are on an exposed deck, are:	
	a. outermost stalls fitted with protective sheathing on its outboard side; and	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	b. stalls the forward end of which would otherwise be exposed, fitted with protective sheathing on its forward end?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
R4.7	Is the sheathing mentioned in R4.6 capable of effectively screening the stall and its feeding and watering arrangements from sea spray without excluding natural ventilation?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Note:	<i>Sheathing may be portable if it is capable of being fitted from outside a stall.</i>	
R4.8	If stalls are on an exposed deck, are the uppermost stalls fitted with a roof which:	
	a. has a height that provides at least the minimum clear height specified in Appendix 7 of this checklist each stall;	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	b. Is waterproof; and	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A

	c. Extend not less than 450mm beyond any part of the stall or referred to in section 68(4) of the order (see R4.6)	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
R4.9	If the back of a stall forms a boundary of a passageway or another stall, is a kick rail or board fitted to that end of the stall so that the clear space between rails or rail and board less than 150mm?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
R4.10	As each horse must be fitted with a collar is each stall fitted with suitable fastenings for cross ties to enable a horse to be restrained from biting, rearing or attempting to jump from the stall?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
R4.11	If chain cross ties are provided for R4.10 is a suitable set of bolt cutters carried and kept readily available?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A

Section S. Provisions of hospital pens and stalls – MO43, Section 65, 73-75

S1.	Are hospital pens provided on board?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
S2.	Are hospital pens constructed to the standard required for the species of livestock for which they are provided?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
S3.	Are hospital pens clearly identified as hospital pens?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
S4.	For sheep, goats and pigs – are hospital pens provided corresponding to 0.25% of the pen area on each deck.	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
S5.	For cattle and horses are:	
	a. hospital pens at least 1% of the pen area available for cattle?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	b. for decks with an area < 500m ² is there a pen provided on the adjacent deck above or below?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
	c. is there a pen provided on each deck?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
S6.	Is any side of any hospital pen at least 1.5m?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
Note:	<i>Animals that are carried individually penned or stalled may be disregarded when calculating the number or area of hospital pens.</i>	

Section T. Other relevant requirements

T1.	Are general alarms fitted in the cargo spaces?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
T2.	Are remote indicators provided to indicate closing of water-tight doors, such as stern doors, side doors and water-tight bulkhead doors?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
T3.	Is the disposal arrangement for dead livestock incorporated in ship's garbage management plan?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
T4.	Is the noise level in all parts of the ship acceptable when all ventilation fans are running?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
T5.	Are electric cables in the livestock spaces properly bundled, secured, supported and protected?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
T6.	Has a comminuter or grinder been provide for the disposal of dead livestock?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
T7.	Has the vessel been provided with a humane killing device?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A
T8.	Are details of the humane killing device reflected in the Record of Equipment?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A

Section V Comments

Section V Comments

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APPENDIX 1

Design of means of access for livestock

1. Load

<u>Species</u>	<u>Load (newtons per square metre)</u>
Cattle and horses	4700
Sheep, goats pigs	2400

2. Maximum permissible tensile steel

<u>Material</u>	<u>Maximum permissible tensile strength</u>
Steel	0.5 x minimum yield stress
Aluminum	0.5 x 0.2% proof stress
Wood	"Permissible working stress" specified by Australian Standard 1720, SAA Timber Structures Code
Others	As specified by AMSA

APPENDIX 2

Sheep, goats and pigs - design of pens and passageways

Detail of design	Dimension
Maximum breath	4.5 metres
Minimum breath	2.0 metres
Maximum length	Not more than twice the stance between the rails aligned fore and aft
Minimum length	Not less than the distance between the rails aligned fore and aft
Maximum clear floor area ¹ within pen	40.5 square metres
Minimum clear height within pen	1.1 metres
Minimum height of top edge of upper most rail above pen floor except that the height of that rail may be decreased if the clear height above that rail does not exceed 300mm	900 mm
Maximum clear vertical distance between rails	300 mm
Maximum clear vertical distance below bottom edge of lowest rail of pen installed at deck level	200 mm
Maximum clear vertical distance below bottom edge of lowest rail of pen not installed at deck level except where a vertical plate or board is fitted in accordance with section 60(2)	50 mm
Minimum width of adjacent passageways clear of receptacles and any other obstruction	550 mm

¹ Clear floor area within pen is the area of the pen exclusive of any receptacle or other object or structure occupying any part of the area of the pen but including a bar fitted in accordance with subsection 5.5(4) of schedule 2. A pipe or rounded bar provided in a pen to minimise fouling of the trough (see item K17. of the checklist) is not regarded as forming an obstruction.

For an open structure above the weather deck, if pen rails or gates form the outer perimeter containment:

- the maximum clear vertical spacing between the bottom edge of the lowest rail and the top of a deck boundary angle or fashion plate is to be 100mm;
- the maximum clear vertical spacing between rails is to be 200mm except that the maximum clear vertical space between the uppermost rail and the next lower rail is to be 250mm;
- the railing must continue to a height that is not more than 200 mm below the overhead structure of the vessel.

APPENDIX 3

Sheep, goats and pigs - strength of pen fittings

1. Rails and stanchions

Rails and stanchions forming a longitudinal (fore and aft) boundary of a sheep pen are to be capable of withstanding a load per metre length determined by the application of the following formula, uniformly distributed up to the height of the top of the uppermost rail the centre of which is at a height of not more than 900mm above the pen floor¹:

$$F = 1668 B (0.574 + 0.0252 Z)$$

where:

F = uniformly distributed load, N/m

B = maximum breadth of pen, m

Z = vertical distance from a point 0.5 metre above the pen floor to the ship's water line corresponding to the anticipated highest load, in metres.

2. Floor and floor supports

Floor and floor supports of a sheep pen, are to be capable of withstanding 100% of the floor load determined by the application of the following formula uniformly distributed over any two-thirds of the area of the pen floor:

$$F = 2500 [1 + 1/d (0.094 - 0.00035 L) y + (7.4 - 0.016 L)]$$

where:

F = floor load, N/m²

d = draught of the ship corresponding to the anticipated lightest loaded waterline, m;

y = longitudinal distance from the midpoint of the pen to amidships, m;

L = length between the perpendiculars of the ship, m.

3. Maximum permissible stress

The maximum stresses permissible for materials used in the construction of the boundaries and floors of a pen is not to exceed the values specified in the following table²:

Material	Maximum permissible tensile stress	Maximum permissible shear stress
Steel	0.75 x minimum yield strength	50% of maximum permissible tensile stress
Aluminium	0.75 x 0.2% proof stress	50% of maximum permissible tensile stress

¹ A rail the centre of which is at a height of more than 900mm above the pen floor is not considered to be load bearing.

² The maximum permissible stresses given in the table apply when loads are determined in accordance with section 1 and 2 of this appendix or in accordance with the Recognized Organization criteria (see note (1) to items P1.1 and P1.3 of the checklist).

APPENDIX 4

Cattle - Design of pens and passageways

Detail of design	Dimension
Maximum breadth of pen	4.5 metres
Minimum breadth of pen	2.1 metres
Minimum Length of pen	2.3 metres
Maximum clear floor area ¹ within pen	21 square metres
Maximum height of top edge of lowest rail above pen floor between pens	600 mm
Maximum space between rails and between top edge of lowest rails and pen floor (except between pens as above) and between the upper rail and overhead structure (except that the upper rail need not be higher than 1.4m)	300 mm
Maximum clear space between rails in the way of the passageway for the purpose of feeding and water livestock within a pen (see section 62(4) of MO 43)	500 mm
Minimum clear height within pen if a mechanical ventilation system is provided	1.8 metres
Minimum clear height within pen in any other case	2.3 metres
Minimum width of adjacent passageways measured clear between rails when pens are on both sides of the passage way and cattle are loaded and discharged through the pens	1.0 metres
Minimum width of adjacent passageways, measured clear of any fixed structure, fittings, receptacles or obstructions when pens are on both sides of the passage way and cattle are loaded and discharged through the pens.	0.7 metres
Minimum width of adjacent passageways, measured clear of any fixed structure when pens are on both sides of the passage way and cattle are loaded and discharged through the passageways.	1.0 metre

¹ Clear floor area within pen is the area of the pen exclusive of any receptacle or other object or structure occupying any part of the area of the pen. A pipe or rounded bar provided in a pen to minimise fouling of the trough (see item K15. of the checklist) is not regarded as forming an obstruction.

For a vessel constructed or converted for the carriage of livestock before 1 July 2018, the vessel is not required to comply until 1 July 2023, but must have railings with a minimum height of 1.4m from the floor to the centre of the top rail.

APPENDIX 5

Cattle - design of stalls

Detail of design	Dimension
Maximum clear length within stall	2.5 metres
Minimum clear length within stall	2.3 metres
Minimum clear passage between 2 rows of stalls and bounded by the front rails	1.7 metres
Minimum clear passage between 2 rows of stalls and bounded by front and back rails	1.2 metres
Minimum clear passage in any other case	1.0 metres
Minimum clear breadth within stall if the stall is aligned athwartships	0.7 metres
Minimum clear breadth within stall if the stall is aligned longitudinally	0.9 metres
Height of uppermost front, back and side rail from floor to top edge	1.15 metres
Height of lowest front, back and side rail from floor to top edge	0.75 metres
Minimum clear height within stall	2.19 metres

APPENDIX 6

Cattle - strength of pen fittings

1. Rails and stanchions

Rails and stanchions forming a longitudinal boundary of a cattle pen are to be capable of withstanding a load determined by the application of the following formula, uniformly distributed up to the height of the top of the uppermost rail the centre of which is at a height of not more than 1.4 metres above the pen floor¹:

$$F = 3336 B (0.574 + 0.0252 Z)$$

where:

F = uniformly distributed load, N/m

B = maximum breadth of pen, m

Z = vertical distance from a point 0.75 metre above the pen floor to the ship's water line corresponding to the anticipated highest load, m.

2. Floor and floor supports

Floor and floor supports of a sheep pen are to be capable of withstanding 100% of the floor load determined by the application of the following formula, uniformly distributed over any two-thirds of the area of the pen floor:

$$F = 5000 [1 + 1/d (0.094 - 0.00035 L) y + (7.4 - 0.016 L)]$$

where:

F = floor load, N/m²

d = draught of the ship corresponding to the anticipated lightest loaded waterline, m;

y = longitudinal distance from the midpoint of the pen to amidships, m;

L = length between the perpendiculars of the ship, m.

3. Maximum permissible stress

The maximum stresses permissible for materials used in the construction of the boundaries and floors of a pen is not to exceed the values specified in the following table²:

Material	Maximum permissible tensile stress	Maximum permissible shear stress
Steel	0.75x minimum yield strength	50% of maximum permissible tensile stress
Aluminium	0.75x0.2% proof stress	50% of maximum permissible tensile stress

¹ A rail the centre of which is at a height of more than 1.4 metres above the pen floor is not considered to be load bearing.

² The maximum permissible stresses given in the table apply when loads are determined in accordance with section 1 and 2 of this appendix or in accordance with classification societies criteria (see note (1) to items Q2.1 and Q2.3 of the checklist).

APPENDIX 7

Horses - design of stalls

Detail of design	Dimension
Maximum clear length within stall	Horses: 2.5 metres Mules or donkeys: 2.3 metres
Minimum clear length within stall	2.3 metres
Minimum clear passage between 2 rows of stalls and bounded by the front rails	Horses: 1.7 metres Mules or donkeys: 1.5 metres
Minimum clear passage between 2 rows of stalls and bounded by front and back rails	1.2 metres
Minimum clear passage in any other case	1.0 metres
Minimum clear breadth within stall if the stall is aligned athwartships	0.7 metres
Minimum clear breadth within stall if the stall is aligned longitudinally	0.9 metres
Height of uppermost front, back and side rail from floor to top edge	1.15 metres
Height of lowest front, back and side rail from floor to top edge	0.75 metres
Minimum clear height within stall	2.19 metres