



**GUIDELINES FOR THE CLASSIFICATION AND
CONSTRUCTION**

PART 7. CLASS NOTATIONS

VOLUME 4
GUIDELINES FOR LIVESTOCK CARRIERS
2015 EDITION

BIRO KLASIFIKASI INDONESIA



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PART 7. CLASS NOTATIONS

VOLUME 4

GUIDELINES FOR LIVESTOCK CARRIERS

2015 EDITION

Biro Klasifikasi Indonesia
Jl. Yos Sudarso No. 38-40, Tanjung Priok
Jakarta 14320
www.bki.co.id
rules@bki.co.id

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Foreword

The “Guidelines for Livestock Carriers, Part 7, Volume 4, 2015” has been developed for seagoing steel ships to meet the specific requirements for the class notation “**LIVESTOCK CARRIER**”. This Guidelines provides additional requirements that shall be used in association with specific Rules and Guidelines issued by BKI for the classification of ship that carrying livestocks. This Guidelines divided into four sections as follows:

- Section 1. General
- Section 2. Hull and Stability
- Section 3. Systems Serving Livestock Spaces
- Section 4. Fire-fighting Systems in Livestock Spaces

Any queries or comments concerning this Guidelines are welcomed through communication (either phone call or email) with BKI Headquarters. Users are advised to check periodically with BKI to ensure that this version of this Guidelines is latest publication.

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Section 1

General

A. Application

1. Ships complying with the requirements of this Guidelines are eligible for the assignment of the service notation **LIVESTOCK CARRIER**, as defined in BKI Rules for Classification and Surveys (Part 1, Vol I), Sec. 2.C. Table 2.4.

2. Ships dealt with in this Guidelines are to comply with requirements stipulated in BKI Rules for Classification and Surveys (Part 1 Vol.I), Rules for Hull (Part I, Vol.II), Rules for Machinery Installations (Part 1, Vol.III), Rules for Electrical Installations (Part 1, Vol.IV), Rules for Material (Part 1, Vol.V), Rules for Welding (Part 1, Vol.VI), and Rules for Automation (Part 1, Vol.VII), as applicable and with the requirements of this Guidelines which are specific to livestock carriers.

B. Summary of references

The requirements as described in Table 1.1 are applied to the ships with service notation **LIVESTOCK CARRIER**.

Table 1.1 Summary of references

Item	Reference
– Ship arrangement	: Section 2 BKI Rules for Hull (Part 1, Vol II)
– Hull	: Section 2 BKI Rules for Hull (Part 1, Vol II)
– Stability	: Section 2 Guidelines on Intact Stability (Part 6, Vol 3) International code on Intact Stability, 2008 (IS Code 2008) Guidelines for Preparation of Damage Stability Calculation and Damage Control Documentation on Board (Part 6, Vol 1) International Convention for the Safety of Life at Sea, 1974 (SOLAS 74)
– Machinery and systems serving livestock spaces	: Section 3 BKI Rules for Machinery Installations (Part 1, Vol III)
– Electrical installations	: BKI Rules for Electrical Installations (Part 1, Vol IV)
– Automation	: BKI Rules for Automation (Part 1, Vol VII)
– Fire protection, detection and extinction	: Section 4 BKI Rules for Machinery Installations (Part 1, Vol III), Sec. 12

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Section 2

Hull and Stability

A. General Arrangement Design

1. Livestock Arrangement

1.1 The livestock are to be kept in pens. The dimensions of these pens are to be suitable for the livestock carried. In general, the breadth and the length of the pen may not be greater than 4,5 m and 9 m, respectively.

The livestock may not be carried on hatch covers unless the latter are effectively protected.

2. Arrangement of Spaces Dedicated to The Carriage of Livestock

2.1 General

The requirements of this item apply to the arrangement of the spaces dedicated to the carriage of livestock. When deemed necessary by the BKI, such spaces may need to be adapted or complemented depending on the species of animals which are to be carried.

2.2 Protection of livestock

Arrangements for protecting the livestock from injury, avoidable suffering and exposure to weather, sea or hot parts are to be provided.

2.3 Livestock arrangement

Livestock may not be carried, or loaded for carriage, in any part of a ship where the livestock, livestock fittings, livestock equipment or carrying arrangements may:

- obstruct access to any accommodation space or working space necessary for the safe running of the ship, or the means of egress from any hold or underdeck space
- interfere with life-saving or fire-fighting appliances
- interfere with the tank sounding equipment or bilge pumping
- interfere with the operation of closing appliances
- interfere with the operation of freeing ports
- interfere with the lighting or ventilation of other parts of the ships
- interfere with the proper navigation of the ship.

3. Means of Escape and Access

3.1 General

In each space in which livestock is carried, not less than two means of escape for persons are to be fitted, widely separated and giving access to an open deck.

Access to livestock space for persons is to be safe. Where it is combined with a ramp used for moving livestock between decks, it is to be separated from the livestock ramp by protective fencing.

3.2 Closing arrangement

Pens, stalls and similar fittings are to be provided with a means of access for persons with secure closing arrangement whose structural strength is to be considered by the BKI on a case-by-case basis.

3.3 Passageway width

If access between a ship side and a pen, stall or similar fitting is required for purposes of safe and proper operation of ship, a passageway not less than 550 mm wide is to be provided between the ship's rail or bulwark and the rails or receptacles of the pen, stall or fitting.

B. Stability

1. Intact Stability

1.1 General

The stability of the ship for the loading conditions reported in the trim and stability booklet is to be in compliance with the requirements of Guidelines on Intact Stability (Part 6, Vol 3).

C. Hull Girder Strength

1. Application

1.1 In general, the decks and platform decks above the strength deck used for the carriage of livestock may not be taken into account for the calculation of the section modulus.

D. Hull scantlings

1. Scantlings of Plating, Ordinary Stiffeners and Primary Supporting Members

1.1 Movable or collapsible structural elements above the strength deck

In general, the movable or collapsible structural elements above the strength deck used for the stocking and the distribution of livestock on decks or platform decks are not a part of ship classification.

Nevertheless, where deemed necessary by the shipyard they may be designed and constructed with according to the criteria in BKI Rules for Hull (Part 1, Vol II), Sect. 1- 22, as applicable. In this case, the scantlings of the barriers surrounding each pen are to take into account the loads applied by the livestock as a result of roll and pitch of the ship.

Section 3

Systems Serving Livestock Spaces

A. General

1. Application

The provisions of this Section cover the systems installed on ships having the service notation **LIVESTOCK CARRIER** and intended for:

- the supply of food, water and fresh air to the livestock
- the cleaning of the livestock spaces
- the draining of the sewage effluents produced by the livestock

2. Documents to be Submitted

The documents listed as follows are to be submitted for approval¹⁾.

- Diagram of the ventilation system, with indication of the gross volume of the enclosed spaces
- Diagram of storage and distribution systems for fodder and water
- Diagram of the water cleaning system
- Diagram of the drainage system

B. Design of the Systems

1. General

The piping systems covered by this Section are to be designed, constructed and tested in accordance with the applicable provisions of BKI Rules for Machinery Installations (Part 1, Vol. III), Sec. 11.

2. Ventilation Systems

2.1 General

Mechanical ventilation is to be provided for the following spaces containing livestock:

- Enclosed spaces
- Partially closed spaces arranged with pens on more than one deck level and having a breadth greater than 20 m.

2.2 Capacity of the mechanical ventilation

The capacity of the mechanical ventilation is not to be less than:

- 20 air changes per hour of each enclosed space
- 15 air changes per hour of each partially closed space, based on the gross volume of the space, deduced, if possible, from the volume of any tank or trunk within that space.

¹⁾ Diagrams are also to include, where applicable:

- the (local and remote) control and monitoring systems and automation systems
- the instructions for the operation and maintenance of the piping system concerned (for information).

Where the clear height of the space is less than 2, 30 m, the BKI may require higher air change rates and not to be less than:

- 30 changes per hour for enclosed spaces
- 22, 5 changes per hour for partially closed spaces.

2.3 Fans

- a) Ventilation circuits are to be supplied by at least two independent fans of such a capacity as to maintain normal ventilation of all the spaces with one fan out of action.
- b) Fans driven by electric motors are to be considered as essential auxiliaries. Their electrical supply is to comply with the provisions of BKI Rules for Electrical Installations (Part 1, Vol. IV).

3. Fodder and Fresh Water Systems

3.1 General

- a) Spaces intended for livestock are to be provided with receptacles for feeding and watering the animals concerned.
- b) The capacity of the receptacles is not to be less than 33% of the daily consumption of the animals concerned, except when the feed system is automatic.

3.2 Fresh water system

- a) The fresh water system serving the livestock spaces is to be totally independent from the fresh water system serving the spaces intended for the crew.
- b) All livestock spaces are to be provided with fresh water service.
- c) The fresh water system is to include at least:
 - One main supply pump, of a capacity sufficient to continuously supply fresh water to the livestock
 - One standby pump of at least the same capacity.

When the water supply system is not automatic, the standby pump may be replaced by a portable pump ready to be connected to at least one fresh water tank.

- d) When the water supply is automatic, water receptacles are to be fitted with:
 - Means of automatic water level control
 - Devices to avoid the return of water from the receptacle to the fresh water tank.

4. Washing System

A water washing system is to be provided with appropriate connections to wash the livestock spaces.

5 Drainage System

5.1 General

- a) Each space intended for the livestock is to be fitted with a pipe or gutter of sufficient size to drain the sewage and the washing effluents.
- b) The drainage system serving the livestock spaces is to be independent from any piping system serving the other spaces of the ship, and in particular from the bilge system.

5.2 Materials

The pipes and other components of the draining system are to be made of a material resistant to the corrosion due to the effluents.

5.3 Draining pipes and discharges

- a) Discharges from livestock spaces are to comply with the provisions of BKI Rules for Machinery Installations (Part 1, Vol. III), Sec. 11.
- b) Where necessary, drainage gutters and upper parts of the draining pipes are to be covered by a strainer plate.
- c) Draining pipes from livestock spaces are to discharge into a holding tank, wells or overboard.

For the overboard discharge is subject to the provisions of MARPOL Annex IV - Regulations for the Prevention of Pollution by Sewage. See also BKI Guidance for the Environmental Service Systems for Ships, Offshore Units, Floating Installation and Liftboats (Part 7, Vol. F).

- d) Means are to be provided to stop the overboard discharge when the ship is in port.

5.4 Drainage tanks

- a) Drainage tanks are to be fitted with means to indicate visually the amount of their content.
- b) Drainage tanks and wells are to be accessible from out-side livestock pens for inspection and cleaning.

5.5 Pumps and ejectors

Pumps and ejectors serving the drainage tanks or wells are to be capable of conveying semi-solid matter.

6. Lighting System

6.1 Permanently fixed adequate lighting is to be provided to give a sufficient level of illumination in passage ways between pens and access routes between or from those parts.

6.2 An emergency permanently fixed lighting system is to be provided in case of failure of the main electrical system required in 6.1. This lighting system is to comply with the requirements in BKI Rules for Electrical Installation (Part 1, Vol. IV) for emergency lighting .

6.3 In addition to those required in 6.1, fixed or portable lightings are to be provided to give a sufficient level of illumination so that livestock can be inspected in each pen.

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Section 4

Fire-Fighting Systems in Livestock Spaces

A. General

1. Application

This Section provides, for ships having the service notation **LIVESTOCK CARRIER**, specific requirements for firefighting in the livestock spaces.

Such requirements supplement those given in BKI Rules for Machinery Installations (Part 1, Vol III), Sec. 12.

2. Documents to be submitted

The documents listed as follows are to be submitted for approval.

- Drawing showing the location of the fire-fighting appliances fitted in the livestock spaces
- Specification of the fire-fighting appliances

B. Fire-Fighting Appliances

1. Fire Hoses

1.1 The number and position of the hydrants are to be such that at least two jets of water not emanating from the same hydrant may reach any part of the spaces intended for the livestock. At least one of these jets is to be from a single length of hose.

1.2 Fire hoses are to be provided for:

- each hydrant located in an enclosed space, and
- for each 50 m length, or part thereof, of open deck spaces.

1.3 Fire hoses are to be located in conspicuous locations, near the hydrants and close to the entrances or access to the spaces.

2. Additional Fire-Fighting Means

2.1 Livestock spaces containing hay or straw

If hay or straw is carried or used in a livestock space, one of the following fire-fighting means is to be provided:

- a fixed water fire-fighting system, or
- portable water extinguishers spaced no more than 18 m apart, one of these extinguishers being positioned at the entrance of the space concerned.

2.2 Livestock spaces containing electrical equipment other than lighting systems

If electrical equipment other than that referred to in Section 3, B.6 is located in an enclosed livestock space, suitable fire-fighting means are to be provided in this respect.

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