

Maritime Rules

Part 47: Load Lines

MNZ Consolidation

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Part objective

Part 47 is divided into three sections. Section 1 applies to commercial ships of more than 24 metres in length, other than fishing ships, and barges of 24 metres in length or more which operate outside the coastal limit. Section 2 applies to smaller ships which carry cargo and section 3 applies to barges of 24 metres in length or more which do not go beyond the coastal limit.

Each section prescribes requirements for assigning and marking load lines and the issue of a load line certificate in respect of the ship or barge. The assigned and marked load lines indicate the draught to which the ship or barge may be safely loaded having regard to its design, construction and area of operation. The load line certificate issued indicates the nature of the load lines and minimum freeboards assigned to the ship or barge, and records the conditions of assignment. Periodic surveys are required to verify the marked load line and maintenance of the ship or barge construction detail which has been taken into consideration in assigning the load lines.

The authority for making Part 47 is found in sections 34, 36(l) and 36(q) of the Maritime Transport Act 1994.

Maritime rules are subject to the Regulations (Disallowance) Act 1989. Under that Act, the rules are required to be tabled in the House of Representatives. The House of Representatives may, by resolution, disallow any rules. The Regulations Review Committee is the select committee responsible for considering rules under this Act.

Disclaimer:

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History of Part 47

Part 47 first came into force on 1 February 1998 and now incorporates the following amendments:

Amendment	Effective date
Amendment 1	27 May 2004
Amendment 2	1 June 2007
Amendment 3	30 July 2009
Amendment 4	1 April 2011
Amendment 5	1 April 2014
Amendment 6	1 July 2014
Amendment 7	1 January 2015
Amendment 8	1 April 2015
Amendment 9	1 April 2015
Amendment 10	1 November 2016
Amendment 11	13 December 2019

Summary of amendments

Amendment 1 Maritime Amendments Parts 20-90	PO, 47.2, 47.5(1), 47.8, 47.19(3)(c), 47.48(j), 47.55, 47.61(2), 47.62, 47.71, Appendix 4
Amendment 2 Part 47 Amendment Rules 2007	PO, 47.2, 47.3(1) & (3), 47.6 to 47.56, 47.58, 47.59(2)(d), 47.62, 47.63(4)-(6), 47.65(5), (5A) & (5B), 47.73, Appendices 1-5
Amendment 3 Maritime (Various Amendments) Rules 2009, Parts 21-80	47.2, 47.54(3), 47.62, 47.67(1), 47.70, 47.75(1), Appendices 4 & 6.
Amendment 4 Maritime Rules Various Amendment 2011	47.54(2), 47.61, 47.65(4)(b), Appendix 1: Clause 5(5) & 6(2)
Amendment 5 Parts 20, 31, 32, 34 and 35: Consequential Amendments	47.2
Amendment 6 Parts 19 and 44: Consequential Amendments	47.62
Amendment 7 Maritime Rules Various Amendments 2014	47.7, 47.71(3)(b)
Amendment 8 Maritime Rules Various Amendments 2015	47.7
Amendment 9 Maritime Rules Various IMO-related Amendments 2015	47.7
Amendment 10 Maritime Rules Various Amendments 2016	47.7, 47.9, 47.62A, 47.70, 47.70A

Amendment 11
Maritime Rules Various Amendments 2019

47.6, 47.62A, 47.70A

All signed rules can be found on our website:
<https://www.maritimenz.govt.nz/Rules/>

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General

47.1 Entry into force

Part 47 shall come into force on the 1st day of February 1998.

47.2 Definitions

In this Part unless the context otherwise requires—

Act means the Maritime Transport Act 1994:

barge means any barge, lighter, or like vessel that does not have any means of self-propulsion:

cargo means any goods (excluding fish carried on fishing ships) carried for reward other than—

- (a) the personal luggage of passengers; or
- (b) perishable goods not exceeding 100 kilograms in total weight:

Director means the person who is for the time being the Director of Maritime Safety under section 439 of the Act:

fishing ship means a ship which is used for catching fish, whales, seals, walrus or other living resources of the sea, and includes a ship that is recognised by the Director as being engaged in fisheries research:

length (L) means 96 percent of the total length on a waterline at 85 percent of the least moulded depth measured from the top of the keel, or the length from the fore side of the stem to the axis of the rudder stock on that waterline, if that be greater. Where the stem contour is concave above the waterline at 85 percent of the least moulded depth, both the forward terminal of the total length and the fore side of the stem respectively shall be taken at the vertical projection to that waterline of the aftermost point of the stem contour (above that waterline). In ships designed with a rake of keel the waterline on which this length is measured is to be parallel to the designed waterline:

master means any person (except a pilot) having command or charge of any ship:

owner—

- (a) In relation to a ship registered in New Zealand under the Ship Registration Act 1992, means the registered owner of the ship:
- (b) In relation to a ship registered in any place outside New Zealand, means the registered owner of the ship:
- (c) In relation to a ship to which paragraph (a) or paragraph (b) of this definition applies, where, by virtue of any charter or demise or for any other reason, the registered owner is not responsible for the management of the ship, includes the charterer or other person who is for the time being so responsible:
- (d) In relation to an unregistered ship or a registered ship that does not have a registered owner, means the person who is for the time being responsible for the management of the ship:

Part means a grouping of rules made under the Act:

passenger means any person carried on a ship, other than—

- (a) the master and the members of the crew, and any other person employed or engaged in any capacity on board the ship on the business of the ship; and
- (b) a person on board the ship either in pursuance of an obligation laid upon the master to carry shipwrecked, distressed, or other persons, or by reason of any circumstances that neither the master nor the charterer (if any) could have prevented or forestalled; and
- (c) a child under the age of 1 year:

position 1, in relation to a hatchway, doorway or ventilator, means a position on—

- (a) an exposed freeboard or raised quarterdeck; or
- (b) an exposed superstructure deck,

forward of a point located a quarter of the ship's length from the forward perpendicular:

position 2, in relation to a hatchway, doorway or ventilator, means a position on an exposed superstructure deck situated—

- (a) (i) abaft a quarter of the ship's length from the forward perpendicular; and
(ii) at least one standard height of superstructure above the freeboard deck; or
- (b) forward of a point located—
 - (i) a quarter of the ship's length from the forward perpendicular; and
 - (ii) at least two standard heights of superstructure above the freeboard deck:

rules includes maritime rules and marine protection rules:

47.3 Submersion

(1) to (3) REVOKED by Part 47 Amendment Rules on 1 June 2007

- (4) The master of a ship to which section 2 applies must ensure that the appropriate load line on the sides of the ship are not submerged at any time when the ship commences a voyage, during the voyage, or on arrival.
- (5) The owner of a barge to which section 3 applies and the master of a ship engaged in the tow of a barge to which section 3 applies must ensure that the appropriate load lines on the sides of the barge are not submerged at any time when the barge commences a voyage, during the voyage, or on arrival.

47.4 Equivalentts

The Director may, in accordance with section 47 of the Act, exempt an equivalent to any fitting, material, appliance, apparatus to be fitted, or other provision to be made in a ship required by this Part, if the Director is satisfied by trial of such equivalent or otherwise, that it is at least as effective as that required by the provisions of this Part.

47.5 Draught marks

- (1) The owner of a New Zealand ship of 16 metres or more in length that is a fishing ship or that carries cargo or more than 50 passengers must ensure that the ship is marked on each side of its stem and stern post (and where no stern post is fitted, in the line of the centre of the rudder stock) with a scale of marks showing its draught.
- (2) The owner must ensure that—
 - (a) the draught marks are in arabic numerals not less than 100 millimetres in height and spaced 200 millimetres vertically; and
 - (b) the lower line of the numerals coincide with the draught shown; and
 - (c) all numerals are cut in and painted either in a light colour on a dark background, or a dark colour on a light background.

Section 1 – Ships of 24 metres or more in length

47.6 Application

- (1) Except as provided in subrule (2), this section applies to—
 - (a) every New Zealand ship; and
 - (b) every foreign ship in New Zealand waters,of 24 metres or more in length.

- (2) This section does not apply to—
- (a) pleasure craft;
 - (b) fishing ships;
 - (c) ships of less than 150 gross tons the keel of which was laid or that was at a similar stage of construction before 5 May 1970;
 - (d) a barge that—
 - (i) operates entirely within coastal limits; or
 - (ii) does not carry any person on board during any voyage;
 - (e) a ship navigating solely within—
 - (i) the Great Lakes of North America and the River St. Lawrence as far east as a rhumb line drawn from Cap des Rosiers to West Point, Anticosti Island and, on the north side of Anticosti Island, the meridian of longitude 63 degrees W;
 - (ii) the Caspian Sea; or
 - (iii) the Plate, Parana and Uruguay Rivers as far east as a rhumb line drawn between Punta Norte, Argentina and Punta del Este, Uruguay.

47.7 Definitions

In this section and in the Load Line Convention—

administration, in respect of New Zealand, means the Director;

appropriate load line means the load line that indicates the maximum depth to which the ship may be loaded in the circumstances;

assigning authority, in respect of New Zealand, means an organisation that has entered into a memorandum of agreement with the Director—

- (a) in accordance with the International Maritime Organization's Code for Recognized Organizations (RO Code); and
- (b) whereby that organisation's employees may survey and assign load lines to New Zealand ships in accordance with the Load Line Convention;

coastal limits has the same meaning as in Part 20;

Convention means the Load Line Convention;

international voyage means a voyage to or from a port or offshore terminal outside New Zealand;

Load Line Convention means the International Convention on Load Lines 1966 as modified by the protocol of 1988 relating thereto and includes any subsequent protocol, amendment or revision accepted or ratified by New Zealand;

New Zealand Load Line Certificate means a New Zealand Load Line Certificate that has been issued in accordance with rule 47.54(3)(a).

New Zealand Load Line Exemption Certificate means a New Zealand Load Line Exemption Certificate that has been issued in accordance with rule 47.54(3)(b).

pleasure yacht means a ship that is used exclusively for the owner's pleasure or as the owner's residence and is not offered or used for hire or reward; but does not include a ship that is—

- (a) provided for transport, sport or recreation by or on behalf of any institution, hotel, motel, place of entertainment or other establishment or business;
- (b) used on any voyage for pleasure, if it is used normally or intended to be used normally—
 - (i) as a fishing ship; or

- (ii) for the carriage of passengers or cargo for hire or reward;
- (c) operated or provided by any club, incorporated society, trust or business;

surveyor means the holder of a Certificate of Surveyor Recognition issued under rule 44.22.

47.8 Owner's and master's obligations

- (1) The owner must—
 - (a) in the case of a new ship, apply to the Director or an assigning authority for the assignment of freeboards to the ship;
 - (b) provide the Director or the assigning authority with such plans, drawings, specifications and other documents and information relating to the design and construction of the ship as the Director or assigning authority may require;
 - (c) cause the ship to be surveyed in accordance with the Load Line Convention; and
 - (d) afford all necessary facilities for such surveys.
- (2) The owner and master must—
 - (a) comply with and ensure compliance with this Section and the provisions of Articles 2, 3, 7, 10 to 15, Annex I and Annex II of the Load Line Convention;
 - (b) not allow the ship to proceed on any voyage unless—
 - (i) it is surveyed, maintained and marked in accordance with this Section and the Load Line Convention; and
 - (ii) there is held in respect of the ship a valid International Load Line Certificate, International Load Line Exemption Certificate, New Zealand Load Line Certificate or New Zealand Load Line Exemption Certificate, as applicable.

47.9 Administration

- (1) The Director or an assigning authority or a surveyor —
 - (a) may assign freeboard(s) to a New Zealand ship in accordance with this Section and the Load Line Convention;
 - (b) must determine—
 - (i) the particulars of the freeboard(s) to be assigned;
 - (ii) which load lines are to be marked on the sides of the ship; and
 - (iii) the position where the load lines and deck line are to be marked; and
 - (c) complete and keep a record of particulars relating to the conditions of assignment.
- (2) The Director or an assigning authority or a surveyor may survey, inspect or mark any ship in accordance with this Section and the Load Line Convention.

47.10 Passenger ships

If a passenger ship is marked with subdivision load lines and the lowest of those lines is lower than the appropriate load line determined in accordance with the Load Line Convention, the Director or an assigning authority—

- (a) must assign that subdivision load line in place of the appropriate load line if the subdivision load line is required to be marked on the ship by Part 40B;
- (b) may, in all other cases, assign that subdivision load line in place of the appropriate load line.

47.11 Assignment of greater than minimum freeboard

The Director or an assigning authority may assign a greater than minimum freeboard to a ship—

- (a) at the request of the owner of the ship; or
- (b) if the structural strength, arrangement of openings in the hull, or design of the ship make assignment of the minimum freeboard inappropriate.

47.12 Lesser requirements for ships operating in enclosed waters only

- (1) This rule applies to ships operating in enclosed waters only.
- (2) The height of the doorway sills of deckhouses and superstructures on the weather deck, from inside which there is direct access to spaces below, may not be less than 150 millimetres.
- (3) Except as provided in subrule (4), position 1 and position 2 coamings must—
 - (a) have a minimum height of 300 millimetres; and
 - (b) be of substantial construction;
- (4) The Director or an assigning authority may approve coamings of a height less than that specified in subrule (3)(a) if—
 - (a) the hatches situated within the mid half beam of the ship are—
 - (i) narrower than half the beam of the ship; and
 - (ii) closed with weathertight covers of steel or other equivalent material; and
 - (iii) fitted with gaskets and clamping devices; and
 - (iv) capable of being rapidly closed and battened down; and
 - (b) he or she is satisfied that the safety of the ship in the service sea conditions will not be impaired by so doing.

Rules 47.13 to 47.53

REVOKED by Part 47 Amendment Rules on 1 June 2007

47.54 Issue, endorsement and renewal of certificates

- (1) Upon application by the owner under section 35 of the Act, the Director may, in accordance with section 41 of the Act and Articles 16 to 18 of the Convention, issue to any ship that has been surveyed, inspected and marked in accordance with the Convention—
 - (a) an International Load Line Certificate; or
 - (b) if the ship has been given an exemption in accordance with rule 47.4 or 47.57, an International Load Line Exemption Certificate,in the form prescribed in Annex III of the Convention.
- (2) Upon application by the owner under section 35 of the Act, the Director may, in accordance with section 41 of the Act and Articles 17 to 19 of the Convention, endorse or renew—
 - (a) the International Load Line Certificate; or
 - (b) the International Load Line Exemption Certificate,of a ship that has been surveyed, inspected and marked in accordance with the Convention.
- (3) Upon application by the owner under section 35 of the Act, the Director may, in accordance with section 41 of the Act, issue to any New Zealand ship that does not proceed on international voyages and has been surveyed, inspected and marked in accordance with the Convention—
 - (a) a New Zealand Load Line Certificate; or
 - (b) if the ship has been given an exemption in accordance with rule 47.4 or 47.57, a New Zealand Load Line Exemption Certificate, for a period of no more than 5 years.

47.55 Validity of certificates

- (1) Article 19 of the Load Line Convention shall apply to the duration and validity of International Load Line and International Load Line Exemption Certificates.
- (2) The Director may, in accordance with section 43 of the Act, suspend an International Load Line Certificate or International Load Line Exemption Certificate issued by the Director, or a New Zealand Load Line Certificate or New Zealand Load Line Exemption Certificate, if—

- (a) any material alteration is made to the hull or superstructures of the ship that necessitates the assignment of an increased freeboard;
 - (b) the fittings and appliances for the protection of means of access to the crew's quarters, openings, guard rails or freeing ports are not maintained in an effective condition; or
 - (c) the structural strength of the ship is lowered to such an extent that the ship is unsafe.
- (3) An International Load Line Certificate or International Load Line Exemption Certificate issued by the Director shall cease to be valid if a ship ceases to be registered as a New Zealand ship.
- (4) A New Zealand Load Line Certificate or New Zealand Load Line Exemption Certificate shall cease to be valid if a ship ceases to be registered as a New Zealand ship.

47.56 Certificates required to be kept on board

The owner and master of a ship must ensure that the ship's—

- (a) International Load Line Certificate;
- (b) International Load Line Exemption Certificate;
- (c) New Zealand Load Line Certificate; or
- (d) New Zealand Load Line Exemption Certificate,

is readily available on board for examination at all times.

47.57 Exemptions

- (1) The Director may exempt, in accordance with section 47 of the Act, any ship that embodies features of a novel kind from any of the provisions of section 1, the application of which might seriously impede research into the development of such features and their incorporation in ships. Any such ship must, however, comply with safety requirements that in the opinion of the Director are adequate for the service for which it is intended and that ensure the overall safety of the ship and are acceptable to the governments of States to be visited by the ship.
- (2) A ship that is not normally engaged on international voyages but that, in exceptional circumstances, is required to undertake a single international voyage may be exempted by the Director under section 47 of the Act from any of the requirements of section 1, provided it complies with safety requirements that in the opinion of the Director are adequate for the voyage that it is to undertake.

47.58 Entries to be made in an Official New Zealand Logbook

The master of a New Zealand ship that is required by Part 73 to have an official logbook and is required to be in possession of an International Load Line Certificate or International Load Line Exemption Certificate must enter particulars of the deck line and load lines specified in that certificate in the official logbook.¹

47.59 Port state control

- (1) The owner and the master of a foreign ship to which this rule applies must ensure that the ship carries on board a valid International Load Line Certificate issued under Article 16 or Article 17 of the Load Line Convention, or a valid International Load Line Exemption Certificate issued under Article 16 of the Load Line Convention, or equivalent certificates recognised as such by the Director under section 41 of the Act.
- (2) The owner and the master of a foreign ship to which this rule applies must ensure—
- (a) the ship is not loaded beyond the limits allowed by the certificate issued under Article 16 or Article 17 of the Load Line Convention; and

¹ Part 73 requires the master of a ship to enter in the official logbook the particulars of the depth to which the ship is loaded before the ship proceeds to sea from any dock, wharf, harbour, or other place.

- (b) the position of the load line of the ship corresponds with the certificate issued under Article 16 or Article 17 of the Load Line Convention; and
- (c) the ship has not been so materially altered in respect of the matters set out in subparagraphs(a) and (b) of paragraph (3) of Article 19 of the Load Line Convention that the ship is manifestly unfit to proceed to sea without danger to human life; and
- (d) in the case of a ship that is assigned a timber freeboard that is carrying a timber deck cargo, the ship complies with the requirements of Regulation 44 of Annex I of the Load Line Convention.

Section 2 – Ships of less than 24 metres in length

47.60 Compliance with section 2

The owner and the master of a ship to which section 2 applies must not allow the ship to proceed on a voyage unless—

- (a) it is surveyed and maintained in accordance with the requirements of rule 47.66; and
- (b) it is marked—
 - (i) in accordance with the requirements of rule 47.64; or
 - (ii) for an existing New Zealand ship, with a submersion line in accordance with the requirements of Part VI of the Shipping and Seamen Act 1952 or the provisions of Part X of the Maritime Transport Act 1994; and
- (c) there is held in respect of that ship—
 - (i) a valid New Zealand Load Line Certificate issued in accordance with the provisions of rule 47.67; or
 - (ii) for an existing New Zealand ship, a current submersion line certificate issued under Part IV of the Shipping and Seamen Act 1952 or Part X of the Maritime Transport Act 1994.²

47.61 Application of section 2

- (1) Section 2 applies to any ship of less than 24 metres in length that carries cargo on a voyage that is—
 - (a) a New Zealand ship, or a foreign ship that operates on the New Zealand coast; and
 - (b) a decked ship, or a barge carrying persons on board during a voyage.
- (2) Section 2 does not apply to any fishing ship unless that ship carries for reward goods other than the ship's catch of fish and other living resources of the sea.

47.62 Definitions relating to section 2

Certificate of Surveyor Recognition—

- (a) has the same meaning as in Part 44; and
- (b) includes any document that is deemed under Part 44 to be a valid Certificate of Surveyor Recognition:

current, in relation to a document means that it is valid, has not expired, and, in the case of a maritime document, has not been suspended or revoked by the Director:

decked ship means a ship having a continuous weather deck, the openings in which are protected by weathertight houses or covers:

new ship means a ship built on or after the date this Part came into force:

² An existing New Zealand ship may retain a current submersion line certificate issued under the requirements of Part IV of the Shipping and Seamen Act 1952 or the provisions of Part X of the Maritime Transport Act 1994 until its expiry date. On expiry of the submersion line certificate, the ship must be surveyed in accordance with rule 47.66(2) and have issued to it a New Zealand Load Line Certificate in accordance with Part 47.

New Zealand Load Line Certificate means a certificate issued in accordance with rule 47.67:

scantling draught means the maximum draught used in the determination of the scantlings of the ship's structure:

ship that operates on the New Zealand coast means a commercial ship that undertakes voyages from one New Zealand port or offshore terminal to another New Zealand port or offshore terminal or back to the same New Zealand port or offshore terminal:

surveyor means a person who holds a current Certificate of Surveyor Recognition under Part 44.:

weathertight means impenetrable by water in any sea or weather conditions:

47.62A Assigning freeboard

- (1) The Director or a surveyor—
 - (a) may assign freeboard to a New Zealand ship in accordance with this Section; and
 - (b) must determine—
 - (i) the particulars of the freeboard to be assigned; and
 - (ii) which load lines are to be marked on the sides of the ship; and
 - (iii) the position where the load lines and deck line are to be marked; and
 - (c) complete and keep a record of particulars relating to the conditions of assignment.
- (2) The Director or a surveyor may survey, inspect, or mark any ship in accordance with this Section.

47.63 Determination of freeboard

- (1) The basic freeboard of the ship must be determined from the following formula—

$$\text{Freeboard} = 50 + \left(150 \times \frac{L}{24} \right)$$

- (2) The basic freeboard determined from rule 47.63(1) must be corrected for the following in the sequence listed—
 - (a) increase in freeboard for short superstructures in accordance with rule Appendix 1, clause 1; and
 - (b) if the block coefficient (C_b) is more than 0.68, the basic freeboard must be multiplied by the factor: $(C_b + 0.68)/1.36$; and
 - (c) depth correction in accordance with rule Appendix 1, clause 2; and
 - (d) superstructure correction in accordance with rule Appendix 1, clause 6; the reduction, where the total of the effective lengths of superstructure is equal to the length of ship, being: 180 millimetres for a ship of 10 metres length: 350 millimetres for a ship of 24 metres length; and
 - (e) sheer correction in accordance with rule Appendix 1, clause 8.
- (3) In no case is the freeboard determined by rule 47.63(2) to be assigned to any ship if this results in a loaded draught that exceeds the scantling draught or at which the ship cannot comply with stability criteria required by Part 40A or Part 40C.
- (4) The minimum freeboard in winter must be the freeboard obtained by an addition to the summer freeboard of one forty-eighth of summer draught, measured from the top of the keel to the top of the summer load line mark.
- (5) Except as provided in subrule (6), the minimum freeboard in fresh water of unit density must be obtained by deducting from the minimum freeboard in salt water—

$$\Delta \div 40T$$

where:

Δ = displacement in salt water in tons at the summer load waterline

T = tons per centimetre immersion in salt water at the summer load waterline.

- (6) If the displacement at the summer load waterline cannot be certified, the minimum freeboard in fresh water of unit density must be obtained by deducting from the minimum freeboard in salt water one-forty-eighth of the summer draught, measured from the top of the keel to the top of the summer load line mark.

47.64 Marking

- (1) The load line must be parallel to the deck at each side amidships and must be 300 millimetres long by 25 millimetres wide.
- (2) Deck lines and load lines must be marked as follows—
- the upper edge of the deck line is to be at the point where the continuation outwards of the upper surface of the deck intersects the outer surface of the hull; and
 - the load line is to be placed under and in the same fore and aft position as the deck line; and
 - the deck lines and load lines must be marked and maintained in a clearly distinguishable colour.

47.65 Conditions of assignment

- (1) Deck sills in doorways or deckhouses are to comply with the following—
- the height from the deck of sills in doorways of deckhouses or superstructures on the weather deck from inside which there is direct access to spaces below the weather deck, must not be less than 300 millimetres for ships of 18 metres or less in length and not less than $300 + 50(L - 18)$ millimetres for ships of more than 18 metres in length; and
 - the height from the deck of sills in doorways of deckhouses, superstructures or companionways on the weather deck that are shielded from the full force of the sea, except those giving direct access to machinery spaces, must not be less than 150 millimetres for ships of 18 metres or less in length and not less than $150 + 37.5(L - 18)$ for ships of more than 18 metres in length; and
 - for ships operating only in enclosed waters, the height from the deck of sills in doorways of deckhouses or superstructures on the weather deck from inside which there is direct access to spaces below, must not be less than 150 millimetres. In exceptional circumstances, sill heights of less than 150 millimetres are acceptable if approved by the Director.
- (2) The height from the deck of coamings in positions (1) and (2) must be 300 millimetres in ships of 18 metres or less in length. For ships of more than 18 metres in length, the height above deck of coamings in position (1) must be $300 + 50(L - 18)$ millimetres and the height above deck of coamings in position (2) must be $300 + 25(L - 18)$ millimetres. These coamings must be of substantial construction.
- (3) The surveyor may approve coamings of a height less than that specified in rule 47.65(2) where hatches situated within the mid half beam of the ship are—
- narrower than half the beam of the ship; and
 - closed with weathertight covers of steel or other equivalent material; and
 - fitted with gaskets and clamping devices; and
 - capable of being rapidly closed and battened down; and
 - the surveyor is satisfied that the safety of the ship in the service sea conditions will not be impaired by doing so.

- (4) Scuppers and discharge pipes that pass through the side of the ship must comply with the following—
- (a) scupper and discharge pipes, excluding machinery exhaust systems, must be fitted with screw-down valves or cocks in easily accessible positions against the ship's side. However, where approved bilge alarms are fitted, such valves or cocks are not required in the case of discharges that do not exceed 40 millimetres internal diameter, and the lowest point of which is not less than 225 millimetres above the assigned load waterline. Waste and soil discharges greater than 40 millimetres internal diameter from spaces above the freeboard deck that are led through the ship's side more than 225 millimetres above the assigned load waterline may be fitted with a non-return valve in lieu of a screw-down valve or cock:
 - (b) main propulsion machinery exhaust systems must be fitted with a hull fitting, approved by the surveyor, the lower edge of which must be as high as practicable but not less than 225 millimetres above the assigned load waterline.

Such systems may pass through watertight bulkheads aft of the machinery space provided that:
 - (i) an after peak bulkhead is fitted that extends to the weather deck; and
 - (ii) the system is passed through the bulkhead or bulkheads as close to the underside of the weather deck as practicable; and
 - (iii) an approved bulkhead fitting is provided at each watertight bulkhead through which the system passes:
 - (c) auxiliary machinery exhaust systems must comply with the provisions of rule 47.65(4)(b) and are not to pass through watertight bulkheads without the approval of the surveyor.
- (5) Where bulwarks in the weather portion of a freeboard deck form wells, and the sheer in the way of the well is standard or greater than standard, there must be provided, on each side of the ship, in each well, the following minimum freeing port area—
- (a) where the length of the well is 20 metres or greater:

Freeing port area = $0.07 \times l$

where l = length of well in metres; or
 - (b) where the length of the well is less than 20 metres, the freeing port area must be determined from table 6:

Table 6

Length of well (metres)	Freeing port area (each bulwark, square metres)
2.5	0.28
5.0	0.52
7.5	0.72
10.0	0.90
12.5	1.07
15.0	1.21
17.5	1.32

The freeing port area for intermediate lengths of well must be determined by interpolation.

Corrections for bulwark height and sheer must be made in accordance with the requirements of subrules (5A) and (5B).

- (5A) The minimum freeing port area, calculated in accordance with subrule (5), must—

- (a) if the bulwark is more than 1.2 metres in average height, be increased by 0.004 square metres per metre of length of well for each 0.1 metre difference in height;
 - (b) if the bulwark is less than 0.9 metres in average height, be reduced by 0.004 square metres per metre of length of well for each 0.1 metre difference in height.
- (5B) The minimum freeing port area, calculated in accordance with subrule (5)(b), must—
- (a) in ships with no sheer, be increased by 50 percent; and
 - (b) in ships where the sheer is less than the standard, be increased by a percentage obtained by linear interpolation.
- (6) Stability information must be carried on board in the form of guidance notes for the master on permissible loadings relevant to the area of stowage. In particular, details must be given of limitations on the carriage of deck cargoes.

47.66 Surveys

- (1) The owner of a new ship to which this section applies must ensure that the ship is subject to an initial survey before it is put into service.
- (2) A surveyor undertaking an initial survey must make a complete inspection of the ship's structure and equipment and of the relevant information supplied to the master to ensure that the ship complies with the requirements of rules 47.64 and 47.65.
- (3) The owner of a ship to which this section applies must ensure that the ship is subject to a renewal survey at intervals not exceeding 5 years.
- (4) A surveyor undertaking a renewal survey must ensure that the ship complies with the requirements of rules 47.64 and 47.65.
- (5) The owner and the master of any ship to which this section applies must ensure that after any survey required by rules 47.64(1) and 47.65(2) has been completed, no change is made in the structure, equipment, arrangements, material, or scantlings covered by the survey without the sanction of the Director.
- (6) On satisfactory completion of an initial survey or a renewal survey in accordance with this rule, the surveyor who undertook the survey must notify the owner in writing as soon as practicable of such completion.

47.67 Certificates

- (1) Upon application by the owner of the ship under section 35 of the Act, and upon receipt of a copy of the notification required by rule 47.66(6), the Director shall issue in respect of that ship, under section 41 of the Act, a maritime document called a New Zealand Load Line Certificate.
- (2) A New Zealand Load Line Certificate is to be issued for a period of five years or a lesser period specified by the Director.
- (3) The owner and the master of a ship to which this section applies must ensure that the New Zealand Load Line Certificate issued under rule 47.67(1) is readily available on board the ship for examination at all times.

Section 3 – Barges that do not operate beyond the coastal limit

47.68 Compliance with section 3

The owner of a barge to which section 3 applies must not allow the barge to proceed on a voyage unless it—

- (a) is surveyed and maintained in accordance with the requirements of rule 47.74; and
- (b) is marked—
 - (i) in accordance with the requirements of rule 47.72; or

- (ii) for an existing barge, with a submersion line in accordance with the requirements of the Shipping and Seamen Act 1952 or the provisions of Part X of the Maritime Transport Act 1994; and
- (c) is in possession of—
 - (i) a valid New Zealand Load Line Certificate issued in accordance with the provisions of rule 47.75; or
 - (ii) for an existing barge, a submersion line certificate issued under the requirements of Part IV of the Shipping and Seamen Act 1952 or the provisions of Part XI of the Maritime Transport Act 1994.

47.69 Application of section 3

Section 3 applies to New Zealand and foreign barges of 24 metres or more in length that—

- (a) carry no passengers on board; and
- (b) operate in waters within the coastal limit.

47.70 Definitions relating to section 3

coastal limit, restricted coastal limit, inshore limit and **enclosed waters** are defined in Part 20 of the maritime rules:

New Zealand Load Line Certificate means a certificate issued in accordance with rule 47.75;

surveyor means the holder of a Certificate of Surveyor Recognition issued under rule 44.22.

47.70A Assigning freeboard

- (1) The Director or a surveyor—
 - (a) may assign freeboard to a New Zealand ship in accordance with this Section; and
 - (b) must determine—
 - (i) the particulars of the freeboard to be assigned; and
 - (ii) which load lines are to be marked on the sides of the ship; and
 - (iii) the position where the load lines and deck line are to be marked; and
 - (c) complete and keep a record of particulars relating to the conditions of assignment.
- (2) The Director or a surveyor may survey, inspect or mark any ship in accordance with this Section.

47.71 Determination of freeboard

- (1) Barges to which this section applies that operate in the coastal limit or a restricted coastal limit must be assigned a minimum freeboard derived from the table 7 and corrected for sheer and depth in accordance with rule 47.71(3) and (4).

Table 7

Length (metres)	Freeboard (millimetres)		Standard sheer ordinate (metres)	
	Deck	Hold	Forward	Aft
24	100	130	1.108	0.554
30	140	178	1.258	0.629
35	190	228	1.383	0.691
40	246	270	1.508	0.754
45	300	320	1.634	0.817
50	360	360	1.758	0.879
55	424	424	1.883	0.941

60	475	475	2.009	1.004
65	526	526	2.134	1.067
70	584	584	2.259	1.129
75	643	643	2.384	1.192

Intermediate values must be obtained by interpolation.

- (2) Barges to which this section applies that only operate within enclosed waters and inshore limits must be assigned a minimum freeboard derived from the table 8 and corrected for sheer and depth in accordance with rule 47.71(3) and (4).

Table 8

Length (metres)	Freeboard (millimetres)				Standard sheer ordinate (metres)	
	Inshore		Enclosed waters			
	Hold	Deck	Hold	Deck		
24	63	40	40	13	0.506	0.424
30	63	40	40	13	0.629	0.477
35	76	76	51	32	0.692	0.520
40	117	117	64	52	0.754	0.568
45	159	159	64	64	0.817	0.615
50	201	201	81	81	0.897	0.676
55	242	242	89	89	0.980	0.738
60	293	293	106	106	1.072	0.805

Intermediate values must be obtained by interpolation.

- (3) The table freeboard must be corrected for variation from the standard sheer in the following manner—
- (a) Where a raised quarterdeck or other break occurs in the freeboard deck, an equivalent sheer ordinate must be determined.

When the raised quarterdeck or other break extends from side to side of the barge, the equivalent sheer ordinate is:

$$\text{Equivalent sheer ordinate} = \text{actual sheer ordinate} + \frac{(l \times h)}{L} \times 6$$

When the raised quarterdeck or break does not extend from side to side but covers not less than 75 percent of the breadth, the equivalent sheer ordinate is:

$$\text{Equivalent sheer ordinate} = \text{actual sheer ordinate} + \frac{(l \times h / 2)}{L} \times 6$$

Where

- l = length of raised quarterdeck or break in metres;
H = height of raised quarterdeck or break in metres; and
L = length of barge in metres

- (b) Where the actual sheer profile aft or forward is not a parabolic sheer profile, an equivalent parabolic sheer ordinate, aft or forward as the case may be, must be determined.

$$\frac{\text{equivalent parabolic sheer ordinate aft} = 6 \times \text{area of actual after sheer profile (metres}^2\text{)}}{L}$$

$$\frac{\text{equivalent parabolic sheer ordinate forward} = 6 \times \text{area of actual forward sheer profile (metres}^2\text{)}}{L}$$

- (c) Where the actual or the equivalent sheer ordinate forward is greater or less than standard, the tabular freeboard must be reduced or increased respectively by an amount equal to:

$1/8 \times (\text{difference between standard sheer ordinate forward and actual or equivalent sheer ordinate forward})$

- (d) Where the actual or equivalent sheer ordinate aft is less than half the standard sheer ordinate aft, the tabular freeboard must be increased by an amount equal to:

$1/4 [(1/2 \times \text{standard sheer ordinate aft}) - (\text{actual or equivalent sheer ordinate aft})]$

- (e) Where the actual or equivalent sheer ordinate aft is greater than the standard sheer ordinate aft, the tabular freeboard must be reduced by an amount equal to:

$1/8 \times [(\text{actual or equivalent sheer ordinate aft}) - (\text{standard sheer ordinate aft})]$

except that if the actual or equivalent sheer forward is less than standard, no deduction for excess sheer aft must be made.

- (f) Where the actual or equivalent sheer ordinate aft is less than standard but not less than half the standard sheer ordinate aft, no correction is to be made.

- (g) The total deduction for excess sheer is not in any case to exceed 40 millimetres.

- (4) The table freeboard must be corrected for variation from the standard depth of $L/16$ as follows—

Final freeboard = tabular freeboard corrected for sheer $\times \frac{\text{actual depth amidships}}{\text{standard depth of } L/16}$

- (5) Despite rule 47.71(1) to (4) inclusive, the minimum freeboard for deck barges is 40 millimetres and for hold barges 63 millimetres, except in the case of barges plying only in enclosed waters where the minimum freeboard for deck barges is 13 millimetres and for hold barges 40 millimetres. A minimum bow height of 600 millimetres must be maintained.

47.72 Marking

- (1) A deck line 300 millimetres wide by 25 millimetres wide must be permanently marked amidships on each side of the barge. The deck line's upper edge must pass through the point where the continuation outwards of the upper surface of the freeboard deck intersects the outer surface of the hull shell.
- (2) The load lines must be parallel to the deck at each side amidships and not less than 300 millimetres long by 25 millimetres wide. They must be permanently marked light on dark background or dark on light background.
- (3) The load lines must be placed as follows—
- the load line for the coastal limit is to be placed under and in the same fore and aft position as the deck line; and
 - the load line for the inshore limit is to extend under and immediately aft of the deck line; and

- (c) the load line for the enclosed water limit is to extend under and immediately forward of the deck line.

47.73 Conditions of assignment

- (1) Hatches of hold barges must be provided with coamings and hatch covers that are fit for purpose and acceptable to the Director or a surveyor.
- (2) If air pipes to ballast and other tanks extend above the freeboard or superstructure decks, the exposed parts of the pipes must be constructed to the satisfaction of the surveyor.
- (3) The height of an air pipe, from the deck to the point where water may have access below, must be at least—
 - (a) 760 millimetres on the freeboard deck; or
 - (b) 450 millimetres on the superstructure deck,

except that if that height might interfere with the working of the ship, the surveyor may approve a lower height if he or she is satisfied that it is justified by the closing arrangements and other circumstances.

- (4) Air pipes must be provided with automatic closing devices, which in the case of oil tankers, may include pressure vacuum (PV) valves.

47.74 Surveys

- (1) The owner of a new barge to which this section applies must ensure that it is subject to an initial survey before the barge is put into service.
- (2) A surveyor undertaking an initial survey must make a complete inspection of the barge's structure, fittings, and marking to ensure that the barge complies with the requirements of rules 47.72 and 47.73.
- (3) Except as provided in 47.74(4), the owner of an existing barge to which section 3 applies must ensure that it is subject to an initial survey within 1 year of the coming into force of this Part.
- (4) The owner of a barge built within the 4 years before the date of the coming into force of this Part, that is in possession of a certificate of completion issued under Part IV of the Shipping and Seamen Act 1952 or Part X of the Maritime Transport Act 1994, must ensure that the barge undergoes an initial survey within 5 years of the anniversary date on which the certificate of completion was issued.
- (5) The owner of a barge to which this section applies must ensure that it is subject to a renewal survey at intervals not exceeding 5 years.
- (6) A surveyor undertaking a renewal survey must ensure that the barge's structure, fittings, and marking complies with the requirements of rules 47.72 and 47.73.
- (7) The owner of a barge to which this section applies must ensure that after any survey required by rules 47.74(1) and 47.74(2) has been completed, no change is made in the structure, equipment, arrangements, material, or scantlings covered by the survey without the sanction of the Director.
- (8) On satisfactory completion of an initial survey or a renewal survey in accordance with this rule, the surveyor who undertook the survey must notify the owner in writing as soon as practicable of such completion.

47.75 Certificates

- (1) Upon application by the owner of the barge under section 35 of the Act, and upon receipt of a copy of the notification required by 47.74(8), the Director shall issue in respect of that barge, under section 41 of the Act, a maritime document called a New Zealand Load Line Certificate.

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- (2) A New Zealand Load Line Certificate is to be issued for a period of five years or a lesser period specified by the Director.
- (3) The owner of the barge must retain the New Zealand Load Line Certificate, issued in accordance with rule 47.75(1), for the period of its validity, and ensure that it is readily available for inspection by the Director.

Rule 47.63

Appendix 1 Corrections to freeboard

1 Corrections to freeboard for short superstructures

In the case of a ship with enclosed superstructures with an effective length of up to 35 percent of the length of the ship, the basic freeboard must be increased by—

$$7.5(100 - L)(0.35 - E_1/L) \text{ millimetres}$$

where

L = length of the ship in metres

E₁ = effective length of superstructure in metres.

2 Correction to freeboard for block coefficient

If the block coefficient (C_b) is more than 0.68, the basic freeboard must be multiplied by the factor: (C_b + 0.68)/1.36.

3 Corrections to freeboard for depth

- (1) If the depth of freeboard (D) is more than L/15, the basic freeboard must be increased by (D – L/15) R millimetres, where R is L/0.48.
- (2) If the depth of freeboard (D) is less than L/15 and the ship has an enclosed superstructure covering at least 0.6L amidships with—
 - (a) a complete trunk; or
 - (b) a combination of detached enclosed superstructures and trunks that extend all fore and aft,

the basic freeboard must be reduced by (D – L/15) R millimetres, where R is L/0.48, except that if the actual height of the superstructure or trunk is less than the standard height the reduction must be decreased by the ratio of the actual to the standard height.

4 Standard height of superstructure

The standard height of—

- (a) a raised quarterdeck is 0.03L;
- (b) any other superstructure is 0.06L;

where L is the length of the ship.

5 Effective length of superstructures

- (1) Except as provided in subclause (2), the effective length (“E”) of an enclosed superstructure of standard height is equal to its length.
- (2) If an enclosed superstructure of standard height is set-in from the sides of the ship, its effective length is equal to its length modified by the ratio b/B_s, where—

b = the breadth of the superstructure at the middle of its length; and

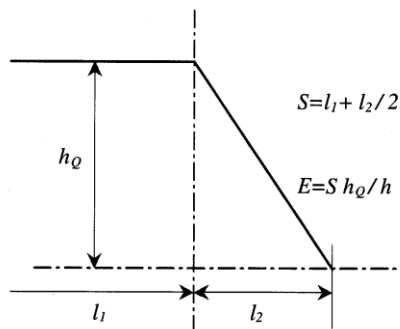
B_s = the breadth of the ship at the middle of the length of the superstructure, except that if the superstructure is set-in only for a part of its length, this modification may only be applied to the set-in part.
- (3) If the height of an enclosed superstructure is less than the standard height, its effective length is its length reduced by the ratio of the actual height to the standard height.³

³ If the height exceed the standard, no increase may be made to the effective length.

- (4) If a superstructure has sloped end bulkheads and the height of the superstructure, clear of the slope, is equal to or less than the standard height, its effective length is its length S , calculated in accordance with figure 1, reduced by the ratio of the actual height to the standard height;

Figure 1

Height of superstructure equal to or less than the standard height (h)



- (5) If a ship with excess sheer is fitted with a poop or forecastle of less than standard height but it is not fitted with any superstructure within 0.2L amidships, credit may be given for the height of the poop or forecastle by increasing the actual height by the difference between the actual and the standard sheer profiles. The deduction for excess sheer, in accordance with regulation 38(6) of the International Convention on Load Lines, may not be granted.
- (6) The effective length of a raised quarterdeck fitted with an intact front bulkhead, is equal to its length up to a maximum of 0.6L.
- (7) If a raised quarterdeck is fitted with a front bulkhead that is not intact, the raised quarterdeck must be treated as a poop of less than standard height.
- (8) A superstructure that is not enclosed has no effective length.

6 Corrections to freeboard – Deduction for superstructures

- (1) In this rule,

Type A means—

- (a) designed to carry only liquid cargoes in bulk; and
- (b) having an exposed deck of high integrity with only small access openings to cargo compartments that are closed by watertight gasketed covers of steel or equivalent material; and
- (c) having low permeability of loaded cargo compartments;

Type B means not Type A.

- (2) If the total effective length of the superstructures is 1.0L, the deduction from the freeboard for the superstructure is—
- (a) for a ship of 10 metres length, 180 millimetres; and
 - (b) for a ship of 24 metres length, 350 millimetres; and
 - (c) for ships of intermediate lengths, to be determined by linear interpolation.
- (3) Except as provided in subclause (4), if the total effective length of the superstructure is less than 1.0L, the deduction from the freeboard is to be determined—
- (a) as a percentage of the length; and
 - (b) in accordance with table 1; and

(c) at intermediate lengths, by linear interpolation:

Table 1
Percentage of deduction

	Total effective length of superstructures										
	0	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	1.0L
Percentage of deduction for all types of superstructures	0	7	14	21	31	41	52	63	75.3	87.7	100

(4) If the effective length of a forecastle of a Type B ship is less than $0.07L$, no deduction [may be made] from the freeboard.

7 Sheer

- (1) Except as provided in subclauses (2) to (5), the sheer is to be measured from the deck at its side to a line of reference drawn parallel to the keel through the sheer line amidships.
- (2) In ships designed with a rake of keel, the sheer is to be measured in relation to a reference line drawn parallel to the design load waterline.
- (3) In flush deck ships and in ships with detached superstructures, the sheer is to be measured at the freeboard deck.
- (4) In ships with topsides in which there is a step or break in the topsides, the sheer is to be considered in relation to the equivalent depth amidships.
- (5) In ships with a superstructure of standard height that extends over the whole length of the freeboard deck, the sheer is to be measured at the superstructure deck and—
 - (a) if the height exceeds the standard, the least difference (Z) between the actual and standard heights must be added to each end ordinate;
 - (b) intermediate ordinates at distances of $1/6L$ and $1/3L$ from each perpendicular must be increased by $0.444Z$ and $0.111Z$ respectively.
- (6) If the deck of an enclosed superstructure has at least the same sheer as the exposed freeboard deck, the sheer of the enclosed portion of the freeboard deck may not be taken into account in calculating the sheer.
- (7) If an enclosed poop or forecastle—
 - (a) is of standard height with greater sheer than that of the freeboard deck; or
 - (b) is of more than standard height,
 an addition to the sheer of the freeboard deck is to be made as provided in subrule (12).

8 Standard Sheer Profile

- (1) The ordinates of the standard sheer profile are given in table 2 where L is in metres—

Table 2

	Station	Ordinate (in mm)	Factor
After half	After Perpendicular	25 (L/3 + 10)	1
	1/6L from A.P.	11.1 (L/3 + 10)	3
	1/3L from A.P.	2.8 (L/3 + 10)	3
	Amidships	0	1
Forward half	Amidships	0	1
	1/3L from F.P.	5.6 (L/3 + 10)	3
	1/6L from F.P.	22.2 (L/3 + 10)	3
	Forward Perpendicular	50 (L/3 + 10)	1

- (2) If the sheer profile differs from the standard—
- (a) the four ordinates of each profile in the forward or after half must be multiplied by the appropriate factors given in table 2;
 - (b) the difference between the sums of the respective products and those of the standard divided by 8 is the deficiency or excess of sheer in the forward or after half; and
 - (c) the arithmetical mean of the excess or deficiency in the forward and after halves is the excess or deficiency of sheer.
- (3) If the after half of the sheer profile is greater than the standard and the forward half is less than the standard, no credit is to be allowed for the part in excess and the deficiency only is to be measured.
- (4) If the forward half of the sheer profile exceeds the standard, and the after portion of the sheer profile is—
- (a) not less than 75 percent of the standard, credit is to be allowed for the part in excess;
 - (b) less than 50 percent of the standard, no credit is to be given for the excess sheer forward;
 - (c) between 50 percent and 75 percent of the standard, intermediate allowances may be granted for excess sheer forward.
- (5) If sheer credit is given for a poop or forecastle the formula $s = (y/3)(L1/L)^4$ must be used to determine the sheer profile for forward and after halves of the ship,

where—

- s = sheer credit to be deducted from the deficiency or added to the excess of sheer; and
- y = difference between actual and standard height of superstructure at the after or forward perpendicular; and
- L1 = mean enclosed length of poop or forecastle up to a maximum length of 0.5L; and
- L = length of ship; and

provided that—

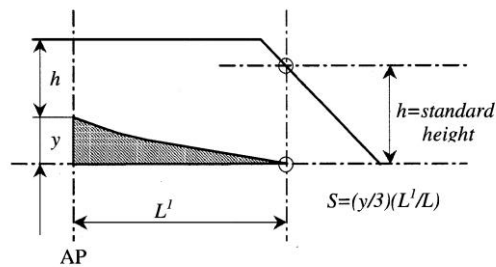
- (i) the superstructure deck must not be less than standard height at any point above the curve;
- (ii) if the actual height of a superstructure is less than the standard height, the superstructure deck must not be less than the minimum height of the superstructure above the virtual sheer curve at any point and for this purpose y

⁴ The formula provides a curve in the form of a parabola tangent to the actual sheer curve at the freeboard deck and intersecting the end ordinate at a point below the superstructure deck at a distance equal to the standard height of a superstructure.

must be taken as the difference between the actual and minimum height of the superstructure at the after or forward perpendicular as appropriate;

- (iii) any excess in the height of a superstructure that does not extend to the after perpendicular must not be regarded as contributing to the sheer credit;
- (iv) sheer credit may only be given, in the case of a raised quarterdeck, if the height of the quarterdeck is greater than the standard height of other superstructures, and only for the amount by which the actual height of the raised quarterdeck exceeds that standard height;
- (v) if the poop or a forecastle has sloping end bulkheads, sheer credit may be allowed in respect of excess height where y and L^1 are calculated as shown in figure 2.

Figure 2



9 Corrections to freeboard for sheer

- (1) The correction for sheer is found by multiplying the deficiency or excess of sheer by $0.75 - S/2L$ where S is the total length of enclosed superstructures.
- (2) If the sheer is less than the standard, the correction for deficiency in sheer, as calculated in accordance with subclause (1), must be added to the freeboard.
- (3) If the sheer is greater than the standard and the ship has no enclosed superstructure that covers amidships, no deduction for excess of sheer may be made from the freeboard.
- (4) If the sheer is greater than the standard, the deduction from the freeboard shall, in the case of a ship with an enclosed superstructure that covers—
 - (a) $0.1L$ before and $0.1L$ abaft amidships, be equal to the correction for excess of sheer, calculated in accordance with subclause (1);
 - (b) less than $0.1L$ before and $0.1L$ abaft amidships, be obtained by linear interpolation;
 except that—
 - (i) the deduction may not exceed 125 millimetres per 100 metres of length; and
 - (ii) if the actual height of the superstructure or raised quarterdeck is less than the standard height, the deduction must be reduced by the ratio of the actual to the standard height.