
STATUTORY INSTRUMENTS

1998 No. 2514

**The Merchant Shipping (Passenger Ship Construction:
Ships of Classes I, II and II(A)) Regulations 1998**

PART V

STABILITY AND SHIPSIDE MARKINGS

Intact stability standard

37. Every ship shall, in all probable loading conditions, satisfy the stability criteria set out in Schedule 1 in Merchant Shipping Notice MSN 1698(M).

Inclining, lightweight survey and stability information

38.—(1) Every ship on her completion shall be inclined and the elements of her stability determined. The master shall be supplied by the owner with approved information relating to the stability of the ship in accordance with the provisions of this regulation.

- (i) Every ship shall have a lightweight survey carried out within each period of five years to verify any changes in lightship displacement and longitudinal centre of gravity. Such periods shall commence on the date of issue of a Passenger Ship Safety Certificate or Passenger Certificate or from a previous inclining or lightweight survey, whichever date is the earliest.
- (ii) The ship shall be re-inclined whenever, in comparison with the ship's approved stability information derived from the previous inclining experiment, a deviation from the lightship displacement exceeding 2 per cent or a deviation of the longitudinal centre of gravity exceeding 1 per cent of the ship's length is found or anticipated.
- (iii) Every inclining or lightweight survey made for the purpose of this paragraph shall be carried out in the presence of a nominated surveyor.
- (iv) The interval between lightweight surveys of any such ship may be extended for a period of not more than one year if, on the production of relevant information about the ship, it can be shown that the lightweight survey is not necessary at the required interval.

(3) An approved report of each inclining or lightweight survey carried out in accordance with paragraph (2) and of the calculation therefrom of the lightship condition shall be placed on board for the use of the master.

(4) Where elements of a ship's stability have been found to have changed following any inclining or lightweight survey carried out in accordance with the requirements of paragraph (2) the master shall be supplied with amended approved stability information.

(5) Where any alterations are made to a ship so as materially to affect the stability information supplied to the master, amended stability information shall be provided, and the ship shall be re-inclined.

Subdivision lines

39. Every ship shall be marked on its side amidships with the subdivision load lines assigned to it in accordance with Schedule 5 in Merchant Shipping Notice MSN 1698 (M).

Draughts marks

40. Every ship shall have scales of draughts marked clearly at the bow and stern.

Automatic draught gauge system

- 41.—(1) Every ship of Class II shall be provided with a reliable automatic draught gauge system.
- (a) (2) (a) Every ship of Class I or II(A) engaged on services which afford only short periods in port or where insufficient lighting is available during periods of darkness, or which include the use of berths exposed to adverse weather, shall be provided with a reliable automatic draught gauge system as prescribed in paragraph (1).
 - (b) Every other ship of Class I or II(A) shall be provided with such an automatic draught gauge system, except where the draught marks are located where they can be easily read.

Recording of draught, trim and freeboard prior to departure

42.—(1) On completion of loading of the ship and before it proceeds on a voyage, the master or an officer appointed for the purpose by the master shall ascertain—

- (a) the ship's draught at the bow and at the stern;
- (b) the trim of the ship by the bow or the stern; and
- (c) the vertical distance from the waterline to the appropriate subdivision load line mark on each side of the ship.

(2) The draughts, trim and the vertical distances ascertained in accordance with paragraph (1) shall be recorded by the master or such officer as the case may be in the official log book.

Calculation of stability prior to departure

43.—(1) On completion of the loading of the ship and prior to its departure, the master shall determine the ship's trim and stability and also ascertain and record that the ship is in compliance with stability criteria in the relevant regulations. The determination of the ship's stability shall always be made by calculation. Use of an electronic loading and stability computer or equivalent means may be accepted for this purpose.

(2) In the case of ships of Class II or II(A) the actual weights of goods vehicles and other items of cargo required to be provided for this calculation shall be in accordance with the Merchant Shipping (Weighing of Goods Vehicles and other Cargo) Regulations 1988(1). In the case of ships of Class I, the actual weights of goods vehicles and other items of cargo shall be used and shall be determined in accordance with those Regulations as if that ship was a ship of Class II. For items not required to be so weighed, the declared weights or weights estimated as accurately as possible shall be used.

(3) Where the calculation is made by means of a shore-based loading and stability computer system, a print-out of the calculation shall be presented to the master before the ship proceeds on its voyage. It shall be the duty of the person responsible for that system to ensure that the calculations are substantially correct.

(1) S.I.1988/1275 as amended by S.I. 1989/270.

Stability in the damaged condition *Requirements for ships constructed before 29 April 1990*

- (a) 44. (1) (a) Subject to the Merchant Shipping (Ro-Ro Passenger Ship Survivability) Regulations 1997(2) and regulation 45(2), in addition to the requirements of regulation 37, every ship shall be so constructed as to provide sufficient intact stability in all service conditions to enable the ship to withstand the flooding of any one of the main compartments into which the ship is subdivided in accordance with the provisions of regulation 8. If two of the main compartments, being adjacent to each other, are separated by a bulkhead which is stepped under the conditions of paragraph 6(3)(a) of Schedule 2 in Merchant Shipping Notice MSN 1698 (M) the intact stability shall be adequate to withstand the flooding of those two adjacent main compartments.
- (b) Where in any ship the factor of subdivision required under paragraph 4 or 9 of Schedule 2 in Merchant Shipping Notice MSN 1698 (M) is 0.50 or less but more than 0.33, the intact stability shall be adequate to withstand the flooding of any two adjacent main compartments.
- (c) Where in any ship the factor of subdivision required under paragraph 4 of Schedule 2 in Merchant Shipping Notice MSN 1698 (M) is 0.33 or less, the intact stability shall be adequate to withstand the flooding of any three adjacent main compartments.
- (a) (2) (a) For the purposes of this regulation the sufficiency of the intact stability of every ship shall be determined in accordance with the provisions of Sections 1 and 2 of Schedule 3 in Merchant Shipping Notice MSN 1698 (M) except that for ro-ro passenger ships the sufficiency of intact stability shall be determined in accordance with sections 1 and 3 of Schedule 2 in Merchant Shipping Notice MSN 1698 (M) not later than the first periodic survey after the date of compliance prescribed below, according to the value of A/A_{max} as calculated in accordance with MSC/Circ.574.

<i>Value of A/A_{max}</i>	<i>Date of Compliance</i>
Less than 85%	1 October 1998
85% or more but less than 90%	1 October 2000
90% or more but less than 95%	1 October 2002
95% or more but less than 97.5%	1 October 2004
97.5% or more	1 October 2005

- (b) The intact stability of every United Kingdom ro-ro passenger ship shall be examined in accordance with the appropriate sections of Schedule 3 of Merchant Shipping Notice MSN 1698 (M) in order to establish the sufficiency of positive stability provided as required by subparagraphs (1)(a) and (2)(a) whenever considered necessary in connection with amended stability information prepared in accordance with regulation 38(4) and (5). Such re-examinations shall demonstrate that at all stages of flooding there is sufficient positive residual stability after the assumed damage prescribed in section 1 of Schedule 3 in Merchant Shipping Notice MSN 1698 (M).
- (a) (3) (a) Every ship shall be constructed as to keep asymmetrical flooding, when the ship is in a damaged condition, at the minimum consistent with efficient arrangements. If cross-flooding fittings are provided in any such ship the fittings shall, where practicable, be self-acting but in any case where controls to cross-flooding fittings are provided, they shall be capable of being operated from above the bulkhead deck. The cross-flooding fittings shall be capable of reducing the heel within 15 minutes, sufficiently to meet the requirements of subparagraph 2(2)(c) of Schedule 3 in Merchant Shipping Notice MSN 1698 (M).

- (b) If the margin line may become submerged during the flooding assumed for the purposes of the calculation referred to in Schedule 3 in Merchant Shipping Notice MSN 1698 (M), the construction of the ship shall be such as will enable the master of the ship to ensure—
- (i) that the maximum angle of heel after flooding but before equalisation shall not exceed 15 degrees; and
 - (ii) that the margin line shall not be submerged in the final stage of flooding.
- (a) (4) (a) There shall be provided by the owner in every ship a document for the use of the master of the ship containing—
- (i) information as to the use of any cross-flooding fittings provided in the ship;
 - (ii) information necessary for the maintenance of sufficient intact stability under service conditions to enable the ship to withstand damage to the extent referred to in section 1 of Schedule 3 in Merchant Shipping Notice MSN 1698 (M); and
 - (iii) information as to the condition of stability on which the calculations of heel have been based, together with a warning that excessive heeling might result should the ship sustain damage when in a less favourable condition.
- (b) This additional information shall be included in the stability information book.

Stability in the damaged condition *Requirements for ships constructed on or after 29th April 1990*

- 45.**—(1) Subject to paragraph (2) every ship shall comply with the provisions of regulation 44 except that—
- (a) for the purpose of regulation 44(2) the sufficiency of intact stability required shall be calculated in accordance with Section 1 and 3 of Schedule 3 in Merchant Shipping Notice MSN 1698 (M); and
 - (b) the cross-flooding fittings shall be capable of meeting the requirements of paragraph 3(2) (b) of Schedule 3 in Merchant Shipping Notice MSN 1698 (M).
- (2) This regulation shall not apply to ships which comply with those provisions of IMO Resolution A.265(VIII) as detailed in regulation 6.

Requirements for ro-ro passenger ships which carry 400 persons or more

46. In addition to the provisions of regulations 44 and 45, ro-ro passenger ships certificated to carry 400 persons or more shall comply with the following—

- (1) Vessels constructed on or after 1st July 1997 shall comply with section 3 of Schedule 3 of Merchant Shipping Notice MSN 1698 (M) with the damage deemed to occur anywhere in the ship's length.
- (2) Vessels constructed before 1st July 1997 shall comply with the requirements of paragraph (1) not later than the date of the first periodic survey following the compliance dates prescribed in subparagraphs (a), (b) and (c) below, whichever occurs latest—

Value of A/Amx	Date of Compliance
less than 85%	1 October 1998
85% or more but less than 90%	1 October 2000
90% or more but less than 95%	1 October 2002
95% or more but less than 97.5%	1 October 2004
97.5% or more	1 October 2010

(b) Number of persons permitted to be carried

1,500 or more	1 October 2002
1,000 or more but less than 1,500	1 October 2006
600 or more but less than 1,000	1 October 2008
400 or more but less than 600	1 October 2010
Age ^(c) of ship equal to or greater than 20 years	20 years after the construction of the ship

where age of the ship means the time from the date on which it was constructed.

Exhibition of damage control plans

47. There shall be permanently exhibited in the ship, for the information of the officer in charge of the ship, plans showing clearly for each level the boundaries of the watertight compartments, the openings therein, the means of closing such openings and the position of the controls and the arrangements for the correction of any list due to flooding. In addition, booklets containing such information shall be made available by the owner for the use of the officers of the ship.