

Translation. Only the Danish version has legal validity.

*Technical regulation no. 2 of 9 February 1994
issued by the Danish Maritime Authority*

**Technical regulation on additional requirements for intact stability
and watertight sub-division, etc. for existing
passenger ships engaged on domestic voyages¹**

In pursuance of section 3, section 11(2), and section 28 of the act on ship safety, etc., cf. consolidated act no. 400 of 18 June 1993, and according to authorisation granted by order no. 570 of 26 September 1988, the following provisions are laid down:

Part 1

Definitions and equivalents

Section 1. For the purposes of this technical regulation, the following definitions shall apply:

- 1) "Domestic voyages" shall mean voyages that are not international voyages.
- 2) "Domestic voyages around the Faroe Islands" shall mean voyages between the islands of the Faroese group of islands as well as within a distance of 20 nautical miles from the islands.
- 3) "Domestic voyages around Greenland" shall mean voyages within a distance of 30 nautical miles from the coasts of Greenland.
- 4) "Passenger ship" shall mean a ship carrying more than 12 passengers.

Section 2. The Danish Maritime Authority shall accept calculations made by recognised test institutes in other EEC member states providing suitable and satisfactory guarantees of a technical, professional and independent nature.

Part 2

Intact stability

Section 3. Information approved by the Danish Maritime Authority on intact stability shall be available on board all passenger ships engaged on domestic voyages, on domestic voyages around the Faroe Islands and Greenland with a gross tonnage of or above 20, the keels of which are laid or which have been purchased from abroad before 1 April 2006.²

Subsection 2. The provisions of part 2 shall be met and approved by the Danish Maritime Authority before the end of 1994 or at a periodical main survey no later than on 31 March 1995.

Ships the keels of which are laid before 12 July 1933

Section 4. Ships the keels of which are laid or which have been purchased from abroad before 12 July 1933 shall be subjected to a stability examination to determine the stability conditions of the ship.

Subsection 2. If stability information is available, it may form the basis of the examination.

¹ Promulgated in Notices from the Danish Maritime Authority no. 3 from 1994 on 20 February 1994.

² As regards ships the keels of which are laid or which have been purchased from abroad on or after 1 April 1976, the provisions of Notice 305 of the Danish Ships Inspection Council/Notice D of the Danish Ships Inspection

Subsection 3. The ships' stability shall comply with the following minimum criteria:

- 1) The metacentric height (GM) shall be a minimum of 0.60 m after having added supplementary ballast, if relevant.
- 2) The ship's freeboard in the loaded condition shall be of a suitable size to be assessed for each individual ship by the Danish Maritime Authority in consideration of the ship's trade area.
- 3) However, the freeboard shall as a minimum be 0.15 m.

Ships the keels of which are laid on or after 12 July 1933

Section 5. Ships the keels of which are laid or which have been purchased from abroad on or after 12 July 1933, but before 1 April 1976, shall, if stability information is not already available, be subjected to the necessary stability examinations to calculate the stability conditions of the ship.

Subsection 2. The ships' stability shall comply with the following minimum criteria:

- 1) The metacentric height (GM) shall be a minimum of 0.15.
- 2) The righting stability arm (GZ) shall have a value of minimum 0.20 m at the topmost point.
- 3) For ships with a Lpp below 24 m, the GZ requirement may be reduced by $2 \times (24 - L_{pp})\%$.
- 4) The area below the GZ curve shall be of minimum 0.055 radian metres up to an angle of heel not exceeding 30 degrees or up to an admission angle in case this is below 30 degrees.
- 5) If the ship's trade area covers only protected waters and the ship is engaged only in the carriage of passengers, the requirements for the ship's stability may be restricted to those stipulated in section 4.

Subsection 3. It shall be permitted to equate the requirements stipulated in subsection 2 with the similar requirements of paragraph 2.5 of IMO Resolution A.469(XII), "Guidelines for Design and Construction of Offshore Supply-Vessels".

Part 3

Watertight subdivision, leak stability and calculation of buoyancy

Section 6. Sections 7-8 shall apply to all existing passenger ships engaged on domestic voyages, on domestic voyages around the Faroe Islands and around Greenland with a gross tonnage of or above 20, the keels of which are laid or which have been purchased from abroad before 1 January 1992.

Subsection 2. Section 9 shall apply only to existing passenger ships designed to carry ro-ro cargoes (lorries, passenger cars, trains, and the like) on domestic voyages, on domestic voyages around the Faroe Islands and around Greenland with a gross tonnage of or above 20, the keels of which are laid or which have been purchased from abroad before 1 January 1992.³

Exemption from the requirements for watertight subdivision calculations

Section 7. For ships that have been approved without presenting calculations of the watertight subdivision, such calculations shall not be required.

Section 8. Wooden ships shall not be required to present calculations of watertight subdivisions.

Council shall apply if exemption from compliance with these provisions has not been granted at the ship's construction, re-building or later.

³ Ships the keels of which are laid on or after 1 January 1992 shall fully comply with the requirements stipulated in Notice D from the Danish Ships Inspection Council, chapter II-1, regulation 8.

Passenger ships carrying ro-ro cargoes

Section 9. Ships not exempted from the requirement for watertight subdivision and leak stability, cf. section 7 or 8, shall comply with the same requirements as those stipulated for new ships in Notice D from the Danish Ships Inspection Council, chapter II-1, regulation 8, as amended by technical regulation D of the Danish Maritime Authority of 12 August 1991, no later than on the date prescribed in the following depending on the value of the calculated factor A/Amax as defined in the appendix to the calculation procedure for the determination of the ship's survival capability, as stipulated in MSC/Circ. 574:⁴

Value of the factor A/Amax	Date of compliance
Less than 70%	1 October 1995
70% and above but less than 75%	1 October 1996
75% and above but less than 85%	1 October 1998
85% and above but less than 90%	1 October 2000
90% and above but less than 95%	1 October 2005

Subsection 2. If the ship has an A/Amax value of or above 95% before 1 October 1995, upgrading to 100% shall not be required.

Subsection 3. Calculation of the A/Amax value documented by a company or person authorised by the Danish Maritime Authority shall be submitted for assessment by the Danish Maritime Authority before 1 January 1995.

Subsection 4. The Danish Maritime Authority may permit:

- 1) Reduction of the required minimum extent of the positive residual stability curve (GZ) of 15 degrees.
- 2) Calculation of the residual stability curve (GZ) in accordance with the formula:

$$\text{GZ (in metres)} = \frac{\text{heeling moment}}{\text{displacement}}$$

where the largest of the heeling moments emanating from the following shall be taken into consideration:

- a) crowding of all passengers in one side,
- b) launching of all life-saving appliances capable of being lowered, fully loaded from one side,
- c) effect of wind pressure,

on the condition that the stability arm GZ shall under no circumstances be below 0.09 m.

Part 4

Exemption, penalty and entry into force

Section 10. The Danish Maritime Authority may, in special cases, grant full or partial exemptions from compliance with the requirements of this technical regulation.

⁴ A simplified method based on Resolution A.265(VIII), developed by the International Maritime Organisation's Maritime Safety Committee (MSC) at its session in June 1991 and described in MSC/Circ. 574. The interpretations adopted by the IMO may be used for the calculation procedure.

Section 11. Contraventions of this technical regulation shall be punishable by fine, mitigated imprisonment or imprisonment for a period not exceeding 1 year.

Subsection 2. The penalty may be increased to mitigated imprisonment or imprisonment for a period not exceeding 2 years if the violation has been committed intentionally or through gross negligence and if:

- 1) the violation has resulted in damage to young persons below the age of 18, or risk of such damage,
- 2) the violation has given or has been intended to give financial benefits to the transgressor or others, including through savings.

Section 12. The regulation shall enter into force on 1 March 1994, cf. however section 3(2) and section 9(1)-(3).

Danish Maritime Authority, 9 February 1994

J. Rasmussen / E. Mortensen

Remarks to technical regulation no. 2 of 9 February 1994

Re. section 3: If the ship's stability material has been made/corrected within the last five years before the dates stipulated in section 3(2) and alterations of the ship have not been made hereafter affecting the stability conditions, the calculations may be accepted provided that the minimum criteria of part 2 are complied with.

If the ship's stability material is more than five years old on the dates stipulated in section 3(2), an inclining test shall be made to check/update the existing stability material.

When corrections have been made as a consequence of the new inclining test, the load conditions shall meet the minimum criteria as stipulated in part 2.

If intact stability calculations are not available for the ship, they shall be made and the minimum criteria stipulated in part 2 shall be met.

Re. section 4: If the ship cannot meet the minimum criteria stipulated in section 4, it may meet the requirements of section 5 instead.

Re. section 5: For ships built/purchased from abroad on or after 12 July 1933, but before 1 April 1976, a reduced version of the provisions stipulated in Notices from the Danish Ships Inspection Council no. 305 that apply to new-buildings/purchases from abroad are prescribed here.

The intact stability requirements shall be complied with before the end of 1994 or at the first periodical main survey hereafter, no later than on 31 March 1995.

Re. section 7: Where calculations in connection with the watertight subdivision from the ship's construction or purchase from abroad are not available, it shall be presupposed that the Danish Ships Inspection Council/the Danish Maritime Authority has found the safety standard sound without having such calculations at the original approval of the ship.

This approval shall continue to be respected since, in practice, it will be very difficult to alter the design of a ship so that it complies with the requirements stipulated in section 9 when the ship's watertight subdivision has not been taken into consideration at the ship's construction.

Re. section 9(1): If calculations in connection with the watertight subdivision have been included in connection with the ship's construction/purchase from abroad without all spaces complying with the requirement for the admission length as a one-space ship, the calculations stipulated in section 9 shall be made, and it shall be permitted that the spaces that did not originally meet the requirements are still excluded from the calculations.

It shall also be permitted, if a "calculated permeability" of a space is used, to continue to use this value.

It shall be permitted to comply with the value of the factor A/A_{max} "gradually", which means that it shall be possible for a ship that, at the first calculations in 1994, complied with, for example, 72% of the A_{max} value to be upgraded to, for example, 85% and subsequently operate legally until 1 October 2000.

All ships, except for those which have reached an A/A_{max} value of at least 95% before 1 October 1995, shall comply with the A/A_{max} value 100% after 1 October 2005.

Re. section 9(3): As stipulated above, the calculations of the factor A/A_{max} shall be submitted to the Danish Maritime Authority before the end of 1994, but it is strongly recommended that the A/A_{max} calculations be made at the same time as the intact stability is set in order since the A/A_{max} calculations may indirectly lead to additional intact stability requirements. Furthermore, the A/A_{max} calculations may result in so large watertight subdivision requirements being made of the ship that, in practice, the ship either cannot meet the requirements or costly alterations of the ship's construction being required.