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Working Party on Inland Water Transport

Working Party on the Standardization of Technical and Safety Requirements in Inland Navigation

Forty-third session

Geneva, 26–28 June 2013

Item 5 of the provisional agenda

Recommendations on Harmonized Europe-Wide Technical Requirements for Inland Navigation Vessels (Resolution No. 61, revised)

Amendments to section 2–7.3 “Data for the identification of a vessel”, chapters 4 “Safety clearance, freeboard and draught marks”, 15a “Specific requirements for passenger sailing vessels” and 22a “Specific requirements applicable to craft longer than 110 m”, and new section 3–6 “Other provisions”

Transmitted by the Group of Volunteer Experts

1. At its fifty-third session, the Working Party on Inland Water Transport (SC.3) asked its Group of Volunteer Experts on Resolution No. 61, "Recommendations on Harmonized Europe-Wide Technical Requirements for Inland Navigation Vessels" (ECE/TRANS/SC.3/172/Rev.1) to continue preparing amendment proposals to Resolution No. 61 with due regard to the latest amendments to the EU Directive 2006/87/EC laying down technical requirements for inland waterway vessels (ECE/TRANS/SC.3/183, para. 18).

2. At its seventh meeting in Zagreb (Croatia, 4 to 6 June 2013) the Group of Volunteer Experts prepared proposals on further amendment of the annex to Resolution No. 61 concerning, in particular, section 2–7.3 “Data for the identification of a vessel”, chapters 4 “Safety clearance, freeboard and draught marks”, 15a “Specific requirements for passenger sailing vessels” and 22a “Specific requirements applicable to craft longer than 110 m”, and new section 3–6 “Other provisions”. The proposals are presented below. The text to be deleted is shown as strikethrough and newly proposed text appears in bold.

3. The Working Party may wish to consider the proposals of the Group of Volunteers on further amendment of the annex of Resolution No. 61 (ECE/TRANS/SC.3/172/Rev.1 and Amends. 1 and 2) and approve their submission to SC.3 for further consideration and adoption.

I. Section 2–7.3 “Data for the identification of a vessel”

4. *Amend section 2–7.3 to read:*

- 2-7.3.1 All vessels
1. Unique European Identification Number
 2. Name of the vessel
 3. Type of vessel as defined in Article 1-2
 4. Length overall
 5. Breadth overall
 6. Draught as defined in Article 1-2
 7. Source of data (ship's certificate)
 8. Deadweight for cargo vessels
 9. Displacement for vessels other than cargo vessels
 10. Operator (owner or their representative), if possible with regard to privacy
 11. Issuing Authority
 12. Number of ship's certificate
 13. Expiration date of ship's certificate
 14. Creator of dataset (in case of electronic databases)
 - 15. MMSI (Maritime Mobile Service Identifier) number**
- 2-7.3.2 Where available
1. National number
 2. Type of vessel in accordance with the International Standard for Notices to Skippers and for Electronic Ship Reporting in Inland Navigation (Resolution No. 60)
 3. Single or double hull in accordance with ADN
 4. Height as defined in Article 1-2
 5. Gross tonnage (for sea-going ships)
 6. IMO number (for sea-going ships)
 7. Call sign (for sea-going ships)
 8. ~~MMSI (Maritime Mobile Service Identity) number~~
 - 8 9- ATIS (Automatic Transmitter Identification System) code**
 - 9 10- Type, number, issuing authority and expiration date of other certificates**

II. Chapter 4, "Safety clearance, freeboard and draught marks"

5. *Amend chapter 4 to read:*

4-1 General

4-1.1 This chapter specifies the minimum freeboard for inland waterway vessels. It also contains requirements concerning the indication of the freeboard mark **and draught marks**.

4-1.2 This chapter assumes that the nature and stowage of the cargo, ballast, etc., are such as to ensure adequate stability and as to obviate any excessive structural fatigue.

4-1.3 Freeboards as prescribed in this chapter shall be assigned on the assumption, first, that navigation will cease when weather conditions are such that the maximum wave height defining the zone or zones in which a vessel is to navigate may be exceeded, and second that in such conditions vessels already under way will seek shelter as quickly as possible.

4-1.4 The Administration may consider it sufficient if the vessel has been built and maintained in conformity with the rules of a recognized Classification Society.

4-2 Types of vessels

For the purpose of this chapter, vessels shall be divided into three types:

- (i) ~~Type A~~— Decked vessels
- (ii) ~~Type B~~— Tankers
- (iii) ~~Type C~~— Open vessels

~~Type A~~ **Decked vessels:** Decked vessels are vessels whose hatch covers are satisfactorily strong, rigid, watertight for zone 1 and sprayproof for zones 2 and 3.

~~Type B~~ **Tankers and similar vessels:** These vessels have only small openings giving access to the tanks, the openings being closed by steel or equivalent covers with watertight fittings. Such vessels have the following characteristics:

- (i) Very high watertight integrity of the exposed deck;
- (ii) Very high resistance to flooding, through low permeability of the loaded compartments and through the degree of subdivision applied in general.

~~Type C~~ **Open vessels:** Open vessels are either vessels whose hatch covers are not satisfactorily strong, rigid, sprayproof or vessels whose cargo hatchways are open.

~~4-3 APPLICATION AND DEROGATIONS~~

~~4-3.1 The maximum draught level shall be so determined that both the freeboard requirements and the safety distance requirements are observed. For safety reasons, however, the Administration may prescribe a higher figure for the freeboard.~~

~~4-3.2 Vessels so constructed that application of the provisions of this chapter is unwarranted or impracticable shall be assigned freeboards by the Administration in such a way that the safety conditions are equivalent to those of this chapter.~~

~~4-3.3 In the case of zone 1, derogations from the conditions of assignment of freeboard may be allowed to vessels to which a freeboard in excess of the minimum freeboard is assigned, provided that the safety conditions are deemed satisfactory by the Administration.~~

4-4 ~~DETERMINATION OF FREEBOARDS~~

4-3 ~~General Draught Marks and Freeboard Mark~~

Deck line

~~The deck line is the upper edge of a horizontal rectangle 300 mm long and 25 mm wide. This rectangle shall be marked amidships on each side of the hull, and its upper edge shall normally pass through the point where the continuation outwards of the upper surface of the freeboard deck intersects the outer surface of the shell amidships. However, the deck line may also be marked at a different height provided that the freeboard is corrected accordingly.~~

4-3.1 ~~Article 4.04(1)~~ The plane of maximum draught shall be determined in such a way that the specifications concerning minimum freeboard and minimum safety clearance are both met. However, for safety reasons, ~~the inspection body~~ **competent authority**¹ may lay down a greater value for the safety clearance or freeboard. The plane of maximum draught shall be determined at least for zone 3.

~~4-3.2 In the case of zone 1, derogations from the conditions of assignment of freeboard may be allowed to vessels to which a freeboard in excess of the minimum freeboard is assigned, provided that the safety conditions are deemed satisfactory by the Administration.~~

4-3.2 ~~Article 4.04(2)~~ The plane of maximum draught shall be indicated by means of highly visible, indelible draught marks.

~~4-3.4 Article 4.04(3) The draught marks for Zone 3 shall consist of a rectangle 300 mm long and 40 mm deep, the base of which is horizontal and coincides with the plane of the maximum authorized draught. Any differing draught marks shall include such a rectangle.~~

4-3.3 ~~Article 4.04(4)~~ Vessels shall have at least three pairs of draught marks, of which one pair shall be centrally located and the two others located, respectively, at a distance from the bow and stern that is equal to roughly one-sixth of the length.

However,

(i) where a vessel is less than 40 m in length it will suffice to affix two pairs of marks at a distance from the bow and stern, respectively, that is equal to a quarter of the length;

(ii) where vessels are not intended for the carriage of goods, a pair of marks located roughly halfway along the vessel will suffice.

4-3.4 ~~Article 4.04(3)~~ The draught marks for zone 3 shall consist of a rectangle 300 mm long and 40 mm deep, the base of which is horizontal and coincides with the plane of the maximum authorized draught. Any differing draught marks shall include such a rectangle.

4-3.5 ~~Article 4.04(5)~~ Marks or indications which cease to be valid following a further inspection shall be deleted or marked as being no longer valid under the supervision of the ~~inspection body~~ **competent authority**¹. ~~If a Draught marks should disappear, it may only be replaced under the supervision of a inspection body~~ **the competent authority**¹.

4-3.6 ~~Article 4.04(6)~~. Where a vessel has been measured in implementation of the 1966 Convention on the Measurement of Inland Navigation Vessels and the plane of the

¹ As referred to in section 2-5.1 of these Recommendations.

measurement marks meets the requirements of this ~~Directive~~ **Resolution**, those measurement marks shall take the place of the draught marks; this shall be mentioned in the ~~Community~~ **ship's** certificate.

4-3.7 ~~Article 4.04(7)~~. For vessels operating on zones of inland waterways other than zone 3 (zones 1, 2 or 4²) the bow and stern pairs of draught marks provided for in paragraph **4-3.3** shall be supplemented by adding a vertical line to which one or, in the case of several zones, several additional draught lines 150 mm long shall be affixed towards the bow, in relation to the draught mark for zone 3.

This vertical line and the horizontal line shall be 30 mm thick. In addition to the draught mark towards the bow of the vessel, the relevant zone numbers shall be indicated in lettering 60 mm high × 40 mm deep (see Figure 4-3.7).

The lower edge of each draught line shall correspond to the plane of maximum authorised draught for the navigation zone concerned.

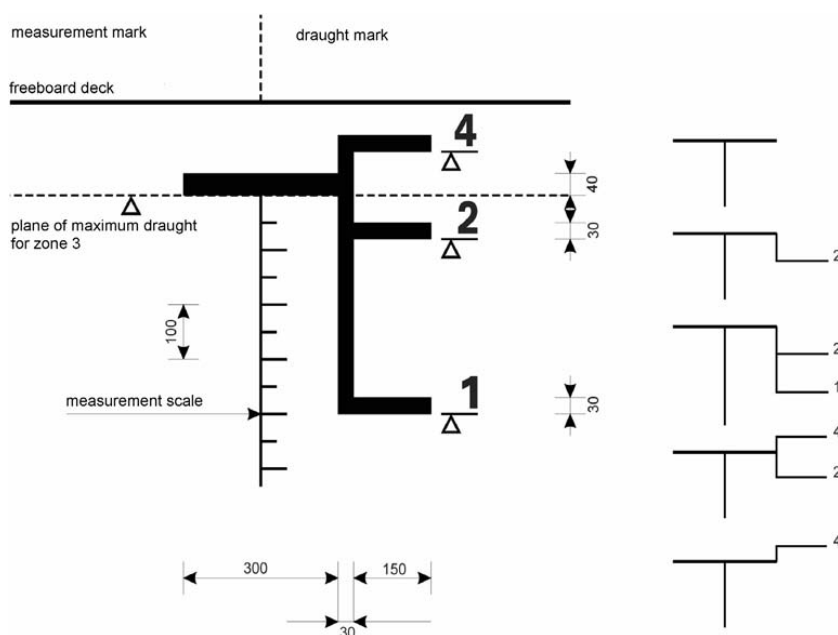


Figure 4-3.7
Measurement/draught scale

4-3.8 ~~4.4.1.2~~ **The centrally located measurement/draught scale for zone 1 and 2 may be replaced by a freeboard mark.** ~~The freeboard mark for vessels for zone 3 consists of a horizontal band of 300 mm long and 40 mm width. The freeboard mark for zones 1 and 2 shall consist of a ring intersected through its centre by a horizontal line which shall be supplemented if necessary by additional freeboard lines.~~

² This reference to zone 4 implies all inland waterways not belonging to zones 1, 2 and 3, as referred to in paragraph 1-1.5 of these Recommendations.

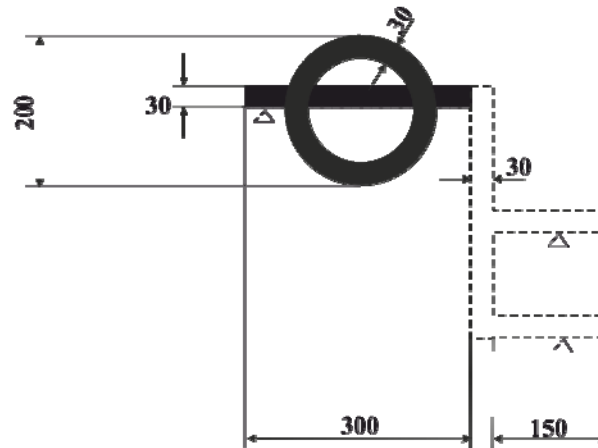


Fig. 4-3.8
Freeboard mark

The width of the ring and of all the other lines of the freeboard mark shall be 30 mm; the outer diameter of the ring shall be 200 mm; the length of the horizontal line intersecting the ring shall be 300 mm; and the size of the numerals designating the zones shall be 60 x 40 mm (Figure 4-3.8).

The centre of the ring shall be placed amidships. The lower edge of the horizontal line which intersects the ring shall pass through the centre of the ring and shall constitute the freeboard line.

If the vessel is intended to navigate in several navigation zones, a vertical line and additional freeboard lines 150 mm in length shall be applied forward of the centre of the ring.

The lower edge of each freeboard line shall correspond to the freeboard prescribed for the navigation zone concerned.

~~If the vessel is measured in accordance with the Convention on the Measurement of Inland Navigation Vessels, it shall bear, in addition to the freeboard mark, a measurement mark in accordance with the requirements of this Convention. The freeboard mark and the measurement draught mark may be combined. In this case, the width of the freeboard mark line rectangle (the width of the upper line if there are a number of freeboard marks) must be 40 mm.~~

4-3.9 4-4.1.1 Deck line and freeboard mark

When the centrally located Measurement/draught scale has been replaced by a freeboard mark, the deck line must be indicated by the upper edge of a horizontal rectangle 300 mm long and 25 mm wide. This rectangle shall be marked amidships on each side of the hull, and its upper edge shall normally pass through the point where the continuation outwards of the upper surface of the freeboard deck intersects the outer surface of the shell amidships. However, the deck line may also be marked at a different height provided that the freeboard is corrected accordingly. The distance between the upper edge of the deck line and the freeboard mark constitutes the freeboard as mentioned in section 4-4.1.

4-4 Freeboard

4-4.1 ~~4-4.2~~ Minimum freeboard in zones 1 and 2

~~4-4.1.1 4-4.2.1~~ Minimum freeboard (F) for ~~vessels of Type A~~ **decked vessels**

Length of the vessel [m]	Minimum freeboard (F) [mm]	
	Zone 1	Zone 2
≤ 30	250	250
40	340	300
50	440	340
≥ 60	570	340
70	570	340
≥ 80	570	340

Note: In this and all subsequent tables, the values for the intermediate lengths of vessels shall be obtained by linear interpolation.

10. ~~4-4.1.2 4-2.2~~ Minimum freeboard (F) for ~~of type B~~ **tankers and flush deck vessels**

Length of the vessel [m]	Minimum freeboard (F) [mm]	
	Zone 1	Zone 2
≤ 30	180	160
40	250	220
50	330	220
≥ 60	420	220
70	420	220
≥ 80	420	220

~~4-4.1.3~~ The minimum freeboard of flush deck vessels should be obtained in the manner indicated for the vessel of tankers.

~~4-4.1.3~~ ~~4-4.2.4~~ The minimum freeboard for **open** vessels of Type C, regardless of length, should be not less than:

- For zone 1 – 1 000 mm
- zone 2 – 600 mm.

Furthermore, the sum of the freeboard and the height of coamings for these vessels must be not less than:

- For zone 1 – 1 200 mm
- zone 2 – 1 000 mm.

~~4-4.1.4~~ ~~4-4.2.5~~ The Administration may authorize corrections for the freeboard for vessels with poop, sheer and forecastle, providing that such corrections are calculated in conformity with the rules of the Administration or of a recognized Classification Society.

4-4.2 ~~Special requirements for~~ Minimum freeboard in zone 3

~~4-4.2.1~~ ~~Article 4.02(1)~~ The **basic** freeboard of vessels with a continuous deck without superstructures and sheer shall be 150 mm.

~~4-4.4.4~~ — The Administration may authorize a correction for the freeboard for vessels with superstructures and sheer providing that such correction is calculated in conformity with the rules of the Administration or of a recognized Classification Society.

4-4.2.2 ~~Article 4.02(2)~~ The freeboard of vessels with sheer and superstructures shall be calculated using the following formula:

$$F = 150 (1 - \alpha) - \frac{\beta_v \cdot Se_v + \beta_a \cdot Se_a}{15} \quad [mm]$$

where:

α is a correction coefficient that takes account of all of the superstructures involved;

β_v is a coefficient for correcting the effect of the forward sheer resulting from the presence of superstructures in the forward quarter of length L of the vessel;

β_a is a coefficient correcting the effect of the aft sheer resulting from the presence of superstructures in the aft quarter of length L of the vessel;

Se_v is the effective forward sheer in mm;

Se_a is the effective aft sheer in mm.

4-4.2.3 ~~Article 4.02(3)~~ The coefficient α is calculated using the following formula:

$$\alpha = \frac{\sum le_a + \sum le_m + \sum le_v}{L}$$

where:

le_m is the effective length, in m, of a superstructure located in the median part corresponding to half of length L of the vessel;

le_v is the effective length, in m, of a superstructure in the forward quarter of vessel length L;

le_a is the effective length, in m, of a superstructure in the aft quarter of vessel length L.

The effective length of a superstructure is calculated using the following formulae:

$$le_m = l \left(2,5 \cdot \frac{b}{B} - 1,5 \right) \cdot \frac{h}{0,36} \quad [m]$$

$$le_v, le_a = l \left(2,5 \cdot \frac{b}{B_1} - 1,5 \right) \cdot \frac{h}{0,36} \quad [m].$$

where:

l is the effective length, in m, of the superstructure involved;

b is the width, in m, of the superstructure involved;

B_1 is the width of the vessel, in m, measured on the outside of the vertical sideplates at deck level halfway along the superstructure involved;

h is the height, in m, of the superstructure involved. However, in the case of hatches, h is obtained -y reducing the height of the coamings by half of the safety distance according to ~~Article 4.01(1) and (2)~~ **4-5.2 and 4-5.3**. In no case will a value exceeding 0,36 m be taken for h .

If $\frac{b}{B}$ or $\frac{b}{B_1}$ is less than 0,6 the effective length l_e of the superstructure will be

zero.

4-4.2.4 ~~Article 4.02(4)~~ Coefficients β_v and β_a are calculated using the following formulae:

$$\beta_v = 1 - \frac{3 \cdot l_{e_v}}{L}$$

$$\beta_a = 1 - \frac{3 \cdot l_{e_a}}{L}$$

4-4.2.5 ~~Article 4.02(5)~~ The effective aft/forward sheers Se_v/Se_a are calculated using the following formulae:

$$Se_v = S_v \cdot p$$

$$Se_a = S_a \cdot p$$

where:

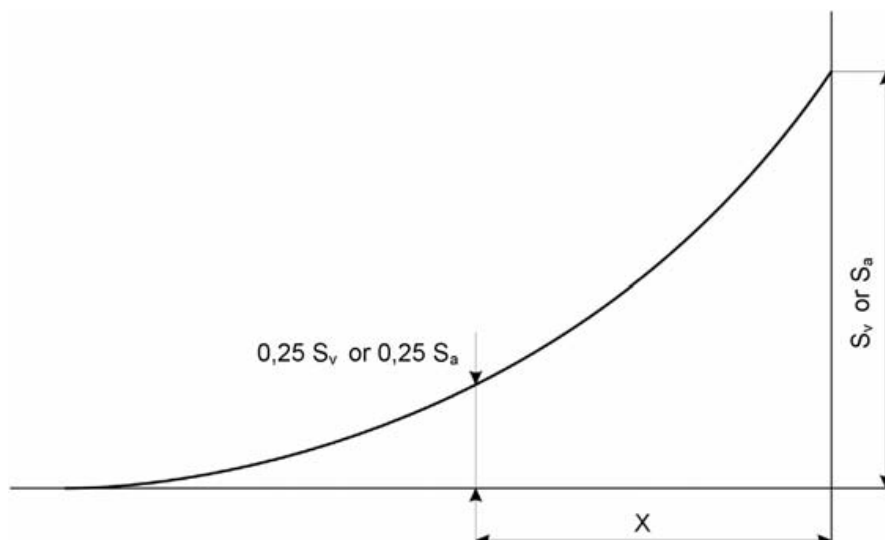
S_v is the actual forward shear, in mm; however S_v shall not be taken to be more than 1 000 mm;

S_a is the actual aft shear, in mm; however S_a may not be taken to be more than 500 mm;

p is a coefficient calculated using the following formula:

$$p = 4 \cdot \frac{x}{L}$$

x is the abscissa, measured from the extremity of the point where the shear is $0,25 S_v$ or $0,25 S_a$ (see figure).



However, coefficient p will not be taken to be more than 1.

~~4-4.2.6~~ Article 4.02(6) If $\beta_a \cdot Se_a$ is greater than $\beta_v \cdot Se_v$, the value of $\beta_a \cdot Se_a$ will be taken as being the value for $\beta_v \cdot Se_v$.

~~4-4.2.7~~ Article 4.03 In view of the reductions referred to in Article 4.02 ~~4-4.2.2 – 4-4.2.6~~ the minimum freeboard shall not be less than 0 mm.

~~4-4.4.4~~ The Administration may authorize a correction for the freeboard for vessels with superstructures and sheer providing that such correction is calculated in conformity with the rules of the Administration or of a recognized Classification Society.

4-5 Safety clearance

~~4-5.1~~ 4.4.3.11 For ~~vessels of type A and type B~~ **decked vessels and tankers**, the safety clearance as defined in 1-2 must not be less than 600 mm for zone 2.

For ~~vessels of type C~~ **open vessels**, as well as other vessels navigating with open holds, this distance shall be increased ~~to~~ **by** 400 mm in zone 2. However, this increase applies only to the coamings of open holds.

~~4-5.2~~ 4.4.4.1 For **decked vessels and tankers** of types A and B **navigating in zone 3**, the safety clearance must not be less than 300 mm.

~~4-5.3~~ 4.4.4.2 (Article 4.01(2)) For **open vessels of the type C navigating in zone 3**, the safety clearance shall be increased in such a way that ~~each of those openings that~~ cannot be closed by spray-proof and weathertight devices shall be at least 500 mm from the plane of maximum draught ~~must not be less than 500 mm~~.

4-6 ~~4-4.3~~ **Arrangement of openings and coamings**

~~4-6.1~~ 4.4.3.1 All outside doors of superstructure, deckhouses and companionways, situated on the freeboard deck shall be watertight on vessels in zone 1 and sprayproof on vessels in zones 2 and 3.

~~4-6.2~~ 4.4.3.2 The coamings of hatchways, companionways and access openings to superstructures shall be not less than 300 mm high on vessels in zone 1 and 150 mm on vessels in zone 2.

~~4-6.3~~ 4.4.3.3 If the height of the coamings is less than that required by this chapter, the minimum freeboard height shall be increased by the difference between the height required in ~~4-6.2~~ and the actual height of the coamings.

~~4-6.4~~ 4.4.3.4 The freeboard height may not be reduced owing to an increase in the height of coamings below the figure indicated in ~~4-6.2~~.

~~4-4.3.5~~ Exposed cargo hatchways and other hatchways on the freeboard deck shall be fitted with watertight closures on vessels in zone 1 and sprayproof closures on vessels in zones 2 and 3.

~~4-6.5~~ 4.4.3.6 Ventilator heads on the exposed parts of the freeboard deck shall be fitted with a strong steel coaming of a height not less than that required for hatchway coamings. Ventilator heads for vessels in zone 1 must have watertight closures.

~~4-6.6~~ 4.4.3.7 Pipe outlets in the ship's sides below the freeboard deck shall be fitted with efficient and accessible devices to prevent water from entering the vessel.

~~4-6.7~~ 4.4.3.8 On vessels in zone 1, side scuttles in spaces below the freeboard deck, windows in superstructures, deckhouses and companionways and windows in skylights on the freeboard deck ~~shall~~ **must** be watertight. In addition, side scuttles in spaces below the freeboard deck ~~shall~~ **must** be provided with permanently attached deadlights. The distance between side scuttles in the shell and the maximum draught level ~~shall~~ **must** not be less than 300 mm.

~~4-6.8~~ 4.4.3.9 Skylights and windows must be of sturdy construction.

~~4-6.9~~ 4.4.3.10 On vessels in zone 2, skylights and windows must be fitted with sprayproof covers which shall be permanently attached if the lowest part of the openings falls within the safety clearance ~~prescribed for the coamings of uncovered holds~~ (see 4-5.1). ~~In this case, the height (h) of the superstructures in which the openings are provided is limited to the lowest point of these openings.~~

~~4.4.3.11~~ For vessels of type A and type B, the safety clearance as defined in 1-2 must not be less than 600 mm for zone 2.

~~For vessels of type C, as well as other vessels navigating with open holds, this distance shall be increased to 400 mm in zone 2. However, this increase applies only to the coamings of open holds.~~

~~4-6.10~~ 4.4.3.12 The covers of Kingston valves and ice boxes must be watertight.

~~4-6.11~~ 4.4.3.13 The scuppers and freeing ports in bulwarks shall be of sufficient size to drain the decks of shipped water.

4-7 Special requirements for safety clearance and freeboard in zone 4²

~~4-7.1~~ ~~Article 19b.01(1)~~ By way of derogation from ~~Article 4.01(1) and (2)~~ ~~4-5.2 and 4-5.3~~, the safety clearance of doors and openings other than hold hatches for vessels navigating on zone 4² waterways is reduced as follows:

- (i) for openings which can be closed spray-proof and weathertight, to 150 mm;
- (ii) for openings which cannot be closed spray-proof and weathertight, to 200 mm.

~~4-7.2~~ ~~Article 19b.01(1)~~ By way of derogation from ~~Article 4.02~~ ~~4-4.2.1~~, the minimum freeboard of vessels navigating on zone 4² waterways is 0 mm, if the safety clearance according to ~~paragraph 1~~ ~~4-7.1~~ is respected.

4-8 Article 4.05 Maximum loaded draught of vessels whose holds are not always closed so as to be spray-proof and weathertight

If the plane of maximum draught for zone 3 of a vessel is determined by assuming that the holds may be closed in such a way as to make them spray-proof and weathertight, and if the distance between the plane of maximum draught and the upper edge of the coamings is less than 500 mm, the maximum draught for sailing with uncovered holds shall be determined.

The following statement shall be entered on the **ship's** certificate:

‘Where the hold hatches are totally or partly uncovered the vessel may only be loaded up to ... mm below the draught marks for zone 3.’

III. Chapter 15a, “Specific requirements for passenger sailing vessels”

6. Amend chapter 15a to read:

15a-1 Application of ~~part II~~ **chapter 3 to chapter 23**

In addition to the provisions of ~~Part II~~ **chapters 3 to chapter 23**, the requirements in this chapter shall apply to passenger sailing vessels.

15a-2 Exceptions for certain passenger sailing vessels

15a-2.1 For passenger sailing vessels having an L_{WL} not exceeding 45 m and a maximum permissible number of passengers not exceeding L_{WL} in whole meters, the following provisions shall not apply:

- (a i) [Section 3-6] ~~Article 3.03(7)~~, provided that anchors are not transported in hawse pipes;³
- (b ii) ~~Article 10.02(2)(d)~~ **Paragraph 10-2.1, fifth bullet**, with regard to length;
- (c iii) ~~Article 15.08(3)(a)~~ **Paragraph 15-8.3(i)**;
- (d iv) ~~Article 15.15(9)(a)~~.⁴ **Paragraph 15-14.6**.

15a-2.2 By way of derogation from paragraph ~~1~~ **15a-2.1**, the number of passengers may be raised to 1,5 times the L_{WL} in whole meters, if sails, rigging and deck fittings so permit.

15a-3 Stability requirements for vessels under sail

15a-3.1 For the calculation of the heeling moment according to ~~Article 15.03(3)~~ **paragraph 15-3.3**, the furled sails shall be taken into account when determining the centre of gravity of the vessel.

15a-3.2 Taking into consideration all load conditions according to ~~Article 15.03(2)~~ **paragraph 15-3.2**, and using a standard arrangement of sails, the heeling moment caused by wind pressure shall not be so high as to exceed a heeling angle of 20°. At the same time

- (a i) a constant wind pressure of 0,07 kN/m² shall be applied for the calculation,
- (b ii) the residual safety clearance shall be at least 100 mm, and
- (c iii) the residual freeboard shall not be negative.

15a-3.3 The righting lever of static stability shall

- (a i) reach its maximum value at a heeling angle of 25° or over,
- (b ii) amount to at least 200 mm at a heeling angle of 30° or over,
- (c iii) be positive at a heeling angle of up to 60°.

15a-3.4 The area under the righting lever curve shall not be less than

- (a i) 0,055 mrad up to 30°;
- (b ii) 0,09 mrad up to 40° or at the angle at which an unprotected opening reaches the water surface and which is less than 40°.

Between

- (c iii) 30° and 40°, or
- (d iv) 30° and the angle at which an unprotected opening reaches the water surface and which is less than 40°,

this area shall not be less than 0,03 mrad.

³ There is no similar article in Res. 61. The text of Article 3.03(7) reads:
 “The foresections of vessels shall be built in such a way that the anchors neither wholly nor partly protrude beyond the side plating.”
 It is recommended to insert this text in chapter 3 of the Resolution. (See proposal for a new section 3-6)

⁴ Article 15.15(9)(a) does not exist in the Directive (English version).

15a-4 Shipbuilding and mechanical requirements

15a-4.1 By way of derogation from ~~Article 6.01(3), and Article 9.01(3)~~ **paragraphs 6-1.3, and 9-1.1.2**, the equipment must be designed for permanent lists of up to 20°.

15a-4.2 By way of derogation from ~~Article 15.06(5)(a) and Article 15.06(9)(b)~~ **paragraphs 15-6.5(i) and 15-6.9(ii)**, the ~~inspection body~~ **competent authority**¹ may, in the case of passenger sailing vessels not more than 25 m long, authorise a clear width of less than 800 mm for connecting corridors and companionways. However, the clear width shall be at least 600 mm.

15a-4.3 By way of derogation from ~~Article 15.06(10)(a)~~ **paragraph 15-6.11(i)**, the ~~inspection body~~ **competent authority**¹ may, in specific cases, authorise the use of removable guard rails in areas where this is necessary for controlling the sails.

15a-4.4 Within the meaning of ~~Article 15.07~~ **section 15-7**, sails rank as a main propulsion system.

15a-4.5 By way of derogation from ~~Article 15.15(7)(e)~~ **paragraph 15-14.5(iii)**, the height of the lower edge of the door opening may be reduced to ~~200 mm~~ **20 cm** above the floor of the passenger area. Once opened, the door shall close and lock automatically.

15a-4.6 If there is a possibility of the propeller idling while the vessel is under sail, any endangered parts of the propulsion system shall be protected against potential damage.

15a-5 Rigging in general

15a-5.1 The parts of the rigging shall be arranged in such a way as to prevent unacceptable chafing.

15a-5.2 If a material other than wood is used or if special types of rigging are used, such a design shall guarantee equivalent levels of safety with the dimensions and strength values laid down in this chapter. As evidence of the strength

(a i) a strength calculation shall be carried out, or

(b ii) confirmation of sufficient strength shall have been obtained from an approved classification society, or

(c iii) dimensioning shall be based on the procedures set out in a recognised regulatory framework (e.g. Middendorf, Kusk-Jensen).

The evidence shall be presented to the ~~inspection body~~ **competent authority**¹.

15a-6 Masts and spars in general

15a-6.1 All spars shall be made of high-quality material.

15a-6.2 Wood for masts shall:

(a i) be free of knot concentrations;

(b ii) be free of sapwood within the required dimensions;

(c iii) as far as possible be straight-grained;

(d iv) contain as little as possible twisted growth.

15a-6.3 If the chosen timber is either pitch pine or Oregon pine of quality level 'clear and better' the diameters in the tables reproduced in ~~Articles 15a.07 to 15a.12~~ **sections 15a-7 to 15a-12** can be reduced by 5 %.

15a-6.4 If the timbers used for masts, topmasts, yardarms, booms and bowsprits are not round in cross-section, such timbers must be of equivalent strength.

15a-6.5 Mast pedestals, mast trunks and fastenings on deck, on floor-plates and on stem or stern shall be constructed in such a way that they can either absorb the forces they are subjected to or transfer them to other connected parts of the structure.

15a-6.6 Depending on the stability of the vessel and the external forces it is subjected to and also the distribution of the available sail area, the ~~inspection body~~ **competent authority**¹ may, on the basis of the dimensions laid down in ~~Articles 15a.07 to 15a.12~~ **sections 15a-7 to 15a-12**, allow reductions in the cross-sections of the spars and, where appropriate, of the rigging. Evidence shall be submitted in accordance with ~~Article 15a.05(2)~~ **paragraph 15a-5.2**.

15a-6.7 If the vessel's period of oscillation/period of roll, in seconds, is less than three quarters of its breadth, in metres, the dimensions set out in ~~Articles 15a.07 to 15a.12~~ **sections 15a-7 to 15a-12** shall be increased. Evidence shall be submitted in accordance with ~~Article 15a.05(2)~~ **paragraph 15a-5.2**.

15a-6.8 In the tables reproduced in ~~Articles 15a.07 to 15a.12 and 15a.14~~ **sections 15a-7 to 15a-12 and 15a-14**, possible intermediate values shall be interpolated.

15a-7 Special provisions for masts

15a-7.1 Wooden masts shall meet the following minimum requirements:

<i>Length⁵ (m)</i>	<i>Diameter on deck (cm)</i>	<i>Diameter on the cross-tree (cm)</i>	<i>Diameter on the mast cap (cm)</i>
10	20	17	15
11	22	17	15
12	24	19	17
13	26	21	18
14	28	23	19
15	30	25	21
16	32	26	22
17	34	28	23
18	36	29	24
19	39	31	25
20	41	33	26
21	43	34	28
22	44	35	29
23	46	37	30
24	49	39	32
25	51	41	33

If a mast has two yards, the diameters shall be increased by at least 10 %.

If a mast has more than two yards, the diameters shall be increased by at least 15 %.

In the case of masts fitted through the deck, the diameter at the mast foot shall be at least 75 % of the diameter of the mast at deck level.

⁵ Distance from the cross-tree to the deck.

15a-7.2 Mast fittings, mast bands, cross-trees and mast caps shall be sufficiently strongly dimensioned and attached.

15a-8 Special provisions for topmasts

15a-8.1 Wooden topmasts shall meet the following minimum requirements:

<i>Length⁶</i> <i>(m)</i>	<i>Diameter at the foot</i> <i>(cm)</i>	<i>Half-length diameter</i> <i>(cm)</i>	<i>Diameter at fitting⁷</i> <i>(cm)</i>
4	8	7	6
5	10	9	7
6	13	11	8
7	14	13	10
8	16	15	11
9	18	16	13
10	20	18	15
11	23	20	16
12	25	22	17
13	26	24	18
14	28	25	20
15	31	27	21

If square sails are attached to a topmast, the dimensions set out in the table shall be increased by 10 %.

15a-8.2 The overlap between the topmast and the mast shall be at least 10 times the required foot diameter of the topmast.

15a-9 Special provisions for bowsprits

15a-9.1 Wooden bowsprits shall meet the following minimum requirements:

<i>Length⁸</i> <i>(m)</i>	<i>Diameter at stem</i> <i>(cm)</i>	<i>Half-length diameter</i> <i>(cm)</i>
4	14,5	12,5
5	18	16
6	22	19
7	25	23
8	29	25
9	32	29
10	36	32
11	39	35
12	43	39

15a-9.2 The inboard section of the bowsprit shall have a length of at least four times the diameter of the bowsprit at the stem.

⁶ Total length of the topmast, without the masthead.

⁷ Diameter of the topmast at the level of the masthead fitting.

⁸ Total length of the bowsprit.

15a-9.3 The diameter of the bowsprit at its head shall be at least 60 % of the diameter of the bowsprit at the stem.

15a-10 Special provisions for jib-booms

15a-10.1 Wooden jib-booms shall meet the following minimum requirements:

<i>Length⁹ (m)</i>	2	3	4	5	6	7	8	9	10
<i>Diameter at the stem (cm)</i>	7	10	14	17	21	24	28	31	35

15a-10.2 The diameter of the jib-boom at its head shall be at least 60 % of the diameter at the stem.

15a-11 Special provisions for main booms

15a-11.1 Wooden main booms shall meet the following minimum requirements:

<i>Length¹⁰ (m)</i>	5	6	7	8	9	10	11	12	13	14	15	16
<i>Diameter (cm)</i>	14	15	16	17	18	20	21	23	24	25	26	27

15a-11.2 The diameter at the swivel pin shall be at least 72 % of the diameter specified in the table.

15a-11.3 The diameter at the clew shall be at least 85 % of the diameter specified in the table.

15a-11.4 Measured from the mast, the greatest diameter shall be at two thirds of the length.

15a-11.5 Where:

(i) there is an angle of less than 65° between the main boom and the after leech and the main sheet is attached to the end of the boom, or

(ii) the attachment point of the sheet is not abreast of the clew,

the ~~inspection body~~ **competent authority**¹ may, according to ~~Article 15a.05(2)~~ **paragraph 15a-5.2**, require a greater diameter.

15a-11.6 For sail areas of less than 50 m², the ~~inspection body~~ **competent authority**¹ may authorise reductions in the dimensions set out in the table.

15a-12 Special provisions for gaffs

15a-12.1 Wooden gaffs shall meet the following minimum requirements:

<i>Length¹¹ (m)</i>	4	5	6	7	8	9	10
<i>Diameter (cm)</i>	10	12	14	16	17	18	20

15a-12.2 The unsupported length of the gaff shall be not more than 75 %.

15a-12.3 The breaking strength of the crowfoot shall be at least equal to 1,2 times the breaking strength of the peak halyard.

15a-12.4 The top angle of the crowfoot shall be a maximum of 60°.

⁹ Total length of the jib-boom.

¹⁰ Total length of the main boom.

¹¹ Total length of the gaff.

15a-12.5 If, by way of derogation from paragraph ~~4~~ **15a-12.4**, the top angle of the crowfoot is greater than 60°, the tensile strength shall be adjusted to accommodate the forces that will then occur.

15a-12.6 For sail areas of less than 50 m², the ~~inspection body~~ **competent authority**¹ may authorise reductions in the dimensions set out in the table.

15a-13 General provisions for standing and running rigging

15a-13.1 Standing and running rigging shall comply with the strength requirements set out in ~~the Articles 15a.14 and 15a.15~~ **sections 15a-14 and 15a-15**.

15a-13.2 Wire cable connections may take the form of:

- (a i) splicings,
- (b ii) compression sleeves, or
- (c iii) sealing sleeves.

Splicings shall be marled and ends shall be whipped.

15a-13.3 Eye splices shall be provided with thimbles.

15a-13.4 Ropes shall be routed in such a way as not to obstruct entrances and companionways.

15a-14 Special provisions for standing rigging

15a-14.1 Forestays and shrouds shall meet the following minimum requirements:

<i>Mast length</i> ¹² (m)	11	12	13	14	15	16	17	18
Tensile strength of the forestay (kN)	160	172	185	200	220	244	269	294
Tensile strength of the shrouds (kN)	355	415	450	485	525	540	630	720
Number of shroud cables and ropes per side	3	3	3	3	3	3	4	4

15a-14.2 Backstays, topmasts, flying jib-stays, jib-booms and bowsprit shrouds shall meet the following minimum requirements:

<i>Mast length</i> ¹³ (m)	<13	13-18	>18
Tensile strength of the backstay (kN)	89	119	159
Tensile strength of the topmast (kN)	89	119	159
Length of topmast (m)	<6	6-8	>8
Tensile strength of the flying jib-stay (kN)	58	89	119
Length of jib-boom (m)	<5	5-7	>7
Tensile strength of the bow sprit shrouds (kN)	58	89	119

15a-14.3 The preferred rope design shall be based on Rope Construction Method 6 × 7 FE in the strength class 1550 N/mm². Alternatively, at the same strength class, Construction Method 6 × 36 SE or 6 × 19 FE may be used. Because of the higher elasticity of

¹² Distance from the top or cross-tree to the deck.

¹³ Distance from the top or cross-tree to the deck.

Construction Method 6 × 19, the tensile strengths given in the table shall be increased by 10 %. Use of a different rope design shall be permitted provided it has comparable properties.

15a-14.4 If rigid rigging is used, the tensile strengths shown in the table shall be increased by 30 %.

15a-14.5 For rigging, only approved forks, round eyes and bolts may be used.

15a-14.6 Bolts, forks, round eyes and turnbuckles shall be capable of being properly secured.

15a-14.7 The tensile strength of the bobstay shall be at least 1,2 times the tensile strength of the respective jib-stay and flying jib-stay.

15a-14.8 For vessels with less than 30 m³ water displacement, the ~~inspection body~~ **competent authority**¹ may permit the reductions in tensile strengths shown in the table set out below:

<i>Water displacement divided by the number of masts (m³)</i>	<i>Reduction (%)</i>
>20 to 30	20
10 to 20	35
< 10	60

15a-15 Special provisions for running rigging

15a-15.1 For running rigging, fibre ropes or steel wire ropes shall be used. The minimum tensile strength and the diameter for running rigging shall, in relation to the sail area, meet the following minimum requirements:

<i>Type of running rigging</i>	<i>Rope material</i>	<i>Sail area (m²)</i>	<i>Minimum tensile strength (kN)</i>	<i>Diameter of rope (mm)</i>
Staysail halyards		up to 35	20	6
	Steel wire	> 35	38	8
	Fibre (polypropylene-PP)	Rope diameter of at least 14 mm and one rope sheave for every 25 m ² or part thereof		
Gaff sail halyards		up to 50	20	6
Top sail halyards		> 50 to 80	30	8
		> 80 to 120	60	10
	Steel wire	>120 to 160	80	12
	Fibre (PP)	Rope diameter of at least 18 mm and one rope sheave for every 30 m ² or part thereof		
Staysail sheets		up to 40	14	
	Fibre (PP)	> 40	18	
For sail areas of more than 30 m ² , the sheet shall take the form of a tackle or shall be capable of being operated by a winch				
Gaff-/Top-sail sheets		< 100	60	10
		100 to 150	85	12
		> 150	116	14
	Steel wire	For top sail sheets, elastic connection elements (fore runners) are necessary.		
	Fibre (PP)	Rope diameter of at least 18 mm and at least three rope		

<i>Type of running rigging</i>	<i>Rope material</i>	<i>Sail area (m²)</i>	<i>Minimum tensile strength (kN)</i>	<i>Diameter of rope (mm)</i>
sheaves. Where the sail area is greater than 60 m ² , one rope sheave per 20 m ²				

15a-15.2 Running rigging forming part of the staying shall have a tensile strength which corresponds to that of the respective stay or shrouds.

15a-15.3 If materials other than those stated in paragraph + 15a-15.1 are used, the strength values given in the table in paragraph + 15a-15.1 shall be complied with.

Fibre ropes of polyethylene shall not be used.

15a-16 Fittings and parts of the rigging

15a-16.1 If steel wire ropes or fibre ropes are used, the diameters of the rope sheaves (measured from centre of rope to centre of rope) shall meet the following minimum requirements:

<i>Steel wire (mm)</i>	6	7	8	9	10	11	12
<i>Fibre (mm)</i>	16	18	20	22	24	26	28
<i>Rope sheave (mm)</i>	100	110	120	130	145	155	165

15a-16.2 By way of derogation from paragraph + 15a-16.1, the diameter of the rope sheaves may be equal to six times the diameter of the steel wire, provided that the steel wire does not constantly run over sheaves.

15a-16.3 The tensile strength of the fittings (e.g. forks, round eyes, turnbuckles, eye-plates, bolts, rings and shackles) shall be compatible with the tensile strength of the standing or running rigging that is attached to them.

15a-16.4 The fastenings of stay and shroud futtocks shall be designed to take up the forces they are subjected to.

15a-16.5 Only one shackle, along with the relevant stay or shroud, may be attached to each eye.

15a-16.6 Blocks of halyards and topping lifts shall be securely fastened to the mast, and the revolving crowfeet used for this purpose shall be in good condition.

15a-16.7 Attachments of eye-bolts, cleats, belaying pins and fife-rails shall be designed to cope with the forces they are subjected to.

15a-17 Sails

15a-17.1 It shall be ensured that sails can be taken in simply, swiftly and safely.

15a-17.2 The sail area shall be appropriate for the type of vessel and the water displacement.

15a-18 Equipment

15a-18.1 Vessels that are fitted with a jib-boom or a bowsprit shall have a jib-net and an adequate number of appropriate holding and tensioning devices.

15a-18.2 The equipment according to paragraph + 15a-18.1 may be dispensed with if the jib-boom or bowsprit is equipped with a hand becket and a foot rope adequately dimensioned to allow for the attachment of a safety harness to be carried on board.

15a-18.3 For work on the rigging, a boatswain's chair shall be provided.

15a-19 Testing

15a-19.1 The rigging shall be tested by the ~~inspection body~~ **competent authority**¹ every 2,5 years. As a minimum, the test shall cover the following:

- (a i) the sails, including leeches, clews and reef eyes;
- (b ii) the state of the masts and spars;
- (c iii) the state of the standing and running rigging together with cable wire connections;
- (d iv) facilities for taking in the sail swiftly and safely;
- (e v) the secure fastening of blocks of halyards and topping lifts;
- (f vi) the fastening of mast trunks and other fastening points for standing and running rigging that are attached to the vessel;
- (g vii) the winches for operating the sails;
- (h viii) other facilities fitted for the purposes of sailing, such as lee-boards and the fittings for operating them;
- (i ix) the measures taken to prevent the chafing of the spars, the running and standing rigging and the sails;
- (j x) the equipment according to ~~Article 15a.18~~ **section 15a-18**.

15a-19.2 That part of the wooden mast passing through the deck and located below the deck shall be re-examined at intervals to be determined by the ~~inspection body~~ **competent authority**¹, but at the very least on the occasion of each periodical inspection according to ~~Article 2.09~~ **section 2-4**. The mast shall be extracted for this purpose.

15a-19.3 A certificate of the last inspection carried out in accordance with paragraph 1 **15a-19.1** and issued, dated and signed by the ~~inspection body~~ **competent authority**¹, shall be carried on board.

IV. Chapter 22a, “Specific requirements applicable to craft longer than 110 m”

7. Amend chapter 22a to read:

22a-1 Application of ~~Part I~~ **chapter 2**

22a-1.1 In addition to the requirements set out in ~~Article 2.03(3)~~ **section 2-6**, the ~~inspection body~~ **competent authority**¹ which is subsequently to issue the EU ship’s certificate shall be informed by the owner or his representative before building of craft longer than 110 m, except sea-going ships, begins (building of a new vessel or extension of a vessel already in service). That ~~inspection body~~ **authority** shall conduct inspections during the building stage. It may dispense with inspections during the building stage if a certificate is produced before building begins to show that an approved classification society declares that it is to supervise that building. **that an approved classification society has been already engaged to supervise that building, is submitted before building begins.**

22a-2 Application of ~~Part II~~ **chapter 3 to chapter 23**

22a-2.1 In addition to ~~Part II~~ **chapter 3 to chapter 23**, ~~Articles 22a.03 to 22a.05~~ the sections 22a-3 to 22a-5 shall apply to craft that are longer than 110 m.

22a-3 **Strength**

22a-3.1 Sufficient hull strength in accordance with ~~Article 3.02(1)(a)~~ **paragraph 3-1.1** (longitudinal, lateral and local strength) shall be verified by a certificate issued by an approved classification society.

22a-4 Buoyancy and stability

22a-4.1 Paragraphs ~~2 to 10~~ **22a-4.2 to 22a-4.10** shall apply to craft that are longer than 110 m, with the exception of passenger vessels.

22a-4.2. The basic values for the stability calculation, the vessel's lightweight and the location of the centre of gravity shall be determined by means of an inclining experiment carried out in accordance with Annex I to IMO Resolution MSC 267 (85).

22a-4.3. The applicant shall prove, by means of a calculation based on the method of lost buoyancy, that the buoyancy and stability of the vessel are appropriate in the event of flooding. All calculations shall be carried out with free sinkage, **heel** and trim.

Sufficient buoyancy and stability of the vessel in the event of flooding shall be proven with a cargo corresponding to its maximum draught and evenly distributed among all the holds and with maximum supplies and fully fuelled.

For diversified cargo, the stability calculation shall be performed for the most unfavourable loading condition. This stability calculation shall be carried on board.

For this purpose, mathematical proof of sufficient stability shall be determined for the intermediate stages of flooding (25%, 50% and 75% of flood build up, and, where appropriate, for the stage immediately prior to transverse equilibrium) and for the final stage of flooding, in the loading conditions specified above.

22a-4.4. The following assumptions shall be taken into consideration for the damaged condition:

(a i) Extent of side damage:

longitudinal extent: at least 0,10 L,

transverse extent: 0,59 m,

vertical extent: from the bottom upwards without limit.

(b ii) Extent of bottom damage:

longitudinal extent: at least 0,10 L,

transverse extent: 3,00 m,

vertical extent: from the base 0,39 m upwards, the sump excepted.

(e iii) Any bulkheads within the damaged area shall be assumed damaged, which means that the subdivision shall be chosen so that the vessel remains afloat after the flooding of two or more adjacent compartments¹⁴ in the longitudinal direction. For the main engine room only the one compartment standard need be taken into account, i.e. the end bulkheads of the engine room shall be assumed as not damaged.

For bottom damage, adjacent athwart ship compartments shall also be assumed as flooded.

¹⁴ The basin administration may waive the requirements prescribed in this paragraph with regard to the 2-compartment status.

(d iv) Permeability

Permeability shall be assumed to be 95%.

If a calculation proves that the average permeability of a compartment is less than 95%, the calculated value may be used instead.

The values used shall not be less than:

1. engine and operation rooms 85%
2. cargo holds : 70%
3. double bottoms, fuel tanks, ballast tanks, etc. depending on whether, according to their function, they have to be assumed as full or empty for the vessel floating at the maximum permissible draught: 0 or 95%

(e v) The calculation of free surface effect in intermediate stages of flooding shall be based on the gross surface area of the damaged compartments.

22a-4.5. For all intermediate stages of flooding referred to in paragraph 3 22a-4.3, the following criteria shall be met:

(a i) the heeling angle ϕ at the equilibrium position of the intermediate stage in question shall not exceed 15° (5° where containers are not secured);

(b ii) beyond the heel in the equilibrium position of the intermediate stage in question, the positive part of the righting lever curve shall display a righting lever value of $GZ \geq 0,02$ m ($0,03$ m where containers are not secured) before the first unprotected opening becomes immersed or a heeling angle ϕ of 27° is reached (15° where containers are not secured);

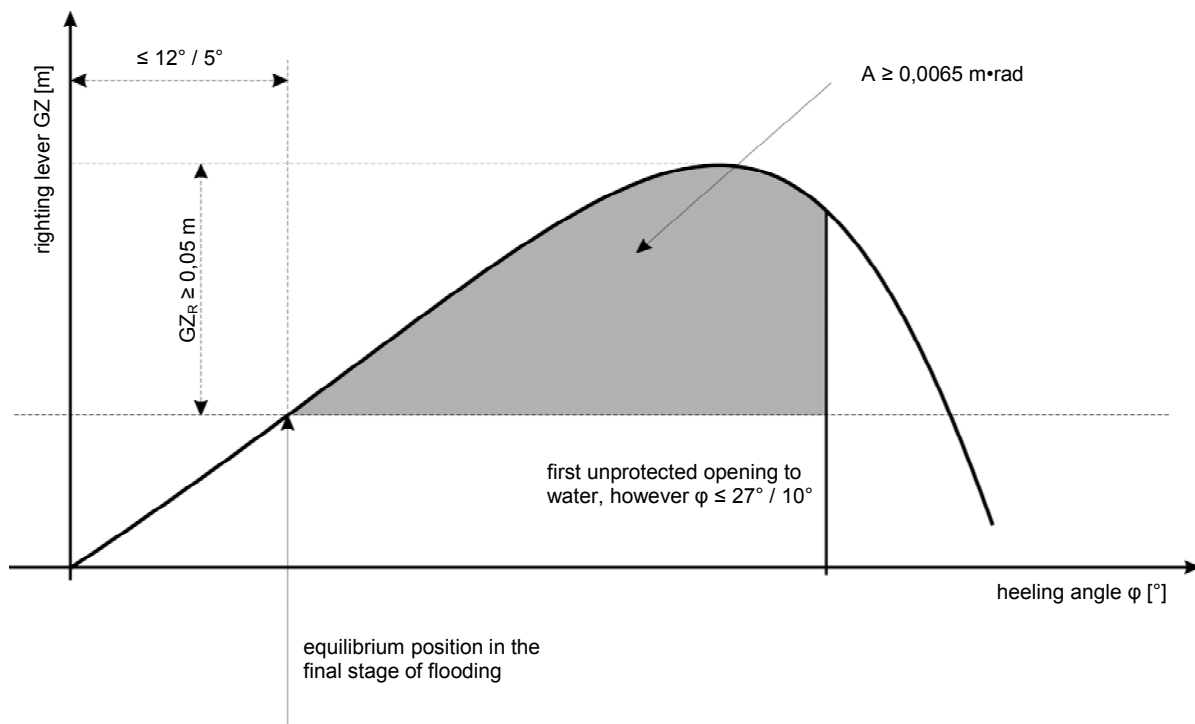
(e iii) non-watertight openings shall not be immersed before the heel in the equilibrium position of the intermediate stage in question has been reached.

22a-4.6. During the final stage of flooding, the following criteria shall be met:

(a i) the lower edge of non-watertight openings (e.g., doors, windows, access hatches) shall be not less than 0,10 m above the damaged waterline;

(b ii) the heeling angle ϕ at the equilibrium position shall not exceed 12° (5° where containers are not secured);

(e iii) beyond the heel in the equilibrium position of the intermediate stage in question, the positive part of the righting lever curve shall display a righting lever value of $GZ \geq 0,05$ m and the area under the curve shall reach at least 0,0065 m.rad before the first unprotected opening becomes immersed or a heeling angle ϕ of 27° (10° where containers are not secured) is reached;



(e iv) if non-watertight openings are immersed before the equilibrium position is reached, the rooms affording access shall be deemed flooded for the purposes of the damaged stability calculation.

22a-4.7 If cross-flood openings to reduce asymmetrical flooding are provided, the following conditions shall be met:

- (a i) for the calculation of cross-flooding, IMO Resolution A.266 (VIII) shall be applied;
- (b ii) they shall be self-acting;
- (e iii) they shall not be equipped with shut-off devices;
- (e iv) the total time allowed for equalisation shall not exceed 15 minutes.

22a-4.8. If openings through which undamaged compartments may additionally become flooded are capable of being closed watertight, the shut-off devices shall bear the following readily legible instruction on both sides:

"Close immediately after passage".

22a-4.9. The proof by calculation in accordance with paragraphs ~~3 to 7~~ **22a-4.3 to 22a-4.7** shall be considered to have been provided if damaged stability calculations in accordance with Part 9 of the Regulations annexed to the European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (hereinafter referred to as ADN) are produced with a positive result.

22a-4.10. Where necessary in order to meet the requirements in paragraph 3, **22a-4.3** the plane of maximum draught shall be re-established.

22a-5 Additional requirements

22a-5.1 Craft longer than 110 m shall:

(a i) be fitted with a multi-propeller propulsion system, with at least two independent engines of equal power and a bow thruster that is controlled from the wheelhouse and is also effective when the craft is in an unladen state; or

have a single-propeller propulsion system and a bow thruster that is controlled from the wheelhouse with its own power supply and which is also effective when the craft is in an unladen state and makes it possible for the craft to proceed under its own power in the event of a breakdown of the main propulsion system;

(b ii) be fitted with a radar navigation system, together with a rate-of-turn indicator in accordance with ~~Article 7.06(1)~~ **paragraph 7-4.1**;

(e iii) have a permanently-installed bilge pumping system in accordance with ~~Article 8.08~~ **section 8-1.6**;

(d iv) meet the requirements of ~~Article 23.09(1)(1)~~ **section 23-9**.

22a-5.2 For craft, except passenger ships, with a length of more than 110 m, which in addition to paragraph ~~+~~ **22a-5.1**

(a i) are capable of being separated, in the event of an accident, in the middle third of the vessel without the use of heavy salvage equipment while the separated parts of the vessel shall remain afloat after separation;

(b ii) are provided with a certificate that shall be carried on board and which is issued by an approved classification society regarding the buoyancy, trim position and stability of the separate parts of the vessel, indicating the degree of loading above which buoyancy of the two parts is no longer ensured;

(e iii) are built as double-hull vessels in accordance with the ADN, where for dry cargo vessels sections 9.1.0.91 to 9.1.0.95, and for tank vessels paragraph 9.3.2.11.7 and sections 9.3.2.13 to 9.3.2.15 or paragraph 9.3.3.11.7 and sections 9.3.3.13 to 9.3.3.15 of Part 9 of the ADN shall apply;

(d iv) are fitted with a multi-screw propulsion system in accordance with paragraph 1(i), first half sentence;

it shall be entered in item 52 of the EU ship's certificate that they comply with all the requirements of points ~~(a) to (d)~~ **(i) to (iv)**.

22a-5.3 For passenger vessels with a length of more than 110 m which in addition to paragraph ~~+~~ **22a-5.1**

(a i) are built or converted for their highest class under the supervision of an approved classification society, in which case compliance shall be confirmed by means of a certificate issued by the classification society while current class is not necessary;

(b ii) either

have a double bottom with a height of at least 600 mm and subdivision to ensure that, in the event of flooding of any two adjacent watertight compartments, the vessel does not immerse lower than the margin line and a residual safety clearance of 100 mm remains,

or

have a double bottom with a height of at least 600 mm and a double hull with a distance of at least 800 mm between the side wall of the vessel and the longitudinal bulkhead;

(e iii) ~~be~~ **are** fitted with a multi-screw propulsion system with at least two independent engines of equal power and a bow thruster system which can be operated from the wheelhouse and which operates longitudinally as well as transversely;

(d iv) allow the stern anchor to be operated directly from the wheelhouse;

it shall be entered in item 52 of the ~~EU~~ **ship's** certificate that they comply with all the requirements of points ~~(a) to (d)~~ **(i) to (iv)**.

Article 22a.06

Application of Part IV in the event of conversion

~~The inspection body may apply Chapter 24 to craft converted to a length of more than 110 m only on the basis of specific recommendations by the Committee.~~

V. New section 3–6 “Other provisions”

8. After section 3–5 *add* a new section 3–6 *to read*:

3–6.1 ~~Article 3.03(7)~~ The foresections of vessels shall be built in such a way that the anchors neither wholly nor partly protrude beyond the ~~side hull~~ plating **A basin administration may accept other arrangements as regards to stowage of the raised anchors as an equivalent safety level has been proved.**
