

This document is meant purely as a documentation tool and the institutions do not assume any liability for its contents

► **B**

**COUNCIL DIRECTIVE**  
**of 4 October 1982**  
**laying down technical requirements for inland waterway vessels**  
**(82/714/EEC)**

(OJ L 301, 28.10.1982, p. 1)

Amended by:

		Official Journal		
		No	page	date
► <b><u>A1</u></b>	Act of Accession of Austria, Sweden and Finland	C 241	21	29.8.1994
	(adapted by Council Decision 95/1/EC, Euratom, ECSC)	L 1	1	1.1.1995



**COUNCIL DIRECTIVE**

**of 4 October 1982**

**laying down technical requirements for inland waterway vessels**

(82/714/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community, and in particular Article 75 thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the European Parliament <sup>(1)</sup>,

Having regard to the opinion of the Economic and Social Committee <sup>(2)</sup>,

Whereas the objectives and implementation of a common policy for transport require *inter alia*, in the field of inland navigation, that the movement of vessels on the Community network take place under the best conditions as far as safety and competition are concerned;

Whereas Council Directive 76/135/EEC of 20 January 1976 on reciprocal recognition of navigability licences for inland waterway vessels <sup>(3)</sup>, as last amended by Directive 78/1016/EEC <sup>(4)</sup>, provides that the Council shall adopt common provisions establishing technical requirements for inland waterway vessels; whereas the aim of this Directive is to establish such requirements; whereas, however, certain categories of vessel should be excluded from the scope of this Directive;

Whereas Community inland waterways differ as regards safety and should therefore be divided into a number of zones; whereas it is desirable not to conflict with the system set up by the Revised Convention for the Navigation of the Rhine;

Whereas it is desirable to introduce a Community inland navigation certificate, valid on all Community waterways except those where the Revised Convention for the Navigation of the Rhine applies, attesting the compliance of vessels with the common technical requirements;

Whereas it must be possible to make use of the inspection certificate issued in accordance with Article 22 of the Revised Convention for the Navigation of the Rhine on all Community waterways, subject, in certain cases, to possession of an additional Community certificate;

Whereas, in view of their local importance and special safety requirements, Member States must be empowered to exempt from the application of the whole or part of this Directive certain vessels which do not operate on the inland waterways of other Member States;

Whereas the dates necessary for the carrying out of the technical inspections which give rise to the issue of certificates for vessels in service should be laid down;

Whereas, in order to facilitate the speedy adaptation to technical progress of the Annexes to this Directive, a streamlined amendment procedure should be laid down;

Whereas, pursuant to Article 7 of Directive 76/135/EEC, the measures provided for in that Directive are to remain in force until the entry into force of this Directive; whereas it is necessary for Directive 76/135/EEC to remain applicable to those vessels covered by it which are not covered by this Directive,

<sup>(1)</sup> OJ No C 289, 19. 11. 1979, p. 25.

<sup>(2)</sup> OJ No C 182, 21. 7. 1980, p. 16.

<sup>(3)</sup> OJ No L 21, 29. 1. 1976, p. 10.

<sup>(4)</sup> OJ No L 349, 13. 12. 1978, p. 31.

**▼B**

HAS ADOPTED THIS DIRECTIVE:

## TITLE I

**General provisions***Article 1*

For the purposes of this Directive, Community inland waterways shall be classified as follows:

- Zones 1 and 2: the waterways listed in Chapter 1 of Annex I,
- Zone 3: the waterways listed in Chapter 2 of Annex I,
- Zone 4: all other Community waterways.

Zone R covers those of the abovementioned waterways for which inspection certificates are to be issued in accordance with Article 22 of the Revised Convention for the Navigation of the Rhine as this Article is worded when the Directive is adopted.

*Article 2*

1. This Directive shall apply to:

- vessels having a total dead weight of 15 tonnes or more, or vessels not intended for the carriage of goods having a displacement of 15 cubic metres or more,
- tugs and pusher craft, including those with a displacement of less than 15 cubic metres, provided that they have been built to tow or push or to move vessels alongside.

2. The following are excluded from this Directive:

- passenger vessels,
- ferries,
- floating equipment,
- floating establishments and installations including those being moved from one location to another,
- pleasure craft,
- service craft belonging to supervisory authorities and fire-service vessels,
- naval vessels,
- sea-going vessels, including sea-going tugs and pusher craft operating or based on tidal waters or temporarily on inland waterways, carrying a valid navigation permit,
- tugs and pusher craft with a displacement of less than 15 cubic metres which have been built to tow, push or move alongside only vessels with a displacement of less than 15 cubic metres.

*Article 3*

Vessels operating on the Community waterways listed in Article 1 shall carry:

- a certificate issued pursuant to Article 22 of the Revised Convention for the Navigation of the Rhine, when operating on a Zone R waterway,
- a Community inland-navigation certificate issued to vessels complying with the technical requirements of Annex II, when operating on waterways of other zones.

The Community certificate shall be drawn up following the model given in Annex III and shall be issued in accordance with this Directive.

*Article 4*

1. All vessels carrying a valid certificate issued pursuant to Article 22 of the Revised Convention for the Navigation of the Rhine may navigate on Community waterways carrying only that certificate.

**▼B**

2. However, all vessels carrying the certificate referred to in paragraph 1 shall also be provided with a supplementary inland-navigation certificate (supplementary Community certificate):

- when operating on Zone 3 and 4 waterways, if they wish to take advantage of the reduction in technical requirements on these waterways,
- when operating on Zone 1 and 2 waterways, if the Member State concerned has adopted additional technical requirements for these waterways, in accordance with Article 5.

The supplementary Community certificate shall be drawn up following the model shown in Annex IV and shall be issued by the competent national authorities on production of the certificate referred to in paragraph 1 and under the conditions laid down by them.

*Article 5*

1. Each Member State may, subject to the requirements of the Revised Convention for the Navigation of the Rhine and after consulting the Commission, adopt technical requirements additional to those in Annex II for vessels operating on Zone 1 and 2 waterways within its territory.

Such additional requirements shall be communicated to the other Member States and the Commission at least six months before their entry into force, unless they were already in force on 21 January 1977.

2. Compliance by the vessels with these additional requirements shall be specified in the Community certificate referred to in Article 3 or, where Article 4 (2) applies, in the supplementary Community certificate.

*Article 6*

Any vessel carrying a certificate issued pursuant to the Regulation for the transport of dangerous substances on the Rhine (ADNR) may carry dangerous goods throughout the territory of the Community under the conditions stated in that certificate.

Any Member State may require that vessels which do not carry an ADNR certificate shall be authorized to carry dangerous goods within its territory only if the vessels comply with requirements additional to those set out in this Directive. Such requirements shall be notified to the Commission and the other Member States.

*Article 7*

1. Member States may exempt from the application of all or part of this Directive:

- (a) vessels operating on navigable waterways not linked, by inland waterway, to the waterways of other Member States;
- (b) vessels having a dead weight not exceeding 350 tonnes which were laid down before 1 January 1950 and operate exclusively on a national waterway.

2. Member States may authorize in respect of navigation on their national waterways exemptions from one or more provisions of this Directive for limited journeys of local interest or in harbour areas. The derogations in question and the journeys or area for which they are valid shall be specified in the vessel's certificate.

3. The Commission shall be notified of derogations adopted pursuant to this Article.

4. Any Member State which, as a result of derogations granted in accordance with paragraphs 1 and 2, has no vessels subject to the provisions of this Directive operating on its waterways shall not be required to comply with Articles 9, 10 and 12.

**▼B**

## TITLE II

**Conditions and rules for issuing Community in and waterway certificates***Article 8*

1. The Community certificate shall be issued to vessels laid down as from 1 January 1985 following a technical inspection carried out prior to the vessel being put into service and intended to check whether the vessel complies with the technical requirements laid down in Annex II.

2. The Community certificate shall be issued to vessels in service on 1 January 1985 and to vessels laid down before that date following a technical inspection to be carried out between 1 January 1986 and 1 July 1998, in accordance with a timetable to be laid down by each Member State, to check that the vessel complies with the technical requirements laid down in Annex II. This timetable shall be notified to the Commission and the other Member States.

However, in the case of vessels navigating exclusively on its national network and laid down before 1 January 1970, any Member State may decide to extend by seven years the period during which the technical inspection shall be carried out.

3. Compliance of a vessel with the additional requirements referred to in Article 5 shall, where appropriate, be checked during the technical inspections provided for in the preceding paragraphs, or during a technical inspection carried out at the request of the vessel's owner.

*Article 9*

The Community certificate shall be issued by the competent national authority of the Member State in which the vessel is registered or, failing that, of the Member State in which its home port is situated or, failing that, of the Member State in which the owner is established.

Such authorities may, where appropriate, request the competent authorities of another Member State to issue the certificate.

Each Member State shall draw up a list indicating which of its authorities are competent for issuing the certificates and shall notify it to the Commission and the other Member States.

Any Member State which, by virtue of Article 7 (4), has not appointed a competent authority may request another Member State or States to direct their competent authorities to issue Community certificates in respect of vessels registered in or having their home port in its territory, or owned by persons established therein

*Article 10*

The technical inspection referred to in Article 8 shall be carried out by competent authorities which may refrain from subjecting the vessel in whole or in part to technical inspection where it is evident from a valid attestation, issued by a classification society approved by the State in which the certificate is issued, that the vessel satisfies in whole or in part the technical requirements of Annex II.

Each Member State shall draw up a list indicating which of its authorities are competent for carrying out technical inspections and shall notify it to the Commission and the other Member States.

*Article 11*

The period of validity of the Community certificate shall be determined in each specific case by the authority competent for issuing such certificates. However, this period shall not exceed 10 years.

*Article 12*

Each Member State shall lay down the conditions under which a valid certificate which has been lost or damaged may be replaced.

**▼B**

## TITLE III

**Conditions and rules for the renewal or amendment of certificates***Article 13*

The Community certificate shall be renewed on expiry of its period of validity, in accordance with the conditions and rules for the issue of such certificates.

*Article 14*

The validity of the certificate may exceptionally be extended for a maximum period of 12 months by the authority which issued or renewed it.

Such extension shall be indicated on the Community certificate.

*Article 15*

In the event of major alterations or repairs which modify the structural soundness or characteristics of the vessel, the latter shall again undergo, prior to any further voyage, the technical inspection provided for in Article 8.

Following this inspection, a new certificate stating the technical characteristics of the vessel shall be issued.

If this certificate is issued in a Member State other than that which issued or renewed the initial certificate, the competent authority which issued or renewed the certificate shall be informed accordingly within one month.

## TITLE IV

**Refusal or withdrawal***Article 16*

Any decision to refuse to issue or renew the Community certificate shall state the grounds on which it is based. The person concerned shall be notified thereof and of the appeal procedure and its time limits in the Member State concerned.

Any valid certificate may be withdrawn by the competent authority which issued or renewed it if the vessel ceases to comply with the technical requirements specified in its certificate.

## TITLE V

**Verification***Article 17*

1. The competent authorities of a Member State may at any time check that a vessel is carrying a certificate valid under the terms of this Directive and satisfies the requirements set out in such certificate(s).

2. If the authorities find upon inspection that the certificate is invalid, or that the vessel does not satisfy the requirements set out in the certificate, but that such invalidity or failure to satisfy the requirements does not constitute a manifest danger, the owner of the vessel or his representative shall take all necessary measures to remedy the situation. The authority which issued the certificate or which last renewed it shall be informed.

3. If, upon making the inspection referred to in paragraph 1, the authorities find that the certificate is not being carried or that the vessel constitutes a manifest danger, they may prevent the vessel from proceeding until the necessary steps have been taken to remedy the situation.

**▼B**

They may also prescribe measures which will enable the vessel to proceed safely, where appropriate on termination of its transport operations, to a place where it will be either inspected or repaired. The authority which issued or last renewed the certificate shall be informed.

4. A Member State which has prevented a vessel from proceeding, or has notified the owner of its intention to do so if the defects found are not corrected, shall inform the authority in the Member State which issued or last renewed the certificate, of the decision which it has taken or intends to take.

5. Any decision to interrupt the passage of a vessel taken pursuant to measures adopted in implementation of this Directive shall state in detail the reasons on which it is based. It shall be notified to the party concerned, who shall at the same time be informed of the appeal procedures available to him under the laws in force in the Member States and of their time limits.

## TITLE VI

**Provisions applicable to the vessels of third countries***Article 18*

Pending the conclusion of agreements on the mutual recognition of navigability certificates between the Community and third countries, Member States may recognize the navigability certificates of vessels from third countries and, where appropriate, issue Community certificates or supplementary Community certificates to vessels from third countries in accordance with this Directive.

## TITLE VII

**Adaption of the Annexes to the Directive to technical progress***Article 19*

The Council, acting by a qualified majority on a proposal from the Commission, shall adopt any amendments necessary to adapt the Annexes to this Directive to technical progress.

## TITLE VIII

**Final provisions***Article 20*

Directive 76/135/EEC shall continue to apply to:

- vessels in service referred to in Article 8 (2) of this Directive until such time as they undergo the inspection provided for in that Article,
- passenger vessels,
- vessels which carry a Community certificate but do not yet comply with the requirements of Annex II, in accordance with the rules set out in 13.01 (a) of Chapter 13.

*Article 21*

The provisions concerning the composition and qualifications of crews and the necessary certificates which apply in Member States are not affected by this Directive.

*Article 22*

Member States shall, after consulting the Commission, adopt the provisions necessary to comply with this Directive not later than 1 January 1985.

*Article 23*

This Directive is addressed to the Member States.



ANNEX I

**LIST OF COMMUNITY INLAND WATERWAYS DIVIDED  
GEOGRAPHICALLY INTO ZONES 1, 2, 3 AND 4**

*(Article 1 of the Directive)*

CHAPTER I

**Zone 1**

*Federal Republic of Germany*

Ems: from a line linking the Delfzijl and Knock lighthouses towards the open sea as far as latitude 53° 30' N and longitude 6° 45' E (i.e. somewhat outside the trans-shipment zone for dry-cargo carriers in the Alte Ems, taking account of the Ems-Dollart cooperation treaty).

**Zone 2**

*Federal Republic of Germany*

Ems: from a line, going from the entrance to the port towards Papenburg crossing the Ems, which links the Diemen pumping station (Diemer Schöpfwerk) and the opening of the dyke at Halte as far as a line linking the Delfzijl and Knock lighthouses, taking account of the Ems-Dollart cooperation treaty.

Jade: inside a line linking the Schillighörn upper light and Langwarden church tower.

Weser: from the Bremen railway bridge to a line linking the Langwarden and Kappel church towers with the Schweiburg secondary arm including the Kleine Weser, Reкуnder-Loch, and Rechter Nebenarm secondary arms.

Elbe: from the lower limit of the port of Hamburg to a line linking the Döse beacon and the north-west point of the Hohe Ufer (Dieksand) with the Este, Lühe, Schwinge, Oste, Pinnau, Krückau and Stör tributaries (in each case from the barrage to the mouth) including the Nebeneibe.

Meldorfer Bucht: inside a line linking the north-west point of the Hohe Ufer (Dieksand) and the Büsum west pier head.

Flensburger Förde: inside a line linking the Kekenis lighthouse and Birknack.

Eckernförder Bucht: inside a line linking Bocknis-Eck to the north-west tip of the mainland at Dänisch Nienhof.

Kieler Förde: inside a line linking the Bülk lighthouse and the Laboe naval memorial.

Leda: from the entrance to the outer harbour of Leer sea lock to the mouth.

Hunte: from the port of Oldenburg and from 200 m downstream of the Amalienbrücke in Oldenburg to the mouth.

Lesum: from the Bremen-Burg railway bridge to the mouth.

Este: from the Buxtehude barrage gate to the Este barrage.

Lühe: from the mill 250 m upstream of the Marschdamm-Horneburg road bridge to the Lühe barrage.

Schwinge: from the footbridge downstream of the Güldenstern bastion at Stade to the Schwinge barrage.

Freiburger-Hafenpriel: from the Freiburg/Elbe sluices to the mouth.

Oste: from the Bremervörde mill dam to the Oste barrage.

Pinnau: from the Pinneburg railway bridge to the Pinnau barrage.

Krückau: from the Elmshorn watermill to the Krückau barrage.

Stör: from Pegel Rensing to the Stör barrage.

Eider: from the Gieselau Canal to the Eider barrage.

Nord-Ostsee-Kanal (Kiel Canal): from a line linking the Brunsbüttel pier heads to a line linking the Kiel-Holtenau entry lights and the Schirnauer See, Bergstedter See, Audorfer See, Obereidersee with Enge, the Achterwehrer canal and the Flemhuder See.



**▼B**

Trave: from the railway bridge and the Holsten bridge (Stadttrave) in Lübeck to a line linking the two outer pier heads of Travemünde and the Pötentzer Wiek and the Dassower See.

Schlei: inside a line linking the Schleimünde pier heads.

*French Republic*

Seine: downstream of the Jeanne d'Arc bridge in Rouen.

Garonne and Gironde: downstream of the Bordeaux stone bridge.

Rhône: downstream of the Trinquetaille bridge in Arles and beyond towards Marseille.

*Kingdom of the Netherlands*

Dollard.

Eems.

Waddenzee: including the links with the North Sea.

IJsselmeer: including the Markermeer and the IJmeer but excluding the Gouwzee.

Rotterdam Waterweg and the Scheur.

Hollands Diep.

Haringvliet and Vuile Gat: including the waterways between Goeree-Overflakkee on the one hand and Voorne-Putten and Hoekse Waard on the other.

Hellegat.

Volkerak.

Kramer.

Grevelingen and Brouwershavense Gat: including all the waterways between Schouwen-Duiveland and Goeree-Overflakkee.

Keten, Mastgat, Zijpe Eastern Scheldt and Roompot: including the waterways between Walcheren, Noord-Beveland and Zuid-Beveland on the one hand and Schouwen-Duiveland and Tholen on the other hand, excluding the Scheldt-Rhine Canal.

Scheldt and Western Scheldt and its mouth on the sea: including the waterways between Zeeland Flanders on the one hand and Walcheren and Zuid-Beveland on the other, excluding the Scheldt-Rhine Canal.

**▼A1***Sweden*

Trollhätte kanal and Göta älv.

Lake Vänern.

Södertälje kanal

Lake Mälaren.

Falsterbo kanal.

Sotenkanalen.

**▼B**

## CHAPTER II

**Zone 3***Kingdom of Belgium*

Maritime Scheldt (downstream of Antwerp open anchorage).

*Federal Republic of Germany*

Danube: from Kelheim (km 414-60) to the German-Austrian border.

Rhine: from the German-Swiss border to the German-Netherlands border.

Elbe: from the mouth of the Elbe-Seiten-Canal to the lower limit of the port of Hamburg.

*French Republic*

Rhine.

*Kingdom of the Netherlands*

Rhine.

Sneekmeer, Koevordermeer, Heegermeer, Fluessen, Slotermeer, Tjeukemeer, Beulakkerwijde, Belterwijde, Ramsdiep, Ketelmeer, Zwartemeer, Veluwemeer, Eemmeer, Alkmaardermeer, Gouwzee, Buiten IJ, afgesloten IJ, Noordzeekanaal, port of IJmuiden, Rotterdam port area, Nieuwe Maas, Noord, Oude Maas, Beneden Merwede, Nieuwe Merwede, Dordtsche Kil, Boven Merwede, Waal, Bijlandsch Canal, Boven Rijn, Pannersdensch Canal, Geldersche IJssel, Neder Rijn, Lek, Amsterdam-Rhine Canal, Veerse Meer, Scheldt-Rhine Canal as far as the mouth in the Volkerak, Amer, Bergsche Maas, the Meuse below Venlo.

**▼A1***Austria*

Danube from the Austrian-German border to the Austrian-Slovak border.

*Sweden*

Göta kanal.

Lake Vättern.

**▼B**

## CHAPTER III

**Zone 4***Kingdom of Belgium*

The entire Belgian network except the waterways in Zone 3.

*Federal Republic of Germany*

All Federal waterways except those in Zones 1, 2 and 3.

*French Republic*

The entire French network except the waterways in Zones 1, 2 and 3.

*Kingdom of the Netherlands*

All other rivers, canals and inland seas not listed in Zones 1, 2 and 3.

*Italian Republic*

River Po: from Piacenza to the mouth.

Milan-Cremona Canal, River Po: final stretch of 15 km to the Po.

▼ B

River Mincio: from Mantua, Governolo to the Po.

Ferrara Waterway: from the Po (Pontelagoscuro), Ferrara to Porto Garibaldi.

Brondolo and Valle Canals: from the eastern Po to the Venice lagoon.

Fissero Canal — Tartaro — Canalbianco: from Adria to the eastern Po.

Venetian coastline: from the Venice lagoon to Grado.

*Grand Duchy of Luxembourg*

Moselle.

▼ A1

*Sweden*

All other rivers, canals and lakes not listed in Zones 1, 2 and 3.



*ANNEX II*

**MINIMUM TECHNICAL REQUIREMENTS FOR VESSELS OPERATING ON WATERWAYS IN ZONES 1, 2, 3 AND 4**

*(Article 3 of the Directive)*

	Page
CHAPTER 1 — DEFINITIONS	13
CHAPTER 2 — REQUIREMENTS RELATING TO SHIPBUILDING	14
2.01. Basic rule	14
2.02. Hull	14
2.03. Heating, cooking and refrigeration appliances	14
2.04. Heating with liquid fuels having a flash-point above 55 °C	15
2.05. Solid fuel heating	15
2.06. Engine and boiler rooms and bunkers	16
CHAPTER 3 — STEERING GEAR AND WHEELHOUSE	16
3.01. General	16
3.02. Effectiveness of the steering gear	16
3.03. General design requirements	17
3.04. Powered steering gear	17
3.05. Engagement of the secondary drive	17
3.06. Manual drive	17
3.07. Manually operated hydraulic drive	17
3.08. Hydraulic drive	17
3.09. Electric drive	18
3.10. Rudder propellers and Voith-Schneider equipment	18
3.11. Remote-control installations	18
3.12. Rudder position indicator	18
3.13. Steering assistance	18
3.14. Unobstructed view	19
3.15. Sound pressure	19
3.16. Electrical components of steering gear	19
3.17. Lowerable wheelhouse	20
CHAPTER 4 — SAFETY DISTANCE, FREEBOARD AND DRAUGHT SCALES	20
4.01. Definitions	20
4.02. Safety distance	20
4.03. Freeboard	20
4.04. Draught marks	20
4.05. Draught scales	21

**▼B**

CHAPTER 5 — MACHINERY	21
5.01. General	21
5.02. Safety equipment	21
5.03. Propelling mechanism	21
5.04. Engine exhaust pipes	22
5.05. Tanks, bunkers and piping	22
5.06. Bilge pumps	22
5.07. Waste oil gathering system	23
5.08. Winches	23
5.09. Vessel's intrinsic noise	23
CHAPTER 6 — ELECTRICAL INSTALLATIONS	24
6.01. General	24
6.02. Maximum permissible voltages	24
6.03. Shore connections	24
6.04. Generators and motors	25
6.05. Accumulators	25
6.06. Electrical switchboards	26
6.07. Switches, plugs, fuses and cable protection	26
6.08. Earth detector equipment	27
6.09. Lighting	27
6.10. Signal lights	27
6.11. Earthing	27
6.12. Emergency power installation	27
CHAPTER 7 — EQUIPMENT	28
7.01. Anchors, chains and anchor cables	28
7.02. Other equipment	28
7.03. Fire-fighting appliances	28
7.04. Ship's boats	30
7.05. Lifebuoys, ball-floats and life-jackets	31
CHAPTER 8 — LIQUEFIED GAS INSTALLATIONS FOR DOMESTIC USES	31
8.01. General	31
8.02. Installation	32
8.03. Receptacles	32
8.04. Siting and arrangement of supply unit	32
8.05. Spare and empty receptacles	32
8.06. Reducing valves	32
8.07. Pressures	33
8.08. Pipes and flexible tubes	33

**▼B**

8.09. Distribution system	33
8.10. Gas-consuming appliances and their installations	33
8.11. Ventilation and evacuation of combustion gases	34
8.12. Instructions for use and safety	34
8.13. Inspection	34
8.14. Tests	34
8.15. Attestation	35
CHAPTER 9 — SPECIAL WHEELHOUSE ARRANGEMENTS FOR STEERING ON RADAR BY ONE PERSON	35
9.01. General	35
9.02. General design conditions	35
9.03. Radar equipment and speed of rotation indicator	35
9.04. Signalling and signal-emitting equipment	36
9.05. Installations for steering the vessel and operating the engines	36
9.06. Stern anchor handling gear	36
9.07. Telephone equipment	36
9.08. Alarm signals	37
9.09. Other instruments	37
9.10. Endorsement of the inspection certificate	37
CHAPTER 10 — SPECIAL PROVISIONS FOR VESSELS DESIGNED TO BE MADE UP INTO PUSHED TRAINS, PULLED TRAINS OR TO BE BREASTED UP	37
10.01. Pushers	37
10.02. Lighters	37
10.03. Powered vessels and tugs capable of pushing	38
10.04. Pushed train tests	38
10.05. Towing vessels	38
10.06. Vessels designed to propel breasted-up formations	38
CHAPTER 11 — HEALTH AND SAFETY IN THE CREW'S ACCOMMODATION AND WORKING STATIONS	39
11.01. General	39
11.02. Siting and fitting-out of the accommodation	39
11.03. Dimensions of the accommodation	39
11.04. Piping in the accommodation	40
11.05. Means of access, doors and companionways in the accommodation	40
11.06. Accommodation floors, walls and ceilings	40
11.07. Heating and ventilation of the accommodation	40
11.08. Daylight and lighting in the accommodation	41
11.09. Furnishing of the accommodation	41
11.10. Galleys, mess rooms and storerooms	41
11.11. Sanitary installations	41
11.12. Potable water installations	42
11.13. Safety devices	42

**▼B**

11.14. Accessibility of working stations	43
11.15. Dimensions of working stations	43
11.16. Protection against falling	43
11.17. Access, doors and companionways of working stations	43
11.18. Floors, deck surfaces, hold floorings, walls, ceilings, ports and skylights	44
11.19. Ventilation and heating of working stations	44
11.20. Natural light and lighting of working stations	44
11.21. Protection against noise and vibration	44
CHAPTER 12 — PROVISIONS RELATING TO TECHNICAL REQUIREMENTS ADDITIONAL TO ZONE 4 REQUIREMENTS APPLICABLE TO VESSELS OPER- ATING ON ZONE 3 INLAND WATERWAYS	45
12.01. Requirements relating to shipbuilding	45
12.02. Freeboard, safety distance and draught scales	45
12.03. Equipment	48
12.04. Special provisions for vessels designed to be made up into pushed trains, pulled trains or to be breasted up	49
CHAPTER 13 — DEROGATIONS FOR VESSELS IN SERVICE	49
CHAPTER 14 — PROCEDURE	53
14.01. Application for inspection	53
14.02. Presentation of the vessel for inspection	53
14.03. Costs	53
14.04. Information	53
14.05. Register of Community certificates	53
14.06. Completion of Community certificates	54
14.07. Comments on various points in the certificate	54

## ▼B

## CHAPTER 1

## DEFINITIONS

For the purposes of this Directive and the Annexes thereto:

- (a) 'vessel' means an inland waterway vessel;
- (b) 'ordinary powered vessel' means any vessel intended for the carriage of goods, not being a tanker vessel, built to navigate independently under its own motive power;
- (c) 'powered tanker' means any vessel intended to carry goods in fixed tanks and built to navigate independently under its own motive power;
- (d) 'powered vessel' means an ordinary powered vessel or a powered tanker;
- (e) 'tug' means any vessel specially built to perform towing;
- (f) 'pusher' means any vessel specially built to propel a pushed train of craft;
- (g) 'pusher tug' means any vessel specially built to perform towing and propel a pushed train of craft;
- (h) 'dumb barge' means any vessel, not being a tank barge, intended for the carriage of goods and built to be towed, and:
  - either having no motive power of its own,
  - or having only sufficient motive power to perform short manoeuvres;
- (i) 'tank barge' means any vessel intended for the carriage of goods in fixed tanks and built to be towed, and:
  - either having no motive power of its own,
  - or having only sufficient motive power to perform short manoeuvres;
- (k) 'barge' means a dumb barge or tank barge;
- (l) 'ordinary lighter' means any vessel intended for the carriage of goods, not being a tank lighter, built or specially modified to be pushed, and:
  - either having no motive power of its own,
  - or having only sufficient motive power to perform short manoeuvres when not part of a pushed train of craft;
- (m) 'tank lighter' means any vessel intended for the carriage of goods in fixed tanks, built or specially modified to be pushed, and:
  - either having no motive power of its own,
  - or having only sufficient motive power to perform short manoeuvres when not part of a pushed train of craft;
- (n) 'ship-borne lighter' means a pushed lighter built to be carried aboard sea-going vessels and to navigate on inland waterways;
- (o) 'lighter' means an ordinary lighter, tank lighter or ship-borne lighter;
- (p) 'passenger boat' means any vessel built and fitted out to carry more than 12 passengers;
- (q) 'floating equipment' means any floating structure carrying mechanical installations and intended for work on waterways or in ports (e.g. a dredger, elevator, sheer-legs or crane);
- (r) 'floating establishment' means any floating installation not normally intended to be moved (e.g. a swimming bath, dock, jetty or boathouse);
- (s) 'floating installation' means a raft or any other structure, object or assembly capable of navigation not being a vessel or floating equipment or establishment;
- (t) 'wheelhouse' means the space in which all the gear necessary for controlling the vessel is installed;
- (u) 'engine room' means the space in which the propulsion machinery and auxiliaries are installed;
- (v) 'accommodation' means any space intended for the use of persons normally living on board, or of passengers, and includes the galley, storage space for provisions, toilets and washing facilities, laundry facilities, landings and gangways, but not the wheelhouse;
- (w) 'plane of maximum draught' means the waterplane corresponding to the maximum draught at which the vessel is authorized to navigate;
- (x) 'freeboard' means the distance between the plane of maximum draught and a parallel plane passing through the lowest point of the side deck or, in the absence of a side deck, the lowest point of the upper edge of the full planking or plating;



**▼B**

- (y) 'safety distance' means the distance between the plane of maximum draught and the parallel plane passing through the lowest point above which the vessel is not regarded as watertight;
- (z) 'certificate' means the Community certificate for inland waterway vessels.

## CHAPTER 2

**REQUIREMENTS RELATING TO SHIPBUILDING****2.01. Basic rule**

Vessels must be constructed in accordance with good shipbuilding practice; their stability must accord with the use for which they are intended.

**2.02. Hull**

2.02.1. The hull must be sufficiently strong for all stresses to which it is subjected under normal conditions.

2.02.2. Water intakes and outlets and pipes connected to them are considered watertight if they are made in such a way that any unintentional ingress of water into the vessel is impossible.

2.02.3. Water bulkheads extending to the deck or, in the absence of a deck, to the upper edge of the hull planking or plating must be installed as follows:

- (a) a collision bulkhead at an appropriate distance from the stem;
- (b) in vessels whose length overall is over 25 m, a stern bulkhead at an appropriate distance from the stern.

2.02.4. The accommodation, engine and boiler rooms and any working spaces forming part of them must be separated from the holds in a watertight manner.

2.02.5. Any compartment not normally hermetically sealed during a voyage shall be capable of being pumped dry. It must be possible to pump out each compartment separately.

2.02.6. There must be no accommodation forward of the collision bulkhead. Accommodation must be separated from the engine and boiler rooms by gas-tight bulkheads and directly accessible from the deck. Where there is no such access, there shall be an emergency exit leading directly on to the deck.

2.02.7. There must be no openings in the bulkheads and other partitions between spaces required under 2.02.3 and 2.02.4. Manholes are permitted, however, in bulkheads other than the collision bulkhead, on condition that they are bolted in a watertight manner. Hatchways in the stern bulkhead and openings for propeller shafts, piping, etc., are permitted when they are constructed in such a manner as not to affect the effectiveness of the bulkheads and other partitions between spaces.

2.02.8. By way of derogation from 2.02.5 and 2.02.7, the stern compartment may communicate with an engine room by means of a readily accessible self-closing drain installation.

**2.03. Heating, cooking and refrigeration appliances**

2.03.1. The heating, cooking and refrigeration equipment, together with its accessories, must be so designed and installed that it is not dangerous even in the event of overheating. It shall be so installed that it cannot overturn or be moved accidentally.

2.03.2. When the equipment referred to in 2.03.1 uses liquid fuel it may be operated only with fuels whose flashpoint is above 55 °C.

2.03.3. By way of derogation from 2.03.2, cooking appliances and heating and refrigeration appliances fitted with burners with wicks and working on commercial paraffin may be permitted in the accommodation and wheelhouse, subject to the capacity of the fuel tank not exceeding 12 litres.

2.03.4. The installations referred to in 2.03.1 may not be installed in spaces or engine rooms in which category K1n or K1s or K2 substances Class IIIa of the ADN are stored or used.

**▼B**

No flues from these installations may pass through the said spaces or engine rooms.

- 2.03.5. The intake of air necessary for combustion must be ensured. No closing devices should be fitted on ventilation fans.
- 2.03.6. Heating and cooking appliance must be securely connected to the flues. The flue pipes must be in good condition and fitted with suitable caps or devices affording protection from the wind. The flues of heating installations must be arranged in such a manner as to limit the possibility of obstruction by combustion products and to permit cleaning.
- 2.03.7. Vents must be fitted above the outlets of refrigeration appliances working on liquid fuel.

2.04. **Heating with liquid fuels having a flash-point above 55 °C**

- 2.04.1. All appliances must be so built that they can be lighted without the aid of another combustible liquid. They must be fixed over a metal drip pan with sufficient capacity to prevent an accidental overflow of fuel and equipped with a device to prevent leaks in the event of the flame accidentally going out. Where the fuel tank and the appliance are separate, the drop between the tank and the burner feed may not exceed that laid down in the manufacturer's operating instructions. The tank must not be close to a flame. It must be possible to interrupt the flow of fuel from the deck.

Fuel tanks with a capacity of over 12 litres must not be installed inside accommodation.

- 2.04.2. When an appliance is installed in an engine room, the conditions governing its installation must be posted.

Where appliances with a naked flame are installed in an engine room, they must be placed above a leak-proof pan with side walls extending not less than 0.20 m above the floor.

- 2.04.3. Where an appliance is installed in the engine room, the air supply to the appliance and to the engines must be such that the appliance and the engines can function independently, effectively and in complete safety. If necessary, separate air supply pipes must be installed.

- 2.04.4. All natural draught equipment must be fitted with a device to prevent draught inversion.

Forced-draught equipment must be fitted with a device that automatically stops the flow of fuel when the supply of air necessary for combustion is interrupted.

- 2.04.5. Forced-draught central heating appliances mounted in an engine room or a compartment accessible from the engine room must also meet the following requirements:

- (a) during start-up, the fan must initially function alone to ensure that the boiler is well ventilated;
- (b) there must be a thermostatic device to regulate the fuel flow;
- (c) the fuel must be ignited automatically by pilot flame or any other means;
- (d) it must be possible to stop the fan and the burner fuel pump from the deck;
- (e) if the central heating appliance is in the engine room, it must be so installed that no flame from the burner can reach other items in the space;
- (f) where warm-air heating appliances are installed in the engine room, the air intakes must be connected to ducts leading to the open air.

2.05. **Solid fuel heating**

- 2.05.1. Except where the heating equipment is installed in a compartment constructed of fire-resistant materials and specifically designed to house a boiler, solid fuel heating appliances must be placed on a metal plate (with raised edges), or similar protective device, to ensure that no burning fuel or hot cinders fall outside this plate.

- 2.05.2. Solid fuel heating boilers must be fitted with thermostatic controls to regulate the flow of combustion air.

**▼B**

- 2.05.3. A means by which cinders can be quickly doused must be placed in the vicinity of each heating appliance.
- 2.06. **Engine and boiler rooms and bunkers**
- 2.06.1. Engine and boiler rooms must be so arranged that it is easy and safe to control and maintain the installations in them.
- 2.06.2. Liquid fuel or lubricating oil bunkers may not have common walls with the accommodation.
- 2.06.3. The walls, ceilings and doors of engine and boiler rooms and bunkers must be of steel or equally fire-resistant material.
- 2.06.4. Engine and boiler rooms and other areas in which inflammable or toxic gases may be evolved must be adequately ventilated.
- 2.06.5. Companionways and ladders providing access to engine and boiler rooms and bunkers must be permanently affixed and made of steel or another equally strong and fire-resistant material.
- 2.06.6. Engine and boiler rooms must have two exits, one of which may be an emergency exit.
- 2.06.7. The maximum permissible sound pressure level in the engine room is 110 dB(A). Measuring points must be chosen having regard to the maintenance necessary when the installation is operating normally.
- If the sound pressure level in the engine room exceeds 90 dB(A), an explicit warning notice must be posted at each of the entrances.

## CHAPTER 3

**STEERING GEAR AND WHEELHOUSE**

- 3.01. **General**
- 3.01.1. Every vessel must be equipped with reliable steering-gear — including where necessary, a bow rudder — which ensures good manoeuvrability, having regard to the use and principal dimensions of the vessel.
- 3.01.2. The steering gear must be so designed that the rudder cannot change position when not intended to do so.
- 3.02. **Effectiveness of the steering gear**
- The steering gear must comply with the following requirements as to performance:
- (a) where the steering gear is manually operated, one complete turn of the hand wheel must correspond to a least 3° of rudder angle;
  - (b) where the steering gear is fully powered, it must be possible to obtain an average rate of 4° of rudder deflection per second through the entire rudder arc when the rudder is fully immersed and with the vessel at full speed;
  - (c) where the steering gear is provided with power assistance gear (power assistance gear supplementing a manual main steering gear) it must be possible to achieve an average rate of 3° per second of rudder deflection through the arc 30° on either side of the neutral position of the rudder when it is fully immersed and with the vessel at full speed.
  - (d) where fully powered steering gear is provided with a second, manually operated control, the latter must at least permit the vessel to proceed to a mooring at reduced speed.
- 3.03. **General design requirements**
- 3.03.1. The entire steering gear must be designed, constructed and installed so as to allow for permanent transverse lists of up to 15° and ambient temperatures of up to 40 °C.
- 3.03.2. The parts comprising the steering gear must be so dimensioned as to withstand all the maximum stresses to which they will be subject in normal operating conditions. In order to be able to resist exceptional outside forces as effectively as possible, the steering gear must not be the weakest part of the system. Any steering gear constructed in accordance with the rules of a recognized classification society may be considered satisfactory in this respect.

**▼ B****3.04. Powered steering gear**

- 3.04.1. Where a vessel is equipped with powered steering gear, an independent secondary steering system must be provided in order to ensure manoeuvrability without delay if the main gear breaks down.
- 3.04.2. Powered steering gear must be fitted with an overload protection device to limit the torque exerted by the drive.
- 3.04.3. Accidental cutting-out or failure of the powered steering gear must be indicated by visual and audible signals at the steering station.

**3.05. Engagement of the secondary drive**

- 3.05.1. If the secondary drive of the steering gear does not engage automatically on failure of the main drive, it must be possible to engage it by hand immediately and simply with the rudder in any position. The number of manipulations to be carried out must not exceed two, and they must be capable of being performed by one person.
- 3.05.2. It must be possible to complete engagement in less than five seconds. It must be possible to establish from the steering station which drive installation is in use.

**3.06. Manual drive**

- 3.06.1. If the independent secondary drive is manual it must be engaged automatically or be capable of being engaged immediately from the steering station in the event of the powered drive cutting out or failing. Claw clutches are permitted only where they are not subject to torque during engagement.
- 3.06.2. The power drive must not actuate the hand wheel; there shall be a device to prevent the return of the hand wheel for any rudder position when the manual drive is engaged automatically.

**3.07. Manually operated hydraulic drive**

- 3.07.1. Manually operated hydraulic steering gear is an installation in which the rudder is driven by a pump which in its turn is driven solely by a manually operated steering wheel (steering wheel pump).
- 3.07.2. Where the sole steering installation is a manually operated hydraulic system it is not to be regarded as powered steering gear in the sense of 3.04, requiring an independent secondary steering system, provided that:
- the dimensioning, construction and layout of the piping precludes deterioration through mechanical action or fire, and
  - the construction of the steering wheel pump guarantees faultless operating.

**3.08. Hydraulic drive**

- 3.08.1. Where the main steering gear is hydraulically operated while the secondary steering is a manually operated hydraulic system, the piping of the manually operated system must be separate from that of the main installation.
- It must be possible to operate the main installation without using the steering wheel pump of the secondary installation.
- 3.08.2. Where both the main and secondary drives are hydraulic, the respective pumps must be driven independently (e.g.:
- where the main pump is powered by the main engine, the secondary pump must be electrically driven,
  - where the main pump operates on the main electric circuit, the secondary pump must operate on the emergency electric circuit,
  - where the main pump is driven by No I generator, the secondary pump must be driven by No II generator).
- 3.08.3. Where the secondary pump is driven by an emergency engine which does not operate continuously while the vessel is in motion, a buffer device must be installed to drive the pump whilst the emergency engine is run up.
- 3.08.4. The two installations must have separate pipes, valves, controls, etc. Nevertheless, where the independent functioning of the two installations is ensured, they may have common components.

**▼B****3.09. Electric drive**

3.09.1. Where both the main and secondary installations are electrically powered, the respective feed and control systems must be independent of each other. Each installation must have its own motor.

3.09.2. Where the secondary motor is fed by an auxiliary engine which does not run continuously whilst the vessel is in motion, a buffer device must be installed to drive the secondary motor while the auxiliary engine is run up.

**3.10. Rudder propellers and Voith-Schneider equipment**

Where remote control of rudder and Voith-Schneider propellers is electrical, hydraulic or pneumatic there must be two independent control systems between the steering station and the propulsion installation.

Where there are two or more independent propulsion installations, no secondary independent control system is required as long as the vessel remains sufficiently manoeuvrable in the event of one of the installations failing.

**3.11. Remote-control installations**

Remote-control installations, including those outside the wheelhouse, must be permanently affixed. Where such installations can be switched off, indicators must be provided to show whether the equipment is 'on' or 'off'.

The arrangement and actuation of the controls must be consonant with their function.

**3.12. Rudder position indicator**

The position of the rudder must be clearly perceivable from the steering station; if necessary a reliable indicator must be provided.

**3.13. Steering assistance**

3.13.1. Steering assistance installations are power-assistance installations fitted in addition to manually operated steering gear.

3.13.2. Where auxiliary steering gear is used, the connections between the principal and auxiliary steering gear should be such that a considerable increase in the manual force applied to the steering wheel is not necessary.

3.13.3. In addition to the foregoing, steering assistance gear must meet the following requirements:

(a) steering assistance gear must be capable of being engaged or disengaged at the steering station with the rudder in any position. The 'on' and 'off' positions must be clearly indicated;

(b) electrical, hydraulic and pneumatic connections between the assistance gear and the manually operated mechanical main steering gear must not compromise the capacity of the main gear to be put into operation immediately. Other failures of steering assistance gear must not cause the main system to fail or jam;

(c) all components of existing steering assistance gear and any new components incorporated later must meet the requirements for steering gear set out in this Chapter.

3.13.4. The rudder position indicator must function both for the main and the secondary steering gear.

3.13.5. The requirements set out herein also apply when steering assistance gear is installed after the building of the vessel.

**3.14. Unobstructed view**

The view in all directions from the steering station must be sufficiently unobstructed. In the forward direction it must be ensured by reliable optical means.

**▼B****3.15. Sound pressure**

Under normal operating conditions, the sound pressure level of the noise made by the vessel must not exceed 70 dB(A) at the helmsman's head position.

**3.16. Electrical components of steering gear**

3.16.1. The nominal rating of the motors must correspond to the maximum torque of the steering gear. In the case of hydraulic installations, the nominal rating of the drive motor must be such as to ensure maximum output from the pump at maximum pressure in the installation (safety valve setting) having regard to the efficiency of the pump.

3.16.2. Motors must meet at least the following requirements:

(a) Powered steering gear for intermittent operation:

— Motors of electro-hydraulic drives and associated converters must be designed for continuous duty with intermittent loading and a 15 % duty factor. A 10-minute duty cycle is to be assumed.

— Motors for electrically powered steering gear must be designed for intermittent operation without being affected by the start-up process and with a 15 % duty factor. A 10-minute duty cycle is to be assumed.

(b) Steering gear with continuous power demand must be designed for continuous operation.

3.16.3. The drive circuits and control circuits may be protected only against short circuits. The control circuits must be protected against twice the maximum rated current of the electric circuit; the rating of the protective devices must be not less than 6 A.

3.16.4. The motor supply cables must be protected as follows:

Where fuses are used, their rated current must be two steps higher than the rated current of the motors, but not more than 160 % of the rated current in the case of motors for intermittent or short-period operation. The short-circuit instantaneous trip of circuit-breakers must not be set for a rated current exceeding 10 times the rated current of the drive motor.

3.16.5. Where there are thermal trip switches in the circuit-breakers they must either be rendered inoperative or set to twice the rated current of the motor.

3.16.6. For the electric equipment the following monitoring and indicating devices must be provided:

(a) a green pilot light indicating that the installation is functioning;

(b) a red pilot light which comes on when the installation breaks down or is accidentally disconnected, when the electric motor is overloaded or when one phase of a three-phase supply fails. An acoustic signal must sound at the same time as the red light comes on.

Where supply is exclusively via circuit-breakers, phase failure monitoring is not required.

3.16.7. Where the rudder position indicator is electrical it must have an independent current supply.

**3.17. Lowerable wheelhouse**

Where the wheelhouse can be lowered, there must be a device to prevent persons from approaching it during lowering. Where persons might pass below such a wheelhouse, there must be an audible alarm which sounds automatically when the wheelhouse is lowered. In the event of failure of the device for lowering the wheelhouse, it must be possible to carry out this operation by other means.



CHAPTER 4

**SAFETY DISTANCE, FREEBOARD AND DRAUGHT SCALES**

4.01. **Definitions**

In this Chapter:

- (a) 'length L' means the maximum length of the hull excluding rudder and bowsprit;
- (b) 'amidships' means half way along the length L;
- (c) a device or structural unit is deemed 'sprayproof and weather-tight' if in normal conditions it allows only a very small quantity of water to penetrate.

4.02. **Safety distance**

The minimum safety distance shall be:

- (a) for doors and openings, other than hatches, which can be closed in a sprayproof and weathertight manner: 0.15 m;
- (b) for doors and openings, other than hatches, which cannot be closed in a sprayproof and weathertight manner: 0.20 m;
- (c) for hatches which can be closed in a sprayproof and weathertight manner: 0.30 m;
- (d) for hatches which cannot be closed by special devices, or are not closed (open holds): 0.50 m.

4.03. **Freeboard**

There must be sufficient freeboard to ensure compliance with the safety distances; it may not be negative.

4.04. **Draught marks**

4.04.1. The maximum draught level must be so determined as to ensure compliance with the requirements as to the minimum safety distance at the same time, whilst ensuring that this level cannot at any point be higher than the side decks, or, in the absence of side decks, the upper edge of the hull planking or plating.

4.04.2. The maximum draught level must be indicated by clearly visible indelible draught marks.

4.04.3. The draught marks must consist of a rectangle 0.30 m long by 0.04 m high with its base horizontal and coinciding with the maximum draught level authorized in this Annex. These marks may be combined with others required under other regulations.

4.04.4. Every vessel must have at least three pairs of draught marks, one pair amidships and the others approximately one-sixth of the vessel's length from bow and stern respectively.

However:

- in the case of vessels under 40 m in length, two pairs of marks about one-quarter of the vessel's length from bow and stern respectively suffice,
- in the case of vessels not intended for the carriage of goods, one pair of marks roughly amidships suffice.

4.04.5. Marks or information which cease to be valid as a result of a fresh survey must be removed or marked as no longer valid, under the supervision of the certificating authority.

Where for any reason a draught mark disappears, it may be replaced only under the supervision of the certificating authority.

4.04.6. Where a vessel has been measured in accordance with the Convention on the measurement of inland waterway vessels <sup>(1)</sup> and the plane of the measurement plates meets the requirements of this Annex, the measurement plates may be accepted as an alternative to draught marks.

<sup>(1)</sup> No E/CE/626.  
No E/CE/546 of 15 February 1966.

**▼B****4.05. Draught scales**

- 4.05.1. Any vessel whose draught may attain 1 m must bear draught scales on each side towards the stern; it may bear additional draught scales.
- 4.05.2. The zero point of each draught scale must lie vertically below the draught scale in a place, parallel to the plane of maximum draught, passing through the lowest point of the hull or of the keel, if any. The vertical distance above zero must be graduated in decimetres. From the light draught plane up to 10 cm above the plane of maximum draught level these graduations must be marked by lines punched in or engraved and painted in two alternating colours in such a way as to be clearly visible. The graduation shall be marked by figures down the side of the scale at least every 5 dm and at the top of the scale.
- 4.05.3. The two rear measurement scales affixed pursuant to the Convention referred to in 4.04.6 may take the place of draught scales, provided that they are graduated in accordance with the above requirements and, where necessary, figures indicating the draught are added.

## CHAPTER 5

## MACHINERY

**5.01. General**

- 5.01.1. All machinery and associated installations must be designed, constructed and installed in accordance with the rules of good engineering practice.
- 5.01.2. Boilers and other pressure vessels and their accessories must comply with the rules in force in the Member State issuing the certificate, pending the introduction of Community rules.
- 5.01.3. Main and secondary machinery running on fuel with a flashpoint below 55 °C is prohibited.  
Nevertheless, engines providing power for anchor winches, ship's boats and portable motor pumps may run on fuel with a flashpoint below 55 °C.
- 5.01.4. Starting aids using fuel with a flashpoint below 55 °C are permitted.

**5.02. Safety equipment**

- 5.02.1. All machinery must be installed and mounted so as to be sufficiently accessible for operating and maintaining and so as not to endanger the personnel concerned.
- 5.02.2. The main and auxiliary machinery, the boilers and all accessories must be fitted with safety devices conforming to the rules in force in the Member State issuing the certificate.
- 5.02.3. It must also be possible to stop the motors driving pressure and draught ventilators from outside the space in which they are installed.

**5.03. Propelling mechanism**

- 5.03.1. It must be possible to start, stop and reverse the vessel's propelling mechanism (propellers, wheels, etc.) quickly and safely
- 5.03.2. Where the propelling mechanism is not controlled from the wheelhouse whilst the vessel is under way, a reliable two-way communication system must be provided between the wheelhouse and the engine room.

**5.04. Engine exhaust pipes**

- 5.04.1. Exhaust pipes passing through accommodation or wheelhouse must be enclosed in a sufficiently gastight jacket. The space between the jacket and the exhaust pipe must communicate with the outside air.
- 5.04.2. All exhaust gas must be evacuated from the vessel. All suitable precautions must be taken to prevent noxious gases from entering the various compartments. Exhausts from main engines which eject their gases through or over the side are prohibited.



**▼B**

- 5.04.3. Exhaust pipes must be suitably lagged, insulated or cooled.
- 5.04.4. Where exhaust pipes pass beside or through inflammable materials the latter must be protected by a sheet of insulating material or any other appropriate device providing effective insulation.
- 5.05. **Tanks, bunkers and piping**
- 5.05.1. Liquid fuel must be stored in tanks securely attached to the hull or in bunkers.
- 5.05.2. Tanks and bunkers, their piping and other accessories must be so arranged and fitted that neither fuel nor gas can escape into the vessel.
- 5.05.3. Except in the case of tanks filled for daily consumption, the mouth of the filling pipe of tanks and bunkers for liquid fuels must be on the deck. The filling pipe must be provided with means of closure. Every tank and bunker must be fitted with a venting pipe terminating in the outside air above the deck and so arranged that no water can enter it.
- 5.05.4. The liquid fuel distribution pipes must be fitted with a closing device at the tank or bunker outlet.
- In addition, it must be possible from the deck to stop the flow in pipes which directly supply motors, boilers and heating appliances.
- Fuel pipes must not be exposed to the harmful effects of heat and it must be possible to inspect them along their entire length.
- 5.05.5. Sight tube gauges on liquid fuel tanks and bunkers must be adequately protected against impact damage, fitted with self-closing cocks, and be connected to the tanks or bunkers at the upper end.
- 5.05.6. Liquid fuel tanks and bunkers must be fitted with ports, having leaktight closures to permit cleaning and inspection.
- 5.05.7. Tanks directly supplying the propelling machinery must be fitted to a device which gives a visible and audible signal in the wheelhouse when the fuel level is no longer sufficient for safe operation.
- 5.05.8. No pipes for dangerous gases or liquids, particularly pipes under such pressure that a leak could endanger persons, may be installed in the accommodation areas and passages. This requirement does not apply to pipes carrying steam and the piping of hydraulic systems, provided that they are surrounded by a protective metal casing.

5.06. **Bilge pumps**

- 5.06.1. The requirements of 2.02.5 shall apply.
- 5.06.2. Crewed vessels shall be equipped with at least one bilge pump. However, vessels where the power of the mechanical propulsion installation exceeds 225 kW and vessels of over 350 dwt must be equipped with two separate bilge pumps, at least one of which must be powered.
- Manually operated bilge pumps are sufficient for watertight compartments under 4 m in length.
- 5.06.3. The inside diameter (d) of the bilge pipe must be at least:

$$d = 1,5 \sqrt{L (B+C)} + 25 \text{ (in mm).}$$

The inside diameter ( $d_a$ ) of the branch pipes connecting at the various suction strainers must be at least:

$$d_a = 2,0 \sqrt{I (B+C)} + 25 \text{ (in mm).}$$

where:

- L is the length of the vessel between perpendiculars (in m),
- B is the moulded breadth of the vessel (in m),
- C is the moulded depth up to the main deck (in m),
- I is the length (in m) of the corresponding watertight compartment.

**▼B**

- 5.06.4. The capacity of the powered bilge pump must be at least  $0.1 d_a^2$  l/min.  
The capacity of the auxiliary bilge pump must be at least  $0.1 d_a^2$  l/min, where  $d_a$  refers to the longest watertight compartment.  
The capacity of any manually operated bilge pump for use in only one compartment must be at least:  
 $0.1 d_a^2$  l/min, where  $d_a$  refers to that compartment.
- 5.06.5. Only self-priming bilge pumps are permitted.
- 5.06.6. For every flat-bottomed compartment over 5 m wide, there must be at least one suction strainer on either side. Where the engine room is over 5 m long there must be at least two suction strainers.
- 5.06.7. It must be possible to drain the stern compartment from the engine room by means of automatically closing pipes (2.02.8).
- 5.06.8. The branch drain pipes from the various compartments must be connected to a main by means of non-return valves which can be closed.  
Compartments or other space, fitted out for ballast need only be connected to the draining system by means of a simple shut-off device.
- 5.07. **Waste oil gathering system**  
Installations for draining engine room bilges must be so devised that the oil or oily water pumped out from the bilges remains on board.  
A dynamic oil separator must be installed in the piping downstream of the bilge pump or, failing this, a static separator must be fitted around each suction strainer.  
These devices must be of a type approved by the competent authority in one of the Member States, and of appropriate size.
- 5.08. **Winches**
- 5.08.1. Anchor winches must be provided for anchors over 50 kg.
- 5.08.2. Winches designed to be driven by power as well as manually must be designed to ensure that the power drive cannot set the manual drive in motion.
- 5.09. **Vessel's intrinsic noise**
- 5.09.1. The vessel's intrinsic noise when under way, particularly noise caused by the engine intake and exhaust, must be muffled by appropriate means.
- 5.09.2. Under normal operating conditions the vessel's intrinsic noise, measured laterally at a point 25 m from the vessel's side must not exceed 75 dB(A).

## CHAPTER 6

**ELECTRICAL INSTALLATIONS**

- 6.01. **General**
- 6.01.1. All electrical installations must comply with the requirements of this Chapter.
- 6.01.2. The following must be on board:  
(a) a circuit and installation diagram checked and signed by the inspecting body specifying:  
— the types and makes of machinery and appliances used,  
— the types and cross-sections of cables,  
— all other particulars essential for an assessment of compliance with safety requirements;  
(b) operating instructions for the electrical installations.
- 6.01.3. All electrical installations must be designed, constructed and installed to withstand a permanent transverse list of up to 15° and ambient temperatures of up to 40 °C.
- 6.02. **Maximum permissible voltages**
- 6.02.1. The following voltages must not be exceeded:

▼ **B**

Nature of installation	Permissible maximum voltage		
	Direct current	Single-phase alternating current	Three-phase alternating current
A. Power and heating installations, including general-purpose outlets	250 V	250 V	500 V
B. Lighting installations, including general-purpose outlets.	250 V	250 V	—
C. Outlets for current supply to hand-held appliances used on open decks or in confined or damp metal-enclosed spaces other than boilers and tanks:	50 V	50 V	—
1. in general	—	250 V	—
2. using an isolating transformer serving a single appliance. Both wires of this system must be insulated from earthsingle appliance. Both wires of this system must be insulated from earth	—	250 V	—
3. where appliances with reinforced or double insulation are used	250 V	250 V	—
D. Outlets for current supply to hand-held equipment used in boilers and tanks	50 V	50 V	—

6.02.2. Subject to compliance with the prescribed safety measures, higher voltages are permissible:

- (a) in installations for battery re-charging equipment, as the charging process requires;
- (b) for machinery whose capacity so requires;
- (c) for special shipboard installations (e.g. radio installations and ignition equipment).

6.03. **Shore connections**

6.03.1. Where an electrical installation is fed by an on-shore source of current, the cables must have a fixed connection on board or be equipped with permanent connection or with current take-off devices.

Care must be taken to ensure that cables and their connections are not subject to tensile load.

6.03.2. Only flexible cable insulated by oil-resistant and flame-retardant sheathing shall be used.

6.03.3. If the lead-in voltage exceeds 50 V, the hull must be effectively earthed. The plug-in socket on the hull must bear special markings.

6.03.4. The main switchboard must include an indicator showing whether the connection to the shore network is carrying current.

6.04. **Generators and motors**

6.04.1. Generators and motors must be so placed as to be readily accessible for inspection, measurements and repairs and as to prevent water and/or oil from reaching the windings. Terminal boxes must be readily accessible.

6.04.2. Generators driven by the main engine, propeller shaft or auxiliary set intended for another function must be designed for variations in the number of revolutions which may occur in service.

6.05. **Accumulators**

6.05.1. Accumulators must be of a design specially adapted for use on board a vessel. Cell boxes must be made of a shock-resistant material that

**▼B**

does not easily catch fire and be so made as to prevent any spillage of electrolyte when inclined 40° from the vertical.

- 6.05.2. Accumulators must be secured so as not to shift with movements of the vessel. They must not be so placed as to be exposed to excessive heat, extreme cold, spray, steam or vapour.

They must be arranged so as to be readily accessible and so as to ensure that any vapours they give off cannot harm neighbouring appliances.

Accumulator batteries may not be installed in the wheelhouse or in accommodation or holds.

Accumulators for portable appliances, however, may be placed in wheelhouses and living quarters.

- 6.05.3. Batteries requiring a power of more than 2 kW for charging (calculated from the maximum charging current and the nominal voltage of the battery) must be installed in a room specifically set aside for them. If placed on deck, they must be enclosed in a cabinet or chest.

Batteries requiring a power not exceeding 2 kW for charging may be installed below deck in a cupboard or chest. They may also be installed in the engine room or some other well-ventilated place provided they are protected against falling objects and dripping water.

- 6.05.4. The interiors of all spaces, cabinets, chests, shelving and other structural sub-assemblies specifically set aside for batteries must be protected against aggressive action of electrolyte by a coat of paint or a lining made of a material resistant to electrolyte.

- 6.05.5. Effective ventilation must be provided when batteries are installed in a closed compartment, cupboard or chest. The air must enter at the bottom and be discharged at the top so that total evacuation of the gas is ensured. Ventilation ducts must not include devices capable of obstructing the air flow (e.g. shut-off valve).

- 6.05.6. The required air flow in litres per hour shall be calculated by the following formula:

$$Q = 110.j.n$$

where:

- j represents (in amperes) one-quarter of the maximum current admissible by the charging device,
- n represents the number of cells.

- 6.05.7. With natural ventilation, the cross-sectional area of the ducts must be appropriate to the air flow required at velocity of 0.5 m/sec. It must be not less than 80 cm<sup>2</sup> for lead-plate batteries and not less than 120 cm<sup>2</sup> for alkaline batteries.

- 6.05.8. Where the required ventilation cannot be obtained by natural air flow, a fan must be provided, preferably having an exhausted with its motor clear of the stream of gas of air.

Special devices must be provided to prevent gases from entering the motor.

Fans must be of a design and material precluding the production of sparks through contact between a blade and the fan casing and preventing electrostatic charges.

- 6.05.9. The 'no smoking' symbol, with a diameter of at least 0.10 m, shall be posted on doors or covers of compartments, cabinets or chests containing batteries.

6.06. **Electrical switchboards**

- 6.06.1. Switchboards must be situated in accessible and well-ventilated places free from gaseous or acid emissions. They must be so arranged as to be protected against jolting and against any untoward incident caused by inclement weather, water, oil, liquid fuels, steam or vapour.

Switchboards must not be placed near sounding pipes or near the vents of liquid-fuel tanks.

**▼B**

- 6.06.2. In general, materials used in the construction of switchboards must have suitable mechanical strength and be durable and non-inflammable. They must not be hygroscopic.
- 6.06.3. When the voltage exceeds 50 V:
- (a) switchboards whose current-carrying components are so arranged or protected as to prevent accidental contact must be used;
  - (b) an insulating mat or an impregnated wooden grating must be provided; this shall not apply, however, to disconnecting-switch panels;
  - (c) metal parts of control-panel frames or substructures and metal casings of appliances must be carefully earthed.
- 6.06.4. All parts of switchboards, including the connections, must be readily accessible for inspection, maintenance or replacement and capable of being disconnected.
- 6.06.5. Indicator plates for all main or connected circuits, indicating the circuit concerned, must be affixed to switchboards.
- 6.07. **Switches, plugs, fuses and cable protection**
- 6.07.1. The whole installation, branch cables from the main switchboard and branch cables from the distribution panel, must be capable of being disconnected by means of switches or automatic circuit-breakers which simultaneously switch off all conductors carrying current.
- Where the current is at 50 V or less, exceptions are permitted for branch cables from distribution panels, particularly in the case of circuits with individual switches for each appliance.
- 6.07.2. All generators and circuits must be protected against excess current in any unearthed pole or conductor. Automatic circuit-breakers with short-circuit and surge trips, or safety fuses of the sealed type, may be used for this purpose. Such electrical protection devices must be so installed as to be adequately protected against jolting.
- 6.07.3. The requirements of 3.16.3, 3.16.4 and 3.16.5 must be met as regards the protection of components of the steering gear.
- 6.07.4. The 'on' and 'off' positions must be indicated on the cut-off devices. This does not apply to light switches handling less than 10 A.
- 6.07.5. All switches and plugs must be designed to disconnect all conductors simultaneously. Light switches handling less than 10 A may be exempted except in the case of the lighting of damp areas.
- 6.07.6. Appliances requiring a current of more than 10 A must be connected to a special circuit.
- 6.07.7. Cables must have a watertight sheath which is flame-retardant and of a type normally used on ships.
- Other types of cable may be used in the living quarters on condition that they are effectively protected and flame retardant.
- Cables must be protected against all risks of damage in normal service conditions, particularly on deck and in the holds.
- 6.07.8. Moveable appliances may under no circumstances be fed by metal-sheathed cables.
- 6.07.9. Cables and equipment must be connected by means of sturdy and durable devices which prevent the connections from coming under tensile load.
- 6.08. **Earth detector equipment**
- Appropriate earth detector equipment must be provided for all unearthed circuits of over 50 V.
- 6.09. **Lighting**
- 6.09.1. All lighting appliances shall be so installed that the heat they emit cannot set fire to nearby inflammable objects or units.
- 6.09.2. In enclosed spaces in which accumulators are installed or paints and other highly inflammable substances are stored, only lighting appliances presenting a limited risk of explosion shall be used.

**▼ B**

- 6.09.3. Lighting appliances in engine and boiler rooms must be distributed between at least two circuits.
- 6.10. **Signal lights**
- 6.10.1. The light-control switchboard must be installed in the wheelhouse; it must be capable of being fed by a separate cable from the main switchboard.
- 6.10.2. Each light must be supplied separately from the light-control switchboard and separately protected and controlled. Lights forming a group may be supplied by a single circuit on condition that the failure of any light activates the alarm in the monitoring equipment.
- 6.10.3. Unless direct monitoring from the wheelhouse is possible, the lights must be monitored by means of tell-tale lights, or similar devices, fitted on the control panel in the wheelhouse. A fault in the tell-tale light must not affect the operation of the light which it monitors.
- 6.11. **Earthing**
- 6.11.1. Metal parts not current-carrying when in use, such as machine frames and casings, appliances, fittings and accessories, must be earthed if they are not already so mounted as to be in effective metallic contact with the hull.
- 6.11.2. In direct current operation, metal fittings and accessories, metal sheaths of cables and ducts must be earthed at both ends at least. Where cables are mounted on wood or a plastic substance, one earth connection will suffice. In alternating current operation, single-conductor cables and ducts may not be earthed at more than one point.
- 6.11.3. In installations where the voltage does not exceed 50 V, earthing may be dispensed with.
- 6.11.4. Where the voltage exceeds 50 V, the casings of mobile current-consuming appliances, if not made of an insulating material or not protected, must be earthed through the feeder cable by means of an additional conductor not normally carrying current.
- 6.12. **Emergency power installation**
- 6.12.1. The following are permitted as emergency power installations:
- (a) an auxiliary set with a fuel supply system independent of the main engine and a separate cooling system, which in the event of failure of the main circuit starts automatically or can be hand-started if it is installed in the immediate vicinity of the wheelhouse or any other station continuously manned by qualified personnel, and is capable on its own of covering current supply requirements within 30 seconds; or
  - (b) an accumulator battery which automatically takes over the supply of current in the event of failure of the main circuit, or can be switched on manually from the wheelhouse or any other station continuously manned by qualified personnel, and is capable of supplying the listed current-consuming devices for the duration of the prescribed period without being recharged and without an inadmissible drop in voltage.
- 6.12.2. Auxiliary sets, emergency batteries and the associated switch gear may be installed in the engine room but in this case as high as possible.
- 6.12.3. As a minimum requirement, emergency power sources shall be capable of ensuring that, where mandatory and in so far as the installations do not have independent emergency supplies, the following electrical installations can function simultaneously:
- (a) signal lights;
  - (b) sound signals;
  - (c) emergency lighting;
  - (d) radio telephone;
  - (e) general alarm, appropriate loudspeaker or other emergency systems;

**▼B**

- (f) emergency floodlight.

The period for which the emergency installation must be capable of functioning must be determined according to the intended use of the vessel but must not be less than 30 minutes.

## CHAPTER 7

## EQUIPMENT

7.01. **Anchors, chains and anchor cables**

The number and weight of anchors and their cables must accord with the characteristics of the waterways used and shall be laid down by the locally competent authority.

7.02. **Other equipment**

## 7.02.1. Vessels must be provided with at least the following equipment:

- (a) the appliances and devices needed for the emission of visual and sound signals and for the marking of vessels, as required by current shipping regulations;
- (b) emergency lights, independent of the vessel's main power circuit, to replace, if needed, the lights required by the above regulations for vessels halted, aground or foundered;
- (c) ropes and metal cables;
- (d) collision mat, unless the certificate indicates that this is not required;
- (e) a gangway at least 0.40 m wide by 4 m long, its sides marked by a light coloured stripe; it must have handrails;
- (f) buoyant fenders or floating wood fenders;
- (g) boat-hook;
- (h) first-aid kit;
- (i) binoculars;
- (j) a mounted notice displaying instructions for saving and resuscitating the drowning;
- (k) a container with a lid for storing oily rags;
- (l) heaving line;
- (m) axe.

## 7.02.2. Vessels whose deck is over 1.50 m above the light waterline must have a companion way or accommodation ladder.

7.03. **Fire-fighting appliances**

## 7.03.1. At least the following must be on board:

- (a) in wheelhouse: one portable fire-extinguisher;
- (b) near each point of access from deck to accommodation: one portable fire-extinguisher;
- (c) at the point of access to any service area not accessible from the accommodation and in which are installed heating, cooking or refrigerating equipment running on solid or liquid fuel: one portable fire-extinguisher;
- (d) at the entrance to each engine and boiler room: one portable fire-extinguisher;
- (e) for vessels whose total capacity exceeds 110 kW, at a suitable point below deck in the engine room: one portable fire-extinguisher.

## 7.03.2. The portable fire-extinguishers prescribed must meet the following requirements:

- (a) the capacity of fluid-type portable fire-extinguishers may not be more than 13.5 litres or less than nine litres. The contents of dry-powder extinguishers must be at least 6 kg;
- (b) as a minimum requirement, the extinguishing agent must be suitable for putting out the type of fire most likely to occur in the space or spaces for which the extinguisher is chiefly provided. On vessels whose electrical installations have an operating voltage exceeding 50 volts, the extinguishing agent must also be

**▼B**

- suitable for fighting fires in electrical installations. Instructions for use must be clearly shown on each portable extinguisher;
- (c) the extinguishing agent in the portable fire-extinguishers prescribed in 7.03.1 above may not consist of CO<sub>2</sub> or contain products likely to give off toxic gases in use (e.g. carbon tetrachloride);
  - (d) extinguishers that are sensitive to extreme cold or heat must be so installed or protected as to ensure their continued effectiveness.
- 7.03.3. All fire-fighting appliances must be inspected at least once every two years. A certificate signed by the person carrying out the inspection must be carried on board.
- 7.03.4. Where fire-fighting appliances are so installed as to be concealed from view, the partition covering them shall be marked with a red letter 'F' at least 10 cm high.
- 7.03.5. A fire-fighting system using water under pressure and comprising piping fed by one or more pumps serving nozzles through hydrants and hoses may be installed subject to the following conditions:
- (a) the fire pumps must be powered. They must not be installed forward of the collision bulkhead;
  - (b) the water pressure in the hydrants must be maintained at not less than 3 bar;
  - (c) piping and hydrants must be so designed that the hoses can be easily connected;
  - (d) all nozzles must be fitted with a device for regulating the water jet at high-pressure or spray and for stopping the flow;
  - (e) the entire system must conform to current standards.
- 7.03.6. The only extinguishing agent authorized in permanently installed appliances is halon 1301 (CBrF<sub>3</sub>). Its use is subject to compliance with the following conditions:
- (a) these appliances may be used only in engine rooms, boiler rooms and pump rooms;
  - (b) the quantity of extinguishing agent must be sufficient to fill, in a gaseous form at 20 °C, from 4.25 to 7 % of the total volume of the room to be protected, including ventilation shafts.  
In calculating the quantity of extinguishing agent necessary, one kilo of halon 1301 at 20 °C is considered to fill a volume of 0.160 m<sup>3</sup>;
  - (c) the tanks under pressure intended for storing halon 1301 must conform to the specifications of the approved inspection bodies. These tanks must also be able to withstand the same pressure as the entire system under conditions in which the ambient temperature reaches a maximum of 60 °C. The following information must be marked in a clearly legible and indelible manner on the containers: nominal operating pressure, pressure under which the extinguishing agent is kept, year of manufacture and year of the last inspection as well as the type and quantity of extinguishing agent;
  - (d) the tanks located in the room to be protected must be fitted with an automatic safety device which ensures that the extinguishing agent is released into the protected area if, in the event of fire, the tank is exposed to fire and the fire-fighting system has not been brought into operation; this safety device must be efficient at an ambient temperature of 60 °C;
  - (e) the tanks which are located outside the area to be protected must be sufficiently protected against excessive pressure up to a maximum ambient temperature of 60 °C. This condition is also valid for tanks containing the propellant gas;
  - (f) any tank which also contains a propellant gas must be fitted with a manometer or equivalent instrument enabling the pressure of this propellant gas to be checked. A table showing the pressure/temperature ratio must be located nearby;
  - (g) the piping and accessories must be manufactured of steel or a material affording equivalent resistance to heat;
  - (h) the only authorized propellant for tanks located inside the area to be protected is nitrogen, which must be under sufficient pressure in such tanks;



**▼B**

- (i) the outlet valves must be fitted in such a way as to enable the extinguishing agent to be distributed evenly and must be designed to enable the extinguishing agent to mix evenly and completely with the air to prevent stong local concentrations of the agent from occurring;
- (j) the system of piping and outlet valves must be designed in such a way as to enable the extinguishing agent to be released into the area to be protected within 10 seconds, supposing that the extinguishing agent is in a fluid state at an ambient temperature of 0 °C;
- (k) the extinguisher system must be able to be operated manually from the wheelhouse or from any other place considered appropriate; this place must be located outside the room to be protected;
 

the installation of an automatic releasing device which is not equipped with an audible warning device is not authorized;
- (l) where an extinguisher system has to protect several areas, the operating instructions and the quantities of extinguishing agent necessary for each area must be clearly indicated;
- (m) pneumatic, hydraulic and electrical control systems must be installed so as to minimize the probability of malfunction in the event of fire or explosion;
- (n) the extinguisher system must be checked at least once every 12 months. This check must include at least:
  - the external inspection of the entire system,
  - checking of the proper functioning of the electrical system for breaking the seals,
  - checking of the pressure in the tanks.

The permissible reduction of pressure may not exceed 10 %, in each tank.

During the second check, the quantity of extinguishing agent in the tanks must also be checked. Any reduction in this quantity must not exceed 5 % in each extinguisher;

- (o) the inspection certificates signed by the inspectors must be carried on board;
- (p) where the vessel is fitted with one or more extinguisher systems using halon 1301 which have been inspected, the following should be mentioned under heading 18 on the certificate issued for the vessel:
 

‘... (number of) permanently fixed extinguisher systems using halon 1301. The required certificates must be carried on board.’

**7.04. Ship's boats**

- 7.04.1. Powered vessels and barges of over 150 dwt as well as tugs, pushers and pusher tugs with a displacement of over 150 m<sup>3</sup> must have at least one ship's boat.
- 7.04.2. The ship's boat shall be so placed on the vessel that it can be lowered into the water in complete safety and with the least possible delay, with the aid of appropriate lowering gear if necessary.
- 7.04.3. The ship's boats required in 7.04.1 and 7.04.2 must meet the following requirements:
  - (a) they must be equipped with seats for at least three persons, the width of the seat per person being at least 0.45 m;
  - (b) they must be sufficiently strong;
  - (c) the volume must be at least 1.5 m<sup>3</sup> or the product of length × beam × depth must be not less than 2.7 m<sup>3</sup>;
  - (d) when carrying three persons weighing approximately 75 kg each, ship's boats must have a freeboard of at least 25 cm;
  - (e) they must be sufficiently stable. They shall be deemed sufficiently stable if, with two people weighing approximately 75 kg each sitting on the same side and as close as possible to the gunwale, there remains a freeboard of at least 10 cm;
  - (f) with nobody aboard but entirely full of water, the boat's reserve buoyancy (in kg) must be at least 30 × length × beam × depth;

**▼B**

- (g) the following equipment must be aboard;
- one set of oars,
  - one mooring line,
  - one baler.
- 7.04.4. In 7.04.3:
- length is the maximum length of the ship's boat (in m);
  - beam is the maximum beam (in m);
  - depth is the maximum moulded depth (in m).
- 7.05. **Lifebuoys, ball-floats and life-jackets**
- 7.05.1. All vessels must carry at least three lifebuoys or two lifebuoys and two ball-floats. These must be ready for use and secured on deck at suitable places but not fastened to their holders. At least one lifebuoy must be placed in the immediate vicinity of the wheelhouse.
- On powered vessels of up to 40 m in length, two lifebuoys will suffice.
- At least one of the lifebuoys or ball-floats must have a heaving line of sufficient length.
- 7.05.2. Lifebuoys must:
- possess buoyancy of not less than 7.5 kg in fresh water,
  - be manufactured of suitable material and be resistant to oil and its derivatives and to temperatures of up to 50 °C,
  - be so coloured as to be readily visible in the water,
  - have a mass not less than 2.5 kg,
  - have an inside diameter of 0.45 m ± 10 %,
  - be surrounded by a rope providing a grip.
- 7.05.3. Ball floats must:
- possess buoyancy of not less than 7.5 kg in fresh water,
  - be manufactured of suitable material and be resistant to oil and its derivatives and to temperatures of up to 50 °C,
  - be so coloured as to be readily visible in the water,
  - have a mass of not less than 1 kg,
  - be surrounded by a net providing a grip.
- 7.05.4. A life-jacket must be provided within immediate reach of each person regularly on board.
- 7.05.5. The buoyancy, material and colour of life-jackets must satisfy the conditions set out in 7.05.2.
- Inflatable life-jackets must inflate automatically or manually; they must also have provision for inflation by mouth.

## CHAPTER 8

**LIQUEFIED GAS INSTALLATIONS FOR DOMESTIC USES**

- 8.01. **General**
- 8.01.1. Every liquefied gas installation consists essentially of a supply unit comprising one or more gas receptacles, and of one or more reducing valves, a distribution system and a number of gas-consuming appliances.
- 8.01.2. Installations may be operated only with commercial propane.
- 8.02. **Installation**
- 8.02.1. Liquefied gas installations must be suitable throughout for use with propane, must be installed in accordance with good practice and conform to the current regulations of the Member State which issued the certificate.
- 8.02.2. A liquefied gas installation may be used only for domestic purposes in the accommodation and the wheelhouse.
- 8.02.3. There may be a number of separate installations on board. A single installation may not be used to serve accommodation areas separated by a hold or a fixed tank.

**▼ B****8.03. Receptacles**

8.03.1. Only receptacles with approved capacities of between 5 and 35 kg are permitted.

8.03.2. The receptacles must satisfy the requirements in force in the Member State which issued the certificate.

They must bear the official stamp certifying that they have passed the statutory tests.

**8.04. Siting and arrangement of supply unit**

8.04.1. Where receptacles with a load of up to 35 kg are used, the supply unit must be installed on deck in a special cupboard or wall cupboard located outside the accommodation area in a position such that it does not interfere with movement on board. It must not, however, be installed against the fore or aft bulwark plating. The cupboard may be a wall cupboard set into the superstructure provided that it can only be opened outwards. It must be so located that the pipes leading to the gas consumption points are as short as possible.

Each installation may comprise up to four receptacles in operation simultaneously, with or without the use of an automatic reversing coupler. The number of receptacles on board, including spare receptacles, must not exceed six per installation.

The pressure reducer, or in the case of two-stage reduction the first pressure reducer, must be fitted to a bulkhead in the same cupboard as the receptacles.

8.04.2. The supply unit must be so installed that any leaking gas may be evacuated from the cupboard containing the unit without any risk that it may penetrate inside the vessel or come into contact with anything that might set it on fire.

8.04.3. The cupboard must be constructed of fire-resistant materials and must be adequately ventilated by apertures in the top and bottom. The receptacles must be placed upright in the cupboard in such a way that they cannot be overturned.

8.04.4. The cupboard must be so designed and placed that the temperature of the receptacles cannot exceed 50 °C;

8.04.5. The inscription 'liquefied gas installation' and the 'no smoking' symbol as described in 6.05.9 must be affixed to the outer wall of the cupboard.

8.04.6. If interior lighting is needed in the cupboard, it must be electrical and the installation must be flame-proof.

**8.05. Spare and empty receptacles**

Spare and empty receptacles which are not kept in the supply unit must be stored outside the accommodation area and the wheelhouse in a cupboard designed according to the requirements of 8.04 of this Chapter.

**8.06. Reducing valves**

8.06.1. The gas consuming appliances may be connected to the receptacles only through a distribution system fitted with one or more reducing valves to bring the gas pressure down to the utilization pressure. The pressure may be reduced in one or two stages. All reducing valves must be set permanently at a pressure determined in accordance with 8.07 below.

8.06.2. The final pressure reducers must either be fitted with or immediately followed by a device to protect the pipe automatically against excess pressure in the event of a malfunctioning of the reducing valve. Any gas which this protection device allows to escape must be evacuated into the open air without any risk that it may penetrate inside the vessel or come into contact with anything that might set it on fire; if necessary, a special pipe must be fitted for this purpose.

8.06.3. Both the protection devices and the vents must be protected against the entry of water.

**▼ B****8.07. Pressures**

- 8.07.1. The pressure at the outlet from the last pressure reducer must be more than 0.05 bar above atmospheric pressure, with a tolerance of 10 %.
- 8.07.2. Where two-stage reducing systems are used, the mean pressure must not be more than 2.5 bar above atmospheric pressure.

**8.08. Pipes and flexible tubes**

- 8.08.1. Pipes must consist of fixed steel or copper tubing.
- Pipes connecting with the receptacles, however, must be high-pressure flexible tubes or spiral tubes suitable for propane. The gas-consuming appliances may, if not installed in a fixed manner, be connected by means of suitable flexible tubes not more than 1 m in length.
- 8.08.2. Pipes must be able to withstand any stresses or corrosive action which may occur under normal operating conditions on board, and their characteristics and layout must be such that they ensure a satisfactory flow of gas at the appropriate pressure to the gas-consuming appliances.
- 8.08.3. Pipes must have as few joints as possible. Both pipes and joints must be gas-tight and must remain gas-tight despite any vibration or expansion to which they may be subjected.
- 8.08.4. The pipes must be readily accessible, properly fixed and protected at every point where they might be subject to impact or friction, particularly where they pass through steel bulkheads or metal partitions.
- The entire outer surface of steel pipes must be treated against corrosion.
- 8.08.5. Flexible pipes and their joints must be able to withstand any stresses which may occur under normal operating conditions on board. They must be unencumbered and fitted in such a way that they can be inspected over their entire length.

**8.09. Distribution system**

- 8.09.1. No part of the liquefied gas installation may be located in the engine room.
- On tanker vessels subject to the rules on the carriage of dangerous goods, no part of the liquefied gas installation may be located in the cargo area.
- 8.09.2. A valve which is rapidly and easily accessible must provide a means whereby the entire distribution system can be shut off.
- 8.09.3. Each gas-consuming appliance must be supplied by a separate branch of the distribution system, and each branch must be controlled by a separate closing device.
- 8.09.4. The valves must as far as possible be fitted at points where they are protected from the weather and from impact.

**8.10. Gas-consuming appliances and their installations**

- 8.10.1. The only appliances that may be installed are propane-consuming appliances approved in the Member State which issued the certificate, which are equipped with devices that effectively prevent the escape of gas, both in case of extinction of the flames and in case of extinction of the pilot light.
- 8.10.2. Each appliance must be so placed and connected as to avoid any risk of accidental wrenching of the connecting pipes.
- 8.10.3. Heating and water-heating appliances must be connected to a duct for evacuating combustion gases.
- 8.10.4. The installation of gas-consuming appliances in the wheelhouse is permitted only if the wheelhouse is so constructed that no gas which leaks accidentally can escape into the lower parts of the vessel, in particular through the control runs leading to the engine room.

On tanker vessels subject to the rules on the carriage of dangerous goods, no gas-consuming appliance may be located in the wheelhouse.

**▼B**

8.10.5. Gas-consuming appliances may be installed in sleeping quarters only if combustion takes place independently of the air in the quarters.

8.10.6. Gas-consuming appliances in which combustion depends on the air in the rooms in which they are located must be installed in rooms which are sufficiently large.

8.10.7. On tanker vessels subject to the rules on the carriage of dangerous goods, gas-consuming appliances must bear a prominent red mark.

8.11. **Ventilation and evacuation of combustion gases**

8.11.1. In rooms containing gas-consuming appliances in which combustion depends on the ambient air, the supply of fresh air and the evacuation of the combustion gases must be ensured by means of ventilation apertures of adequate dimensions determined according to the capacity of the appliances.

8.11.2. The ventilation apertures must not have any closing device and must not give on to sleeping quarters.

8.11.3. The evacuation devices must be so designed as to ensure the safe evacuation of the combustion gases. They must be reliable in operation and fire-resistant. Their operation must not be affected by the ventilators.

8.12. **Instructions for use and safety**

A notice containing instructions on the use of the installation shall be affixed on board in a suitable place. The notice must bear *inter alia* the following instructions in the appropriate language or languages:

- ‘the taps of receptacles which are not connected to the distribution system must be closed, even if the recipients are presumed to be empty’,
- ‘flexible pipes must be changed as soon as their condition so requires’,
- ‘all receptacles must remain connected unless the corresponding connecting pipes are closed by taps or sealed’.

8.13. **Inspection**

Before a liquefied gas installation is used, after any modification or repair and on every renewal of the attestation referred to in 8.15, the whole of the said installation must be submitted for inspection by an approved expert of the Member State issuing the certificate. At the time of the inspection the expert must verify whether the installation conforms to the requirements of this Chapter. He must submit an inspection report to the competent authority which issues the certificate.

8.14. **Tests**

The tests on the installation, after mounting, must be carried out as follows:

8.14.1. Medium-pressure pipes between the outlet of the first reducing device and the valves fitted before the final pressure reducer:

- (a) strength test, carried out with air, an inert gas or a liquid at a pressure 20 bar above atmospheric pressure;
- (b) gas-tightness test, carried out with air or an inert gas at a pressure 3.5 bar above atmospheric pressure.

8.14.2. Pipes at the utilization pressure between the single or final pressure reducer and the valves fitted before the gas-consuming appliances:

- leak test, carried out with air or an inert gas at a pressure of 1 bar above atmospheric pressure.

8.14.3. Pipes situated between the single or final pressure reducer and the controls of the gas-consuming appliance:

- leak test at a pressure of 0.2 bar above atmospheric pressure.

8.14.4. In the tests referred to in 8.14.1 (b), 8.14.2 and 8.14.3, the pipes are deemed gas-tight if, after sufficient time to allow for normal balancing, no fall in the test pressure is observed during the following 10 minutes.

**▼B**

- 8.14.5. Receptacle connectors, piping and other fittings subjected to the pressure in the receptacles, and joints between the reducing valve and the distribution pipe:  
— leak test, carried out with a foaming substance, at the operating pressure.
- 8.14.6. All gas-consuming appliances must be brought into service and tested at the nominal pressure to ensure that combustion is satisfactory with the regulating knobs in the different positions.  
The safety devices must be checked to ensure that they operate satisfactorily.
- 8.14.7. After the test referred to in 8.14.6, it must be verified, in respect of each gas-consuming appliance connected to a flue, whether, after five minutes' operation at the nominal pressure, with windows and doors closed and the ventilation devices in operation, any combustion gases are escaping through the damper.  
If there is a more than momentary escape of such gases, the cause must immediately be detected and remedied. The appliance must not be approved for use until all defects have been eliminated.
- 8.15. **Attestation**
- 8.15.1. The certificate must include an attestation to the effect that, following the inspection referred to in 8.13, all liquefied gas installations conform to the requirements of this Chapter.
- 8.15.2. The attestation shall be valid for a period not exceeding three years. It may be renewed only after a further inspection carried out in accordance with 8.13.  
Where the owner of a vessel or his representative submits a reasoned request, the Member State which issued the certificate may extend the validity of the attestation for not more than six months without carrying out the inspection required under 8.13. Such extension must be entered in the certificate. The date on which the next inspection would normally have been due may not be postponed as a result of the extension.

## CHAPTER 9

**SPECIAL WHEELHOUSE ARRANGEMENTS FOR STEERING ON RADAR BY ONE PERSON**

- 9.01. **General**  
A wheelhouse is deemed to be specially arranged for steering on radar by one person if it fulfils the conditions of this Chapter
- 9.02. **General design conditions**
- 9.02.1. The wheelhouse must be designed to accommodate a seated steersman.
- 9.02.2. All appliances, instruments and controls must be so arranged that the steersman can use them conveniently during the voyage without leaving his seat and without losing sight of the radar screen.  
The controls must move easily into the operating position, which must be unmistakably clear.
- 9.02.3. Monitoring instruments must be easy to read and their illumination must be capable of continuous adjustment to the point of extinction, whatever the lighting conditions inside the wheelhouse, so that the illumination is not troublesome and does not impair visibility.
- 9.02.4. The wheelhouse must be equipped with adjustable heating. The wheelhouse darkening device must not adversely affect ventilation.
- 9.03. **Radar equipment and speed of rotation indicator**
- 9.03.1. The radar screen must not be substantially off the steersman's line of vision when he is in the normal position at the wheel.
- 9.03.2. The radar image must remain fully visible, without the aid of a mask or screen, irrespective of the lighting conditions prevailing outside the wheelhouse.

**▼B**

9.03.3. A speed-of-rotation indicator must be installed directly above or below the radar screen.

9.04. **Signalling and signal-emitting equipment**

9.04.1. Lights and light signals must be controlled by switches whose layout reflects the actual position of the lights and light signals. Each light or light signal must be monitored by a tell-tale light of the same colour as the light or light signal which it monitors, built into the switch or mounted beside it. Failure of a light or light signal must cause the corresponding tell-tale light to be extinguished.

9.04.2. Audible warning devices must be controlled by foot.

9.05. **Installations for steering the vessel and operating the engines**

9.05.1. The steering gear of the vessel must be controlled by a horizontal lever. This lever must be easy to operate and the angle between the lever and the centreline of the vessel must accurately reflect the angle of deflection of the rudder plate. It must be possible to release the lever, whatever its position, without the position of the rudder plate changing. An equivalent control system is permitted for Voith-Schneider and steerable propellers.

If the vessel is also fitted with reversing rudders or bow rudders they must be controlled by separate levers.

9.05.2. Every engine must be controlled by a single lever moving through the arc of a circle in a vertical plane more or less parallel to the longitudinal axis of the vessel. Forward movement of the lever must cause the vessel to move ahead and its movement toward the stern must cause motion astern. The drive must be engaged or reversed when the lever is approximately in the neutral position. There must be a clearly distinguishable click as the lever goes into the neutral position. The sweep of the lever from the neutral position to the 'full speed ahead' position and from the neutral position to the 'full speed astern' position must not exceed 90°.

9.05.3. The direction and rate of rotation of the propellers must be indicated.

9.06. **Stern anchor handling gear**

The steersman must be able to cast the stern anchor(s) without leaving his seat. This requirement shall not apply to vessels of pushed trains or breasted-up formations not exceeding 86 m in length.

9.07. **Telephone equipment**

9.07.1. Vessels must be fitted with a radiotelephone installation for vessel-to-vessel service. Reception must be by a loudspeaker and transmission by a fixed microphone. The steersman must be able to effect both operations. The changeover from reception to transmission must be effected by push-button. The steersman must be able to reach this installation from his seat.

The same requirements shall apply where necessary to the nautical operations service.

9.07.2. If the wheelhouse is fitted with a radiotelephone installation connected to the public service, reception must be by a loudspeaker at the steersman's seat. However, the microphone for vessel-to-vessel communication may not under any circumstances be used for calls via the public service.

9.07.3. All vessels must have a voice communication system. This shall serve at least the following points:

- the bows of the vessel or the head of the train,
- the crew's quarters, and
- the steersman's cabin.

Reception must be by a separate loudspeaker and transmission via a fixed microphone which may be the one used for the vessel-to-vessel service on condition that this does not cause confusion between the two networks. The changeover from reception to transmission must be effected by push-buttons or change-over switches.

**▼B****9.08. Alarm signals**

- 9.08.1. An alarm system controlled by an 'off/on' switch must be available to the steersman. Switches which automatically return to the 'off' position when released are not permitted.
- 9.08.2. The strength of this signal must be not less than 75 dB(A) in the accommodation. In the engine room it shall be 5 dB(A) in excess of the ambient noise level with the propulsion machinery at full power.

**9.09. Other instruments**

Instruments other than those listed above must be reduced to a minimum.

**9.10. Endorsement of the inspection certificate**

If the vessel conforms to the requirements of this Chapter, the certificate must be endorsed as follows:

'Approved for steering on radar by one person.'

## CHAPTER 10

**SPECIAL PROVISIONS FOR VESSELS DESIGNED TO BE MADE UP INTO PUSHED TRAINS, PULLED TRAINS OR TO BE BREASTED UP****10.01. Pushers**

- 10.01.1. Pushers must have at the bow a 'pusher platform', a device not less than two-thirds as wide as the greatest width of the vessel. The platform must be so designed that, from the start of the coupling manoeuvres, the personnel involved can move easily and without danger from one vessel to the other with the coupling gear.
- The platform must also be such as to enable the pusher to take up a fixed position in relation to the lighters, and particularly to prevent the pusher sheering out sideways to the stern of the lighters.
- 10.01.2. Pushers must be equipped with the requisite coupling gear; where cables are used for coupling, pushers must be equipped with at least two special winches or equivalent devices.
- 10.01.3. The main engines must be controlled from the wheelhouse. Their operation must be monitored by means of devices installed in the wheelhouse.

**10.02. Lighters**

- 10.02.1. Chapter 3 and 7.02, 7.04 and 7.05.1 shall not apply to lighters. 5.06 shall not apply to lighters with no accommodation and no engine or boiler rooms.
- 10.02.2. Ship-borne lighters shall also comply with the following construction requirements:
- The transverse watertight bulkheads referred to in 2.02.3 are not required if the bows are capable of withstanding an impact at least 2.5 times that required in the collision bulkhead of an inland waterway vessel of the same draught built to the specifications of a classification society approved by the Member State which has to issue the certificate.
  - By way of derogation from 2.02.5, compartments with a double bottom into which access is difficult need not be drainable unless the volume of the space concerned exceeds 5 % of the displacement of the ship-borne lighter at maximum authorized draught.
  - The surface of decks, side decks and hatch covers must have an antislip finish. Where necessary, sloping surfaces must be fitted with raised slats.
  - Along the line where the deck or side decks form an angle with the ship's side there must be toerails or stringer bars at least 0.03 m high and guard rails at least 0.90 m high; the guard rails may be removable.



**▼B**

No guard rails are required at the bows.

**10.03. Powered vessels and tugs capable of pushing**

In order to be approved for carrying out pushing operations, powered vessels and tugs must:

- (a) have a pusher platform as required under 10.01.1, or
- (b) be fitted with appropriate and effective devices to prevent the pusher vessel sheering out sideways to the stern of the vessel to be pushed.

**10.04. Pushed train tests**

10.04.1. For the purpose of issuing a certificate for a pusher or pusher tug, or of endorsing the certificate of a powered vessel or tug with 'suitable for pushing', it is for the competent authority to decide whether, and which, trains are to be submitted for tests, and to carry out tests with those formations which it regards as the most unfavourable. The certificate must show the conditions under which the pusher is certified or the endorsement 'suitable for pushing' is valid.

10.04.2. The tests must prove that:

- (a) the train has sufficient directional stability;
- (b) a major course alteration followed immediately by a return to the original course can be made swiftly and easily;
- (c) the train has sufficient speed through the water;
- (d) where necessary, astern propulsive power is sufficient to enable the train to stop when headed downstream;
- (e) when the train is being coupled or uncoupled, the coupling gear is easy and safe to manipulate.

The coupling gear must also meet the following requirements:

- the rigidity of the train must be maintained,
- coupling gear must ensure uniform tension, preferably by means of special winches.

10.04.3. In the course of the above tests, the authority competent for issuing the certificate will not take into account the effects of special devices (rudders, propulsion mechanisms, etc.) installed on lighters unless the latter always form part of the same train. Where they do, the authorized lighters must be named in the certificate of the vessel providing the propulsion for the train.

**10.05. Towing vessels**

In order to be authorized to effect towing operations, vessels must meet the following requirements:

- (a) towing gear must be so installed that, when in use, it does not compromise the safety of the crew or cargo. The vessel must remain sufficiently manoeuvrable and stable when towing;
- (b) the steersman must be able to operate the propulsion machinery himself or be able to control such operations without leaving the steering station;
- (c) where cables are used for towing, the towing gear must comprise winches or a towing hook which can be slipped from the steering station. The towing gear must be installed forward of the plane of the propellers. However, this does not apply to articulated tugs.

**10.06. Vessels designed to propel breasted-up formations**

In order to be authorized to propel breasted-up formations, vessels must:

1. comply with the provisions of 10.05 (a) and (b);
2. be equipped with appliances which in number and layout ensure that the formation of powered and propelled vessels remains securely breasted-up whether laden or unladen.

**▼B****11.01. General**

- 11.01.1. Vessels on which the uninterrupted presence of persons is required out of working hours must have the necessary accommodation.
- 11.01.2. The accommodation must be assigned, dimensioned and fitted out in such a way as to satisfy the needs of those on board as to safety, health and comfort. Such accommodation must comply with the requirements of 11.02 to 11.12.
- 11.01.3. The inspecting authorities may permit exceptions to the rules set out below when the safety, health and comfort of those on board are ensured in an equivalent manner by other measures.
- 11.01.4. 11.03, 11.08.2, 11.09, 11.10 and 11.11 do not apply to accommodation used solely by crew members who are not workers employed under an employment contract. These derogations must be mentioned under heading No 21 of the certificate.

**11.02. Siting and fitting-out of the accommodation**

- 11.02.1. The accommodation must be situated aft of the collision bulkhead and as much as possible of the accommodation must be above deck.
- In the fore section of the vessel, no floors shall be more than 1.20 m below the plane of maximum draught.
- Exceptions may be authorized for accommodation which is not occupied permanently.
- 11.02.2. The accommodation must be accessible easily and in complete safety.
- As a general rule, the accommodation and galleys must be accessible from deck by means of a corridor.
- 11.02.3. The accommodation must be so located and fitted out as to avoid as far as possible the penetration of polluted air from other compartments of the vessel (e.g. engine room and holds). Where forced-air ventilation is used the intake vents must be so placed as to satisfy the above requirement. Stale air from galleys or sanitary installations must be expelled from the vessel by the most direct route.
- 11.02.4. Accommodation must be protected from unacceptable noise and vibration. The maximum permissible sound pressure levels are:
- 70 dB(A) in the living quarters,
  - 60 dB(A) in the sleeping quarters, except in the case of vessels working only by day.
- 11.02.5. To permit rapid evacuation in the event of wreck or fire, the accommodation must be provided with emergency exits, distant from each other if possible, and where possible to port and starboard.
- This does not apply to:
- (a) accommodation with several exits, ports or skylights which would permit rapid evacuation;
  - (b) sanitary installations.
- 11.02.6. Emergency exits and ports or skylights designed for use as emergency exits must have a clear opening of at least 0.36 m<sup>2</sup> and the smallest dimension must be at least 0.50 m.

**11.03. Dimensions of the accommodation**

- 11.03.1. The headroom in the crew's quarters must not be less than 2 m.
- 11.03.2. The free floor area of the accommodation must not be less than 2 m<sup>2</sup> per occupant. The area occupied by movable furniture such as chairs and tables shall be included in the free floor area.
- 11.03.3. The volume of air per occupant must not be less than 3.5 m<sup>3</sup> in the living quarters and not less than 5 m<sup>3</sup> for the first occupant and 3 m<sup>3</sup> for the second in the sleeping quarters. The volume of air is that remaining after the appropriate deductions have been made for lockers, berths, etc.
- 11.03.4. The cubic capacity of each unit in the living and sleeping quarters must not be less than 7 m<sup>3</sup>.
- 11.03.5. The water closets must have a minimum floor space of 1 m<sup>2</sup> (not less than 0.75 m wide and not less than 1.1 m long).

**▼B**

- 11.03.6. Sleeping cabins must not be planned for occupation by more than two adults.
- 11.04. **Piping in the accommodation**  
Piping in the accommodation must comply with the requirements of 5.05.8.
- 11.05. **Means of access, doors and companionways in the accommodation**
- 11.05.1. Means of access to the accommodation must be so arranged and of such dimensions that they can be used without danger or difficulty.  
This requirement is deemed to be fulfilled when:
- (a) there is enough space in front of the opening to the access to permit unimpeded entrance;
  - (b) means of access are far enough away from installations which might prove dangerous, such as winches, towing or hauling gear and loading gear;
  - (c) the clear width is at least 0.60 m and the total height of the access plus coaming is at least 1.90 m, it being permissible to obtain the latter dimension by using hoods or covers;
  - (d) any coamings fitted in door openings are not more than 0.40 m high, without prejudice to the provisions of other safety regulations;
  - (e) the means of access at emergency exits are insulated and covered with fire-resistant materials.
- 11.05.2. The accidental opening or closing of doors and hinged covers must be prevented.
- 11.05.3. Doors must be fitted with means of closure which can be operated from either side.
- 11.05.4. Where there is no deck level access to the accommodation, and the difference in levels is 0.30 m or more, the accommodation must be accessible by means of companionways.
- 11.05.5. Companionways must be fixed. They must be safely negotiable and shall be deemed to be so when:
- (a) they are not less than 0.50 m wide;
  - (b) the tread is not less than 0.15 m;
  - (c) the steps are non-slip;
  - (d) companionways with more than four steps are fitted with at least one handrail.
- 11.06. **Accommodation floors, walls and ceilings**
- 11.06.1. The floor, walls and ceilings must be made so that they may be cleaned easily. Floor coverings must be non-slip. Surface claddings must not be harmful to health.
- 11.06.2. The accommodation, including the passages in the part of the vessel used for crew accommodation, must be insulated against cold and heat from outside or from nearby or adjacent compartments.
- 11.07. **Heating and ventilation of the accommodation**
- 11.07.1. The accommodation must be provided with a heating system which is capable of maintaining a satisfactory temperature in the conditions of weather and climate to which the vessel is exposed.
- 11.07.2. The accommodation must be adequately ventilated, even when the access is closed.  
The ventilation must be capable of adjustment to ensure adequate air circulation in all climatic conditions.
- 11.08. **Daylight and lighting in the accommodation**
- 11.08.1. The accommodation must be adequately lighted. The living quarters, sleeping quarters and galleys must receive daylight and should if possible look on to the outside of the vessel.

**▼B**

- 11.08.2. Adequate electric lighting must be installed in the accommodation.
- 11.08.3. Any lighting devices using liquid fuel must be made of metal and burn only fuels with a flash-point above 55 °C or paraffin. They must be fixed so as not to constitute a fire hazard.
- 11.09. **Furnishing of the accommodation**
- 11.09.1. Each member of the crew must be provided with an individual berth. Berths must correspond to the biometric data for the human body.
- 11.09.2. Berths must not be placed side by side in such a way that the occupant has to climb over one berth in order to reach the next berth.
- 11.09.3. Berths must not be less than 0.30 m above the floor. When one berth is placed over another, the upper berth must be placed approximately midway between the bottom of the lower berth and the lower side of the deckhead beams; the headroom above each berth must be not less than 0.60 m.
- 11.09.4. Berths, including their frames, must be of hard, smooth material. Where one berth is placed over another, a dust-proof covering must be fitted beneath the upper berth.
- 11.09.5. A suitable clothes locker fitted with a lock must be provided for each member of the crew. Lockers must have an available height of not less than 1.70 m and an available area of 0.25 m<sup>2</sup>.
- 11.09.6. Well-ventilated facilities for hanging up clothes used for work in bad weather and for dirty work must be provided, but not in the cabins, day rooms or mess rooms.
- 11.10. **Galleys, mess rooms and storerooms**
- 11.10.1. In general, vessels must have at least one compartment partitioned off from the sleeping quarters and used as a galley or day-room and galley combined (combined day-room and galley).
- 11.10.2. Galleys and combined day-rooms and galleys must be equipped with:
- (a) cooking appliances;
  - (b) a suitable sink with drainage;
  - (c) an installation for the supply of potable water;
  - (d) a refrigerator of sufficient capacity for the number of crew members;
  - (e) the necessary cupboards or shelves.
- 11.10.3. The mess rooms and combined day-rooms and galleys must be sufficiently large for the number of crew normally using them at the same time, the seats being not less than 0.60 m wide.
- 11.10.4. Mess rooms and combined day-rooms and galleys must be fitted with a sufficient number of tables and seats with backs.
- 11.10.5. Vessels with a permanent crew must have refrigerators and storage space for foodstuffs. This space must be kept dry and well ventilated. It must be possible to keep it in an impeccable state of hygiene. It must be possible to open the refrigerators and cold storage rooms from inside even if they have been closed from the outside.
- 11.11. **Sanitary installations**
- 11.11.1. The following minimum sanitary installations must be provided in vessels with accommodation:
- (a) one wash basin connected up to hot and cold potable water per accommodation unit or per four crew members. Wash basins must be of a suitable size and made of a smooth material which does not craze or corrode;
  - (b) one bath or shower connected up to hot and cold potable water per accommodation unit or per six crew members;
  - (c) one water closet per accommodation unit or per six crew members.
- 11.11.2. The sanitary installations must be in close proximity to the accommodation. The water closets must not have direct access to the galleys, mess rooms or combined day-rooms and galley.

**▼B**

11.11.3. The areas containing sanitary installations must comply with the following requirements:

- (a) the floors and walls must be of durable and waterproof materials;
- (b) the joins between the floors and walls must be watertight.

11.11.4. Water closets must be ventilated to the open air.

11.11.5. Water closets must have flushing systems. Toilet seats must be easy to clean.

**11.12. Potable water installations**

11.12.1. (a) Vessels with accommodation must be fitted with one or more tanks for potable water or an installation for recuperating potable water;

- (b) they must have sufficient capacity for the number of persons on board, the minimum being 150 litres per person.

11.12.2. Potable water tanks must be so designed and installed that there is no risk of the water being polluted or deteriorating in taste or smell, particularly through the action of liquid fuel or lubricating oil.

Potable water tanks must, as far as possible, be protected against excessive heating of the potable water.

11.12.3. Potable water tanks must be fitted with a water level indicator.

11.12.4. Potable water tanks must not have common walls with tanks intended for other uses.

11.12.5. Potable water tanks must have an opening or a manhole to enable the inside to be cleaned.

11.12.6. Pressurized water cisterns for potable water must operate only on compressed air of natural composition. If the compressed air is obtained from pressurized receptacles used to operate the vessel or for other purposes, or produced by means of compressors, an air filter or oil separator must be installed directly in front of the pressurized water cistern unless the water and the air are separated by diaphragms.

11.12.7. Potable water pipes must not pass through cisterns or tanks containing other liquids. Pipes carrying other liquids or gas must not pass through potable water cisterns or tanks.

Connections between the potable water supply system and other piping systems are prohibited.

Pipes reserved for potable water must be durable, with a smooth casing and fitted with connections for water hydrants on quays.

11.12.8. The filling apertures and connecting pipes for potable water cisterns or tanks must be so marked as to warn the user against the introduction of other liquids.

**11.13. Safety devices**

11.13.1. Vessels must be so fitted out that the crew can move about and work easily. Where necessary, moving parts and openings in the deck must be protected by safety devices, and plating, guard rails and handrails must be installed. Winches and towing hooks must be designed to ensure safety at work.

All installations required for work on board must be so designed, sited and protected as to make on-board manoeuvres, maintenance and repairs safe and easy.

11.13.2. Decks in the vicinity of winches and bollards, as well as side-decks, engine-room floors, landings, companionways and the top of the side-deck bollards must be non-slip.

11.13.3. The tops of side-deck bollards and any obstacles in areas where crew move about (e.g. the treads of companionways, must be marked by light-coloured paint).

11.13.4. Appropriate devices must be provided for anchoring stacked hatch covers.

**▼B****11.14. Accessibility of working stations**

- 11.14.1. Working stations must be readily and safely accessible.
- 11.14.2. Companionways, ladders, rungs or similar devices must be provided where there is a difference of over 0.50 m in the levels of accesses, exits and passageways. Companionways must be provided where the level of permanently manned working stations differs by more than 1 m from the levels from which access is to be gained.
- 11.14.3. Emergency exits must be clearly marked as such.
- 11.14.4. The number, design and dimensions of exits, including emergency exits, must be in keeping with the purpose and size of the compartments.

**11.15. Dimensions of working stations**

- 11.15.1. Working stations must be of dimensions such that each crew member working in them has adequate freedom of movement.
- 11.15.2. Permanently manned working stations must be of sufficient dimensions to ensure:
  - (a) a net volume of air not less than 7 m<sup>3</sup>, except for the wheelhouse of vessels less than 40 m long;
  - (b) a free floor area and headroom for each working station which gives adequate freedom of movement for operation and inspection and for ordinary maintenance and repair work.
- 11.15.3. The clear width of side-decks must be not less than 0.60 m; this width may be reduced around mooring bollards.

**11.16. Protection against falling**

- 11.16.1. Working stations close to the water or in positions involving differences in level of more than 1 m must be equipped so as to prevent crew slipping or falling.
- 11.16.2. On crewed vessels, protection against slipping or falling overboard must be provided by guardrails comprising a handrail, an intermediate protection at knee level and a toerail. A handrail will suffice on uncrewed vessels.

**11.17. Access, doors and companion ways of working stations**

- 11.17.1. The size and arrangement of passageways, accesses and corridors for the movement of persons and cargo must be such that they are negotiable without risk to accident. The minimum requirements are deemed to be fulfilled when:
  - (a) there is enough space in front of the access opening to permit unimpeded movement;
  - (b) the openings are far enough away from installations which might be a source of danger;
  - (c) the clear width of the passageway is in keeping with the purpose of the working station and is not less than 0.60 m, except in the case of vessels less than 8 m wide, on which the width of the passageways may be reduced to 0.50 m;
  - (d) the headroom including ceaming is not less than 1.90 m.
- 11.17.2. The design and layout of doors must be such as not to endanger the persons opening or closing them. Doors must be protected against accidental closing and opening, and it must be possible to open or close them from either side.
- 11.17.3. Structures for passage from one level to another, particularly companionways, ladders and rungs must be such that their use is free of hazard. The minimum requirements are fulfilled when:
  - (a) companionways and ladders are permanently fixed or secured against slipping and overturning;
  - (b) companionways are not less than 0.50 m wide and the width between handrails not less than 0.60 m; ladders and rungs are not less than 0.30 m wide;
  - (c) the depth of the tread is not less than 0.15 m;
  - (d) steps and rungs can be safely negotiated, with no risk of side-slipping; the rungs must be visible from above;

**▼B**

- (e) companionways with more than four steps are fitted with hand-rails;
  - (f) vertical ladders are fitted with hand-holds above the exits;
  - (g) portable ladders (hold ladders) are secured against overturning and slipping and are long enough to extend 1 m beyond the rim of the hatchway when inclined at an angle of 60° from the horizontal. The ladders must be at least 0.40 m wide and 0.50 m at the base;
  - (h) rungs are so fixed in the upright that they cannot turn or become detached and the maximum distance between rungs is 0.30 m.
- 11.17.4. Emergency exits and ports or skylights designed for use as emergency exits must have a clear opening of at least 0.36 m<sup>2</sup> and the smallest dimension must be at least 0.50 m.
- 11.18. **Floors, deck surfaces, hold floorings, walls, ceilings, ports and skylights**
- 11.18.1. The floors and hold floorings at inside working stations, deck surfaces at outside working stations and surfaces on which personnel move about must be strongly made and designed to prevent slipping and falling.
- 11.18.2. Openings in decks or floors must when open be provided with protection against falls by persons.
- 11.18.3. Floors, deck surfaces, hold floorings, walls and ceilings must be designed so that they can be cleaned.
- 11.18.4. Ports and skylights must be so arranged and fitted out that they can be handled and cleared without risk.
- 11.19. **Ventilation and heating of working stations**
- 11.19.1. Closed spaces in which work is carried out, with the exception of storerooms, must be able to be ventilated. The ventilation devices must not cause draughts and must provide an adequate and regularly renewed supply of air to the working stations for the persons in them.
- Where the natural rate of air renewed is inadequate, mechanical ventilation must be provided. The rate of renewal may be considered adequate if it is carried out at least five times per hour.
- 11.19.2. Combustion or ventilation equipment must not cause the quality of the air in working station to deteriorate.
- 11.19.3. Heating equipment capable of maintaining adequate temperatures must be installed in permanent working stations inside the vessel.
- 11.20. **Natural light and lighting of working stations**
- 11.20.1. Where possible, working stations must receive adequate natural light even when the doors are closed. Permanently manned working stations must look out directly on to the outside of the vessel in so far as operating or design requirements make this possible.
- 11.20.2. Lighting must be so arranged as to eliminate dazzle.
- 11.20.3. The light switches for the working stations must be installed in readily accessible positions near doors.
- 11.21. **Protection against noise and vibration**
- 11.21.1. Permanent working stations and the installations in them must be so designed and sound-proofed that the safety and health of users are protected against noise and vibration.
- Without prejudice to the provisions of 2.06.7 and 3.15, the ambient noise levels in permanently manned working stations may not exceed 90 dB(A) at head level and each of the means of access must be equipped with a clearly worded warning.
- 11.21.2. If this level is exceeded, a sufficient number of individual noise protection devices must be provided.
- 11.21.3. Working stations must be located, fitted out and designed in such a way that crew members are not exposed to harmful vibration.



CHAPTER 12

**PROVISIONS RELATING TO TECHNICAL REQUIREMENTS ADDITIONAL TO ZONE 4 REQUIREMENTS APPLICABLE TO VESSELS OPERATING ON ZONE 3 INLAND WATERWAYS**

*(The requirements of 4.02 and 4.03 do not apply to Zone 3 waterways)*

**12.01. Requirements relating to shipbuilding**

Vessels, pushed trains and breasted-up formations with a maximum length exceeding 86 m.

- 12.01.1. Any vessel fitted with mechanical means of propulsion and having a maximum length exceeding 86 m must be built and fitted out in such a way as to be capable of coming to a halt pointing downstream in time, while remaining sufficiently manoeuvrable during and after stopping. This requirement also applies to pushed trains and breasted-up formations with a length exceeding 86 m.

To this end it is verified, on the basis of a stop test, whether propulsive power when going astern is sufficient. A stop test is not necessary if it can be substantiated in some other manner that this requirement is fulfilled.

The maximum permitted displacement of the vessel or train during downstream navigation is determined from the results of the stop test or substantiation; the inspection certificate will be endorsed accordingly.

- 12.01.2. The vessel, pushed train or breasted-up formation must be capable of attaining an adequate minimum speed.

**12.02. Freeboard, safety distance and draught scales**

12.02.1. *Definitions*

In this Chapter:

- (a) 'length L' means the maximum length of the hull, excluding rudder and bowsprit;
- (b) 'breadth B' means the maximum beam measured outside the side planking or plating, not including paddle wheels;
- (c) 'amidships' means half way along the length L;
- (d) 'enclosed superstructure' means a structure made up of solid watertight walls above the deck and joined to it in a permanent and watertight manner;
  - 'breadth of a superstructure' is its mean breadth, and
  - 'height of a superstructure' is its mean vertical height, measured at the side of the vessel between the top deck of the superstructure and the freeboard deck; if the walls have openings such as doors or windows, the height of superstructures is measured only up to the lowest point of the openings;
- (e) structural elements and devices are deemed 'watertight' when they are fitted out in such a manner as to prevent the ingress of water into the vessel, either:
  - when subjected to a pressure equivalent to 1 m of water for one minute, or
  - when subjected to a jet of water with a pressure of not less than 1 bar applied for 10 minutes in all directions and on the entire surface;
- (f) structural elements and devices are deemed 'spray-proof and weathertight' if in normal conditions they allow only a very small quantity of water to penetrate.

12.02.2. *Safety distance*

1. The safety distance must be not less than 30 cm.
2. On vessels whose openings cannot be closed by means of spray-proof and weathertight devices and vessels which navigate with their holds uncovered the safety distance is increased by 20 cm.



**▼B**

In the case of vessels with uncovered holds, however, the increase applies only to the coamings of uncovered holds and only until the prescribed distance of 50 cm is attained between the plane of greatest draught and the upper edge of the coamings.

12.02.3. *Freeboard*

1. The freeboard of vessels with a continuous deck, without sheer and without superstructures must be 150 mm.

This value is also the basic freeboard for vessels with sheer and superstructures.

2. The freeboard of vessels with sheer and superstructures is calculated by the following formula:

$$F = F_0 (1 - \alpha) - \frac{\beta_1 \cdot Se_1 + \beta_2 \cdot Se_2}{15}$$

The freeboard (F) must in no case be less than zero.

In the formula:

- $F_0$  is the basic freeboard referred to in 12.02.3 (1) (in mm),
- $\alpha$  is a correcting coefficient taking account of all superstructures considered,
- $\alpha$  is calculated by the following formula:

$$\alpha = \frac{\sum le}{L}$$

where:

- $le$  is the effective length of a superstructure (in m), and
- $L$  is the length of the vessel (in m) as defined in 12.02.1,
- $Se_1$  and  $Se_2$  are respectively the effective forward sheer and the aft sheer (in mm),
- $\beta_1$  and  $\beta_2$  are respectively correcting coefficients for the effect of the forward sheer and aft sheer resulting from the presence of superstructures at the extremities of the vessel,
- $\beta_1$  is calculated by the following formula:

$$\beta_1 = 1 - \frac{3le_1}{L}$$

where:

- $\beta_2$  is calculated by the following formula:

$$\beta_2 = 1 - \frac{3le_2}{L}$$

In these formulae:

- $le_1$  is the effective length of the forward superstructures (in m), and
- $le_2$  is the effective length of the rear superstructures (in m).

However, the effective length is taken into consideration only if it is located in the forward quarter or rear quarter of the length  $L$  of the vessel.

3. The effective sheer is calculated by the following formula:

$$Se = p S$$

where:

- $S$  is the actual sheer at the extremity in question (in mm),
- $S$  forward may not be taken to exceed 1 000 mm,
- $S$  aft cannot be taken to exceed 500 mm, and

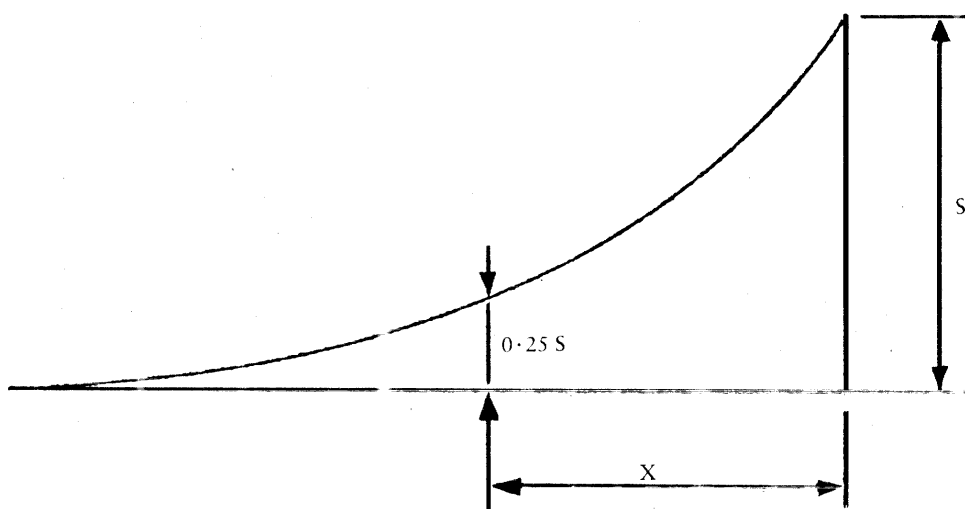
## ▼B

— p is the coefficient taken from the table below in line with the ratio  $\frac{X}{L}$ :

$\frac{X}{L}$	0.25 and over	0.20	0.15	0.10	0.05	0
p	1	0.8	0.6	0.4	0.2	0

For intermediate values of the ratio  $\frac{X}{L}$  the coefficient p is obtained by linear interpolation.

X is the abscissa, measured from the extremity, from the point where the shear equals 0.25 S (see sketch below).



Where  $\beta_2 Se_2$  exceed  $\beta_1 Se_1$ , the value of  $\beta_1 Se_1$  is taken as the value of  $\beta_2 Se_2$ .

4. The effective length of a superstructure is calculated by the formula:

$$le = 1 \left( 2,5 \frac{b}{B} - 1,5 \right) \frac{h}{0,6 \times 0,6}$$

where:

- l is the actual length of the superstructure in question (in m),
- b is the breadth of the superstructure in question (in m),
- B is the breadth of the vessel as defined in 12.02.1 (in m) (for  $le_1$  and  $le_2$ , however, the breadth of the vessel at the mid-point of the superstructure in question should be used),
- h is the height of the superstructure in question (in m) (in the case of hatches, however, h is obtained by reducing the height of coamings by half the safety distance referred to in 12.02.2).

A value exceeding  $0.6 \times 0.6$  m (i.e. 0.36 m) must not in any event be assigned to h.

Where  $\frac{b}{B}$  is less than 0.6 the value of the bracket must be assumed

to be zero (i.e. the effective length  $le$  of the superstructure should be assumed to be zero).

#### 12.02.4. Minimum freeboard

Taking into account the reductions referred to in 12.02.3, the minimum freeboard must not be less than 50 mm.

**▼B**

However, the competent authority may stipulate a smaller freeboard if it is guaranteed that the crew can move without danger over the whole length of the vessel to carry out their work.

12.02.5. *Draught marks*

In the case of vessels operating in the various inland waterway zones (Zones 1, 2, 3 and 4), there must be a vertical line and one or more additional draught lines of a length of 150 mm towards the bow on the draught marks fore and aft for one or more inland waterway zones.

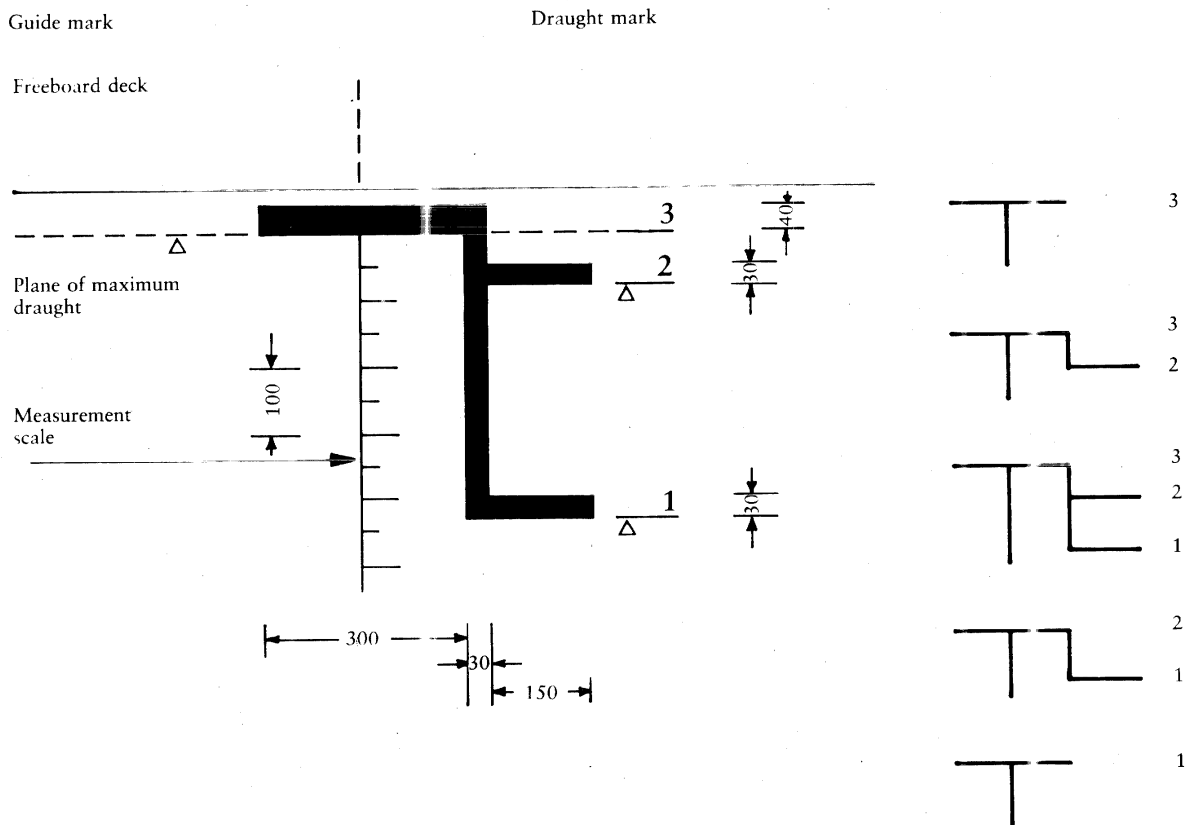
The vertical line and the horizontal lines must be 30 mm thick. Beside the draught mark running towards the bow there must appear a figure measuring 60 × 40 mm indicating the corresponding zone (see Figures 1 and 2).

12.03. **Equipment**

Lifebuoys, ball-floats and life-jackets.

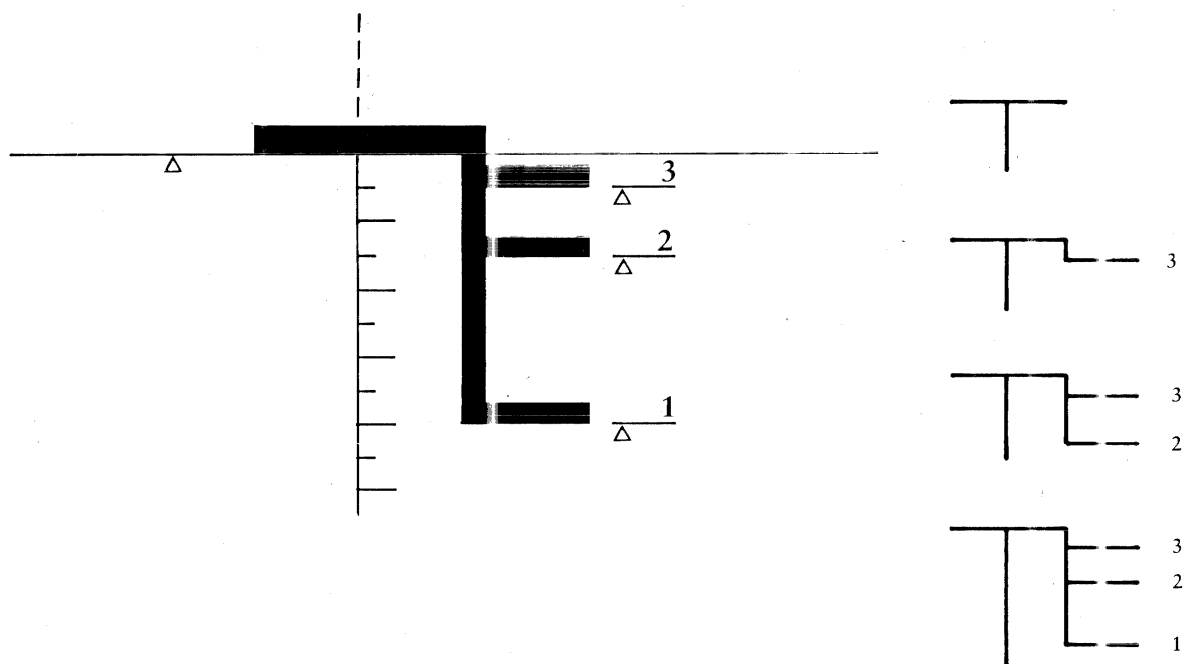
Self-propelled craft up to 40 m in length must have on board at least three lifebuoys or two lifebuoys and two ball-floats.

Figure 1



▼B

Figure 2



12.04. **Special provisions for vessels designed to be made up into pushed trains, pulled trains or to be breasted up**

12.04.1. Pushers must be provided with powered anchor windlasses.

12.04.2. *Vessels capable of towing*

In order to perform towing operations, vessels must meet the following requirements:

- (a) The length of the vessels must not exceed 86 m; exceptionally, the locally competent authority may authorize vessels with a length exceeding 86 m to tow downstream when certain conditions to be laid down by it are satisfied. The same applies to pushers intended to push trains of 86 × 12 m and over.
- (b) Where there is a risk of towing cables fouling the stern of the vessel, towing rails must be provided.

## CHAPTER 13

### DEROGATIONS FOR VESSELS IN SERVICE

13.01. Vessels already in service on or laid down before 1 January 1985 but whose construction and equipment do not fully comply with the provisions of this Directive must be brought into line with them within one year of the date of the first technical inspection provided for in Article 8 (2) of the Directive, with the exception of the provisions in Table 1 below, to which the following conditions apply:

- (a) The requirements set out in the first column of the table must be implemented within five years of the date of the first inspection provided for in Article 8 of the Directive.
- (b) The requirements in the second column do not apply to vessels already in service where the safety of vessel and crew is ensured in another appropriate manner.
- (c) The derogations referred to in 13.01 (a) and 13.01 (b) do not apply to parts which have been altered or replaced.
- (d) Where implementation of the requirements in 13.01, 13.01 (a) (after expiry of the transitional period) and 13.01 (c) is not practicable or would entail unreasonable outlay, the authority responsible for issuing the certificate may grant derogations.

▼ **B**

- (e) Relevant details of any derogations granted under 13.01 (a) must be entered in the certificate during the first inspection after the entry into force of this Directive; derogations under 13.01 (d) must be entered when granted.
- 13.02. Vessels already approved for radar steering by one person have five years to comply with the requirements of Chapter 9. Vessels requesting such approval for the first time must be brought into conformity with Chapter 9 before they can obtain approval.
- 13.03. Vessels which on 1 January 1985 have permanently installed fire-extinguishing appliances using CO<sub>2</sub> as an extinguishing agent may retain such appliances provided that they satisfy the following conditions:
- CO<sub>2</sub> is authorized as an extinguishing agent in permanently installed appliances subject to the following conditions:
- (a) CO<sub>2</sub> appliances may be used only in engine, boiler and pump rooms.
- (b) All permanently installed CO<sub>2</sub> appliances must be fitted with an alarm whose signal is clearly audible in all areas designed to be flooded with CO<sub>2</sub>, even above the highest possible level of intrinsic noise during operation, and clearly distinguishable from all other audible warning signals on board.
- CO<sub>2</sub> alarm signals must also be clearly audible in neighbouring areas — through closed communications hatchways and above the highest possible level of intrinsic noise produced during operation — if these areas can be evacuated through the one designed to be flooded with CO<sub>2</sub>.
- The following notice in red letters on a white background, in Dutch, French and German and in the language(s) of the Member States in which the vessel operates, must be displayed in an appropriate place at the entrance to and exit from any area likely to be flooded by CO<sub>2</sub>:
- ‘Leave this area immediately when the CO<sub>2</sub> warning signal is sounded (description of the signal) — danger of suffocation.’
- (c) Clearly legible and durably marked instruction for use in Dutch, French and German and in the language(s) of the Member State in which the vessel operates must be displayed near all devices for activating CO<sub>2</sub> extinguisher systems.
- Pipes terminating in areas likely to be affected by CO<sub>2</sub> must be fitted with closing devices.
- The warning device required under (b) above must be activated automatically before an extinguisher system is put into operation.
- (d) CO<sub>2</sub> tanks must be installed in a gas-tight area separated from other areas.
- This area must be directly accessible from the outside only, and must have an adequate and independent ventilation system completely separate from all other ventilation systems on board.
- The temperature in this area must not exceed 60 °C.
- All tanks under pressure must bear the inscription ‘CO<sub>2</sub>’ in white on a red background. The characters must be at least 6 cm high.
- (e) CO<sub>2</sub> tanks, fittings and piping under pressure must conform to the specifications in force in the Member State which issued the certificate. They must bear the official stamp certifying acceptance following the regulation tests.
- (f) The alarm referred to in (b) above must be checked at least once every 12 months.
- Fire-fighting systems must be checked at least once every two years. This check must at least include:
- external inspection of the entire system,
  - functional testing of piping and outlet nozzles,
  - functional testing of the triggering mechanism,
  - a check on the CO<sub>2</sub> supply in each service tank.
- (g) The inspection certificates signed by the inspectors must be carried on board. These certificates must mention at least the abovementioned checks, the results obtained and the date of the check.

▼B

(h) Where the vessel is equipped with one or more CO<sub>2</sub> extinguishing systems that have been checked, the certificate issued for the vessel must be endorsed as follows under heading No 18:

‘... (number) fixed CO<sub>2</sub> extinguishing system(s). The required certificates must be carried on board.’

- 13.04 The provisions of Chapter 11 apply only to the vessels referred to in Article 8 (1) of the Directive. However, for reasons of safety, the provisions in 11.01.1, 11.01.3, 11.01.4 and, within the time limits stipulated, those in Table 2 of this Chapter apply also to the vessels referred to in 13.01.
- 13.05. On existing vessels with side decks less than 0.50 m wide, a handrail in the form of a taut cable along the waterside or handrails along hatch coamings may be substituted for the guardrail.

TABLE 1

Derogation	Requirements applicable to vessels in service within five years of the date of the first inspection		Requirements not applicable to vessels in service	
	Article	Paragraph	Article	Paragraph
2. Requirements relating to shipbuilding			2.02	3, 6, 7
	2.03	2, 3		
	2.04	1, 2, 3, 4, 5		
	2.05	1, 2, 3		
	2.06	3, 5, 6	2.06	2, 7
3. Steering gear and wheelhouse	3.01	2		
			3.02	
	3.03	2	3.03	1
	3.04	1, 2, 3		
	3.05	1, 2		
	3.06	1, 2		
	3.08	1, 2, 3, 4		
	3.09	1, 2		
	3.10			
	3.11			
	3.12			
	3.13	2, 3, 4, 5		
	3.14			
		3.15		
		3.17		
4. Freeboard, safety distance and draught scales	4.05	1, 2, 3		
5. Machinery			5.01	3
	5.02	2, 3	5.03	2/reciprocal
			5.04	1, 2, 3, 4
	5.05	2, 3, 4, 5, 6	5.05	7, 8
	5.06	8	5.06	2, 3, 4, 5, 6, 7
			5.08	1, 2
		5.09	2	

▼**B**

Derogation	Requirements applicable to vessels in service within five years of the date of the first inspection		Requirements not applicable to vessels in service	
	Chapter	Article	Paragraph	Article
6. Electrical installations	6.03	1, 2, 3, 4	6.01	2, 3
			6.02	1, 2
			6.04	1, 2
			6.05	3
			6.06	1, 2, 3, 4, 5
			6.07	1, 2, 3, 4, 5, 6, 7, 8, 9
			6.08	
			6.09	1, 2
			6.10	1, 2, 3
			6.11	1, 2, 3, 4
			6.12	1, 2, 3
7. Equipment	7.03	6	7.03	5
	7.04	1, 2	7.04	3, 4
			7.05	2, 3, 5
8. Liquefied gas installations for domestic uses	The entire chapter with the exception of 8.15	Three years instead of five years		
12. Provisions relating to technical requirements additional to Zone 4 requirements applicable to vessels operating on Zone 3 inland waterways requirements applicable to vessels operating on Zone 3 inland waterways			12.02 12.03	2, 3, 4



**TABLE 2**

Derogation	Requirements applicable to vessels in service within five years of the date of the first inspection		Requirements applicable to vessels in service within one year of the date of the first inspection	
	Article	Paragraph	Article	Paragraph
11. Health and safety in the accommodation and working stations	11.01	2		
	11.02	5		
	11.05	2		
			11.08	3
	11.12	5, 6, 7	11.12	8
	11.13	1, 2, 3, 4		
			11.14	1, 3, 4
	11.16	1, 2		
	11.17	2	11.17	3 a)
	11.18	1, 2, 4		
11.20	2, 3			
		11.21	2	

CHAPTER 14

**PROCEDURE**

14.01. **Application for inspection**

It is for the certifying authorities to determine the procedure for applying for inspection and for deciding the place and date of inspection. This procedure must be such that inspection can take place within a reasonable period of application being made.

14.02. **Presentation of the vessel for inspection**

14.02.1. The owner or his representative must present the vessel for inspection in an unladen, cleaned and equipped condition; he is required to lend such assistance as is necessary for the inspection, for example to supply an appropriate boat, to make personnel available and to facilitate examination of parts of the hull or installations which are not directly accessible or visible.

14.02.2. Where special grounds exist for doing so, the authority may also request the following:

- (a) inspection of the vessel out of the water;
- (b) operational trials;
- (c) proof by calculation of the strength of the hull;
- (d) proof by calculation of stability, where necessary, on the basis of an inclining experiment.

14.03. **Costs**

When the owner of the vessel or his representative is liable for costs arising from the inspection and the issue of the certificate in accordance with a detailed schedule to be laid down by each Member State. There may be no discrimination on the grounds of country of registry, nationality or domicile of the owner.

14.04. **Information**

Persons who can show grounds for learning the contents of the certificate in respect of a vessel may do so from the certifying authority and may, at their own expense, obtain extracts or certified copies of the certificate which will be marked as such.

14.05. **Register of Community certificates**

14.05.1. Authorities issuing certificates must assign a serial number to each one and enter it in a register.



**▼B**

14.05.2. Authorities issuing certificates must keep a copy of all certificates issued by them and enter thereon all endorsements, amendments, cancellations and replacements of certificates.

14.06. **Completion of Community certificates**

1. Certificates should be typed or filled in in block capitals. Please use black or blue ink.
2. Details followed by a footnote should be deleted where appropriate in black or blue.
3. If an entry is not applicable, strike out the dotted line with a continuous black or blue horizontal line.
4. Entries which need to be amended should be deleted in red. Entries deleted in black or blue should be underlined in red.
5. New entries should be inserted in black or blue under heading No 23 of the certificate.

14.07. **Comments on various points in the certificate**

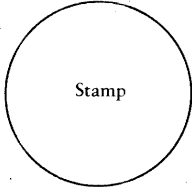
2. When indicating the type of vessel, the terms defined in Chapter 1 should be used as far as possible. The references for these terms should also be given (e.g. 'tvg reference 1 (e)').
3. The official number is that provided for under the Rhine or Moselle navigation regulations or, if allocated, the number provided for in the national regulations.
4. Valid postal address of the owner.
- 15 and 17. When an authority issues a certificate for some zones only, the other boxes should be deleted. The holder of such a certificate may later apply for a complementary certificate which is valid for the other zones or have the certificate amended.
15. The information given in the calibration certificate; to two decimal places.
16. Give only the mass, length and effective breaking load. The information given in the column should refer to the anchors and chains which were on board when the inspection took place.
20. The list may be supplemented by information relating to the equipment and gear laid down in national rules.  
The number of items must be given, but stating the type is optional.
21. Give the permanent and temporary requirements with an indication of the Articles concerned and the deadline.  
  
Special provisions or conditions relating to operation, loading, etc., may also be mentioned under this heading. Mention may be made here of a certificate for the carriage of dangerous substances.
- 22 to 25. If necessary, special pages may be added for further information. These should be numbered 5a, 5b, 6a 6b, etc. The original pages should be left in the certificate.  
  
Page 10, and if necessary pages 10a and 10b, etc., are reserved for national certificates of approval, declarations and/or permits.  
  
The certificate should be kept in a durable cover. If this is not transparent, the certificate heading should be reproduced on the cover (i.e. at least page 1 of the certificate down as far as 'name of vessel').

▼B

ANNEX III

**SPECIMEN COMMUNITY CERTIFICATE FOR INLAND NAVIGATION**

*(Article 3 of the Directive)*

Certificate No .....	Page 1
<p><b>COMMUNITY CERTIFICATE FOR INLAND WATERWAY VESSELS</b></p> <p>(Reserved for State emblem)</p> <p><b>NAME OF STATE</b></p> <p>Name and address of the competent authority issuing the certificate</p> <p>1. Name of vessel .....</p> <p>2. Type of vessel ..... Code .....</p> <p>3. Official number (where one exists) .....</p> <p>4. Name and domicile of owner .....</p> <p>.....</p> <p>5. Place of registration and registration number .....</p> <p>6. Country of registration and/or home port <sup>(1)</sup> .....</p> <p>7. Year of construction .....</p> <p>8. Name and domicile of shipyard .....</p> <p>.....</p> <p>9. This certificate replaces certificate No .....</p> <p>issued on ..... by .....</p> <p>.....</p> <p>10. This certificate expires on .....</p> <p>11. Issued in ..... on .....</p> <p>12.</p> <div style="display: flex; justify-content: space-between; align-items: center; margin-top: 20px;"> <div style="text-align: center;">  <p>Stamp</p> </div> <div style="text-align: right;"> <p>..... <sup>(2)</sup></p> <p>.....</p> <p>(Signature)</p> </div> </div>	
<p><sup>(1)</sup> Delete where inapplicable.</p> <p><sup>(2)</sup> Give the name of the authority issuing the certificate.</p>	

▼B

Page 2	Certificate No .....
--------	----------------------

13. Subsequent to the inspection carried out on <sup>(1)</sup> .....  
 and on presentation of the certificate delivered on .....  
 by <sup>(1)</sup> .....  
 the vessel mentioned in this certificate is acknowledged as fit to operate:

- on Community waterways in Zone(s) <sup>(1)</sup> .....
- on the waterways in Zone(s) <sup>(1)</sup> .....

in .....  
(Names of the Member States <sup>(1)</sup>)

except for .....

- on the following waterways in .....

.....  
(Name of the Member States <sup>(1)</sup>)

14. The vessel mentioned in this certificate is fit <sup>(1)</sup> to:

- tow up and downstream
- tow upstream only
- tow as an auxiliary towing vessel
- power a breasted-up formation
- push-tow
- be towed
- be empowered in a breasted-up formation
- to be push-towed
- to be radar navigated by a single person

15. MAIN CHARACTERISTICS OF THE VESSEL

Length overall ..... m

Beam overall ..... m

Number of holds partitioned with fixed bulkheads .....

<sup>(1)</sup> Delete where inapplicable.

▼B

Certificate No .....		Page 3				
Total power rating of main means of propulsion .....kW/CH						
Dead weight ..... tonnes						
Calibration certificate No ..... dated .....						
Calibration office .....						
		Zone and/or waterways <sup>(1)</sup>				
		4	3	2	1	
Freeboard (cm)	with hold closed					
	with hold open					

16. ANCHORS AND ANCHOR CHAINS

NB: The data relating to anchors is for information purposes only.

Number of bow anchors	
Total weight of bow anchors (kg)	
Number of stern anchors	
Total weight of stern anchors (kg)	
Number of bow anchor chains	
Length of each chain	
Breaking strain (kg)	
Number of stern anchor chains	
Length of each chain	
Breaking strain (kg)	

17. LIFE-SAVING EQUIPMENT

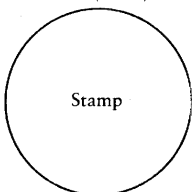
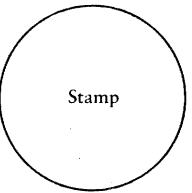
	Zones <sup>(1)</sup>			
	4	3	2	1
Number of lifeboats each with a capacity of ..... persons				
Number of liferafts each with a capacity of ..... persons				
Number of life-jackets				
Number of lifebuoys				
Number of ball-floats				

<sup>(1)</sup> Delete where inapplicable.

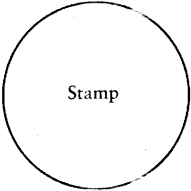
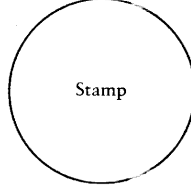
▼B

Page 4	Certificate No .....				
<p><b>18. FIRE-FIGHTING EQUIPMENT</b></p> <p>Number of portable extinguishers .....</p> <p>Number of fixed fire-fighting installations .....</p> <p>Extinguishing agent .....</p> <p>Other installations .....</p> <p>.....</p>					
<p><b>19. PUMPING EQUIPMENT</b></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Number of power-driven pumps .....</td> <td style="width: 50%;">Total capacity <sup>(1)</sup> .....</td> </tr> <tr> <td>Number of hand pumps .....</td> <td>Total capacity <sup>(1)</sup> .....</td> </tr> </table>		Number of power-driven pumps .....	Total capacity <sup>(1)</sup> .....	Number of hand pumps .....	Total capacity <sup>(1)</sup> .....
Number of power-driven pumps .....	Total capacity <sup>(1)</sup> .....				
Number of hand pumps .....	Total capacity <sup>(1)</sup> .....				
<p><b>20. OTHER EQUIPMENT</b></p> <p>Signalling lights .....</p> <p>Emergency signalling lights .....</p> <p>Cables and ropes .....</p> <p>.....</p> <p>Collision mats .....</p> <p>Loud hailers .....</p> <p>Sounding poles .....</p> <p>First-aid kit .....</p> <p>Notice of the rescuing of persons overboard .....</p> <p>Receptacle for oily rags .....</p> <p>Gangway or embarkation ladder .....</p> <p>.....</p> <p>.....</p>					
<p><b>21. PERMITTED DEROGATIONS AND SPECIAL PROVISIONS OR CONDITIONS</b></p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>					
<p><small><sup>(1)</sup> Give the unit of measurement.</small></p>					

▼B

Certificate No .....	Page 5
<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>If the vessel is modified, rebuilt or undergoes major repairs, the owner must inform the competent authority without delay.</p> <p><b>22. EXTENSION/RENEWAL OF THE CERTIFICATE</b></p> <p>— ..... (1)</p> <p>inspected the vessel ..... on ..... (2)</p> <p>— A permit dated ..... from the approved classification society ..... (2)</p> <p>was submitted to the competent authority (2)</p> <p>In view of the inspection result/permit (2), the period of validity for certificate No ..... is extended/renewed (2) until .....</p> <p>..... (Place) ..... (Date)</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Stamp</p> </div> <div style="text-align: right;"> <p>..... (3)</p> <p>..... (Signature)</p> </div> </div> <p><b>22. EXTENSION/RENEWAL OF THE CERTIFICATE</b></p> <p>— ..... (1)</p> <p>inspected the vessel ..... on ..... (2)</p> <p>— A permit dated ..... from the approved classification society ..... (2)</p> <p>was submitted to the competent authority (2)</p> <p>In view of the inspection result/permit (2), the period of validity for certificate No ..... is extended/renewed (2) until .....</p> <p>..... (Place) ..... (Date)</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Stamp</p> </div> <div style="text-align: right;"> <p>..... (3)</p> <p>..... (Signature)</p> </div> </div> <p>(1) Name the authority which inspected the vessel.                  (2) Delete where inapplicable.                  (3) Name the authority extending/renewing the certificate.</p>	

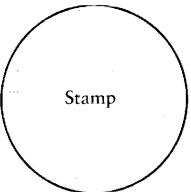
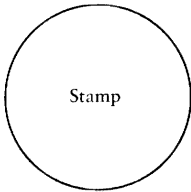
▼B

Page 6	Certificate No .....
23. AMENDMENT TO CERTIFICATE No .....	
Amendment(s) to paragraph(s): .....	
New text: .....	
.....	
.....	
.....	
.....	
(Place)	(Date)
	..... (1)
	(Signature)
23. AMENDMENT TO CERTIFICATE No .....	
Amendment(s) to paragraph(s): .....	
New text: .....	
.....	
.....	
.....	
.....	
(Place)	(Date)
	..... (1)
	(Signature)
<hr/> <sup>(1)</sup> Name the authority amending the certificate.	





▼B

Page 8	Certificate No .....
<p>This permit is valid until .....</p> <p>..... (Place) ..... (Date)</p> <p>Authorized officer: .....</p> <p>..... (Signature) ..... (Signature) (1)</p> <div style="text-align: center; margin: 10px 0;">  <p>Stamp</p> </div>	
<p>25. EXTENSION OF THE PERMIT RELATING TO LIQUEFIED GAS INSTALLATION(S)</p> <p>The period covered by the permit relating to liquefied gas installation(s) on board the vessel</p> <p>.....</p> <p>dated .....</p> <p>is extended until .....</p> <p>— the following inspection by the authorized officer (2) .....</p> <p>.....</p> <p>— on presentation of permit No ..... dated ..... (2)</p> <p>..... (Place) ..... (Date)</p> <p>Authorized officer: .....</p> <p>..... (Signature) ..... (Signature) (1)</p> <div style="text-align: center; margin: 10px 0;">  <p>Stamp</p> </div>	
<p>25. EXTENSION OF THE PERMIT RELATING TO LIQUEFIED GAS INSTALLATION(S)</p> <p>The period covered by the permit relating to liquefied gas installation(s) on board the vessel</p> <p>.....</p> <p>dated .....</p> <p>is extended until .....</p> <p>— the following inspection by the authorized officer (2) .....</p> <p>.....</p>	
<p>.....</p> <p>(1) Name the authority issuing the certificate.</p> <p>(2) Delete where inapplicable.</p>	

▼ **B**

Certificate No .....	Page 9
— on presentation of permit No ..... dated ..... (1)	
..... (Place)	..... (Date)
Authorized officer	
.....	..... (2)
..... (Signature)	..... (Signature)

(1) Delete where inapplicable.  
(2) Name the authority issuing the certificate.

▼B

Page 10

Certificate No .....

26. Special page(s) for national certificates of approval, declarations and/or permits.

▼B

ANNEX IV

SPECIMEN SUPPLEMENTARY COMMUNITY CERTIFICATE FOR INLAND WATERWAY VESSELS

(Article 4 of the Directive)

Annex to inspection certificate for the Rhine No ..... Page 1

SUPPLEMENTARY COMMUNITY CERTIFICATE FOR INLAND WATERWAY VESSELS

(Reserved for State emblem)

NAME OF STATE

Name and address of the competent authority issuing the supplementary certificate

1. Name of vessel .....

2. Official number .....

3. Place of registration and registration number .....

4. Country of registration and/or home port <sup>(1)</sup> .....

5. Having regard to inspection certificate for the Rhine No .....  
dated ..... valid until .....

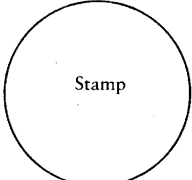
6. Having regard to the result of the inspection .....  
..... on .....

7. The abovementioned vessel is deemed fit to operate on the Community waterways of Zone(s) ...  
.....

8. This supplementary certificate expires on .....

9. Issued in ..... on .....

10.



Stamp

.....  
Competent authority  
.....  
(Signature)

<sup>(1)</sup> Delete where inapplicable.

