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## Economic Commission for Europe

### Inland Transport Committee

#### Working Party on Inland Water Transport

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

###### Sixty-third session

Geneva, 3–5 July 2023

Item 4 (b) of the provisional agenda

##### Standardization of Technical and Safety Requirements in Inland Navigation: Recommendations on Harmonized Europe-Wide Technical Requirements for Inland Navigation Vessels (Resolution No. 61, Revision 2)

## Amendment Proposals to the Annex of Resolution No. 61, Revision 2

### Note by the secretariat

### Mandate

1. This document is submitted in line with the proposed Programme Budget for 2023, part V, Regional cooperation for development, section 20, Economic Development in Europe, Programme 17, Economic Development in Europe (A/77/6 (Sect. 20), table 20.6).
2. At its sixty-second session, the Working Party on the Standardization of Technical and Safety Requirements in Inland Navigation (SC.3/WP.3) asked the secretariat to prepare an amendment proposal to the annex of resolution No. 61 based on the provisions of the European Standard laying down technical requirements for inland navigation vessels (ES-TRIN) edition 2023/1, as contained in ECE/TRANS/SC.3/WP.3/2023/5 (ECE/TRANS/SC.3/WP.3/124, paragraph 55).
3. SC.3/WP.3 may wish to consider the proposal contained in the annex to this document and decide as appropriate. SC.3/WP.3 may also wish to go back to the provisions for permanently installed firefighting systems in chapter 10 and to chapter 21 with a view of harmonizing them with ES-TRIN at its future sessions, as they may require a detailed revision of other provisions of the annex of resolution No. 61 that should be referred to in the revised chapters.

## Annex

### Amendment Proposals to Chapters 1, 3, 7, 8, 8A, 8C, 9 and 10 of the Annex of Resolution No. 61

#### A. Chapter 1 “General Provisions”

1. Section 1-2 “Definitions”, *add*

55a. “Hazardous areas”: hazardous area classification based upon the frequency of the occurrence and duration of an explosive atmosphere in accordance with IEC 60079.

“Zone 0”: areas in which an explosive atmosphere is present continuously or for long periods or frequently.

“Zone 1”: areas in which an explosive atmosphere is likely to occur in normal operation occasionally.

“Zone 2”: areas in which an explosive atmosphere is not likely to occur in normal operation but, if it does occur, will persist for a short period only. These areas also include areas directly adjoining Zone 1 that are not separated from one another in a gas tight manner.

...

101a. “Retractable wheelhouse”: a wheelhouse whose height is adjusted solely by lowering the upper mobile part while the wheelhouse floor remains in position, or in another related manner;

101b. “Elevating wheelhouse”: a wheelhouse whose height is adjusted by the movement of the entire wheelhouse. This type of wheelhouse can additionally have a retractable upper part;

...

114a. “Unprotected opening” (or “open” type of opening): openings which cannot be closed with at least weathertight means of closure should be considered as unprotected openings and, consequently, as down-flooding points. It also includes ventilation openings that have to remain open to supply air to the engine room or emergency generator room for the operation of the vessel.

#### B. Chapter 3 “Shipbuilding Requirements”

2. Paragraph 3–4.1.9, *modify*

3–4.1.9 No accommodation or installations needed for vessel safety or operation may be located ahead of the plane of the collision bulkhead **or aft of the aft-peak bulkhead**. This requirement shall not apply to anchor gear.

**Furthermore, this requirement shall not apply to**

(i) **Steering apparatus;**

(ii) **Rudder-propeller, water-jet, and cycloidal-propeller installations, or**

(iii) **Propulsion installations comparable to subparagraph (iii),**

**located aft of the aft-peak bulkhead. This also includes electric drives of these installations.**

## C. Chapter 7 “Wheelhouse”

### 3. Section 7-7, *modify*

#### 7-7 ~~MOVABLE~~ ELEVATING WHEELHOUSES

##### 7-7.1 General requirements

7-7.1.1 ~~Movable-Elevating~~ wheelhouses should be fitted with an emergency lowering system **which is independent from the normal lifting mechanism and can be used even in the event of a power failure. This emergency system shall be operated from inside the wheelhouse. When using the emergency system the lowering speed shall not be less than the lowering speed under normal conditions.**

**7-7.1.2 Arrangements shall be provided to avoid uncontrolled lowering of the wheelhouse. Appropriate protection features shall be installed to prevent the risk of injury which may result from lowering.** All lowering operations shall automatically trigger an optical and a clearly audible warning signal. ~~This requirement shall not apply, if the risk of corporal injury which may result from lowering, is prevented by appropriate design features.~~

~~7-7.1.2~~ **7-7.1.3 A vertically movable wheelhouse and its gear mechanically powered elevating wheelhouse and its appliances shall be designed in such a way as not to adversely affect that the safety of persons on-board is not endangered.**

**7-7.1.4 An elevating wheelhouse shall not endanger the stability of the vessel.**

~~7-7.1.3~~ **7-7.1.5** Hoisting and lowering shall not ~~interfere with~~ **hinder** operations performed from the wheelhouse. It must be possible to leave the wheelhouse safely, whatever its position.<sup>1</sup>

##### 7-7.2 Requirements relating to construction

7-7.2.1 The hoisting mechanism shall be designed to hoist at least 1.5 times the weight of the wheelhouse fully equipped and fully manned.

7-7.2.2 The mechanism for hoisting the wheelhouse shall function reliably and without jamming under all possible conditions of asymmetrical load, as well as at all angles of vessel’s list and trim, which could occur during its normal operation.

7-7.2.3 The wheelhouse shall be earthed.

7-7.2.4 The feed cables for systems inside the wheelhouse shall be laid and fastened, in such a way, as to exclude the possibility of mechanical damage to them.

7-7.2.5 The device for fastening the cables may also be used for laying hoses or pipes leading into the wheelhouse. The distance between such hoses or pipes and the cables shall be not less than 100 mm.

~~7-7.2.6 Optical signalling of the following positions shall be provided~~ **It shall be possible to operate the lifting mechanism from inside the wheelhouse. The following indications shall be arranged at the steering position:**

- (i) Electric drive switchboard live;
- (ii) Wheelhouse in lower terminal position;
- (iii) Wheelhouse in upper terminal position;
- (iv) Wheelhouse locked in fixed position (if applicable).**

##### **7-7.2.7 Hydraulic hoses are:**

**(i) Only permissible, if vibration absorption or freedom of movement of components makes their use inevitable;**

<sup>1</sup> Paragraph 7-7.1.1, second indent.

- (ii) **To be designed for at least the maximum service pressure;**
- (iii) **to be renewed at the latest every eight years.**

7-7.3 Requirements relating to the hoisting gear drive

7-7.3.1 The gear for hoisting and lowering the wheelhouse shall have a power drive capable of functioning under all conditions of the vessel's operation.

7-7.3.2 Emergency lowering of the wheelhouse shall be effected under its own weight and shall be smooth and controllable.

7-7.3.3 The hoisting mechanism shall enable the wheelhouse to stop and remain in ~~any position~~ **all positions. If the possibility exists to lock the wheelhouse in a certain position, the hoisting mechanism shall be automatically disabled when locking takes place.** A possibility for immediate release of the fixing arrangements should be ensured under all operational conditions, inclusive of a total power failure.

On board vessels intended for zones 1 and 2, the Basin administrations may require that it shall be possible to fix the wheelhouse in different positions.

7-7.3.4 ~~Automatic cutting out of the hoisting mechanism in the terminal positions shall be provided.~~ **The lifting mechanism shall be designed in such a way that exceeding the terminal positions is not possible.**

7-7.3.5 Lowering of the wheelhouse shall be effected by one person under all conditions. Emergency lowering control shall be possible from both inside the wheelhouse and a control station outside. The speed of emergency lowering of the wheelhouse shall be not less than the speed of lowering effected by means of the main drive.

7-7.3.6 The use of a self-braking hoisting mechanism shall not be permitted.

#### **7-7.4 Inspections**

**7-7.4.1 Elevating wheelhouses and their appliances shall be inspected regularly, but at least once every twelve months, by a competent person. The safety of the installation is to be established by a visual check and a check on satisfactory operation.**

**7-7.4.2 Elevating wheelhouses and their appliances shall be inspected by an expert:**

- (i) **Before being put into service for the first time,**
- (ii) **Before being put back into service after any major modification or repair, and**
- (iii) **Regularly, at least every five years.**

**In these inspections proof of adequate strength and stability shall be provided by calculations.**

**An inspection attestation shall be issued, signed by the expert and showing the date of the inspection.**

4. *Add a new section 7-8*

7-8 "Retractable wheelhouses

7-8.1 This section does not apply to:

- (i) Dismountable wheelhouses, and
- (ii) Wheelhouses which do not make use of a mechanism (e.g. chains, pulleys, cables, etc.), whether they are moved by human, electric, hydraulic or pneumatic force.

7-8.2 A retractable wheelhouse and its appliances shall be designed in such a way that the safety of persons on board is not endangered.

7-8.3 Operations carried out from the wheelhouse shall not be hindered during lifting and lowering. It shall be possible to enter and leave the wheelhouse safely, whatever its position. The emergency exit may be an opening in the roof, provided that it complies with the dimensions in paragraph 11-6.2.

7-8.4 The lifting mechanism shall enable the wheelhouse to stop in all positions. If the possibility exists to lock the wheelhouse in a certain position, the lifting mechanism shall be automatically disabled when locking takes place. Releasing the locks shall be possible under all operating conditions.

7-8.5 The lifting mechanism shall be designed in such a way that exceeding the terminal positions is not possible.

7-8.6 Arrangements shall be provided to avoid uncontrolled lowering of the retractable wheelhouse. Appropriate protection features shall be installed to prevent the risk of injury which may result from lowering.

When deemed necessary, the inspection body may require the triggering of an optical or acoustic warning signal during lowering operations.

7-8.7 Hydraulic hoses are

- (i) Only permissible, if vibration absorption or freedom of movement of components makes their use inevitable;
- (ii) To be designed for at least the maximum service pressure;
- (iii) To be renewed at the latest every eight years.

7-8.8 Retractable wheelhouses and their appliances shall be inspected regularly, but at least once every twelve months, by a competent person. The safety of the installation is to be established by a visual check and a check on satisfactory operation.

#### **D. Chapter 8 “Engine Design”**

5. *Add a new paragraph 8-1.1.2a*

8-1.1.2a By way of derogation from paragraph 8-1.1.2, craft may be equipped with propulsion or auxiliary systems operating on fuels with a flashpoint equal to or lower than 55 °C, if they fulfil the requirements of chapter 8C and appendix 10 or are outside the scope of application of chapter 8C.

#### **E. Chapter 8A “Exhaust and Pollutant Particulate Emissions from Diesel Engines”**

6. *Add a new section 8A-3*

8A-3 Specific requirements concerning exhaust gas after treatment systems

8A-3.1 The after-treatment systems shall not impair the safe operation of the craft, including the propulsion system and power supply, nor block the exhaust system.

8A-3.2 When the after-treatment system of internal combustion engines, which ensure the main propulsion of a craft, is equipped with a bypassing device, the bypassing device must comply with the following conditions:

- (i) In the event of a failure of the after-treatment system, the activation of the bypassing device must allow the craft to continue to make steerageway under its own power.
- (ii) In the event of activation of the bypassing device, the by-pass device control system shall trigger an acoustic and optical alarm signal in the wheelhouse.
- (iii) A by-pass device control system shall record in non-volatile computer memory all incidents of engine operation with use of the bypassing device. The information shall be readily available for the competent authorities.

8A-3.3 When a control diagnostic system is installed [according to Article 25(3)(f) of Regulation (EU) 2016/1628], the required alarms shall trigger an acoustic and optical alarm signal in the wheelhouse in case of malfunctions.

8A-3.4 If an after-treatment system relies on the use of a reagent in order to reduce emissions, the required alarms shall alert crew to the need to refill the reagent tank before it is empty, or to replace the reagent if it does not meet the concentration specifications. When a control diagnostic system installed [according to Article 25(3)(f) of Regulation (EU) 2016/1628] can activate power reduction of the internal combustion engine, the following requirements must be fulfilled:

(i) The activation of the power reduction must allow the craft to continue to make steerageway under its own power.

(ii) In the event of activation of the power reduction, the control system shall trigger an acoustic and optical alarm signal in the wheelhouse.

8A-3.5 The requirement of paragraph 8A-3.1 shall be deemed to be fulfilled when the vessel is equipped with:

(i) A second independent propulsion system (even if that second system also includes an after-treatment system) allowing the craft to continue to make steerageway under its own power; or

(ii) An after-treatment system with a bypassing device according to paragraph 8A-3.1, or

(iii) For a vessel with only a single-engine propulsion system, an alarm system allowing warning of the malfunctioning of the after-treatment system, combined with possibility to override the automatic shutdown of the engine, to continue operation for at least 30 minutes in order to reach a safe berth.

## **F. Chapter 8C “Special Provisions Applicable to Craft Equipped with Propulsion or Auxiliary Systems Operating on Fuels with a Flashpoint Equal to or Lower than 55 °C”**

7. The text of chapter 8C *replace with*

8C-0 Definition

For the purposes of this chapter, the following definition shall apply:

“Propulsion and auxiliary system”: any system using fuel, including fuel tanks, tank connections, fuel preparation systems, piping, valves, energy converters (such as engines, turbines or fuel cells), control, monitoring and safety systems.

8C-1 Scope of application

8C-1.1 This chapter applies to craft with propulsion or auxiliary systems operating on fuels with a flashpoint equal to or lower than 55 °C.

8C-1.2 In addition to the requirements of this chapter, appendix 10 provides for those requirements that are specific for certain fuels.

8C-1.3 The provisions of this chapter shall not apply to auxiliary systems according to paragraph 8C-1.1 with a cumulative reference power that is less than 20 kW.

8C-2 General

8C-2.1 Craft according to paragraph 8C-1.1 must comply with the mitigation measures identified by the risk assessment according to section 8C-4.

8C-2.2 Unless otherwise specified in appendix 10 and if necessary, derogations from paragraphs 8-1.1.2, 8-1.5.1, 8-1.5.10, 8-5.11 and 8-5.14<sup>2</sup> are permitted provided that the craft meets an equivalent level of safety.

If the energy converter of the craft generates gaseous or particulate pollutants but does not fall in the scope of application of chapter 8A, the emissions of gaseous and particulate pollutants from the energy converter shall be equivalent or lower than those of the internal combustion engines referred to in [Article 9.01(2)].<sup>3</sup> The inspection body may ask for a report which demonstrates its compliance to this requirement.

8C-3 Tasks of the inspection body and technical service, documentation

8C-3.1 Propulsion and auxiliary systems of craft according to paragraph 8C-1.1 shall be constructed and installed under the supervision of the inspection body.

8C-3.2 For the purpose of discharging tasks pursuant to this chapter, the inspection body may employ a technical service. The technical services shall satisfy the international standard ISO/IEC 17020:2012. The knowledge of the technical service shall cover at least the following areas:

- (a) Fuel system including tanks, heat exchangers, pipelines,
- (b) Strength (longitudinal and local) and stability of the craft,
- (c) Electrical installation and control, monitoring and safety systems,
- (d) Ventilation system,
- (e) Fire safety, and
- (f) Gas warning equipment.

Manufacturers and distributors of propulsion or auxiliary systems, or parts of these systems, cannot be recognized as technical services.

The supervision and testing according to paragraph 8C-3.1 and section 8C-11 may be performed by different technical services provided that all the expertise described above is taken into account in the process.

8C-3.3 Before commissioning of a propulsion or auxiliary system according to paragraph 8C-3.1, the following documents shall be submitted to the inspection body:

- (a) Risk assessment according to section 8C-4,
- (b) Description of the propulsion or auxiliary system,
- (c) Drawings of the propulsion or auxiliary system,
- (d) Diagram of the pressure and temperature within the system,
- (e) The operating manual according to paragraph 8C-5.5,
- (f) Safety rota according to paragraph 8C-5.1, and
- (g) A copy of the inspection certificate referred to in paragraph 8C-11.4.

8C-3.4 The technical documentation according to (3) shall enable an assessment of whether craft, propulsion and auxiliary systems and their components comply with the applicable rules, regulations, standards applied and principles regarding safety, availability, maintainability and reliability.

8C-3.5 A copy of the documents according to paragraph 8C-3.3 shall be kept on-board.

8C-4 Risk assessment

8C-4.1 A risk assessment shall be conducted to ensure that risks arising from the use of fuels with a flashpoint equal to or lower than 55 °C affecting people on board

<sup>2</sup> Chapter 8 does not contain a paragraph similar to Article 8.05(11) of ES-TRIN.

<sup>3</sup> Similar provision is missing in chapter 8A.

including passengers, the environment, the structural strength and the integrity of the craft, are addressed.

8C-4.2 The risk assessment shall include at least:

(a) A hazard identification (HAZID), as described in ISO 31010:2019, to find, list and characterize hazards as well as to identify measures to eliminate or mitigate these hazards.

(b) The classification of hazardous areas on board, divided into zones 0, 1 and 2.

In the light of the outcome of the hazard identification (HAZID), the inspection body may request additional risk analysis (e.g. quantitative risk analysis or fire and explosion risk analysis).

8C-4.3 As a minimum, the process of HAZID shall consider the following risks:

- (a) Hazards associated with physical layout;
- (b) Mechanical damage to components;
- (c) Operational, maintenance, cargo-related and weather-related influences;
- (d) Electrical failures;
- (e) Unintended chemical reactions;
- (f) Release of toxic vapours;
- (g) Self-ignition of fuels;
- (h) Fire;
- (i) Explosion;
- (j) Temporary power outage (blackout);
- (k) Flooding of water in parts of the craft which may contain fuel or hazardous vapours;
- (l) Craft sinking.

8C-4.4 As a minimum, the process of HAZID shall involve:

- (a) A risk assessment facilitator;
- (b) Fuel related safety experts;
- (c) Craft and system designers;
- (d) The shipyard or equivalent entity having an overview of the shipbuilding;
- (e) The equipment suppliers;
- (f) Future craft operator;
- (g) A boatmaster.

The inspection body must be permitted to attend as observer the risk assessment process.

8C-4.5 The risk assessment shall ensure that risks are eliminated wherever possible. Risks which cannot be eliminated entirely are to be mitigated to an acceptable level in accordance with paragraph 8C-4.6. Details of risks, and the measures by which they are mitigated, shall be documented to the satisfaction of the inspection body.



8C-4.6 Craft according to paragraph 8C-1.1 must fulfil the following requirements:

(a) A single failure in parts of the craft which may contain fuel or hazardous vapours, such as engines, fuel tanks and associated piping, shall not lead to an unsafe situation.

(b) The level of safety, reliability and dependability of the craft shall be at least equivalent to that of craft with main and auxiliary machinery using fuels having a flashpoint of more than 55 °C.

(c) The probability and consequences of fuel-related hazards shall be minimised through system design. Failure of risk-reducing measures shall lead to measures mitigating the impact on safety.

(d) Fuel supply, storage and bunkering arrangements shall be suitable to receive and contain fuel in the required state without leakage or venting under normal operating conditions.

(e) A fire or explosion in parts of the craft which may contain fuel or hazardous vapours shall not:

(i) Damage or disrupt the proper functioning of equipment/systems located in any space other than that in which the incident occurs;

(ii) Damage the craft in such a way that flooding of water below the main deck or any progressive flooding occurs;

(iii) Damage work areas or accommodation in such a way that persons who stay in such areas under normal operating conditions are injured or exposed to hot temperatures or toxic substances;

(iv) Injure persons as well as prevent persons' access to life-saving appliances or impede escape routes either by physical blockage, heat or toxic substances.

8C-4.7 In agreement with the inspection body, the scope of the risk assessment can exclude concepts in whole or in part that have been previously subjected to a risk assessment, provided that:

(a) There are no changes to the arrangements or design, location of the installation, mode of operation, type of fuels, use of surrounding spaces or to the number of persons exposed, and

(b) Mitigation measures taken as a result of previous risk assessments are included.

8C-5 Safety organization

8C-5.1 A safety rota shall be provided on-board the craft according to paragraph 8C-1.1. The safety rota shall include safety instructions according to paragraph 8C-5.2 and a safety plan according to paragraph 8C-5.3.

8C-5.2 These safety instructions shall include information on at least the following measures:

(a) Emergency shutdown of the system;

(b) Measures in the event of accidental release of liquid or gaseous fuel, for instance during bunkering;

(c) Measures in the event of fire or other incidents on-board;

(d) Measures in the event of collision;

(e) Use of safety equipment;

(f) Raising the alert, and

(g) Evacuation.

8C-5.3 The safety plan shall include information on at least the following areas and equipment:

- (a) Hazardous areas;
- (b) Escape routes, emergency exits and gastight rooms;
- (c) Life-saving equipment and ship's boats;
- (d) Fire extinguishers, firefighting systems and sprinkler systems;
- (e) Alarm systems;
- (f) Emergency circuit-breakers' controls;
- (g) Fire dampers;
- (h) Emergency power sources;
- (i) Ventilation system controls;
- (j) Controls for fuel supply lines, and
- (k) Safety equipment.

8C-5.4 The safety rota shall:

- (a) Be duly stamped by the inspection body, and
- (b) Be prominently displayed at one or more appropriate points on board.

8C-5.5 A detailed operating manual of the propulsion or auxiliary system shall be provided on-board the craft according to paragraph 8C-1.1 and shall at minimum:

- (a) Contain practical explanations about bunkering system, fuel containment system, fuel piping system, fuel supply system, engine or energy converter room, ventilation system, leakage prevention and control, monitoring and safety system;
- (b) Describe the bunkering operations, especially valves operation, purging, inerting and gas freeing;
- (c) Describe the relevant method of electrical insulation during bunkering operations, and
- (d) Describe the details of risks identified in the risk assessment as referred to in section 8C-4 and the means by which they are mitigated.

8C-6 Marking

Service rooms and system components shall be appropriately marked so that it is clear for what fuels they are being used.

8C-7 Independent propulsion

In the event of an automatic shutdown of the propulsion system or parts of the propulsion system, the craft shall be able to make steerageway under its own power.

8C-8 Fire safety

8C-8.1 Fire detection, protection and extinction measures appropriate to the hazards concerned shall be provided on-board.

8C-8.2 An appropriate fixed fire alarm system shall be provided for all rooms and spaces of the propulsion or auxiliary system where fire cannot be excluded.

8C-8.3 An appropriate firefighting system shall be provided for all rooms and spaces of the propulsion or auxiliary system.

8C-9 Electrical installations

8C-9.1 In accordance with section 9-2.3, equipment for hazardous areas shall be of an appropriate type according to zones where such equipment is installed.

8C-9.2 Electrical generation and distribution systems and associated control systems shall be designed such that a single failure will not result in the release of fuel.

8C-9.3 The lighting system in hazardous areas shall be divided between at least two branch circuits. All switches and protective devices shall interrupt all poles and phases and shall be located in a non-hazardous area.

8C-10 Control, monitoring and safety systems

8C-10.1 A propulsion or auxiliary system of craft according to paragraph 8C-1.1 shall be fitted with its own control and monitoring system and its own safety system. These systems must be independent from each other. All elements of these systems shall be capable of being functionally tested.

8C-10.2 Spaces in which the propulsion or auxiliary system is installed shall be equipped with permanently installed devices for gas detection and leakage monitoring. The number, type and redundancy of detectors in each space shall correspond to the size, layout and ventilation of the space. Permanently installed gas detectors shall be installed where gas may accumulate and in the ventilation outlets of these spaces.

8C-10.3 Instrumentation devices shall be fitted to allow a local and a remote reading of essential parameters, where they are necessary to ensure a safe operation of the whole system including bunkering.

8C-11 Testing

8C-11.1 Propulsion and auxiliary systems of the craft according to paragraph 8C-1.1 shall be inspected by the inspection body:

- (a) Before commissioning;
- (b) After any modification or repair, and
- (c) Regularly, at least once a year.

The relevant instructions of the manufacturers shall be taken into account in the process.

8C-11.2 The inspections referred to in paragraph 8C-11.1, subparagraphs (a) and (c), must at least cover:

- (a) A check of conformity of the propulsion and auxiliary systems with the approved drawings and in the case of subsequent checks, whether alterations in the propulsion or auxiliary system were made;
- (b) If necessary, a functional test of the propulsion and auxiliary systems for all operational possibilities;
- (c) A visual check and a tightness check of all system components, in particular valves, pipelines, hoses, pistons, pumps and filters;
- (d) A visual check of the electrical and electronic appliances of the installation, and
- (e) A check of the control, monitoring and safety systems.

8C-11.3 The inspections referred to in paragraph 8C-11.1, subparagraph (b), shall include at least the [parts of] [items of equipment mentioned in] paragraph 8C-11.2 which have been modified or repaired.

8C-11.4 For each inspection according to paragraph 8C-11.1, an inspection attestation shall be issued showing the date of inspection.

## G. Chapter 9 “Electrical Installations”

### 8. Section 9-2.2, table, *modify*

Location	Type of minimum protection (in accordance with IEC <del>publication 529</del> <b>60529</b> )					
	Generators	Motors	Transformers	Panels Distributors Switches	Installation equipment <sup>4</sup>	Lighting devices appliances, fire detectors and manual call points
Service premises rooms, engine rooms, steering-gear compartments	IP 22	IP 22	<sup>2</sup> IP 22	1, 2 IP 22	IP 44	IP 22
Holds		<b>IP 55</b>	<b>IP 55</b>		IP 55	IP 55
<del>Battery</del> <b>Accumulator rooms</b> and paint lockers						IP 44 <del>+</del> <b>and (EX)</b> <sup>3</sup>
Unroofed decks and <b>open</b> steering positions	<b>IP 55</b>	IP 55		IP 55	IP 55	IP 55
Enclosed wheelhouse	<b>IP 55</b>	IP 22	IP 22	IP 22	IP 22	IP 22
Accommodation apart from health facilities and washrooms				IP 22	IP 20	IP 20
Health facilities and washrooms		IP 44	IP 44	IP 44	IP 55	IP 44

*Remarks*

<sup>1</sup> Where appliances release large amounts of heat: IP 12.

<sup>2</sup> Where appliances or panels do not have this type of protection their location shall meet the conditions applying to that type of protection **indicated in the table.**

<sup>3</sup> Electrical equipment of the certified safety type, **for example installations in accordance with IEC Publication 79**

(a) **allowed pursuant to the international standards series IEC 60079 [in the version in force on 6 July 2017],**

(b) **lower minimum type of protection depending on design, e.g. certain types of fire detectors. If lighting devices, fire detectors or manual call points are used in accumulator and paint lockers, both conditions must be complied with.**

<sup>4</sup> **For installation fittings for currents of 125 A and greater: IP 66 (IEC 60529:2013).**

### 9. Section 9-2.3, *modify*

#### 9-2.3 ~~Explosion proofing~~ **Protection from explosion**

9-2.3.1 Only electrical equipment that has been explosion proofed (~~safety-certified safety~~) may be installed in premises where ~~potentially explosive gases or mixtures of gases are~~ **atmosphere is** likely to accumulate ~~such as compartments set aside for accumulators or the storage of highly inflammable products.~~ **This equipment must be tested and approved as to its operating safety in an explosive atmosphere by a testing institution recognized by the Administration.**

~~No light switches or other electrical appliances shall be installed on those premises.~~ **The installation in these rooms or areas of switching devices for lighting appliances and other electrical equipment is to be avoided as far as possible.** The explosion proofing shall take account of the characteristics of the ~~potentially explosive gases or mixtures of gases~~ **atmosphere that are** is likely to arise (explosion-potential group, temperature class) **and of the requirements of the relevant hazardous zone.**

**Information and restrictions in the approval certificates of the equipment must be observed.**

**The classification and evaluation of areas at risk of explosion is to be conducted and documented in accordance with international standards IEC 60079-10-1:2020 and IEC 60079-10-2:2015.**

**9-2.3.2 The applicable rules for hazardous areas:**

**(i) In Zone 0 areas, only intrinsically safe circuits (protection class Ex ia) in accordance with international standard IEC 60079-11:2012 are permitted.**

**(ii) In zone 1 areas, only explosion-protected electrical equipment (certified safety) is permitted.**

**(iii) In zone 2 areas, measures need to be taken to protect electrical equipment that are appropriate to the type and intended purpose of the service equipment. Approval in these areas is restricted to:**

**(a) Explosion-protected electrical equipment (certified safety), or**

**(b) Service equipment, which in normal use do not produce any sparks and whose surfaces might come into contact with the outside air, do not reach impermissible temperatures, or**

**(c) Service equipment which is protected by pressurization or which is encapsulated in a vapour-proof manner (minimum protection class IP 55) and whose surfaces do not reach impermissible temperatures.**

**9-2.3.3 For dust explosion protection, the requirements shall apply according to international standard IEC 60079-10-2:2015.**

## **H. Chapter 10 “Equipment”**

10. Paragraph 10-1.2.1, table, *replace with*

<i>Deadweight tonnage, [t]</i>	<i>Coefficient c</i>
Up to 50 inclusive	20
From 50 to 100 inclusive	25
From 100 to 200 inclusive	30
From 200 to 400 inclusive	45
From 400 to 650 inclusive	55
From 650 to 1 000 inclusive	65
More than 1 000	70

11. Section 10-5.2 *modify as follows:*

(a) Subsection 10-5.2.1 *delete*

(b) Subsections 10-5.2.2 and 10-5.2.3 *modify*

10-5.2.2 Lifejackets

10-5.2.2.1 ~~A lifejacket shall satisfy the following requirements:~~

(i) ~~It shall be capable of keeping the head of an exhausted or unconscious person above water;~~

~~(ii) — It shall be so designed as to eliminate so far as possible all risk of its being put on incorrectly; however, it shall be capable of being worn inside out;~~

~~(iii) — It shall be capable of turning the wearer's body, on entering the water, to a safe floating position slightly inclined backwards from the vertical;~~

~~(iv) — It shall be easy and quick to put on, and shall fasten securely to the body.~~

**A personal automatically inflatable life jacket shall be within reach of every person who is regularly on board a craft. Such life jackets shall conform to:**

**(i) International standards ISO 12402-2:2020, ISO 12402-3:2020 and ISO 12402-4:2020; or**

**(ii) The International Life-Saving Appliance (LSA) Code, subsection 2.2.**

**The requirements of (a) above shall be deemed to have been met when the life jacket satisfies.**

**Non-inflatable lifejackets in accordance with (i) or (ii) shall also be admissible for children.**

~~10-5.2.2.2 Inflatable life jackets shall inflate automatically and manually and may also be inflated by mouth. They~~ **Lifejackets** shall be checked in accordance with the manufacturer's instructions.

~~10-5.2.2.3 Inflatable lifejackets shall meet the requirements of the Basin Administration.~~

10-5.2.3 Lifebuoys

10-5.2.3.1 Lifebuoys shall meet the following requirements:

- ~~(i) — Have a mass of not less than 2.5 kg;~~
- ~~(ii) — Have an internal diameter of 0.45 m  $\pm$ 10%;~~
- ~~(iii) — Be encircled with rope which can be grasped.~~

**On-board craft there shall be at least three lifebuoys:**

- In accordance with [European Standard EN 14144:2003]; or**
- In accordance with the 1974 International Convention for the Safety of Life at Sea (SOLAS 1974), Chapter III, Regulation 7.1, and the International Life-Saving Appliance (LSA) Code, subsection 2.1.**

**They shall be ready for use and attached to the deck at appropriate points without being attached to their mounting. At least one lifebuoy shall be in the immediate vicinity of the wheelhouse and shall be equipped with a self-igniting, battery-powered light that will not be extinguished in water.**

[10-5.2.3.2 At least one lifebuoy on each side of the vessel shall be fitted with a reliably secured buoyant lifeline which is not less than 25 m long.]

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