Amendment on 27 June 2024
Resolved by Technical Committee on 30 January 2024

Electrical Equipment in Hazardous Area

Object of Amendment

Rules for the Survey and Construction of Steel Ships Parts GF and H
Rules for High Speed Craft
Rules for the Survey and Construction of Inland Waterway Ships
Guidance for the Survey and Construction of Steel Ships Parts H and R
Guidance for High Speed Craft
Guidance for the Survey and Construction of Inland Waterway Ships

Reason for Amendment

Chapter II-2 of SOLAS stipulates that electrical equipment installed in hazardous areas is to be of an explosion-protected type suitable for such areas. This requirement has already been incorporated into the NK Rules.

Hazardous areas are, in principle, classified into three categories—Zone 0, Zone 1 and Zone 2— in descending order of degree of danger (i.e. Zone 0 is the most hazardous) according to amount of explosive or otherwise dangerous gases present within the space, and the NK Rules specifically mention several of the more common of these areas and their corresponding categories. There are, however, cases in which electrical equipment is installed in hazardous areas that are not specifically mentioned in the NK Rules, and such areas are typically classified by the Society on a case-by-case basis in consideration of prior survey results, the prior handling of similar areas and other relevant factors. Over the years, a number of these areas have been repeatedly and consistently classified in a certain way that the Society has decided that the time has come to add specific references to them to relevant requirements in the NK Rules.

Accordingly, relevant requirements are amended to clarify the hazardous area classification of such areas with respect to the installation of electrical equipment. In addition, relevant requirements in Parts H and R of the Rules for the Survey and Construction of Steel Ships are amended to remove any inconsistencies with respect to descriptions of the same hazardous area.

Outline of Amendment

(1) Clarify the classification of the following hazardous areas.
  (a) vehicle spaces in car carriers,
  (b) dangerous good loading areas,
  (c) battery rooms, and
  (d) cargo areas of tank barges for navigating inland waterways and carrying cargoes having flashpoints exceeding 60 °C.
(2) Clarify the relationship between Parts H and R of the Rules for the Survey and Construction of Steel Ships with respect to descriptions of the same hazardous areas.

Effective Date and Application

This amendment applies to ships for which the date of contract for construction is on or after

1 July 2024.

ID: DD23-14

An asterisk (*) after the title of a requirement indicates that there is also relevant information in the corresponding Guidance.

Amended-Original Requirements Comparison Table (Electrical Equipment in Hazardous Area)

Amended	Original	Remarks
RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS **Part GF SHIPS USING LOW-FLASHPOINT FUELS** **Chapter 13 VENTILATION**	**RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS** **Part GF SHIPS USING LOW-FLASHPOINT FUELS** **Chapter 13 VENTILATION**	
13.3 General Requirements (*IGF Code* 13.3) **13.3.10 Non-hazardous Areas with Entry Openings to a Hazardous Enclosed Space*** (Omitted)	**13.3 General Requirements (*IGF Code* 13.3)** **13.3.10 Non-hazardous Areas with Entry Openings to a Hazardous Enclosed Space** (Omitted)	"*" is added, since there is the related guidance.

Amended-Original Requirements Comparison Table (Electrical Equipment in Hazardous Area)

Amended	Original	Remarks
RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS **Part H ELECTRICAL INSTALLATIONS** **Chapter 2 ELECTRICAL INSTALLATIONS AND SYSTEM DESIGN**	**RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS** **Part H ELECTRICAL INSTALLATIONS** **Chapter 2 ELECTRICAL INSTALLATIONS AND SYSTEM DESIGN**	
2.11 Accumulator Batteries	**2.11 Accumulator Batteries**	
2.11.6 Electrical Equipment*	**2.11.6 Electrical Equipment***	
1 Switches, fuses and other electrical installations liable to cause arcs are not to be installed in battery compartments. **2** Lighting fittings provided within battery compartments are to comply with the requirements given in **2.16** and to be suitable for use in explosive atmospheres classified into gas and vapours group *IIC*, temperature class *T*1 and construction suitable for use in Zone 1 as specified in *IEC* 60079, or equivalent thereto. **3** Cables other than those for batteries and electrical installations specified in **-2** above are, as a rule, not to be installed in battery compartments except in cases where installation in other locations is impracticable.	**1** Switches, fuses and other electrical installations liable to cause arcs are not to be installed in battery compartments. **2** Lighting fittings provided within battery compartments are to comply with the requirements given in **2.16** and to be suitable for use in explosive atmospheres classified into gases and vapours group *IIC* and temperature class *T*1 as specified in *IEC* 60079 or any equivalent thereto. **3** Cables other than those for batteries and electrical installations specified in **-2** above are, as a rule, not to be installed in battery compartments except in cases where installation in other locations is impracticable.	The classification of hazardous area of the battery room is specified because it was unclear. The storage battery room of the concerned place is the object of the vented type battery, and it is assumed that explosive gas is generated in a specific situation such as when the storage battery is charged. Therefore, it is assumed that it corresponds to Zone 1.

Amended-Original Requirements Comparison Table (Electrical Equipment in Hazardous Area)

Amended	Original	Remarks
2.16 Explosion-protected Electrical Equipment	**2.16 Explosion-protected Electrical Equipment**	
2.16.2 Selection of Explosion-protected Construction	**2.16.2 Selection of Explosion-protected Construction**	
Constructions for explosion-protected electrical equipment used in hazardous areas (Zone 0, Zone 1 or Zone 2) on board ships are to be selected from the following explosion-protected types: (1) Flameproof type (2) Increased safety type (3) Intrinsically safe type (Deleted) (Deleted) (4) Pressurized protected type (5) Encapsulation type (6) Powder filling type (7) Oil immersion type (8) Type of protection '*n*' (9) Special protection type	Constructions for explosion-protected electrical equipment used in hazardous areas on board ships are to be selected from the following explosion-protected types: (1) Flameproof type (2) Increased safety type (3) Intrinsically safe type (a) Category '*ia*' intrinsically safe type (b) Category '*ib*' intrinsically safe type (4) Pressurized protected type (5) Encapsulation type (6) Powder filling type (7) Oil immersion type (8) Type of protection '*n*' (9) Special protection type	Intrinsically safety type structures are not limited to Ex ia and Ex ib, but also Ex ic. (Ex ic is also allowed if the deck of a car ship is above 450 mm. For Zone 2 hazardous areas) On the other hand, Encapsulation type include ma, mb, and mc, and Pressurized protected type include px py pz, and so on. Therefore, these structures are classified according to the types of dangerous places. If intrinsically safe explosion-proof structures are described according to the types of dangerous places, it is necessary to specify the Encapsulation type and Pressurized protected type mentioned above. Since it would be complicated to specify all these, the differences of explosion-proof structures according to the types of dangerous places are not described in detail.

Amended-Original Requirements Comparison Table (Electrical Equipment in Hazardous Area)

Amended	Original	Remarks
Chapter 4 ADDITIONAL REQUIREMENTS FOR SHIPS CARRYING SPECIAL CARGOES	**Chapter 4 ADDITIONAL REQUIREMENTS FOR SHIPS CARRYING SPECIAL CARGOES**	
4.3 Tankers and Ships Carrying Dangerous Chemicals in Bulk Having a Flashpoint Not Exceeding 60 °C	**4.3 Tankers and Ships Carrying Dangerous Chemicals in Bulk Having a Flashpoint Not Exceeding 60 °C**	
4.3.1 Classification of Hazardous Areas*	**4.3.1 Classification of Hazardous Areas***	
The following areas or spaces in tankers and ships carrying dangerous chemicals in bulk having flashpoints not exceeding 60 °C are to be classified as Zone 0, Zone 1, and Zone 2 as shown below: (1) (Omitted) (2) (Omitted) (3) Zone 2 (a) Areas on open decks or semi-enclosed spaces on open decks, within 1.5 *m* surrounding the areas specified in **(2)** above. However, the "any ventilation outlets, cargo tank openings for pressure release which permits the flow of small volumes of gas or vapour caused by thermal variations" referred to in **(2)(g)** above are to be in accordance with requirements otherwise specified by the Society. (except those hazardous areas otherwise specified in the Rules; hereinafter, referred to in the same way).	The following areas or spaces in tankers and ships carrying dangerous chemicals in bulk having flashpoints not exceeding 60 °C are to be classified as Zone 0, 1, and 2 as shown below: (1) (Omitted) (2) (Omitted) (3) Zone 2 (a) Areas on open decks or semi-enclosed spaces on open decks, within 1.5 *m* surrounding the areas specified in **(2)** above (except those hazardous areas otherwise specified in the Rules; hereinafter, referred to in the same way).	refer to remaks at Guidance H4.3.1
4.7 Ships Carrying Liquefied Gases in Bulk	**4.7 Ships Carrying Liquefied Gases in Bulk**	
4.7.1 Classification of Hazardous Areas*	**4.7.1 Classification of Hazardous Areas***	
The following areas or spaces in ships carrying liquefied gases in bulk are to be classified as Zone 0, Zone 1 and Zone 2 as shown	The following areas or spaces in ships carrying liquefied gases in bulk are to be classified as Zone 0, 1 and 2 as shown below:	

Amended-Original Requirements Comparison Table (Electrical Equipment in Hazardous Area)

Amended	Original	Remarks
below: (1) (Omitted) (2) (Omitted) (3) Zone 2 (a) Areas on open decks or semi-enclosed spaces on open decks, within a distance of 1.5 *m* surrounding those areas specified in **(2)** above. <u>However, the "any ventilation outlets, cargo tank openings for pressure release which permits the flow of small volumes of gas or vapour caused by thermal variations" referred to in **(2)(h)** above are to be in accordance with requirements otherwise specified by the Society.</u>	(1) (Omitted) (2) (Omitted) (3) Zone 2 (a) Areas on open decks or semi-enclosed spaces on open decks, within a distance of 1.5 *m* surrounding those areas specified in **(2)** above.	refer to remaks at Guidance H4.7.1

Amended-Original Requirements Comparison Table (Electrical Equipment in Hazardous Area)

Amended	Original	Remarks
RULES FOR HIGH SPEED CRAFT **Part 10 ELECTRICAL INSTALLATIONS** **Chapter 2 ELECTRICAL INSTALLATIONS AND SYSTEM DESIGN**	**RULES FOR HIGH SPEED CRAFT** **Part 10 ELECTRICAL INSTALLATIONS** **Chapter 2 ELECTRICAL INSTALLATIONS AND SYSTEM DESIGN**	
2.8 Accumulator Batteries	**2.8 Accumulator Batteries**	
2.8.6 Electrical Installations*	**2.8.6 Electrical Installations***	
1 Switches, fuses and other electrical installations liable to cause an arc are not to be installed in battery compartments. **2** Lighting fittings provided within battery compartments are to be suitable for use in explosive atmosphere classified into gas and vapours group II*C*, temperature class *T*1 and construction suitable for use in Zone 1 as specified in *IEC* 60079, or equivalent thereto. **3** Cables other than those for batteries and electrical installations specified in **-2** are, as a rule, not to be installed in battery compartments except where installation in other locations is impracticable.	**1** Switches, fuses and other electrical installations liable to cause an arc are not to be installed in battery compartments. **2** Lighting fittings provided within battery compartments are to be suitable for use in explosive atmosphere classified into gases and vapours group II*C* and temperature class *T*1 as specified in *IEC* 60079, or equivalent thereto. **3** Cables other than those for batteries and electrical installations specified in **-2** are, as a rule, not to be installed in battery compartments except where installation in other locations is impracticable.	Same as guidance H2.16

Amended-Original Requirements Comparison Table (Electrical Equipment in Hazardous Area)

Amended	Original	Remarks
RULES FOR THE SURVEY AND CONSTRUCTION OF INLAND WATERWAY SHIPS **Part 8 ELECTRICAL INSTALLATIONS** **Chapter 2 ELECTRICAL INSTALLATIONS AND SYSTEM DESIGN**	**RULES FOR THE SURVEY AND CONSTRUCTION OF INLAND WATERWAY SHIPS** **Part 8 ELECTRICAL INSTALLATIONS** **Chapter 2 ELECTRICAL INSTALLATIONS AND SYSTEM DESIGN**	
2.11 Accumulator Batteries	**2.11 Accumulator Batteries**	
2.11.6 Electrical Installations*	**2.11.6 Electrical Installations***	
1 Switches, fuses and other electrical installations liable to cause arcs are not to be installed in battery compartments. **2** Lighting fittings provided within battery compartments are to comply with the requirements given in **2.16** and to be suitable for use in explosive atmospheres classified into gas and vapour group *IIC*, temperature class *T*1 and construction suitable for use in Zone 1 as specified in *IEC* 60079, or equivalent thereto. **3** Cables other than those for batteries and electrical installations specified in **-2** above are, as a rule, not to be installed in battery compartments except in cases where installation in other locations is impracticable.	**1** Switches, fuses and other electrical installations liable to cause arcs are not to be installed in battery compartments. **2** Lighting fittings provided within battery compartments are to comply with the requirements given in **2.16** and to be suitable for use in explosive atmospheres classified into gases and vapours group *IIC* and temperature class *T*1 as specified in *IEC* 60079 or any equivalent thereto. **3** Cables other than those for batteries and electrical installations specified in **-2** above are, as a rule, not to be installed in battery compartments except in cases where installation in other locations is impracticable.	Same as guidance H2.16

Amended-Original Requirements Comparison Table (Electrical Equipment in Hazardous Area)

Amended	Original	Remarks
Chapter 5 BARGES	**Chapter 5 BARGES**	
5.10 Tank Barges Carrying Flammable Liquid Cargoes	**5.10 Tank Barges Carrying Liquid Cargoes Having Flashpoint Not Exceeding 60 °C**	
5.10.1 Classification of Hazardous Areas*	**5.10.1 Classification of Hazardous Areas***	
The following areas or spaces in tank barges carrying liquid cargoes having flashpoints not exceeding 60 °C are to be classified as Zone 0, Zone 1 and Zone 2 as shown below, and the areas or spaces in tank barges carrying liquid cargoes having flashpoints exceeding 60 °C are to be in accordance with **4.2.3, Part H of the Rules**. (1) (Omitted) (2) (Omitted) (3) Zone 2 (a) Areas on open decks or semi-enclosed spaces on open decks, within 1.5 *m* surrounding the areas specified in **(2)** above. However the "any ventilation outlets, cargo tank openings for pressure release which permits the flow of small volumes of gas or vapour caused by thermal variations" referred to in **(2)(g)** above are to be in accordance with requirements otherwise specified by the Society. (except those hazardous areas otherwise specified in the Rules; hereinafter, referred to in the same way).	The following areas or spaces in tank barges carrying liquid cargoes having flashpoints not exceeding 60 °C are to be classified as Zone 0, 1 and 2 as shown below; (1) (Omitted) (2) (Omitted) (3) Zone 2 (a) Areas on open decks or semi-enclosed spaces on open decks, within 1.5 *m* surrounding the areas specified in **(2)** above (except those hazardous areas otherwise specified in the Rules; hereinafter, referred to in the same way).	Tank Barge carrying liquid cargo with a flash point exceeding 60°C are classified

Amended	Original	Remarks
EFFECTIVE DATE AND APPLICATION **1.** The effective date of the amendments is 1 July 2024. **2.** Notwithstanding the amendments to the Rules, the current requirements apply to ships for which the date of contract for construction* is before the effective date. * "contract for construction" is defined in the latest version of IACS Procedural Requirement (PR) No.29. IACS PR No.29 (Rev.0, July 2009) **1.** The date of "contract for construction" of a vessel is the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. This date and the construction numbers (i.e. hull numbers) of all the vessels included in the contract are to be declared to the classification society by the party applying for the assignment of class to a newbuilding. **2.** The date of "contract for construction" of a series of vessels, including specified optional vessels for which the option is ultimately exercised, is the date on which the contract to build the series is signed between the prospective owner and the shipbuilder. For the purpose of this Procedural Requirement, vessels built under a single contract for construction are considered a "series of vessels" if they are built to the same approved plans for classification purposes. However, vessels within a series may have design alterations from the original design provided: (1) such alterations do not affect matters related to classification, or (2) If the alterations are subject to classification requirements, these alterations are to comply with the classification requirements in effect on the date on which the alterations are contracted between the prospective owner and the shipbuilder or, in the absence of the alteration contract, comply with the classification requirements in effect on the date on which the alterations are submitted to the Society for approval. The optional vessels will be considered part of the same series of vessels if the option is exercised not later than 1 year after the contract to build the series was signed. **3.** If a contract for construction is later amended to include additional vessels or additional options, the date of "contract for construction" for such vessels is the date on which the amendment to the contract, is signed between the prospective owner and the shipbuilder. The amendment to the contract is to be considered as a "new contract" to which **1.** and **2.** above apply. **4.** If a contract for construction is amended to change the ship type, the date of "contract for construction" of this modified vessel, or vessels, is the date on which revised contract or new contract is signed between the Owner, or Owners, and the shipbuilder. Note: This Procedural Requirement applies from 1 July 2009.		

Amended-Original Requirements Comparison Table (Electrical Equipment in Hazardous Area)

Amended	Original	Remarks
GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS **Part H ELECTRICAL INSTALLATIONS** **H4 ADDITIONAL REQUIREMENTS FOR SHIPS CARRYING SPECIAL CARGOES**	**GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS** **Part H ELECTRICAL INSTALLATIONS** **H4 ADDITIONAL REQUIREMENTS FOR SHIPS CARRYING SPECIAL CARGOES**	
H4.2 Tankers, Ships Carrying Liquefied Gases in Bulk and Ships Carrying Dangerous Chemicals in Bulk	**H4.2 Tankers, Ships Carrying Liquefied Gases in Bulk and Ships Carrying Dangerous Chemicals in Bulk**	
H4.2.3 Hazardous Areas	**H4.2.3 Hazardous Areas**	
1 The wording "those requirements otherwise specified by the Society" in **4.2.3-4, Part H of the Rules** means the categorization technique specified in 4.1.4 in *IEC* 60092-502 (1999). This technique categorizes those hazardous areas adjacent to any spaces (standard hazardous areas) in which flammable or explosive gas atmospheres are present or likely to occur after taking into account the effectiveness of any sources of release and ventilation (refer to **Fig. H4.2.3-1**). In addition, the wording "those requirements otherwise specified by the Society" in **4.2.3-4, Part H of the Rules** also means **R4.5.3-5** and **R11.6.2, Part R of the Guidance**.	**1** The wording "those requirements otherwise specified by the Society" in **4.2.3-4, Part H of the Rules** means the categorization technique specified in **4.1.4** in *IEC* 60092-502 (1999). This technique categorizes those hazardous areas adjacent to any spaces (standard hazardous areas) in which flammable or explosive gas atmospheres are present or likely to occur after taking into account the effectiveness of any sources of release and ventilation. (Refer to **Fig. H4.2.3-1**)	Relationship between Part R Guidance (UI SC70) and H4.2.3 and MSC.1/Circ. 1557/Rev.1 are taken into account. Part R4.5.3-5. of Guidance refers to places included in Part H 4.3.1 (2) (g), 4.3.1 (3) (a) and R11.6.2 refers to places included in Part H 4.7.1 (2) (h) and 4.7.1 (2) (a). However, Zone 2 indicated in R11.6.2 is different from that of Part H 4.7.1 (2) (a). MSC.1/Circ. 1557/Rev.1 gives precedence to R11.6.2 of the Convention requirements.

Amended-Original Requirements Comparison Table (Electrical Equipment in Hazardous Area)

Amended	Original	Remarks
H4.3 Tankers and Ships Carrying Dangerous Chemicals in Bulk Having a Flashpoint Not Exceeding 60 °C	**H4.3 Tankers and Ships Carrying Dangerous Chemicals in Bulk Having a Flashpoint Not Exceeding 60 °C**	
H4.3.1 Classification of Hazardous Areas	**H4.3.1 Classification of Hazardous Areas**	
1 Examples of those hazardous areas specified in **4.3.1, Part H of the Rules** are shown in **Fig. H4.3.1(1)** to **Fig. H4.3.1(3)**. Fig. H4.3.1(1) (Omitted) Fig. H4.3.1(2) (Omitted) Fig. H4.3.1(3) (Omitted)	Examples of those hazardous areas specified in **4.3.1, Part H of the Rules** are shown in **Fig. H4.3.1(1)** to **Fig. H4.3.1(3)**. Fig. H4.3.1(1) (Omitted) Fig. H4.3.1(2) (Omitted) Fig. H4.3.1(3) (Omitted)	
2 The wording "requirements otherwise specified by the Society" in **4.3.1(3)(a), Part H of the Rules** means that **R11.6.2, Part R of the Guidance** applies and not **4.3.1(3)(a), Part H of the Rules**.	(Newly added)	refer to remaks at Guidance H4.2.3
H4.7 Ships Carrying Liquefied Gases in Bulk	**H4.7 Ships Carrying Liquefied Gases in Bulk**	
H4.7.1 Classification of Hazardous Areas	**H4.7.1 Classification of Hazardous Areas**	
1 Examples of those hazardous areas specified in **4.7.1, Part H of the Rules** are shown in **Fig.H4.7.1(1)** to **Fig.H4.7.1(3)**. Fig. H4.7.1(1) (Omitted) Fig. H4.7.1(2) (Omitted) Fig. H4.7.1(3) (Omitted)	Examples of those hazardous areas specified in **4.7.1, Part H of the Rules** are shown in **Fig.H4.7.1(1)** to **Fig.H4.7.1(3)**. Fig. H4.7.1(1) (Omitted) Fig. H4.7.1(2) (Omitted) Fig. H4.7.1(3) (Omitted)	

Amended-Original Requirements Comparison Table (Electrical Equipment in Hazardous Area)

Amended	Original	Remarks
2 The wording "requirements otherwise specified by the Society" in **4.7.1(3)(a), Part H of the Rules** means that **R11.6.2, Part R of the Guidance** applies and not **4.7.1(3)(a), Part H of the Rules**.	(Newly added)	refer to remaks at Guidance H4.2.3

Amended-Original Requirements Comparison Table (Electrical Equipment in Hazardous Area)

Amended	Original	Remarks
GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS **Part R FIRE PROTECTION, DETECTION AND EXTINCTION** **R19 CARRIAGE OF DANGEROUS GOODS**	**GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS** **Part R FIRE PROTECTION, DETECTION AND EXTINCTION** **R19 CARRIAGE OF DANGEROUS GOODS**	
R19.3 Special Requirements	**R19.3 Special Requirements**	
R19.3.2 Sources of Ignition	**R19.3.2 Sources of Ignition**	
1 Applying to the requirements in **19.3.2, Part R of the Rules**, permitted electrical installations are to be in accordance with the following. (1) (Omitted) (2) (Omitted) (3) For ships carrying solid dangerous goods in bulk specified in **19.2.3(12), Part R of the Rules** which may create explosive gas and ships carrying dangerous goods in a packaged form specified in **19.2.3(3)**, **(5)**, **(7)** (except the liquids of which flash point is less than −18 °C), **(11)** (flash point is less than 23 °C), **(15)**, **(19)** or **(23)** (evolving flammable vapour), **Part R of the Rules**, the requirements in **Table R19.3.2-3** (Classified as hazardous area by *IEC* 60092-506:2003) and **Table R19.3.2-4** (Classified as extended hazardous area by *IEC* 60092-506:2003) are to apply. The hazardous areas specified in **Table R19.3.2-4(d)** for ships carrying flammable liquid substances having	**1** Applying to the requirements in **19.3.2, Part R of the Rules**, permitted electrical installations are to be in accordance with the followings. (1) (Omitted) (2) (Omitted) (3) For ships carrying solid dangerous goods in bulk specified in **19.2.3(12), Part R of the Rules** which may create explosive gas and ships carrying dangerous goods in a packaged form specified in **19.2.3(3)**, **(7)** (except the liquids of which flash point is less than -18 °C), **(15)** or **(19), Part R of the Rules**, the requirements in **Table R19.3.2-3** (Classified as hazardous area by *IEC* 60092-506:2003) and **Table R19.3.2-4** (Classified as extended hazardous area by *IEC* 60092-506:2003) are to apply. The hazardous areas specified in **Table R19.3.2-4(d)** for ships carrying flammable liquid substances having flashpoints of less than 23 °C, as specified in **19.2.3(7)**, **(15)**	Due to SOLAS amendment in 2010, the exclusion of ignition sources (installation of explosion-proof devices) in R 19.3.2 had to be considered in addition to the space and its surroundings where liquid (less than 23°C) water reaction flammable substances, flammable toxic high pressure gases (R edition 19.2.3 (5)) flammable toxic high pressure gases, and toxic substances with flammable vapor (R edition 19.2.3 (23)) were loaded. Although the treatment of

Amended	Original	Remarks
flashpoints of less than 23 °C, as specified in **19.2.3(7), (15)** or **(19), Part R of the Rules**, are to apply. However, enclosed spaces served by continuously forced mechanical ventilation capable of at least 6 air changes per hour may be considered as non-hazardous areas if they satisfy the following **(a)** and **(b)**: (a) In the event of failure of the mechanical ventilation device, an alarm is to be activated in a continually manned space, such as the navigation bridge, the machinery control room, etc. In addition, all electrical installations except those permitted according to **Tables R19.3.2-1**, **R19.3.2-2** and **R19.3.2-3** (hereinafter referred to as "permitted electrical installation") are to be automatically switched off. (b) Essential electrical equipment for the safety of the ship or its personnel is to be a permitted electrical installation which cannot be automatically switched off. However, in cases where two or more mechanical ventilation devices are installed within the enclosed space, essential equipment need not be of a permitted electrical installation type. In such cases, essential equipment not considered to be permitted electrical installations is to be interlocked so as to prevent inadvertent operation when the ventilation devices are not operational. ((4) to (10) are omitted.)	or **(19), Part R of the Rules**, are to apply. However, enclosed spaces served by continuously forced mechanical ventilation capable of at least 6 air changes per hour may be considered as non-hazardous areas if they satisfy the following **(a)** and **(b)**: (a) In the event of failure of the mechanical ventilation device, an alarm is to be activated in a continually manned space, such as the navigation bridge, the machinery control room, etc. In addition, all electrical installations except those permitted according to **Tables R19.3.2-1**, **R19.3.2-2** and **R19.3.2-3** (hereinafter referred to as "permitted electrical installation") are to be automatically switched off. (b) Essential electrical equipment for the safety of the ship or its personnel is to be a permitted electrical installation which cannot be automatically switched off. However, in cases where two or more mechanical ventilation devices are installed within the enclosed space, essential equipment need not be of a permitted electrical installation type. In such cases, essential equipment not considered to be permitted electrical installations is to be interlocked so as to prevent inadvertent operation when the ventilation devices are not operational. ((4) to (10) are omitted.)	hazardous area in the case where they were installed was unclear, they were considered to be treated the same as those generating explosive gas as in Part R 19.2.3 (3), (7), (15), and (19).

Amended-Original Requirements Comparison Table (Electrical Equipment in Hazardous Area)

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<tr><th>Amended</th><th>Original</th><th>Remarks</th></tr>
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Table R19.3.2-2 Hazardous Areas and Permitted Electrical Installations (Related to **R19.3.2-1(2)**)

Hazardous areas		Permitted electrical installations
(a)	Enclosed or semi-enclosed cargo spaces	(1) Electrical equipment of degree of protection: IP55, maximum surface temperature: 200 °C, and associated cables (2) Certified safe type electrical equipment specified in **2.16.2, Part H of the Rules** of construction suitable for use in Zone 1 as specified in *IEC* 60079-14:2013, degree of protection: IP55, temperature class: *T*3, and associated cables (3) Through run cables
(b)	Inert and exhaust ventilation ducts	
(c)	Enclosed or semi-enclosed spaces having a direct opening (without closing devices, such as doors) into any of the spaces specified in **(a)** and **(b)**	

Notes:

1. Where cargoes which require a lower surface temperature are carried, this is to be taken into consideration.
2. The following requirements are to apply when the dangerous goods listed below are loaded in the space specified in **19.2.2(7), Part R of the Rules**.
   - Sulphur; degree of protection: IP55, temperature class: *T*4
   - Seed cakes with expellers; gas and vapours group: II*A*, temperature class: *T*3
   - Iron oxide, iron sponges; degree of protection: IP55, gas and vapour group: II*A*, temperature class: *T*2
   - Ammonium nitrate fertilizers; electrical supply circuits other than intrinsically safe circuits are to be switched off

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Table R19.3.2-2 Hazardous Areas and Permitted Electrical Installations (Related to **R19.3.2-1(2)**)

Hazardous areas		Permitted electrical installations
(a)	Enclosed or semi-enclosed cargo spaces	(1) Electrical equipment of degree of protection: IP55, maximum surface temperature: 200 °C, and associated cables (2) Certified safe type electrical equipment specified in **2.16.2, Part H of the Rules** of degree of protection: IP55, temperature class: *T*3, and associated cables (3) Through run cables
(b)	Inert and exhaust ventilation ducts	
(c)	Enclosed or semi-enclosed spaces having a direct opening (without closing devices, such as doors) into any of the spaces specified in **(a)** and **(b)**	

Note:

1. Where cargoes which require a lower surface temperature are carried, this is to be taken into consideration.
2. The following requirements are to apply when the dangerous goods listed below are loaded in the space specified in **19.2.2(7), Part R of the Rules**.
   - Sulphur; degree of protection: IP55, temperature class: *T*4
   - Seed cake, expellers; gases and vapours group: II*A*, temperature class: *T*3
   - Iron oxcide, Iron sponges; degree of protection: IP55, gases and vapours group: II*A*, temperature class: *T*2
   - Ammonium nitrate fertilizers; electrical supply circuit other than intrinsically safe circuit is to be switched off

</td>
<td>Refer to IEC60092-506 4.3.1</td>
</tr>
</table>

Amended-Original Requirements Comparison Table (Electrical Equipment in Hazardous Area)

<table>
<tr><th>Amended</th><th>Original</th><th>Remarks</th></tr>
<tr>
<td>
Table R19.3.2-3 Hazardous Areas and Permitted Electrical Installations (Related to R19.3.2-1(3))
<table>
<tr><th colspan="2">Hazardous areas</th><th>Permitted electrical installations</th></tr>
<tr><td>(a)</td><td>Enclosed or semi-enclosed cargo spaces, closed or open ro-ro spaces and closed or open vehicle spaces</td><td rowspan="4">(1) Certified safe type electrical equipment specified in 2.16.2, Part H of the Rules of construction suitable for use in Zone 1 as specified in IEC 60079-14:2013, gas and vapours group: IIB, temperature class: T3, and associated cables
(2) Through run cables</td></tr>
<tr><td>(b)</td><td>Inert and exhaust ventilation ducts</td></tr>
<tr><td>(c)</td><td>Enclosed or semi-enclosed spaces having a direct opening (without closing devices, such as doors) into any of the spaces specified in (a) and (b)</td></tr>
<tr><td>(d)</td><td>Areas on open deck or semi-enclosed spaces on open decks within 1.5 m of mechanical ventilation outlets of hazardous areas</td></tr>
</table>
Notes:
1. Where cargoes which require a higher grading are carried, this is to be taken into consideration.
2. The following requirements are to apply when the dangerous goods listed below are loaded in the space specified in 19.2.2(7), Part R of the Rules.
・ Aluminium ferrosilicon powder and aluminium silicon powder; gas and vapour group: IIC, temperature class: T2
・ Ferrosilicon; gas and vapour group: IIC, temperature class: T1
・ Zinc ashes, zinc dross, zinc residues, zinc skimmings; gas and vapour group: IIC, temperature class: T2
</td>
<td>
Table R19.3.2-3 Hazardous Areas and Permitted Electrical Installations (Related to R19.3.2-1(3))
<table>
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(2) Through run cables</td></tr>
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<tr><td>(c)</td><td>Enclosed or semi-enclosed spaces having a direct opening (without closing devices, such as doors) into any of the spaces specified in (a) and (b)</td></tr>
<tr><td>(d)</td><td>Areas on open deck or semi-enclosed spaces on open deck within 1.5 m of mechanical ventilation outlet of hazardous areas</td></tr>
</table>
Notes:
1. Where cargoes which require a higher grading are carried, this is to be taken into consideration.
2. The following requirements are to apply when the dangerous goods listed below are loaded in the space specified in 19.2.2(7), Part R of the Rules.
・ Aluminum ferrosilicon powder, Aluminum silicon powder; gases and vapours group: IIC, temperature class: T2
・ Ferrosilicon; gases and vapours group: IIC, temperature class: T1
・ Zinc ashes, Zinc dross, Zinc residues, Zinc skimmings; gases and vapours group: IIC, temperature class: T2
</td>
<td>Refer to IEC60092-506 4.3.2 and 4.3.3</td>
</tr>
</table>

Amended-Original Requirements Comparison Table (Electrical Equipment in Hazardous Area)

Amended

Table R19.3.2-4 Hazardous Areas and Permitted Electrical Installations (Related to **R19.3.2-1(3)**)

Hazardous areas		Permitted electrical installations
(a)	Areas not ventilated by overpressure which have gas-tight closures or automatically closing gas-tight doors and lead to the areas specified in **Table R19.3.2-3 (a)** to **(c)**	(1) Certified safe type electrical equipment specified in **2.16.2, Part H of the Rules** of construction suitable for use in Zone 2 as specified in *IEC* 60079-14:2013, gas and vapour group: II*B*, temperature class: *T*3 and associated cables (2) Through run cables (3) Electrical equipment of the type which enclosures the absence of sparks or arcs and no part of such equipment has an operating temperature which can cause the ignition of gases or vapours of the cargoes to be carried, and associated cables (4) Electrical equipment with type of protection "n" specified in *IEC* 60079-15 and associated cables
(b)	Areas protected by gas-tight doors in accordance with **R19.3.2-1(9)(b)** (Air lock spaces)	
(c)	Areas which are 1.5 *m* beyond the areas specified in **Table R19.3.2-3 (d)**	
(d)	Enclosed spaces (bilge pump rooms, pipe tunnels, etc.) which contain sources of gas release, such as flanges, valves and pumps	

Notes:

1. Where cargoes which require a higher grading are carried, this is to be taken into consideration.
2. The following requirements are to apply when the dangerous goods listed below are loaded in the space specified in **19.2.2(7), Part R of the Rules**.
   - Aluminium ferrosilicon powder and Aluminium silicon powder; gas and vapour group: II*C*, temperature class: *T*2
   - Ferrosilicon; gas and vapours group: II*C*, temperature class: *T*1
   - Zinc ashes, zinc dross, zinc residues, zinc skimmings; gas and vapour group: II*C*, temperature class: *T*2

Original

Table R19.3.2-4 Hazardous Areas and Permitted Electrical Installations (Related to **R19.3.2-1(3)**)

Hazardous areas		Permitted electrical installations
(a)	Areas not ventilated by overpressure which have gas-tight closures or automatically closing gas-tight doors and lead to the areas specified in **Table R19.3.2-3 (a)** to **(c)**	(1) Certified safe type electrical equipment specified in **2.16.2, Part H of the Rules** of gases and vapours group: II*B*, temperature class: *T*3 and associated cables (2) Through run cables (3) Electrical equipment of the type which enclosures the absence of sparks or arcs and no part of such equipment has an operating temperature which can cause the ignition of gases or vapours of the cargoes to be carried, and associated cables (4) Electrical equipment with type of protection "n" specified in *IEC* 60079-15 and associated cables
(b)	Areas protected by gas-tight doors in accordance with **R19.3.2-1(9)(b)** (Air lock spaces)	
(c)	Areas which are 1.5 *m* beyond the areas specified in **Table R19.3.2-3 (d)**	
(d)	Enclosed spaces (e.g., bilge pump rooms, pipe tunnels, etc.) which contain sources of gas release, such as flanges, valves, and pumps	

Notes:

1. Where cargoes which require a higher grading are carried, this is to be taken into consideration.
2. The following requirements are to apply when the dangerous goods listed below are loaded in the space specified in **19.2.2(7), Part R of the Rules**.
   - Aluminium ferrosilicon powder, Aluminium silicon powder; gases and vapours group: II*C*, temperature class: *T*2
   - Ferrosilicon; gases and vapours group: II*C*, temperature class: *T*1
   - Zinc ashes, Zinc dross, Zinc residues, Zinc skimmings; gases and vapours group: II*C*, temperature class: *T*2

Remarks

Refer to IEC60092-506 4.3.2 and 4.3.3

Amended-Original Requirements Comparison Table (Electrical Equipment in Hazardous Area)

Amended	Original	Remarks
R20 PROTECTION OF VEHICLE AND RO-RO SPACES	**R20 PROTECTION OF VEHICLE AND RO-RO SPACES**	
R20.3 Precaution against Ignition of Flammable Vapours in Closed Vehicle Spaces and Closed Ro-ro Spaces	**R20.3 Precaution against Ignition of Flammable Vapours in Closed Vehicle Spaces and Closed Ro-ro Spaces**	
R20.3.2 Electrical Equipment and Wiring	**R20.3.2 Electrical Equipment and Wiring**	
1 The wording "electrical equipment of a type suitable for use in explosive petrol and air mixture" in **20.3.2-1, Part R of the Rules** means those generally meeting the requirements in **2.16, Part H of the Rules**, having a construction suitable for use in Zone 1 as specified in *IEC*60079-14:2013 certified as Apparatus Group II*A* and Temperature Class *T*3 or higher as specified in *IEC* 60079-10-1:2015 or Explosion Class *d*3 and Ignition Group *G*3 or higher as specified in the Recommended Practices for Explosion-Protected Electrical Installations in General Industries (NIIS-TR-NO.39 (2006)) issued by National Institute of Industrial Safety in Japan, or equivalent thereto. Further, cables complying with **4.2.4-5, Part H of the Rules** may generally be regarded as wiring of a type suitable for use in explosive petrol and air mixture. **2** The wording "electrical equipment of a type so enclosed and protected as to prevent the escape of sparks" in **20.3.2-2, Part R of**	**1** The wording "electrical equipment of a type suitable for use in explosive petrol and air mixture" in **20.3.2-1, Part R of the Rules** means those generally meeting the requirements in **2.16, Part H of the Rules**, having an intrinsically safe, flameproof, pressurized, increased safety, encapsulation, powder filling or oil immersion construction certified as Apparatus Group II*A* and Temperature Class *T*3 or higher as specified in *IEC* 60079-10-1:2015 or Explosion Class *d*3 and Ignition Group *G*3 or higher as specified in the Recommended Practices for Explosion-Protected Electrical Installations in General Industries (NIIS-TR-NO.39 (2006)) issued by National Institute of Industrial Safety in Japan, or equivalent thereto. Further, cables complying with the requirements in **4.2.4-5, Part H of the Rules** may generally be regarded as wiring of a type suitable for use in explosive petrol and air mixture. **2** The wording "electrical equipment of a type so enclosed and protected as to prevent the escape of sparks" in **20.3.2-2, Part R of**	Refer to the UI SC43 and MSC.1/circ.1120

Amended-Original Requirements Comparison Table (Electrical Equipment in Hazardous Area)

Amended	Original	Remarks
the Rules means the following **(1)** or **(2)**. (1) The electrical equipment with a protection degree of at least *IP*55 as defined in **H2.1.3-4**. (2) The electrical equipment suitable for use in the area of Zone 2 as specified in *IEC* 60079-14:2013 and with a temperature class of at least *T*3 as defined in *IEC* 60079-10-1:2015.	**the Rules** means the following **(1)** or **(2)**. (1) The electrical equipment with a protection degree of at least *IP*55 as defined in **H2.1.3-4**. (2) The electrical equipment suitable for use in the area of zone 2 as specified in *IEC* 60079-14:2013 (*e.g.* type of protection "*n*") and with a Temperature class of at least *T*3 as defined in *IEC* 60079-10-1:2015.	Minor Correction

Amended-Original Requirements Comparison Table (Electrical Equipment in Hazardous Area)

Amended	Original	Remarks
R20A REQUIREMENTS FOR VEHICLE CARRIERS FOR CARRIAGE OF MOTOR VEHICLES WITH COMPRESSED HYDROGEN OR COMPRESSED NATURAL GAS IN THEIR TANKS FOR THEIR OWN PROPULSION AS CARGO	**R20A REQUIREMENTS FOR VEHICLE CARRIERS FOR CARRIAGE OF MOTOR VEHICLES WITH COMPRESSED HYDROGEN OR COMPRESSED NATURAL GAS IN THEIR TANKS FOR THEIR OWN PROPULSION AS CARGO**	
R20A.3 Requirements for Spaces Intended for Carriage of Motor Vehicles with Compressed Natural Gas in their Tanks for their own Propulsion as Cargo	**R20A.3 Requirements for Spaces Intended for Carriage of Motor Vehicles with Compressed Natural Gas in their Tanks for their own Propulsion as Cargo**	
R20A.3.1 Electrical Equipment and Wiring	**R20A.3.1 Electrical Equipment and Wiring**	
The wording "certified safe type for use in an explosive methane and air mixture" in **20A.3.1, Part R of the Rules** means those having a construction suitable for use in Zone 1 as specified in *IEC* 60079-14:2013 certified as Apparatus Group II*A* and Temperature Class *T*1 or higher as specified in *IEC* Publication 60079 or Explosion Class *d*1 and Ignition Group *G*1 or higher as specified in the Recommended Practices for Explosion-Protected Electrical Installations in General Industries (NIIS-TR-NO.39 (2006)) issued by National Institute of Industrial Safety in Japan, or equivalent thereto. Further, cables which comply with the requirements in **4.2.4-5, Part H of the Rules** may be regarded as a "certified safe type for use in an explosive methane and air mixture".	The wording "certified safe type for use in an explosive methane and air mixture" in **20A.3.1, Part R of the Rules** means those having an intrinsically safe, flameproof, pressurized, increased safety, encapsulation, powder filling or oil immersion construction certified as Apparatus Group II*A* and Temperature Class *T*1 or higher as specified in *IEC* Publication 60079 or Explosion Class *d*1 and Ignition Group *G*1 or higher as specified in the Recommended Practices for Explosion-Protected Electrical Installations in General Industries (NIIS-TR-NO.39 (2006)) issued by National Institute of Industrial Safety in Japan, or equivalent thereto. Further, cables which comply with the requirements in **4.2.4-5, Part H of the Rules** may be regarded as a "certified safe type for use in an explosive methane and air mixture".	The classification of hazardous areas for loading compressed natural gas-fueled motor vehicle is considered to be equivalent to that for loading the entire gasoline motor vehicle (except 10 ventilations per hour plus 450 mm above the deck).

Amended-Original Requirements Comparison Table (Electrical Equipment in Hazardous Area)

Amended	Original	Remarks
R20A.4 Requirements for Spaces Intended for Carriage of Motor Vehicles with Compressed Hydrogen in their Tanks for their own Propulsion as Cargo	**R20A.4 Requirements for Spaces Intended for Carriage of Motor Vehicles with Compressed Hydrogen in their tanks for their own Propulsion as Cargo**	
R20A.4.1 Electrical Equipment and Wiring	**R20A.4.1 Electrical Equipment and Wiring**	
The wording "certified safe type for use in an explosive hydrogen and air mixture" in **20A.4.1, Part R of the Rules** means those having a construction suitable for use in Zone 1 as specified in *IEC* 60079-14:2013 certified as Apparatus Group II*C* and Temperature Class *T*1 or higher as specified in *IEC* Publication 60079 or Explosion Class *d*3 and Ignition Group *G*1 or higher as specified in Recommended Practices for Explosion-Protected Electrical Installations in General Industries (NIIS-TR-NO.39 (2006)) issued by National Institute of Industrial Safety in Japan, or equivalent thereto. Further, cables which comply with the requirements in **4.2.4-5, Part H of the Rules** may be regarded as a "certified safe type for use in an explosive hydrogen and air mixture".	The wording "certified safe type for use in an explosive hydrogen and air mixture" in **20A.4.1, Part R of the Rules** means those having an intrinsically safe, flameproof, pressurized, increased safety, encapsulation, powder filling or oil immersion construction certified as Apparatus Group II*C* and Temperature Class *T*1 or higher as specified in *IEC* Publication 60079 or Explosion Class *d*3 and Ignition Group *G*1 or higher as specified in Recommended Practices for Explosion-Protected Electrical Installations in General Industries (NIIS-TR-NO.39 (2006)) issued by National Institute of Industrial Safety in Japan, or equivalent thereto. Further, cables which comply with the requirements in **4.2.4-5, Part H of the Rules** may be regarded as a "certified safe type for use in an explosive hydrogen and air mixture".	The classification of hazardous areas for loading the compressed hydrogen gas-fueled vehicle is considered to be equivalent to that for loading the gasoline vehicle (except 10 ventilations per hour plus 450 mm above the deck).

Amended	Original	Remarks
GUIDANCE FOR HIGH SPEED CRAFT **Part 10 ELECTRICAL INSTALLATIONS** **Chapter 4 ADDITIONAL REQUIREMENTS FOR CRAFT CARRYING SPECIAL CARGOES**	**GUIDANCE FOR HIGH SPEED CRAFT** **Part 10 ELECTRICAL INSTALLATIONS** **Chapter 4 ADDITIONAL REQUIREMENTS FOR CRAFT CARRYING SPECIAL CARGOES**	
4.1 Enclosed Cargo Holds for Carrying Motor Vehicles with Fuel in their Tanks for their own Propulsion and Enclosed Compartments Adjoining the Cargo Holds, etc.	**4.1 Enclosed Cargo Holds for Carrying Motor Vehicles with Fuel in their Tanks for their Own Propulsion and Enclosed Compartments Adjoining the Cargo Holds, etc.**	
4.1.1 Electrical Installations in Enclosed Cargo Holds, etc.	**4.1.1 Electrical Installations in Enclosed Cargo Holds, etc.**	
1 The wording "electrical equipment of a type suitable for use in explosive gas atmosphere concerned" in **4.1.1-2, Part 10 of the Rules** means those generally meeting the requirements in **2.9, Part 10 of the Rules** having a construction suitable for use in Zone 1 as specified in *IEC*60079-14:2013 certified as Apparatus Group *II*A and Temperature Class *T*3 or higher as specified *IEC* 60079 or Explosion Class *d*1 and Ignition Group *G*3 or higher as specified in the Recommended Practices for Explosion-Protected Electrical Installations in General Industries (NIIS-TR-NO.39 (2006)) issued by National Institute of Industrial Safety in Japan, or equivalent thereto. Further, cables complying with the requirements in **4.2.4-5, Part H of Rules for the Survey and Construction of Steel Ships** may	**1** A wording "electrical equipment of a type suitable for use in explosive gas atmosphere concerned" in **4.1.1-2, Part 10 of the Rules** means those generally meeting the requirements in **2.9, Part 10 of the Rules** having an intrinsically safe, flameproof, pressurized, increased safety, encapsulation, powder filling or oil immersion construction certified as Apparatus Group *II*A and Temperature Class *T*3 or higher as specified *IEC* 60079 or Explosion Class *d*1 and Ignition Group *G*3 or higher as specified in the Recommended Practices for Explosion-Protected Electrical Installations in General Industries (NIIS-TR-NO.39 (2006)) issued by National Institute of Industrial Safety in Japan, or equivalent thereto. Further, cables complying with the requirements in **4.2.4-5, Part H of Rules for the Survey and**	Same as Remarks at Guidance R20.3.2-1

Amended	Original	Remarks
generally be regarded as wiring of a type suitable for use in explosive gas atmosphere concerned. **2** The electrical equipment so enclosed and protected as to prevent the escape of sparks specified in **4.1.1-3, Part 10** is to be of the following **(1)** or **(2)**. (1) The electrical equipment with a protection degree of at least IP55 as defined in **H2.1.3-4, Part H of the Guidance for the Survey and Construction of Steel Ships**. (2) The electrical equipment suitable for use in Zone 2 and with a temperature class of at least *T*3 as defined in *IEC* 60079.	**Construction of Steel Ships** may generally be regarded as wiring of a type suitable for use in explosive gas atmosphere concerned. **2** The electrical equipment so enclosed and protected as to prevent the escape of sparks specified in **4.1.1-3, Part 10** is to be of the following **(1)** or **(2)**. (1) The electrical equipment with a protection degree of at least IP55 as defined in **H2.1.3-4, Part H of the Guidance for the Survey and Construction of Steel Ships**. (2) The electrical equipment suitable for use in zone 2 (*e.g.* type of protection "n") and with a temperature class of at least *T*3 as defined in *IEC* 60079.	

Amended-Original Requirements Comparison Table (Electrical Equipment in Hazardous Area)

Amended	Original	Remarks
GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF INLAND WATERWAY SHIPS **Part 8 ELECTRICAL INSTALLATIONS** **Chapter 5 BARGES**	**GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF INLAND WATERWAY SHIPS** **Part 8 ELECTRICAL INSTALLATIONS** **Chapter 5 BARGES**	
5.9 Tank Barges	**5.9 Tank Barges**	
5.9.3 Hazardous Areas	**5.9.3 Hazardous Areas**	
1 The wording "those requirements otherwise specified by the Society" in **5.9.3-2, Part 8 of the Rules** means the categorization technique specified in **5.9.4** in *IEC* 60092-502 (1999). This technique categorizes those hazardous areas adjacent to any spaces (standard hazardous areas) in which flammable or explosive gas atmospheres are present or likely to occur after taking into account the effectiveness of any sources of release and ventilation (refer to **Fig. 8.5.9.3-1**). In addition, the wording "those requirements otherwise specified by the Society" in **5.9.3-2, Part 8 of the Rules** also means **7.3.2-2, Part 9 of the Guidance**.	**1** The wording "those requirements otherwise specified by the Society" in **5.9.3-2, Part 8 of the Rules** means the categorization technique specified in **5.9.4** in *IEC* 60092-502 (1999). This technique categorizes those hazardous areas adjacent to any spaces (standard hazardous areas) in which flammable or explosive gas atmospheres are present or likely to occur after taking into account the effectiveness of any sources of release and ventilation. (Refer to **Fig. 8.5.9.3-1**)	Same as Remarks at Guidance H4.2.3

Amended-Original Requirements Comparison Table (Electrical Equipment in Hazardous Area)

Amended	Original	Remarks
5.10 Tank Barges Carrying <u>Flammable</u> Liquid Cargoes	**5.10 Tank Barges Carrying Liquid Cargoes <u>Having Flashpoint Not Exceeding 60 °C</u>**	
5.10.1 Classification of Hazardous Areas	**5.10.1 Classification of Hazardous Areas**	
<u>1</u> Examples of those hazardous areas specified in **5.10.1, Part 8 of the Rules** are shown in **Fig. 8.5.10.1(1)** to **Fig. 8.5.10.1(3)**. Fig.8.5.10.1(1) (Omitted) Fig.8.5.10.1(2) (Omitted) Fig.8.5.10.1(3) (Omitted)	Examples of those hazardous areas specified in **5.10.1, Part 8 of the Rules** are shown in **Fig. 8.5.10.1(1)** to **Fig. 8.5.10.1(3)**. Fig.8.5.10.1(1) (Omitted) Fig.8.5.10.1(2) (Omitted) Fig.8.5.10.1(3) (Omitted)	Same as Remarks at Guidance H4.7.1
<u>2</u> <u>The wording "requirements otherwise specified by the Society" in **5.10.1(3)(a), Part 8 of the Rules** means that **7.3.2-2, Part 9 of the Guidance** applies and not **5.10.1(3)(a), Part 8 of the Rules**.</u>	(Newly addd)	

Amended	Original	Remarks
EFFECTIVE DATE AND APPLICATION **1.** The effective date of the amendments is 1 July 2024. **2.** Notwithstanding the amendments to the Guidance, the current requirements apply to ships for which the date of contract for construction* is before the effective date. * "contract for construction" is defined in the latest version of IACS Procedural Requirement (PR) No.29. IACS PR No.29 (Rev.0, July 2009) **1.** The date of "contract for construction" of a vessel is the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. This date and the construction numbers (i.e. hull numbers) of all the vessels included in the contract are to be declared to the classification society by the party applying for the assignment of class to a newbuilding. **2.** The date of "contract for construction" of a series of vessels, including specified optional vessels for which the option is ultimately exercised, is the date on which the contract to build the series is signed between the prospective owner and the shipbuilder. For the purpose of this Procedural Requirement, vessels built under a single contract for construction are considered a "series of vessels" if they are built to the same approved plans for classification purposes. However, vessels within a series may have design alterations from the original design provided: (1) such alterations do not affect matters related to classification, or (2) If the alterations are subject to classification requirements, these alterations are to comply with the classification requirements in effect on the date on which the alterations are contracted between the prospective owner and the shipbuilder or, in the absence of the alteration contract, comply with the classification requirements in effect on the date on which the alterations are submitted to the Society for approval. The optional vessels will be considered part of the same series of vessels if the option is exercised not later than 1 year after the contract to build the series was signed. **3.** If a contract for construction is later amended to include additional vessels or additional options, the date of "contract for construction" for such vessels is the date on which the amendment to the contract, is signed between the prospective owner and the shipbuilder. The amendment to the contract is to be considered as a "new contract" to which **1.** and **2.** above apply. **4.** If a contract for construction is amended to change the ship type, the date of "contract for construction" of this modified vessel, or vessels, is the date on which revised contract or new contract is signed between the Owner, or Owners, and the shipbuilder. Note: This Procedural Requirement applies from 1 July 2009.		