RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

Part H Electrical Installations

Rules for the Survey and Construction of Steel Ships
Part H 2016 AMENDMENT NO.1
Guidance for the Survey and Construction of Steel Ships
Part H 2016 AMENDMENT NO.1

Rule No.40 / Notice No.39 30th June 2016
Resolved by Technical Committee on 28th July 2015 / 5th February 2016
Approved by Board of Directors on 14th September 2015 / 22nd February 2016

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RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

RULES

Part H Electrical Installations

2016 AMENDMENT NO.1

Rule No.40 30th June 2016

Resolved by Technical Committee on 28th July 2015 / 5th February 2016

Approved by Board of Directors on 14th September 2015 / 22nd February 2016

Rule No.40 30th June 2016
AMENDMENT TO THE RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

"Rules for the survey and construction of steel ships" has been partly amended as follows:

Part H ELECTRICAL INSTALLATIONS

Amendment 1-1

Chapter 6 SPECIAL REQUIREMENTS FOR SHIPS WITH RESTRICTED SERVICE, SMALL SHIPS AND FISHING VESSELS

6.2 Electrical Installations of Ships Specified in 6.1.1(1)

Paragraph 6.2.17 has been amended as follows.

6.2.17 Power Supply to Navigation Lights

Notwithstanding the requirements given in **3.6.1-3** and **-6**, power is to be supplied to navigation light indicator panels (including alarm circuits) by separate circuits from main switchboards and reserve sources of electrical power or lighting distribution panels provided on navigation bridges (limited to those cases where two or more generating sets are provided). However, in the case of ships with a gross tonnage of less than 500 *tonnes*, a single~~only one~~ circuit ~~each~~ from ~~main switchboards~~ charging and discharging panels supplied by~~from~~ main sources of electrical power (through main switchboards) and reserve sources of electrical power is deemed~~may be~~ accepta~~ed~~ble.

EFFECTIVE DATE AND APPLICATION (Amendment 1-1)

1. The effective date of the amendments is 30 June 2016.

2. Notwithstanding the amendments to the Rules, the current requirements apply to ships other than ships for which the application for Classification Survey during Construction is submitted to the Society on or after the effective date.

3. Notwithstanding the provision of preceding **2.**, the amendments to the Rules may apply to ships other than ships for which the application for Classification Survey during Construction is submitted to the Society on or after the effective date upon request by the owner.

Amendment 1-2

Chapter 4 ADDITIONAL REQUIREMENTS FOR SHIPS CARRYING SPECIAL CARGOES

4.2 Tankers, Ships Carrying Liquefied Gases in Bulk and Ships Carrying Dangerous Chemicals in Bulk

4.2.5 Lighting in Hazardous Areas

Sub-paragraph -2 has been amended as follows.

2 Lighting fittings installed in cargo pump rooms ~~and cargo compressor rooms~~ for tankers and ships carrying dangerous chemicals in bulk are to be divided between at least two branch circuits. Ships carrying liquefied gases in bulk are to comply with the requirements given in **10.2.7, Part N**.

Title of Paragraph 4.2.6 has been amended as follows.

4.2.6 Ventilation ~~in Hazardous Areas~~

Sub-paragraphs -3 and -4 have been amended as follows.

3 The ventilators specified in **-1** above for tankers, ships carrying liquefied gases in bulk and ships carrying dangerous chemicals in bulk are to be ones that do not to produce any source of ignition in compliance with the requirements given in **4.5.4-1(1)**, **Part R**, **12.1.~~9~~7**, **Part N** and **12.2.8**, **Part S**.

4 The ventilation air change ratios in cargo pump rooms for tankers, ships carrying liquefied gases in bulk and ships carrying dangerous chemicals in bulk are to comply with the requirements given in **4.5.4-1(1)**, **Part R**, **12.1.~~2~~3**, **Part N** and **12.2.3**, **Part S**.

Sub-paragraph -5 has been added as follows.

5 Ventilation ducts, air intakes and exhaust outlets serving artificial ventilation systems are to be positioned in accordance with standards deemed appropriate by the Society.

4.7 Ships Carrying Liquefied Gases in Bulk

4.7.1 Classification of Hazardous Areas

(2) Zone 1

Sub-paragraph (n) has been amended as follows.

(n) Enclosed or semi-enclosed spaces in which pipes containing cargo are located (except spaces which contains gas detection equipment complying with **13.6.~~5~~11**, **Part N** of the Rules and which utilize boil-off gas as fuel in accordance with the requirements given in **Chapter 16**, **Part N** of the Rules.)

EFFECTIVE DATE AND APPLICATION (Amendment 1-2)

1. The effective date of the amendments is 1 July 2016.

2. Notwithstanding the amendments to the Rules, the current requirements may apply to ships the keels of which were laid or which were at *a similar stage of construction* before the effective date.
(Note) The term "*a similar stage of construction*" means the stage at which the construction identifiable with a specific ship begins and the assembly of that ship has commenced comprising at least 50 *tonnes* or 1% of the estimated mass of all structural material, whichever is the less.

Amendment 1-3

Chapter 2 ELECTRICAL INSTALLATIONS AND SYSTEM DESIGN

2.4 Rotating Machines

2.4.15 Shop Tests

Sub-paragraph -3 has been amended as follows.

3 In the case of generators, voltage regulation tests are to be carried out and comply with the requirements given in **2.4.13-4**, or **2.4.14-2** and **-3**. In the absence of precise information concerning the maximum values of any sudden loads when applying the requirement given in **2.4.14-3**, 60% of the rated current with a power factor of between 0.4 lagging and zero is to be suddenly switched on with the generator running at no load, and then switched off after attaining steady-state conditions. However, the voltage regulation during transient conditions may be calculated values based upon the test records of identical type generators subject to the Society's permission.

Sub-paragraph -6 has been amended as follows.

6 Steady short-circuit tests for synchronous generators are to be carried out and comply with the requirements given in **2.4.6-2**. However, the duration of a steady short-circuit may be of any time delay which will be fitted in the tripping device for selective tripping where precise data showing such time delay is available in accordance with the following **(1)** and **(2)**. The manufacturer's simulation model for the generator and the voltage regulator may be used where this has been validated through tests of identical types of the same model.

(1) In order to provide sufficient information to the party responsible for determining the discrimination settings in the distribution system where the generator is going to be used, the generator manufacturer is to provide documentation showing the transient behaviour of the short-circuit current upon a sudden short-circuit occurring when excited, and running at nominal speed.

(2) The influence of the automatic voltage regulator is to be taken into account, and the setting parameters for the voltage regulator are to be noted together with the decrement curve. Such a decrement curve is to be available when the setting of the distribution system's short-circuit protection is calculated. The decrement curve need not be based upon physical testing.

EFFECTIVE DATE AND APPLICATION (Amendment 1-3)

1. The effective date of the amendments is 1 January 2017.

2. Notwithstanding this amendment to the Rules, the current requirements may be applied to generators installed on board ships whose contracts for construction* and whose applications for manufacturing process approval are dated before the amendment's 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.

GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

GUIDANCE

Part H Electrical Installations

2016 AMENDMENT NO.1

Notice No.39 30th June 2016

Resolved by Technical Committee on 28th July 2015 / 5th February 2016

Notice No.39 30th June 2016
AMENDMENT TO THE GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

"Guidance for the survey and construction of steel ships" has been partly amended as follows:

Part H ELECTRICAL INSTALLATIONS

H2 ELECTRICAL INSTALLATIONS AND SYSTEM DESIGN

H2.9 Cables

H2.9.12 Cables in Hazardous Areas

Sub-paragraph -1(1) has been amended as follows.

1 Hazardous areas generally mean the following areas:
(1) Hazardous areas specified in **4.2.3**, **Part H**~~,~~ and **1.1.5(~~15~~23), Part N** ~~**and 10.2, Part S of the Rules**~~.

H4 ADDITIONAL REQUIREMENTS FOR SHIPS CARRYING SPECIAL CARGOES

H4.2 Tankers, Ships Carrying Liquefied Gases in Bulk and Ships Carrying Dangerous Chemicals in Bulk

H4.2.4 Electrical Installations in Hazardous Areas

Sub-paragraph -3 has been amended as follows.

3 The wording "it is to be confirmed that such equipment is safe to use in explosive gas atmospheres" in **4.2.4-2**, **Part H of the Rules** means the following:
((1) is omitted.)
(2) In the case of ships which carry liquefied gases in bulk, any equipment complying with those requirements given in **10.~~1.5~~2.4, Part N of the Rules**
((3) is omitted.)

Paragraph H4.2.6 has been added as follows.

H4.2.6 Ventilation

1 The wording "standards deemed appropriate by the Society" in **4.2.6-5, Part H of the Rules** refers to *IEC*60092-502, which means that the arrangements of air intakes and exhaust outlets serving artificial ventilation systems are to comply with the following requirements.

(1) Air intakes serving artificial ventilation systems
  (a) Air intakes for hazardous areas are to be located in areas which, in the absence of the considered inlet, would be non-hazardous.
  (b) Air intakes for non-hazardous areas are to be located in non-hazardous areas at least 1.5 *m* from the boundaries of any hazardous area.

(2) Exhaust outlets serving artificial ventilation systems
  (a) Exhaust outlets for hazardous areas are to be located in open areas which, in the absence of the considered outlet, would be of the same or a lesser hazard than the ventilated space.
  (b) Exhaust outlets for non-hazardous areas are to be located in non-hazardous open areas.

EFFECTIVE DATE AND APPLICATION

1. The effective date of the amendments is 1 July 2016.

2. Notwithstanding the amendments to the Guidance, the current requirements may apply to ships the keels of which were laid or which were at *a similar stage of construction* before the effective date.
(Note) The term "*a similar stage of construction*" means the stage at which the construction identifiable with a specific ship begins and the assembly of that ship has commenced comprising at least 50 *tonnes* or 1% of the estimated mass of all structural material, whichever is the less.