

RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

Part R

Fire Protection, Detection and Extinction

Rules for the Survey and Construction of Steel Ships

Part R

2017 AMENDMENT NO.1

Guidance for the Survey and Construction of Steel Ships

Part R

2017 AMENDMENT NO.1

Rule No.29 / Notice No.27 1st June 2017

Resolved by Technical Committee on 30th January 2017

Approved by Board of Directors on 20th February 2017

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NIPPON KAIJI KYOKAI

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

RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

Part R

**Fire Protection, Detection and
Extinction**

RULES

2017 AMENDMENT NO.1

Rule No.29 1st June 2017

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

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 R FIRE PROTECTION, DETECTION AND EXTINCTION

Amendment 1-1

Chapter 4 PROBABILITY OF IGNITION

4.2 Arrangements for Oil Fuel, Lubrication Oil and Other Flammable Oils

4.2.2 Arrangements for Oil Fuel*

Sub-paragraph (5) has been amended as follows.

In a ship in which oil fuel is used, the arrangements for the storage, distribution and utilization of the oil fuel are to be such as to ensure the safety of the ship and persons on board and are to at least comply with the following provisions.

(5) Oil fuel piping is to comply with the following requirements:

- (a) Oil fuel pipes and their valves and fittings are to be of steel or other ~~approved~~ material approved by the Society, except that restricted use of flexible hoses is permissible in positions where the Society is satisfied that they are necessary. Such flexible hoses and end fittings are to comply with **12.1.6** and **12.3.4 of Part D**. Use of ordinary cast iron valves in piping systems is to comply with the requirements of **12.1.5 of Part D**.

((b) to (f) are omitted.)

EFFECTIVE DATE AND APPLICATION (Amendment 1-1)

1. The effective date of the amendments is 1 July 2017.
2. Notwithstanding the amendments to the Rules, the current requirements 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.

Chapter 4 PROBABILITY OF IGNITION

4.5 Cargo Areas of Tankers

Title of Paragraph 4.5.1 has been amended as follows.

4.5.1 Separation of Cargo Tanks and Location of Fuel Tanks*

Sub-paragraph -8 has been added as follows.

8 In cases where fuel tanks are located in the cargo area of the oil tankers defined in 2.1.1(6), Part 1 of the Rules for Marine Pollution Prevention Systems, the following (1) to (5) are to apply:

- (1) Fuel tanks located with a common boundary to cargo tanks are not to be situated within the cargo tank block. Such tanks may, however, be situated at the forward and aft ends of the cargo tank block instead of cofferdams.
- (2) Fuel tanks are to extend neither fully nor partly into cargo or slop tanks. They may, however, be accepted when located as independent tanks on open deck in the cargo area subject to spill and fire safety considerations.
- (3) Fuel tanks are not permitted to extend into the protective area of cargo tanks required by Chapter 3, Part 3 of the Rules for Marine Pollution Prevention Systems.
- (4) The arrangement of independent fuel tanks and associated fuel piping systems, including the pumps, can be as for fuel tanks and associated fuel piping systems located in the machinery spaces.
- (5) For electrical equipment, the requirements to hazardous area classification specified in Part H are to be taken into account.

EFFECTIVE DATE AND APPLICATION (Amendment 1-2)

1. The effective date of the amendments is 1 July 2017.
2. Notwithstanding the amendments to the Rules, the current requirements apply to ships other than those for which the application for Classification Survey during Construction or the application for examinations of altered parts is dated on or after the effective date.

GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

Part R

**Fire Protection, Detection and
Extinction**

GUIDANCE

2017 AMENDMENT NO.1

Notice No.27 1st June 2017

Resolved by Technical Committee on 30th January 2017

Notice No.27 1st June 2017

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 R FIRE PROTECTION, DETECTION AND EXTINCTION

Amendment 1-1

R3 DEFINITIONS

R3.2 Definitions

Paragraph R3.2.54 has been added as follows.

R3.2.54 Vehicle carrier

The definition of “vehicle carrier” specified in 3.2.54, Part R of the Rules is intended for pure car and truck carriers, and excludes other types ro-ro cargo ships or container/ro-ro ships, even when carrying empty cars and trucks as cargo.

R29 FIXED FIRE DETECTION AND FIRE ALARM SYSTEMS

R29.2 Engineering Specifications

Paragraph R29.2.2 has been added as follows.

R29.2.2 Sources of Power Supply

“30 minutes” specified in 29.2.2-4, Part R of the Rules means the last 30 minutes of the 18-hour time period required by 3.3, Part H of the Rules.

EFFECTIVE DATE AND APPLICATION (Amendment 1-1)

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

Annex R5.3.1-1 DETAILS OF FIRE PROTECTION MATERIALS

1 FIRE PROTECTION MATERIALS FOR CARGO SHIPS

Table 1 has been amended as follows.

Table 1 Method IC

Requirements		Non Combustible material	Non Combustible material	Low flame spread	Equivalent volume	Calorific value	Smoke production	Not readily ignite
Part R of the Rules		5.3.1-2	5.3.1-1	5.3.2-4	5.3.2-1	5.3.2-2	6.2.1 6.3.1	4.4.4
1)	Moulding				○			
2)	Panel	○						
3)	Painted surface or Veneer or Fabric or Falls Foils			○	○	○	○ ⁽²⁾	
4)	Painted surface or Veneer or Fabric or Falls Foils			○	○	○	○ ⁽²⁾	
5)	Decorative panel Decoration				○		○	
6)	Painted surface or Veneer or Fabric or Falls Foils				○	○	○ ⁽²⁾	
7)	Skirting board				○			
8)	Insulation		○ ⁽¹⁾					
9)	Surfaces and paints in concealed or inaccessible spaces			○				
10)	Draught stop	○						
11)	Grounds and supports	○		○				
12)	Lining	○						
13)	Primary deck covering 1st layer						○	○
14)	Floor finishing			○ ⁽³⁾			○	
15)	Window box	○						
16)	Window box surface			○	○	○	○	
17)	Window box surface in concealed or inaccessible spaces			○				
18)	Ceiling panel	○						

Note:

- (1) Vapour barriers and adhesives used in conjunction with insulation, as well as the insulation of pipe fittings, for cold service systems, need not be of non-combustible materials, but their exposed surfaces are to have low flame spread characteristics".
- (2) Applicable to paints, varnishes and other finishes
- (3) Only in corridors and stairway enclosures

Table 2 has been amended as follows.

Table 2 Method IIC and IIIC

Requirements		Non Combustible material	Non Combustible material	Low flame spread	Equivalent volume	Calorific value	Smoke production	Not readily ignite
Part R of the Rules		5.3.1-2	5.3.1-1	5.3.2-4	5.3.2-1	5.3.2-2	6.2.1 6.3.1	4.4.4
1)	Moulding				○ ⁽³⁾			
2)	Panel	○ ⁽⁴⁾						
3)	Painted surface or Veneer or Fabric or Foils			○	○	○	○ ⁽⁵⁾	
4)	Painted surface or Veneer or Fabric or Foils			○	○ ⁽³⁾	○ ⁽²⁾	○ ⁽⁵⁾	
5)	Decorative panel Decoration				○ ⁽³⁾		○	
6)	Painted surface or Veneer or Fabric or Foils				○ ⁽³⁾	○ ⁽²⁾	○ ⁽⁵⁾	
7)	Skirting board				○ ⁽³⁾			
8)	Insulation		○ ⁽¹⁾					
9)	Surfaces and paints in concealed or inaccessible spaces			○				
10)	Draught stop	○ ⁽⁴⁾						
11)	Grounds and supports	○ ⁽⁴⁾		○				
12)	Lining	○ ⁽⁴⁾						
13)	Primary deck covering 1st layer						○	○
14)	Floor finishing			○ ⁽⁶⁾			○	
15)	Window box	○ ⁽⁴⁾						
16)	Window box surface			○ ⁽³⁾	○ ⁽³⁾	○ ⁽²⁾	○	
17)	Window box surface in concealed or inaccessible spaces			○				
18)	Ceiling panel	○ ⁽⁴⁾						

Note:

- (1) Vapour barriers and adhesives used in conjunction with insulation, as well as the insulation of pipe fittings, for cold service systems, need not be of non-combustible materials, but their exposed surfaces are to have low flame spread characteristics".
- (2) Where the material is fitted on non-combustible bulkheads, ceiling on lining in accommodation and service spaces.
- (3) To be applied to those accommodation and service spaces bounded by non-combustible bulkheads, ceiling and linings.
- (4) Only in corridors and stairway enclosures serving accommodation and service spaces and control stations.
- (5) Applicable to paints, varnishes and other finishes
- (6) Only in corridors and stairway enclosures

EFFECTIVE DATE AND APPLICATION (Amendment 1-2)

1. The effective date of the amendments is 1 June 2017.
2. Notwithstanding the amendments to the Guidance, the current requirements 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.

* For high speed craft, “1%” is to be read as “3%”.

R4 PROBABILITY OF IGNITION

R4.2 Arrangements for Oil Fuel, Lubrication Oil and Other Flammable Oils

R4.2.2 Arrangements for Oil Fuel

Sub-paragraphs -11 to -17 have been renumbered to Sub-paragraphs -12 and -18, and Sub-paragraph -11 has been added as follows.

11 With respect to the requirements in 4.2.2(5)(a), Part R of the Rules, a material may be accepted as other material approved by the Society for engine, turbine and gearbox, in cases where the material is used for any of the following (1) to (3) cases:

- (1) Internal pipes which cannot cause any release of flammable fluid onto the machinery or into the machinery space in the case of failure;
- (2) Components which are only subject to liquid spray on the inside in cases where the machinery is running; for example, machinery covers, rocker box covers, camshaft end covers, inspection plates and sump tanks. However in such cases, the pressure inside these components and all the elements contained therein is to be less than 0.18 N/mm^2 and that wet sumps are to have a volume not exceeding 100 litres; or
- (3) Components attached to machinery which satisfy fire test criteria according to ISO standard 19921:2005 and 19922:2005 or other standards acceptable to the Society, and which retain mechanical properties adequate for the intended installation.

~~142~~ If flexible hoses are used as a jacketed piping system required in 4.2.2(5)(b), Part R of the Rules, these are to be of an approved type.

~~143~~ The wording “appropriate designs, constructions and arrangements for minimizing the fire risk” specified in 4.2.2(5)(b), Part R of the Rules means that the diesel engine meets all the following conditions:

((1) to (3) are omitted.)

~~134~~ The wording “other suitably protected to avoid oil spray or oil leakage onto the sources of ignition” specified in 4.2.2(5)(c), Part R of the Rules means the following preventive measures which are subject to approval by the society upon submission of those drawings or documents.

((1) to (3) are omitted.)

145 With respect to the requirements in 4.2.2(5)(c), Part R of the Rules, it is considered unnecessary to provide protective means for the following arrangements as the danger caused by an oil spray or an oil leakage is considered relatively low.

((1) to (2) are omitted.)

~~156~~ The means of isolating specified in 4.2.2(5)(e), Part R of the Rules are to be provided at the position in the engine room where is capable of operating safely and ascertaining the fire condition in case of fire of the engine. With respect to return pipings from engines, non-return valves may be acceptable as the means of isolating.

~~167~~ With respect to the requirements in 4.2.2(6)(a), Part R of the Rules where the insulation is of oil absorbent material or may permit the penetration of oil, the insulation is to be encased in sheathing of steel or equivalent material, except those installed in a place having no fire risk.

~~178~~ With respect to the requirements of 4.2.2(8), Part R of the Rules:

((1) to (3) are omitted.)

R10 FIRE FIGHTING

R10.5 Fire-extinguishing Arrangements in Machinery Spaces

R10.5.5 Fixed Local Application Fire-fighting Systems

Sub-paragraph -4 has been amended as follows.

4 The operation controls for manual release required in **10.5.5-2, Part R of the Rules** are to be located at easily accessible positions inside and outside the machinery space of category A (hereinafter referred to as “the protected space” in this **R10.5.5**). For the controls inside the space, the provisions of **R4.2.2-156** are to be referred to. At the every control positions, instructions for the operation of the fire-fighting system are to be posted.

EFFECTIVE DATE AND APPLICATION (Amendment 1-3)

1. The effective date of the amendments is 1 July 2017.
2. Notwithstanding the amendments to the Guidance, the current requirements 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.

R4 PROBABILITY OF IGNITION

R4.5 Cargo Areas of Tankers

Title of Paragraph R4.5.1 has been amended as follows.

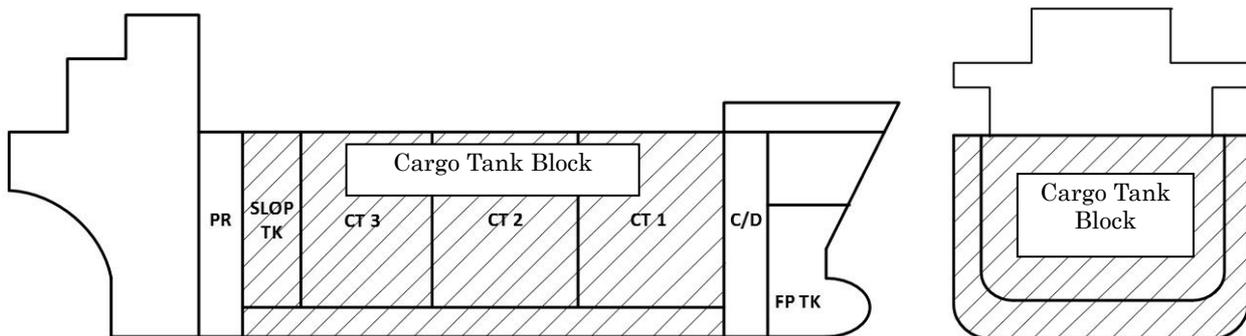
R4.5.1 Separation of Cargo Tanks and Location of Fuel Tanks

Sub-paragraph -12 has been added as follows.

12 The “cargo tank block” referred to in 4.5.1-8(1), Part R of the Rules means the part of the ship extending from the aft bulkhead of the aftermost cargo or slop tank to the forward bulkhead of the forward most cargo or slop tank, extending to the full depth and beam of the ship, but not including the area above the deck of the cargo or slop tank (refer to Fig. R4.5.1-5).

Fig. R4.5.1-5 has been added as follows.

Fig. R4.5.1-5 Example of Cargo Tank Block



SLOP TK : Slop tank
CT1/2/3 : NO.1/2/3 Cargo tank
PR : Cargo pump room
C/D : Cofferdam
FP TK : Forepeak tank

R21 SPECIAL REQUIREMENTS FOR SMALL SHIPS AND SHIPS FOR RESTRICTED SERVICE

R21.2 Special Requirements

R21.2.1 Requirements for Ships of less than 500 *Gross Tonnage*

Sub-paragraph -2 has been amended as follows.

2 The following (1) to (3) requirements relating to fire protection may be applied in lieu of the provisions of 4.4.3, 4.4.4, 4.4.5, 4.5.1 (except -8), 4.5.2, 5.3, 6.2, 6.3, 8.2.1, 8.4.1, Chapter 9 (except 9.5.2 and 9.6), 11.2, 11.3.1(2), 11.4, 20.3.1 and 20.3.5, Part R of the Rules relating to the fire protection, the following requirements may apply.
(1) to (3) are omitted.)

EFFECTIVE DATE AND APPLICATION (Amendment 1-4)

- 1.** The effective date of the amendments is 1 July 2017.
- 2.** Notwithstanding the amendments to the Guidance, the current requirements apply to ships other than those for which the application for Classification Survey during Construction or the application for examinations of altered parts is dated on or after the effective date.