Amendment on 25 December 2025
Resolved by Technical Committee on 30 July 2025

Review of Expressions Used in Requirements for Pipes, Valves and Pipe Fittings

Object of Amendment

Rules for the Survey and Construction of Steel Ships Part D
Guidance for the Survey and Construction of Steel Ships Parts D and R

Reason for Amendment

The Society stipulates requirements for matters such as the material, structure and testing of pipes, valves and pipe fittings in Chapter 12 of Part D of the Rules for the Survey and Construction of Steel Ships. The Society recently reviewed the structure and wording of these requirements in order to further improve customer convenience and enhance readability.

Accordingly, relevant requirements are amended based on the results of the aforementioned review.

Outline of the Amendment

The main contents of this amendment are as follows.

(1) Amends requirements for pipes, valves and pipe fittings related to the materials, the shop tests and modification of requirements by using a bullet list to clarify the scope of application for each requirement.
(2) Amends the expressions to clarify the correspondence between Japanese-flagged and non-Japanese-flagged ships.

Effective Date and application

Effective date of this amendment is 1 January 2026.

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

ID:DD25-17

Amended-Original Requirements Comparison Table
(Review of Expressions Used in Requirements for Pipes, Valves and Pipe Fittings)

Amended	Original	Remarks
RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS	**RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS**	
Part D MACHINERY INSTALLATIONS	**Part D MACHINERY INSTALLATIONS**	
Chapter 12 PIPES, VALVES, PIPE FITTINGS AND AUXILIARIES	**Chapter 12 PIPES, VALVES, PIPE FITTINGS AND AUXILIARIES**	
12.1 General	**12.1 General**	
12.1.4 Materials **1** Materials used for auxiliary machinery are to be adequate for their service conditions. Materials used for any essential parts of auxiliary machinery are to comply with standards recognised by the Society.	**12.1.4 Materials** **1** Materials used for auxiliary machinery are to be adequate for their service conditions. Materials used for any essential parts of auxiliary machinery are to comply with recognized standards.	Changed the expression from "recognized standards" to " standards recognized by the Society" to align with the requirements for Japanese-flagged ships.
2 Materials for pipes are to be adequate for their service conditions and are to comply with the following requirements: (1) (Omitted) (2) Materials for pipes belonging to Group III are to comply with standards recognised by the Society.	**2** Materials for pipes are to be adequate for their service conditions and are to comply with the following requirements: (1) (Omitted) (2) Materials for pipes belonging to Group III are to comply with recognized standards.	Ditto.
3 Materials for valves or cocks (hereinafter referred to as "valves" in this chapter) and pipe fittings are to be adequate for their service conditions and are to comply with the following requirements: (1) Materials for following **(a)** to **(c)** are to comply with	**3** Materials for valves or cocks (hereinafter referred to as "valves" in this Chapter) and pipe fittings are to be adequate for their service conditions and are to comply with the following requirements: (1) Materials for valves and pipe fittings used for the	

Amended-Original Requirements Comparison Table
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Amended	Original	Remarks
the requirements in **Part K**. However, other materials that comply with standards recognized by the Society may be used where approved by the Society after consideration has been given to the dimensions and service conditions of the valves and piping fittings.	pipes belonging to Group I or II as well as valves and pipe fittings directly fitted to the shell plating and collision bulkhead are to comply with the requirements in **Part K**. However, other materials that comply with recognized standards may be used where approved by the Society after consideration has been given to the dimensions and service conditions of the valves and piping fittings.	
(a) Valves and pipe fittings used for the pipes belonging to Group I or II	(Moved)	Moved from -3(1) above.
(b) Valves and pipe fittings directly fitted to the following **i)** to **iii)** (including seats and distance pieces mounted on the ship's side) i) Shell plating ii) Sea chests iii) Collision bulkhead	(Moved)	Moved from -3(1) above.
(c) Valves directly fitted to the pipes specified in the following **i)** and the pipe fittings specified in the following **ii)** i) Pipes piercing the collision bulkhead ii) For the pipes fittings specified in **(b)** above, seats or distance pieces mounted on the ship's side	(Newly added)	
(2) Materials for valves and pipe fittings used for the pipes belonging to Group III are to comply with standards recognised by the Society.	(2) Materials for valves and pipe fittings used for the pipes belonging to Group III are to comply with recognized standards.	Changed the expression from "recognized standards" to " standards recognized by the Society" to align with the requirement for Japanese-flagged ships.
4 (Omitted)	**4** (Omitted)	

Amended-Original Requirements Comparison Table
(Review of Expressions Used in Requirements for Pipes, Valves and Pipe Fittings)

Amended	Original	Remarks
12.1.5 Service Limitations for Materials*	**12.1.5 Service Limitations for Materials***	
1 Pipes are, as a rule, to be made of steel, copper, copper alloy or cast iron and the material is to meet the requirements for the service limitations listed below according to design temperature, classification, service, etc., unless otherwise specified. However, for pipes which have an opening and are classed in Group III regardless of design temperature, these service limitations regarding temperature do not apply.	**1** Pipes are, as a rule, to be made of steel, copper, copper alloy or cast iron and the material is to meet the requirements for the service limitations listed below according to design temperature, classification, service, etc., unless otherwise specified. However, for pipes which have an opening and are classed in Group III regardless of design temperature, these service limitations regarding temperature do not apply.	
((1) to (3) are omitted.)	((1) to (3) are omitted.)	
(4) In addition to **(2)** and **(3)**, copper pipes, copper alloy pipes and cast iron pipes are to comply with **Table D12.2** according to their application. However, the requirements may be waived when deemed acceptable by the Society.	(4) In addition to **(2)** and **(3)**, copper pipes, copper alloy pipes and cast iron pipes are to conform to the requirements in **Table D12.2** according to their application. However, the requirements may be waived when deemed acceptable by the Society.	

Amended-Original Requirements Comparison Table
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Amended	Original	Remarks

Table D12.2　Service Limitations for Pipes according to Application

Pipe Application (Note 1)	Material		
	Copper	Copper alloy	Cast iron
Fuel oil pipes Lubricating oil pipes in machinery spaces Hydraulic oil pipes in machinery spaces Thermal oil pipes in machinery spaces Cargo oil pipes Air pipes Sounding pipes outside of sounding areas	× (Note 2)	× (Note 2)	× (Note 3)
Overflow pipes Bilge pipes Ballast pipes Drain pipes opening outboard and sanitary pipes Pipes below the freeboard deck Pipes used for fire fighting aboard ship Pipes in danger of rupturing leading to flooding during a fire Boiler water blow off pipes	×	×	×
Control oil pipes in machinery spaces	○	× (Note 2)	×
Compressed air~~Air~~ pipes for the remote closing of tank suction stop valves Compressed air~~Air~~ pipes for the remote control of auxiliaries, valves, etc. used during a fire	○	×	×

Notes:

1. Pipes used for measurements, drain pipes and vent pipes fitted to strainers and pumps, etc. are not included.
2. The portion of pipes which is inside a tank is usable.
3. Including those outside machinery spaces.

Remarks:

1○ : Usable

2× : Use prohibited

Corrected the expression of a part of “air pipe”.

Amended-Original Requirements Comparison Table
(Review of Expressions Used in Requirements for Pipes, Valves and Pipe Fittings)

Amended	Original	Remarks
2 Valves and pipe fittings are, as a rule, to be made of steel, copper alloy or cast iron and, except where otherwise specified, they are to conform to the requirements below for service limitations according to their design temperature, class, application, etc. However, for valves and pipe fittings which have an opening and are classified as Group III notwithstanding their design temperature, the service limitations regarding temperature do not apply. ((1) and (2) are omitted.) (3) Cast iron products with an elongation less than 12 % are not to be used for the following valves and pipe fittings: ((a) to (c) are omitted.) (d) Valves and pipe fittings directly mounted on shell plating, sea chests or collision bulkheads. (Moved) (e) Valves directly fitted to pipes specified in the following i) and pipe fittings specified in the following ii). i) Pipes piercing the collision bulkhead ii) For pipes fittings specified in (d) above, seats or distance pieces mounted on the ship's side ((f) to (j) are omitted.) (4) (Omitted)	**2** Valves and pipe fittings are, as a rule, to be made of steel, copper alloy or cast iron and, except where otherwise specified, they are to conform to the requirements below for service limitations according to their design temperature, class, application, etc. However, for valves and pipe fittings which have an opening and are classified as Group III notwithstanding their design temperature, the service limitations regarding temperature do not apply. ((1) and (2) are omitted.) (3) Cast iron products with an elongation less than 12% are not to be used for the following valves and pipe fittings: ((a) to (c) are omitted.) (d) Valves, seats and distance pieces mounted on shell plating or sea chests. (e) Valves directly mounted onto collision bulkheads. (Newly added) ((f) to (j) are omitted.) (4) (Omitted)	Moved to -2(3)(d) above. Aligned with the application of 12.1.4-3(1).
12.6 Tests **12.6.1 Shop Tests*** **6** The following (1) or (2) directly fitted to shell plating	**12.6 Tests** **12.6.1 Shop Tests*** **6** Valves and distance pieces fitted to the ship's side	Clarified to include

Amended-Original Requirements Comparison Table
(Review of Expressions Used in Requirements for Pipes, Valves and Pipe Fittings)

Amended	Original	Remarks
or sea chests below the load line are to be subjected to hydrostatic tests at a pressure of 1.5 *times* the design pressure or 0.5 *MPa*, whichever is greater. (1) Valves fitted to the ship's side (including valves directly fitted to seats or directly fitted to distance pieces mounted on the ship's side) (2) Distance pieces mounted on the ship's side	below the load line are to be subjected to hydrostatic tests at a pressure of 1.5 times the design pressure or 0.5 *MPa*, whichever is greater.	"valves directly fitted to distance pieces fitted to the ship's side" as the test object.

Amended-Original Requirements Comparison Table
(Review of Expressions Used in Requirements for Pipes, Valves and Pipe Fittings)

Amended	Original	Remarks
GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS **Part D MACHINERY INSTALLATIONS** **D1 GENERAL** **D1.1 General** **D1.1.4 Modification of Requirements** For those machinery installations specified in **1.1.4, Part D of the Rules** (excluding those specified in other parts of the Rules), some requirements of **Part D of the Rules** may be modified as follows: ((1) to (5) are omitted.) (6) Pipes, valves and pipe fittings of piping systems with both a design pressure less than 1 *MPa* and a design temperature of 230 °C or less: Hydrostatic tests may be dealt with under the requirements of **(1)(a)iii)** except for those valves directly fitted to shell plating or sea chests below the load line (including seats or valves directly fitted to distance pieces mounted on the ship's side) and distance pieces fitted to the ship's side which are directly fitted to shell plating or sea chests below the load line. (7) Materials for pipes, valves and pipe fittings specified in following **(a)** and **(b)**:	**GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS** **Part D MACHINERY INSTALLATIONS** **D1 GENERAL** **D1.1 General** **D1.1.4 Modification of Requirements** For those machinery installations specified in **1.1.4, Part D of the Rules** (excluding those specified in other parts of the Rules), some requirements of **Part D of the Rules** may be modified as follows: ((1) to (5) are omitted.) (6) Pipes, valves and pipe fittings of piping systems with both a design pressure less than 1 *MPa* and a design temperature of 230 °C or less: Hydrostatic tests may be dealt with under the requirements of **(1)(a)iii)** except for those valves and distance pieces directly fitted to the ship's side below the load line. (7) Piping of Groups I and II, and their respective valves, pipe fittings and valves and pipe fittings	Unified the expression. Previously, NK has required that "cast iron

Amended-Original Requirements Comparison Table
(Review of Expressions Used in Requirements for Pipes, Valves and Pipe Fittings)

Amended	Original	Remarks
Materials which comply with *JIS* or other standards recognised by the Society may be accepted.	which are directly fitted to the shell plating and collision bulkhead: Materials which comply with any national standards may be accepted for the following **(a)** to **(d)**, except for those cast iron products for valves, seats and distance pieces mounted on the shell plating (including sea chests).	products used for valves, seats and distance pieces fitted to the ship's side" be both made of materials that comply with the Rules for the Survey and Construction of Steel Ships Part K. However, as the wording had been difficult to understand, NK has revised the description to clarify this handling.
(a) Piping of Groups I or II with both a design pressure less than 1 *MPa* and a design temperature of 230 °C or less	(a) Pipes with both a design pressure less than 1 *MPa* and a design temperature of 230 °C or less	Organised the requirement for piping of Groups I and II.
(b) "For valves and pipe fittings used for pipes belonging to Group I or II", "valves and pipe fittings directly fitted to shell plating, sea chests or collision bulkhead", "valves directly fitted to pipes piercing the collision bulkhead", and "valves directly fitted to seats or distance pieces mounted on the ship's side which are directly fitted to shell plating or sea chests", the items defined in any of the following **i)** to **iii).** However, this excludes the following cast iron products: those used for valves, seats or distance pieces directly fitted to shell plating or sea chests; and those used for valves directly fitted to the above-mentioned seats or distance pieces.	(Newly added)	Organised the requirement for valves and pipe fittings.
i) Items used for pipes with a nominal diameter less than 100 *mm*	(b) Valves and pipe fittings used for pipes with a nominal diameter less than 100 *mm*	
ii) Items with both a design pressure less than 3 *MPa* and a design temperature of 230 °C	(c) Valves and pipe fittings with both a design pressure less than 3 *MPa* and a design	

Amended-Original Requirements Comparison Table
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Amended	Original	Remarks
or less iii) Pipe flanges (8) (Omitted) **D12 PIPES, VALVES, PIPE FITTINGS AND AUXILIARIES** **D12.1 General** **D12.1.4 Materials** **1** The "standards recognised by the Society" referred to **12.1.4-1, -2(2), -3(1) and (2), Part D of the Rules** means national or international standards such as *JIS*. **2** The wording "where approved by the Society after consideration has been given to the dimensions and service conditions" in **12.1.4-3(1), Part D of the Rules** means the items specified in **D1.1.4(7)**.	temperature of 230 °C or less (d) Pipe flanges (8) (Omitted) **D12 PIPES, VALVES, PIPE FITTINGS AND AUXILIARIES** **D12.1 General** **(Newly added)**	Aligned with the structure of the requirements for Japanese-flagged ships.

Amended-Original Requirements Comparison Table
(Review of Expressions Used in Requirements for Pipes, Valves and Pipe Fittings)

Amended	Original	Remarks
GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS	**GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS**	
Part R FIRE PROTECTION, DETECTION AND EXTINCTION	**Part R FIRE PROTECTION, DETECTION AND EXTINCTION**	
R4 PROBABILITY OF IGNITION	**R4 PROBABILITY OF IGNITION**	
R4.2 Arrangements for Oil Fuel, Lubrication Oil and Other Flammable Oils	**R4.2 Arrangements for Oil Fuel, Lubrication Oil and Other Flammable Oils**	
R4.2.2 Arrangements for Oil Fuel **6** With respect to the requirements of **4.2.2(3)(d), Part R of the Rules**, pneumatic remote shut-down devices (of the type that needs compressed air only at the time of closing) of main suction valves of fuel oil tanks are to comply with the following requirements: ((1) to (4) are omitted.) (5) Compressed air pipes for control from the air bottle to the main suction valve's actuators are to be of steel or copper. (6) (Omitted) **7** In cases where air bottles specified in **-6** above are used commonly for remote shut-down of the fuel tank valves for the emergency generator, remote opening of the sea	**R4.2.2 Arrangements for Oil Fuel** **6** With respect to the requirements of **4.2.2(3)(d), Part R of the Rules**, pneumatic remote shut-down devices (of the type that needs compressed air only at the time of closing) of main suction valves of fuel oil tanks are to comply with the following requirements: ((1) to (4) are omitted.) (5) Air pipes from the air bottle to the main suction valve's actuators are to be of steel or copper. (6) (Omitted) **7** In case where air bottles specified in **-6** above are used commonly for remote shut-down of the fuel tank valves for the emergency generator, remote opening of the sea	Corrected the expression of "air pipe" same as Table D12.2 of the Rules for the Survey and Construction of Steel Ships Part D. Editorial Correction.

Amended-Original Requirements Comparison Table
(Review of Expressions Used in Requirements for Pipes, Valves and Pipe Fittings)

Amended	Original	Remarks
water suction valve of the emergency fire pump, remote shut-down of dampers for the ventilating fans for machinery spaces, etc., the following requirements are to be complied with: (1) (Omitted) (2) The compressed air piping for the remote shut-down of fuel oil tank main suction valve is to be arranged separately from piping for other purposes, and the air outlet valve from the air bottle is to be fitted with a name tag for clear identification of the intended service. (3) The compressed air piping system for remote shut-down of the fuel tank valves for the emergency generator is to comply with **(2)** mentioned above and to be independent from the other compressed air piping system.	water suction valve of the emergency fire pump, remote shut-down of dampers for the ventilating fans for machinery spaces, etc, the following requirements are to be complied with: (1) (Omitted) (2) The air piping for the remote shut-down of fuel oil tank main suction valve is to be arranged separately from pipings for other purposes, and the air outlet valve from the air bottle is to be fitted with a name tag for clear identification of the intended service. (3) The air piping system for remote shut-down of the fuel tank valves for the emergency generator is to comply with **(2)** mentioned above and to be independent from the other air piping system.	Ditto. Editorial Correction. Ditto.
EFFECTIVE DATE AND APPLICATION **1.** The effective date of the amendments is 1 January 2026.		