Application, Classes, Tests, etc. for Pipes

Object of Amendment

Rules for the Survey and Construction of Steel Ships Part D
Rules for the Survey and Construction of Inland Waterway Ships
Guidance for the Survey and Construction of Steel Ships Part D
Guidance for the Approval and Type Approval of Materials and Equipment for Marine Use

Reason for Amendment

The IACS Unified Requirement (UR) P2 series, which stipulates requirements for the design, construction and tests of pipes, was developed in 1981, and it has already been incorporated into the ClassNK Rules.

IACS, however, recently comprehensively reviewed the UR for the purpose of the clarification and reflecting requests from the industry members. In addition, the requirements for mechanical joints were reviewed again. As a result of its review, IACS adopted UR P2.1(Rev.3), UR P2.2(Rev.5), UR P2.7.3(Rev.3), UR P2.7.4(Rev.11), UR P2.9(Rev.3) and P2.11(Rev.6) in October 2023.

Accordingly, relevant requirements are amended based on the aforementioned revisions to the UR P2 series.

Outline of the Amendment

The main contents of this amendment are as follows.

(1) Adds "urea for SCR systems" as a type of medium to Table D12.1, Part D of the Rules for the Survey and Construction of Steel Ships.
(2) Clarifies that pressure pulsation tests carried out during approval tests are mandatory for Group I and Group II pipes, but are only required for Group III pipes in cases where pressure pulsation other than water hammer is expected.
(3) Clarifies the acceptable diameters for threaded joints of the small diameter pipes conveying flammable media used for instrumentation are only outside diameters of 25 *mm* or less.

Effective Date and application

(1) Part D of the Rules for the Survey and Construction of Steel Ships (12.1.1, 12.1.3 and 21.2.1) and Part 7 of the Rules for the Survey and Construction of Inland Waterway Ships (10.1.1 and Table 7.10.1)
This draft amendment applies to ships for which the date of contract for construction is on or after 1 January 2025.
(2) Part D of the Rules for the Survey and Construction of Steel Ships (12.3.3 and Table D12.9), Rules for the Survey and Construction of Inland Waterway Ships (Table 7.10.9), Part D of the Guidance for the Survey and Construction of Steel Ships (D12.4.2) and Part 6 of the Guidance for the Approval and Type Approval of Materials and Equipment for Marine Use (Table 6.9-1)
This draft amendment applies to the following mechanical joints:
(a) those for which the application for approval is submitted to the Society on or after 1 January 2025; and
(b) those for which the application for renewal of approval of use is submitted to the

Society on or after 1 January 2025.

(3) Part D of the Rules for the Survey and Construction of Steel Ships (12.4.2), Part 7 of the Rules for the Survey and Construction of Inland Waterway Ships (10.4.2) and Part D of the Guidance for the Survey and Construction of Steel Ships (D12.4.2)
This draft amendment applies to threaded joints for which the application for approval is submitted to the Society on or after 1 January 2025.

(4) Part D of the Rules for the Survey and Construction of Steel Ships (12.6.2, 13.17.2 and 14.6.2) and Part 7 of the Rules for the Survey and Construction of Inland Waterway Ships (11.16.2)
Effective date of the draft amendments is 1 January 2025.

(5) Part 6 of the Guidance for the Approval and Type Approval of Materials and Equipment for Marine Use (6.9.1)
This draft amendment applies to the following plastic piping systems on or after 1 January 2025:
   (a) those for which the application for approval of use is submitted to the Society on or after 1 July 2023;
   (b) those for which the application for renewal of approval of use is submitted to the Society on or after 1 July 2023; and
   (c) those used on ships for which the date of contract for construction is on or after 1 July 2023.

ID: DD24-03

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

Amended-Original Requirements Comparison Table (Application, Classes, Testes for Pipes)

Amended	Original	Remarks
RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS **Part D MACHINERY INSTALLATIONS** **Chapter 12 PIPES, VALVES, PIPE FITTINGS AND AUXILIARIES** **12.1 General** **12.1.1 Scope** **1** The requirements in this Chapter apply to the design, fabrication and testing of pipes, valves, pipe fittings and auxiliaries.	**RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS** **Part D MACHINERY INSTALLATIONS** **Chapter 12 PIPES, VALVES, PIPE FITTINGS AND AUXILIARIES** **12.1 General** **12.1.1 Scope** The requirements in this Chapter apply to the design, fabrication and testing of pipes, valves, pipe fittings and auxiliaries.	
2 The following piping systems are also to comply with relevant requirements in other Parts of the Rules as specified below. (1) Chemical cargo piping systems of ships subject to **Part S** and shipboard hydrocarbon/chemical process piping system (2) Gas cargo/fuel and process piping systems of ships, subject to **Part N** and gas fuel piping systems of ships subject to **Part GF**. (3) Piping systems for low flashpoint fuels defined in **2.2.1-28, Part GF** but which do not fall under **(2)** above.	(Newly added)	-2:P2.1

Amended	Original	Remarks
12.1.3 Classes of Pipes Table D12.1 Classes of Pipes Design Pressure (*P*) and Design Temperature (*T*) Notes: (1) Excluding any pipes meeting the conditions for Group III (2) When piping materials are selected according to ISO 18611-3:2014 for urea in SCR systems.		P2.2/Table 1

Type of Medium	Group I	Group II ~~(Note)~~(1)	Group III
Steam	*P*>1.6 *MPa* or *T*>300 °C	*P*≦1.6 *MPa* and *T*≦300 °C	*P*≦0.7 *MPa* and *T*≦170 °C
Thermal oil	*P*>1.6 *MPa* or *T*>300 °C	*P*≦1.6 *MPa* and *T*≦300 °C	*P*≦0.7 *MPa* and *T*≦150 °C
Fuel oil, lubricating oil and flammable hydraulic oil	*P*>1.6 *MPa* or *T*>150 °C	*P*≦1.6 *MPa* and *T*≦150 °C	*P*≦0.7 *MPa* and *T*≦60 °C
Air, carbon dioxide gas, water ~~and,~~ non-flammable hydraulic oil and urea for selective catalytic reduction (SCR) systems(2)	*P*>4.0 *MPa* or *T*>300 °C	*P*≦4.0 *MPa* and *T*≦300 °C	*P*≦1.6 *MPa* and *T*≦200 °C

EFFECTIVE DATE AND APPLICATION

1. The effective date of the amendments is 1 January 2025.

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.

Amended-Original Requirements Comparison Table (Application, Classes, Testes for Pipes)

Amended	Original	Remarks
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 (Application, Classes, Testes for Pipes)

Amended	Original	Remarks
12.3 Construction of Valves and Pipe Fittings **12.3.3 Mechanical Joints*** **7** Mechanical joints are to be tested in accordance with a program approved by the Society in accordance with standards separately specified by the Society; such a programme is to include at least the following **(1)** to **(8)**: (1) leakage test; (2) vacuum test (where deemed necessary by the Society); (3) vibration (fatigue) test; (4) fire endurance test (where deemed necessary by the Society); (5) burst pressure test; (6) pressure pulsation test (for Group I and II mandatory, for Group III where pressure pulsation other than water hammer is expected); (7) assembly test (where deemed necessary by the Society); and (8) pull out test (where deemed necessary by the Society).	**12.3 Construction of Valves and Pipe Fittings** **12.3.3 Mechanical Joints*** **7** Mechanical joints are to be tested in accordance with a program approved by the Society in accordance with standards separately specified by the Society; such a programme is to include at least the following **(1)** to **(8)**: (1) leakage test; (2) vacuum test (where deemed necessary by the Society); (3) vibration (fatigue) test; (4) fire endurance test (where deemed necessary by the Society); (5) burst pressure test; (6) pressure pulsation test (where deemed necessary by the Society); (7) assembly test (where deemed necessary by the Society); and (8) pull out test (where deemed necessary by the Society).	(6):P2.7.4.11.6, P2.11

Amended-Original Requirements Comparison Table (Application, Classes, Testes for Pipes)

Amended	Original	Remarks
Table D12.9 Application Classifications of Mechanical Joints Depending upon the Class of Pipes to which the Mechanical Joints are Fitted (1)		P2.7.4/Table 8

Types of Joints		Classes of Pipes		
		Group I	Group II	Group III
Pipe Unions	Welded and brazed type	+(2)	+(2)	+
Compression Couplings	Swage type	+	+	+
	Bite type	+(2)	+(2)	+
	Typical compression type	+(2)	+(2)	+
	Flared type	+(2)	+(2)	+
	Press type	-	-	+
Slip-on joints	Machine grooved type	+	+	+
	Grip type	-	+	+
	Slip type	-	+	+

Notes:

(1) + Application is allowed, - Application is not allowed.

(2) May be used for pipes whose nominal diameter is 50A or less.

EFFECTIVE DATE AND APPLICATION

1. The effective date of the amendments is 1 January 2025.

2. Notwithstanding the amendments to the Rules, the current requirements apply to mechanical joints other than those that fall under the following:

(1) mechanical joints for which the application for approval of use is submitted to the Society on or after the effective date.

(2) mechanical joints for which the application for renewal of approval of use is submitted to the Society on or after the effective date.

Amended-Original Requirements Comparison Table (Application, Classes, Testes for Pipes)

Amended	Original	Remarks
12.4 Connection and Forming of Piping Systems **12.4.2 Direct Connection of Pipe Lengths*** **3** Threaded joints are to comply with the following **(1)** to **(3)**. (1) Threaded joints are to comply with the requirements of standards recognized by the Society. (2) Threaded pipe joints are not to be used for the following pipes. However, the Society may allow use for pipes specified in **(e)** or **(f)** after considering the service of the pipes. (a) Pipes conveying flammable media, except for pipes with outside diameters of 25 *mm* or less used for instrumentation. (b) Pipes conveying toxic media. (c) Pipes servicing where fatigue, severe erosion or crevice corrosion is expected to occur. (d) Pipes for CO_2 systems, except inside protected spaces and in CO_2 cylinder rooms. (e) Pipes belonging to Group I with a nominal diameter exceeding 25 *A*. (f) Pipes belonging to Group II and Group III with a nominal diameter exceeding 50 *A*. (3) For pipes belonging to Group I or Group II, threaded joints with tapered threads are to be used.	**12.4 Connection and Forming of Piping Systems** **12.4.2 Direct Connection of Pipe Lengths*** **3** Threaded joints are to comply with the following **(1)** to **(3)**. (1) Threaded joints are to comply with the requirements of standards recognized by the Society. (2) Threaded pipe joints are not to be used for the following pipes. However, the Society may allow use for pipes specified in **(e)** or **(f)** after considering the service of the pipes. (a) Pipes conveying flammable media, except for pipes with small diameter used for instrumentation. (b) Pipes conveying toxic media. (c) Pipes servicing where fatigue, severe erosion or crevice corrosion is expected to occur. (d) Pipes for CO_2 systems, except inside protected spaces and in CO_2 cylinder rooms. (e) Pipes belonging to Group I with a nominal diameter exceeding 25 *A*. (f) Pipes belonging to Group II and Group III with a nominal diameter exceeding 50 *A*. (3) For pipes belonging to Group I or Group II, threaded joints with tapered threads are to be used.	(a):P2.7.3

Amended-Original Requirements Comparison Table (Application, Classes, Testes for Pipes)

Amended	Original	Remarks
EFFECTIVE DATE AND APPLICATION **1.** The effective date of the amendments is 1 January 2025. **2.** Notwithstanding the amendments to the Rules, the current requirements apply to threaded joints for which the application for approval is submitted to the Society before the effective date. **12.6 Tests** **12.6.2 Tests after Installation On Board.** The applicable requirements in **13.17.2-3** and **-4** or **14.6.2-2** to **-5** apply to tests of piping systems after assembly on board. EFFECTIVE DATE AND APPLICATION **1.** The effective date of the amendments is 1 January 2025.	**12.6 Tests** **12.6.2 Tests after Installation On Board.** The applicable requirements in **13.17.2-3** or **14.6.2-2**, apply to tests of piping systems after assembly on board.	Clarification.

Amended-Original Requirements Comparison Table (Application, Classes, Testes for Pipes)

Amended	Original	Remarks
Chapter 13 PIPING SYSTEMS **13.17 Tests** **13.17.2 Tests On Board** **1** (Omitted) **2** (Omitted) **3** (Omitted) **4** Pneumatic leak testing may be carried out on water sensitive systems, in lieu of hydrostatic testing. In certain circumstances, a combined hydrostatic–pneumatic strength test may also be applied, where the system is partially filled with water and the free space above is pressurized with a test gas (typically air or nitrogen). When pneumatic tests cannot be avoided, the safety precautions in *IACS* Rec. 140, Part F, are to be observed. EFFECTIVE DATE AND APPLICATION **1.** The effective date of the amendments is 1 January 2025.	**Chapter 13 PIPING SYSTEMS** **13.17 Tests** **13.17.2 Tests On Board** **1** (Omitted) **2** (Omitted) **3** (Omitted) (Newly added)	-4:P2.9

Amended-Original Requirements Comparison Table (Application, Classes, Testes for Pipes)

Amended	Original	Remarks
Chapter 14 PIPING SYSTEMS FOR TANKERS **14.6 Tests** **14.6.2 Tests after Installation On Board** **1** (Omitted) **2** (Omitted) **3** (Omitted) **4** For the leak tests in **-2** and **-3** above, either pneumatic testing, or a combined hydrostatic-pneumatic strength testing may be carried out in accordance with **13.17.2-4**. **5** After installation on board, auxiliaries and piping systems are to be subjected to the following tests: (1) Function tests of cargo oil pumps. (2) Function tests of various systems concerning the safety measures specified in this Chapter. EFFECTIVE DATE AND APPLICATION **1.** The effective date of the amendments is 1 January 2025.	**Chapter 14 PIPING SYSTEMS FOR TANKERS** **14.6 Tests** **14.6.2 Tests after Installation On Board** **1** (Omitted) **2** Cargo oil pipes, after the completion of their installation, are to be subjected to leak tests at a pressure not less than 1.25 *times* the design pressure. **3** Heating pipes inside cargo oil tanks are, after assembly on board, to be subjected to leak tests at a pressure not less than 1.5 *times* the design pressure or 0.4 *MPa*, whichever is greater. (Newly added) **4** After installation on board, auxiliaries and piping systems are to be subjected to the following tests: (1) Function tests of cargo oil pumps. (2) Function tests of various systems concerning the safety measures specified in this Chapter.	-4:P2.9

Amended	Original	Remarks
Chapter 21 SELECTIVE CATALYTIC REDUCTION SYSTEMS AND ASSOCIATED EQUIPMENT **21.2 Design** **21.2.1 General Requirements** **1** In addition to the requirements in this Chapter, pipes, valves, pipe fittings and auxiliaries are to satisfy the requirements in **Chapter 12**. In such cases, the term "sea water" is to be read as "reductant agent". However, when applying table **D12.1** and when piping materials are selected according to *ISO* 18611-3:2014, "urea in SCR systems" is to be applied as "type of medium". EFFECTIVE DATE AND APPLICATION **1.** The effective date of the amendments is 1 January 2025. **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	**Chapter 21 SELECTIVE CATALYTIC REDUCTION SYSTEMS AND ASSOCIATED EQUIPMENT** **21.2 Design** **21.2.1 General Requirements** **1** In addition to the requirements in this Chapter, pipes, valves, pipe fittings and auxiliaries are to satisfy the requirements in **Chapter 12**. In such cases, the term "sea water" is to be read as "reductant agent".	

Amended	Original	Remarks
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 (Application, Classes, Testes for Pipes)

Amended	Original	Remarks
RULES FOR THE SURVEY AND CONSTRUCTION OF INLAND WATERWAY SHIPS **Part 7 MACHINERY INSTALLATIONS** **Chapter 10 PIPES, VALVES, PIPE FITTINGS AND AUXILIARIES** **10.1 General** **10.1.1 Scope** **1** The requirements in this Chapter apply to the design, fabrication and testing of pipes, valves, pipe fittings and auxiliaries. **2** The following piping systems are also to comply with relevant requirements in the parts of the Rules for the Survey and Construction of Steel Ships as specified below. (1) Chemical cargo piping systems of ships subject to **Part S of Rules for the Survey and Construction of Steel Ships** and shipboard hydrocarbon/chemical process piping system (2) Gas cargo/fuel and process piping systems of ships, subject to **Part N of Rules for the Survey and Construction of Steel Ships** and gas fuel piping systems of ships subject to **Part GF of Rules for the Survey and Construction of Steel Ships** (3) Piping systems for low flashpoint fuels defined in	**RULES FOR THE SURVEY AND CONSTRUCTION OF INLAND WATERWAY SHIPS** **Part 7 MACHINERY INSTALLATIONS** **Chapter 10 PIPES, VALVES, PIPE FITTINGS AND AUXILIARIES** **10.1 General** **10.1.1 Scope** The requirements in this Chapter apply to the design, fabrication and testing of pipes, valves, pipe fittings and auxiliaries. (Newly added)	-2:P2.1

Amended	Original	Remarks
2.2.1-28, Part GF of Rules for the Survey and Construction of Steel Ships but which do not fall under (2) above. **10.1.3 Classes of Pipes**	**10.1.3 Classes of Pipes**	P2.2

Table 7.10.1 Classes of Pipes

Type of Medium	Design Pressure (P) and Design Temperature (T)		
	Group I	Group II ~~(Note)~~(1)	Group III
Steam	P>1.6 *MPa* or T>300 °C	P≦1.6 *MPa* and T≦300 °C	P≦0.7 *MPa* and T≦170 °C
Thermal oil	P>1.6 *MPa* or T>300 °C	P≦1.6 *MPa* and T≦300 °C	P≦0.7 *MPa* and T≦150 °C
Fuel oil, lubricating oil and flammable hydraulic oil	P>1.6 *MPa* or T>150 °C	P≦1.6 *MPa* and T≦150 °C	P≦0.7 *MPa* and T≦60 °C
Air, carbon dioxide gas, water ~~and,~~ non-flammable hydraulic oil and urea for selective catalytic reduction (SCR) systems(2)	P>4.0 *MPa* or T>300 °C	P≦4.0 *MPa* and T≦300 °C	P≦1.6 *MPa* and T≦200 °C

Notes:

(1) Excluding any pipes meeting the conditions for Group III

(2) When piping materials are selected according to ISO 18611-3:2014 for urea in SCR systems.

EFFECTIVE DATE AND APPLICATION

1. The effective date of the amendments is 1 January 2025.
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

Amended	Original	Remarks
(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	Remarks

10.3 Construction of Valves and Pipe Fittings

10.3.3 Mechanical Joints*

Table 7.10.9 Application Classifications of Mechanical Joints Depending Upon the Class of Piping(1)

P2.7.4/Table 8

Types of Joints		Classes of Piping Systems		
		Group I	Group II	Group III
Pipe Unions	Welded and brazed type	+(2)	+(2)	+
Compression Couplings	Swage type	+	+	+
	Bite type	+(2)	+(2)	+
	Typical compression type	±	±	±
	Flared type	+(2)	+(2)	+
	Press type	-	-	+
Slip-on joints	Machine grooved type	+	+	+
	Grip type	-	+	+
	Slip type	-	+	+

Notes:

(1) + Application is allowed, - Application is not allowed

(2) May be used for pipes of a nominal diameter of 50*A* or below.

EFFECTIVE DATE AND APPLICATION

1. The effective date of the amendments is 1 January 2025.

2. Notwithstanding the amendments to the Rules, the current requirements apply to mechanical joints other than those that fall under the following:

(1) mechanical joints for which the application for approval of use is submitted to the Society on or after 1 January 2025.

(2) mechanical joints for which the application

Amended-Original Requirements Comparison Table (Application, Classes, Testes for Pipes)

Amended	Original	Remarks
for renewal of approval of use is submitted to the Society on or after 1 January 2025.		
10.4 Connection and Forming of Piping Systems	**10.4 Connection and Forming of Piping Systems**	
10.4.2 Direct Connection of Pipe Lengths **2** Threaded pipe joints (only tapered threads where used for pipes in Group I and Group II) are not to be used for the following pipes. However, the Society may allow use for pipes specified in **(3)** and **(4)** after considering the service of the pipes. (1) Pipes conveying flammable media, except for pipes with small outside diameters of 25 *mm* or less used for instrumentation. (2) Pipes for CO_2 systems, except inside protected spaces and in CO_2 cylinder rooms. (3) Pipes belonging to Group I with a nominal diameter exceeding 25*A*. (4) Pipes belonging to Group II and Group III with a nominal diameter exceeding 50*A*.	**10.4.2 Direct Connection of Pipe Lengths** **2** Threaded pipe joints (only tapered threads where used for pipes in Group I and Group II) are not to be used for the following pipes. However, the Society may allow use for pipes specified in **(3)** and **(4)** after considering the service of the pipes. (1) Pipes conveying flammable media, except for pipes with small diameter used for instrumentation. (2) Pipes for CO_2 systems, except inside protected spaces and in CO_2 cylinder rooms. (3) Pipes belonging to Group I with a nominal diameter exceeding 25*A*. (4) Pipes belonging to Group II and Group III with a nominal diameter exceeding 50*A*.	(1):P2.7.3
EFFECTIVE DATE AND APPLICATION **1.** The effective date of the amendments is 1 January 2025. **2.** Notwithstanding the amendments to the Rules, the current requirements apply to threaded joints for which the application for approval is submitted to the Society before the effective date.		

Amended-Original Requirements Comparison Table (Application, Classes, Testes for Pipes)

Amended	Original	Remarks
Chapter 11 PIPING SYSTEMS **11.16 Tests** **11.16.2 Tests On Board** **1** (Omitted) **2** (Omitted) **3** Pneumatic leak testing may be carried out on water sensitive systems, in lieu of hydrostatic testing. In certain circumstances, a combined hydrostatic – pneumatic strength test may also be applied, where the system is partially filled with water and the free space above is pressurized with a test gas (typically air or nitrogen). When pneumatic tests cannot be avoided, the safety precautions in *IACS* Rec. 140, Part F, are to be observed. EFFECTIVE DATE AND APPLICATION **1.** The effective date of the amendments is 1 January 2025.	**Chapter 11 PIPING SYSTEMS** **11.16 Tests** **11.16.2 Tests On Board** **1** (Omitted) **2** (Omitted) (Newly added)	-3:P2.9

Amended-Original Requirements Comparison Table (Application, Classes, Testes for Pipes)

Amended	Original	Remarks
GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS **Part D MACHINERY INSTALLATIONS** **D12 PIPES, VALVES, PIPE FITTINGS AND AUXILIARIES** **D12.4 Connection and Forming of Piping Systems** **D12.4.2 Direct Connection of Pipe Lengths** **3** The "standards recognized by the Society" specified in **12.4.2-3(1), Part D of the Rules** refers to, for example, *JIS B* 2301, *JIS B* 2302, *JIS B* 2308, *ASME* B31.1 and *ASME* B31.3. EFFECTIVE DATE AND APPLICATION **1.** The effective date of the amendments is 1 January 2025. **2.** Notwithstanding the amendments to the Guidance, the current requirements apply to threaded joints for which the application for approval is submitted to the Society before the effective date.	**GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS** **Part D MACHINERY INSTALLATIONS** **D12 PIPES, VALVES, PIPE FITTINGS AND AUXILIARIES** **D12.4 Connection and Forming of Piping Systems** **D12.4.2 Direct Connection of Pipe Lengths** **3** The "standards recognized by the Society" specified in **12.4.2-3(1), Part D of the Rules** refers to, for example, *JIS B* 2301, *JIS B* 2302 and *JIS B* 2308.	P2.7.3/Note

Amended	Original	Remarks
GUIDANCE FOR THE APPROVAL AND TYPE APPROVAL OF MATERIALS AND EQUIPMENT FOR MARINE USE **Part 6 MACHINERY** **Chapter 6 APPROVAL OF USE OF PLASTIC PIPES** **6.9 Testing Procedures and Criteria** **6.9.1 Criteria for Approval Test for Process of Manufacture** The requirements and the criteria for the approval tests are, in principle, referred to **Table 6.6**. For application of the tables, see below: ((1) to (6) are omitted.) (7) Judgements for acceptance are to be made in accordance with the following procedures and criteria : (a) For fire endurance, the specimens required by **1.5.1-2, Annex 12.1.6, Part D of Rules for the Survey and Construction of Steel Ships** are to be tested for approval. (b) For flame spread, smoke generation and toxicity, at least largest and smallest wall thicknesses are to be tested for approval. (c) For heat dependence of material and electric conductivity, the acceptance criteria are to be	**GUIDANCE FOR THE APPROVAL AND TYPE APPROVAL OF MATERIALS AND EQUIPMENT FOR MARINE USE** **Part 6 MACHINERY** **Chapter 6 APPROVAL OF USE OF PLASTIC PIPES** **6.9 Testing Procedures and Criteria** **6.9.1 Criteria for Approval Test for Process of Manufacture** The requirements and the criteria for the approval tests are, in principle, referred to **Table 6.6**. For application of the tables, see below: ((1) to (6) are omitted.) (7) Judgements for acceptance are to be made in accordance with the following procedures and criteria : (a) For fire endurance, at least largest and smallest diameter or wall thickness are to be tested for approval. (b) For flame spread, smoke generation and toxicity, at least largest and smallest wall thicknesses are to be tested for approval. (c) For heat dependence of material and electric conductivity, the acceptance criteria are to be	(a):Aligning with the requirement of Annex 12.1.6, Part D of Rules for the Survey and Construction of Steel Ships.

Amended	Original	Remarks
satisfied by the mean value of the three specimens or at least that of two test specimens. (d) For other test items, the number of specimen and the way for judgment are to be in accordance with each testing standard. EFFECTIVE DATE AND APPLICATION **1.** The effective date of the amendments is 1 January 2025. **2.** Notwithstanding the amendments to the Guidance, the current requirements apply to plastic piping systems other than those which fall under the following: (1) plastic piping systems for which the application for approval of use is submitted to the Society on or after 1 July 2023; (2) plastic piping systems for which the application for renewal of approval of use is submitted to the Society on or after 1 July 2023; or (3) plastic piping systems used on ships for which the date of contract for construction* is on or after 1 July 2023. * "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	satisfied by the mean value of the three specimens or at least that of two test specimens. (d) For other test items, the number of specimen and the way for judgment are to be in accordance with each testing standard.	

Amended	Original	Remarks
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	Remarks
Chapter 9 APPROVAL OF USE OF MECHANICAL JOINTS	**Chapter 9 APPROVAL OF USE OF MECHANICAL JOINTS**	

9.3 Approval Tests

9.3.1 General

Table 6.9-1 Testing Requirements for Mechanical Joints

Tests		Types of mechanical joints		
		Compression couplings and pipes unions	Slip-on joints	
			Grip type &machine grooved type	Slip type
1	Tightness test	+	+	+
2	Vibration (fatigue)test	+	+	-
3	Pressure pulsation test(1)	+	+	-
4	Burst pressure test	+	+	+
5	Pull-out test	+	+	-
6	Fire endurance test(4)	+(3)	+	+
7	Vacuum test(5)	+(3)	+	+
8	Repeated assembly test	+(2)	+	-

Notes:

+ : Test is required, - : Test is not required

(1) For use in all Group I and Group II piping systems and those Group III piping systems where pressure pulsation other than water hammer is expected.

(2) Except permanent joint type (e.g. press type and swage type).

(3) Except joints with metal-to-metal tightening surfaces.

(4) If required approved fire resistant types by **12.3.3-6, Part D of Rules for the Survey and Construction of Steel Ships**.

(5) For use in suction lines.

Fire endurance test: P2.11/Table 9

Notes: P2.11/Footnotes for Table 9

Amended-Original Requirements Comparison Table (Application, Classes, Testes for Pipes)

Amended	Original	Remarks
EFFECTIVE DATE AND APPLICATION **1.** The effective date of the amendments is 1 January 2025. **2.** Notwithstanding the amendments to the Guidance, the current requirements apply to mechanical joints other than those that fall under the following: (1) mechanical joints for which the application for approval is submitted to the Society on or after the effective date. (2) mechanical joints for which the application for renewal of approval of use submitted to the Society is on or after the effective date.		