
GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

Part S

**Ships Carrying Dangerous Chemicals
in Bulk**

GUIDANCE

2018 AMENDMENT NO.1

Notice No.52 29 June 2018

Resolved by Technical Committee on 31 January 2018

Notice No.52 29 June 2018

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 S SHIPS CARRYING DANGEROUS CHEMICALS IN BULK

S5 CARGO TRANSFER

S5.4 Tests Requirements for Piping

S5.4.1 Application

The classification standard and test requirements for cargo piping are to be in accordance with **Table S5.4.1-1** and **Table S5.4.1-2**.

Table S5.4.1-1 Classification Standard for Cargo Piping

Ship type requirements	Classification of applicable cargo piping (See Table S5.4.1-2)	Remark
Type 1	Category I	Irrespective of the design pressure and temperature, the requirements in the left-hand column apply, as a standard.
Type 2	Category II	
Type 3	Category III	For compatibility between cargo and cargo piping materials, separate investigation is to be made.

Note:

- (1) Cargo piping means the piping to transfer liquid cargo and vapour cargo.
- (2) Cargo piping for slop tanks arranged in accordance with the requirements of Ship Type 3 is to be classified into Category III irrespective of the ship type requirements for cargo contained in slop tanks.
- (3) Cargo piping passing through the tanks cargo with higher ship type requirements is to comply with the requirements of the piping specified for such cargo.

Table S5.4.1-2 has been amended as follows.

Table S5.4.1-2 Test Requirements for Piping

	1. Materials of pipe	2. Materials of valves, cocks and pipe fittings	3. Shop tests for piping fabrication			4. Shop tests for valves, cocks and pipe fittings	5. Shipboard tests for piping
			Welding procedure test	Non-destructive tests	Hydraulic tests		
Category I	Materials complying, as a rule, with the requirements in Part K of the Rules .	Materials complying, as a rule, with the requirements in Part K of the Rules . However, materials complying with the requirements of <i>JIS</i> or equivalent may be accepted. ⁽¹⁾	To be carried out on piping of Category I or Category II where the following (1) to (3) are relevant: (1)Joinings between pipes, pipes and valves (or cocks) and, pipes and fittings are made <u>being welded</u> for the first time. (2)When a new welding method is employed. (3)When <u>the</u> base material, type of welding material, <u>or</u> type of joints is <u>are</u> changed.	(1)Radiographic testing for the entire length of butt welded joints of between <u>between pipes, pipes and valves (or cocks), and pipes and fittings</u> with nominal diameters exceeding 65 mm. (2)Radiographic testing for the sampled butt welded joints of between <u>between pipes, pipes and valves (or cocks), and pipes and fittings</u> with nominal diameters not more than 65 mm. (3)In place of radiographic testings, suitable other nondestructive testing may be accepted. (4)Magnetic particle testing or suitable other <u>testing</u> for fillet welds of <u>between pipes, pipes and valves (or cocks), and pipes and fittings</u> .	(1)All pipings of Category I, Category II and Category III, steam pipes, feed pipes compressed air pipes, fuel oil pipes of which design pressure exceeds 0.35 N/mm² are to be subjected to hydraulic tests with fittings attached after fabrication at a test pressure 1.5 times the design pressure. (2)The test pressure for hydraulic test for pipes with design temperature exceeding 300°C is to be specified separately. (3)The hydraulic test for welded joints between pipes or pipe and valves (or cocks) of piping arranged on board the ship is to be specified separately.	Valves, <u>cocks</u> and fittings for piping of Category I or Category II are to be subjected to hydraulic tests at a pressure of 1.5 times the design pressure.	(1)All pipings is <u>are</u> to be subjected to leak tests in their service condition. (2)All pipings is <u>are</u> to be subjected to preliminary tests together with the equipment they serve. (2)Fuel oil pipes and tank heating pipes are to be subjected to leak test at a pressure of 1.5 times the design pressure. However, the test pressure is to be at least 0.4 N/mm² or more. (4)The piping of the refrigerating installation is to be subjected to the requirements separately provided. (3)All cargo pipings is <u>are</u> to be subjected to the hydraulic tests at a pressure of 1.5 times the design pressure.

Category II				<p>(1) Radiographic testing or suitable other testing for the sampled butt welded pipe joints of <u>between pipes, pipes and valves (or cocks), and pipes and fittings</u> with nominal diameters exceeding 80 mm.</p> <p>(2) Magnetic particle testing or suitable other testing for fillet welds of <u>between pipes, pipes and valves (or cocks), and pipes and fittings.</u></p>			
Category III	Materials complying with the requirements of <i>JIS</i> or equivalent.	Materials complying with the requirements of <i>JIS</i> or equivalent.					

Note:

- (1) Materials complying with international or national standards such as *ISO*, *JIS*, etc. may be used for pipe joints of butt welded type and pipe joints of a slip-on sleeve welded type (such as elbows, reducers, tees, bends and sockets, etc.) for which hot forming or heat treatment is carried out during their manufacturing process in accordance with the requirements of **D12.6.1-1(1)(a)ii** on the condition that they receive approval of use from the Society in accordance with **Chapter 12, Part 6 of the Guidance for the Approval and Type Approval of Materials and Equipment for Marine Use.**

EFFECTIVE DATE AND APPLICATION

1. The effective date of the amendments is 29 June 2018.
2. Notwithstanding the amendments to the Guidance, the current requirements apply to tests other than tests that fall under the following:
 - (1) shop tests for piping fabrication for which the application is submitted to the Society before the effective date; or
 - (2) shop tests for valves, cocks and pipe fittings for which the application is submitted to the Society before the effective date; or
 - (3) shipboard tests for piping for which the application is submitted to the Society before the effective date.