

Shipbuilding – General rules for inspection of strainers

1. Scope This Japanese Industrial Standard specifies the general rules for inspection of marine strainers (hereinafter referred to "strainer").

Remark: This standard makes reference to the following standards:

JIS B 2203 – Tolerances for pipe flanges

JIS B 8247 – formed heads for pressure vessels

2. Inspection items The inspection items of strainers shall be as follows. The items of inspection for specific strainers shall be as given in the respective standard.

- (1) Material inspection
- (2) Non-destructive inspection
- (3) Welding inspection
- (4) Visual inspection
- (5) Dimensional inspection
- (6) Assembly inspection
- (7) Pressure inspection
 - (a) Watertight inspection for valve seat or fitting face of cock
 - (b) Pressure inspection for body of strainer
- (8) Weld repairs inspection

3. Material Inspection The specified materials shall be tested in accordance with the respective standards. For materials of which qualities have been verified by an officially authorized testing organization or corresponding other organization, or materials of which qualities have been verified by a manufacturer who is recognized to be equivalent, in ability, to above testing organization relative to the specific items of testing, the material inspection may be omitted.

4. Non-destructive inspection The non-destructive inspection of strainers shall, as a rule, be following four methods, and shall be carried out as required by the purchaser. The inspection methods and judgement in inspection shall be provided by agreement between the parties concerned.

- (1) Radiographic inspection
- (2) Supersonic inspection
- (3) Magnetic particle inspection
- (4) Dye penetrant inspection

5. Welding inspection The welding inspection of strainers shall be as follows.

- (1) The welding shall be carried out by approved method.
- (2) Welders shall have welder qualifications authorized either by the legal requirements or by the rules of a classification society.
- (3) The welding shall be used registered electrode, core wire and flux.
- (4) In case of manual welding, the important butt joint without backing strip shall be welded both side excepting especially considering such as one side welding of penetration bead.
- (5) There shall not be cross welding on the welding joints.
- (6) The tolerance of the angle of bevel and the root gap on the butt joints, which shall not be specified their tolerance, shall be each $\pm 5^\circ$ and ± 1 mm.
- (7) The under cut shall be 0.3 mm or less, and pinhole and overlap shall not be found on the welding bead.
- (8) The minus permissible deviation of the fillet welding leg length shall be 10%.

- (9) The permissible dimensional deviation of the vertical and circumference butt joints on the body shall be as given in Table 1.

Table 1.

Kind of joint	Permissible dimensional deviation
Vertical joint	25% of plate thickness (max. 3 mm)
Circumference joint	25% of plate thickness

- (10) The height of reinforcement of weld on the butt joint shall be as given in Table 2.

Table 2

Unit: mm	
Thickness of base metal	Height of reinforcement of weld
12 or less	1.5 or less
Exceeding 12 to 20 or less	2.5 or less

6. Visual inspection The visual inspection of strainers shall be as follows:

- (1) The castings shall be free from detrimental defects such as blowhole, fin, sand burning, etc. in both inside and outside faces.
- (2) The forging shall be free from lap cracks and cutler cracks.
- (3) The surface of welded parts shall be uniform, and free from any defects such as cracks etc.
- (4) The machined surfaces shall be free from abnormal defects, irregularity in finish, etc.
- (5) The corners of castings on which no dimensions are given, shall be suitably round off.
- (6) The fluid passages shall have been carefully finished and cleaned.
- (7) The slag and spatter on the welded bead shall be removed, and welded part shall be sufficiently cleaned.
- (8) The bodies shall be clearly marked with the essential particulars of the respective strainers.

7. Dimensional inspection The each dimension of strainer shall be checked as following specified dimensions.

- (1) The permissible deviation for the dimensions of machined and unmachined parts, if not specifically indicated by the purchaser, shall, as a rule, be as given in Table 3.
The permissible deviation for the dimensions of pipes shall conform to each Japanese Industrial Standard (JIS).

Related Standard:

- ISO 5208 – Industrial valves – pressure testing for valves
JMS 7303 – Standard for weld repairs of marine cast steel piping fittings