



Shipbuilding – Hull cast steel angle valves

1. Scope This Japanese Industrial Standard specifies cast angle valves (hereinafter referred to as “angle valve”) intended for the services on sea water and bilge pipe lines and to be directly fitted on ship’s bottom or side.

Remark: This standard makes reference to the following standards:

- JIS B 0205 – Metric coarse screw threads
- JIS B 0222 – 29°C trapezoidal screw threads
- JIS B 1532 – Rolling bearing – Thrust ball bearings with flat back faces
- JIS B 1575 – Grease nipples
- JIS B 2210 – Basic dimensions of ferrous materials pipe flanges
- JIS F 7102 – Shipbuilding – Piping system in machinery space – Application for gaskets and packings
- JIS F 7400 – Shipbuilding – Valves and cocks – General inspection requirement
- JIS G 3101 – Rolled steel for general structure
- JIS G 4051 – Carbon steel for machine structural use
- JIS G 4303 – Stainless steel bars
- JIS G 4305 – Cold rolled stainless steel sheets and plates
- JIS G 4404 – Alloy tool steels
- JIS G 5101 – Carbon steel castings
- JIS G 5121 – Stainless steel castings
- JIS G 5501 – Gray iron castings
- JIS H 3100 – Copper and copper alloy sheets, plates and strip
- JIS H 3250 – Copper and copper alloy rods and bars
- JIS H 3260 – Copper and copper alloy wires
- JIS H 5111 – Bronze castings

2. Pressure rating The relation between fluid condition and maximum working pressure shall be as given in Table 1.

Table 1

Fluid condition	Maximum working pressure MPa					
	Nominal diameter 200 or less		Nominal diameter 250, 300		Nominal diameter 350 or more	
	Class B	Class S	Class B	Class S	Class B	Class S
Sea water and bilge	1.0		0.7	1.0	0.2	

Remark: For Class B and Class S, refer to 4. (1).

3. Construction, shape and dimensions The construction, shape and dimensions shall be as shown in Figs. 1 and 3, the permissible deviation of body thickness “a” shall, as a rule, be within $\begin{matrix} +15 \\ -10 \end{matrix}$ %. But, when the calculated value is below 1 mm, the permissible deviation may be 1 mm.

4. Materials The materials shall be as follows;

- (1) The body, bonnet and principal parts (disc, valve seat and stem) shall be as shown in Figs. 2 and 4. The valves shall be classified into Class B and Class S depending on combination of materials. However, for the valves grouped into Class S, either of the following directions may be given.
 - (a) For the valves of nominal diameter 200 or more, the disc and valve seat shall conform to JIS G 5101 – SC 480, and the seating face thereof shall be deposited with ausenitic stainless steel bead

- (b) For the valves of nominal diameter 200 or more, having valve seat integrated with body, the seating face of the valve seat shall be directly deposited with austenitic stainless steel.
- (c) For the valves of nominal diameter 350 or more, the disc shall be set with rubber seat, and in this case seating face of the disc and valve seat shall be deposited with austenitic stainless steel bead.

(2) The materials used for other parts shall, as a rule, be as shown in **Figs. 2 and 4**.

5. Tests and inspection The angle valves shall be subjected to the following items of inspection in accordance with **JIS F 7400**.

- (1) Material inspection
- (2) Visual inspection
- (3) Dimensional inspection
- (4) Assembly inspection
- (5) Hydraulic inspection

The valves shall be tested as given in **Table 2**.

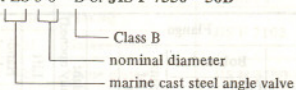
Table 2

Nominal diameter	Test pressure MPa			
	Watertight inspection for valve seat		Hydraulic inspection for body	
	Class B	Class S	Class B	Class S
200 or less	1.1		1.5	
250, 300	0.77	1.1	1.05	1.5
350 or more	0.25		0.5	

6. Designation The angle valves shall be designated by the title, nominal diameter and material classification mark or symbol. **JIS** number may be used in place of the title.

Example: For a valve of Class B and nominal diameter 50:

Marine hull cast steel 50 angle valve B or FLS 5 0 B or **JIS F 7350 - 50B**



7. Marking The following particulars shall be marked with casting or die stamps on the surface of the body.

- (1) Maximum working pressure and nominal diameter

Example: 10 K - 50

- (2) Arrowhead indicating the direction of flow
- (3) Manufacturer's name or mark
- (4) Year and month of manufacture

Related Standard: ISO 5208 - Industrial valves - Pressure testing of valves