

**Technical specification for Stainless Steel B. F. Valve Body & Door****1.0 SCOPE OF SUPPLY**

This specification covers the technical requirements of Stainless Steel Casting for Butterfly Valve Body & Door as per the following details.

S. No.	Item Description	Qty. in No.	Drawing No.	Casting drawing No. (if applicable)
01	Dia.600 BFV Body	06	19513800089 Rev.01 Var.03	19513800091 Rev.00 Var.03
02	Dia.600 BFV Door	06	19513800086 Rev.01 Var-04	19513800092 Rev.00 Var-04
03	Dia.500 BFV Body	18	19513800087 Rev.01	1951380090 Rev.00
04	Dia.500 BFV Door	18	19513800088 Rev.01	1951380093 Rev.00
05	Dia.400 BFV Body	04	19513800089 Rev.01 Var.01	1951380091 Rev.00 var.01
06	Dia.400 BFV Door	04	19513800086 Rev.01 Var.01	1951380092 Rev.00 Var.01

Scope shall also include heat treatment, testing of material, NDT, Grit Blasting, hydro test of body.

Note: MOC (i.e. Material of Construction) for BODY and DOOR casting shall be as specified below only (i.e. A-351 Gr. CF3M). Drawings to be referred for dimension and other requirements only.

2.0 TECHNICAL REQUIREMENTS

- 2.1 Material : Stainless Steel Casting to A-351 Gr. CF3M.
- 2.2 Manufacturing: The castings shall be made by Electric Furnace followed by AOD (argon-oxygen-decarburization) / VOD (vacuum-oxygen-decarburization) refining & VD (Vacuum Degassing). While performing VD, checking of Gas is required to be done by Gas Analyzer.
- 2.3 While casting, test piece to be kept as an integral part of each casting. Test piece is required to be removed after Heat Treatment.
- 2.4 Casting shall be free from injurious defects and shall have a workman like appearance confirming to Para-10 & 12 of specification A-703.
- 2.5 All castings shall be supplied in Heat Treated Condition as per the requirements as indicated in the respective material specification.
- 2.6 Weld repair if any shall be subject to prior approval from BHEL.



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2.7 After Heat Treatment and separation of test piece, all castings required to be DPT (Dye Penetrant Test to Level-I of spec. AA0850132) followed by machining (as per BHEL drawing), grit blasting (machined face including marking area are to be kept protected while grit blasting) followed by passivation and DPT of machined surface.

2.8 All body casting to be hydraulically tested for leak tightness at a pressure as specified in BHEL drawing for a duration of 30 minutes (minimum).

After receipt of castings at BHEL, complete assembly shall again be subjected to hydraulic test. Leakage found if any (in body or door), same shall be informed to casting vendor which need to be rectified / replaced within maximum seven (07) days from the date of intimation.

2.9 Size & Quantity : Refer above table and enquiry / PO description.

3.0 TESTING

3.1 Chemical : Ladle and product analysis are to be done at laboratory duly accredited by NABL to ensure its chemical properties. In house spectrometer can also be used for these testing.

3.2 Mechanical : Testing of test piece (for each Heat and Heat Treatment Batch) is also required to be done at laboratory duly accredited by NABL to ensure its mechanical properties. In house instruments (duly calibrated by NABL approved agency / lab) can also be used for mechanical testing.

4.0 INSPECTION & CERTIFICATION

4.1 All castings shall be subjected to inspection by BHEL-TPIA at the works of casting vendor as per the QAP duly approved by BHEL.

4.2 All test certificates & inspection reports shall be co-related with respective castings and shall be duly signed by the inspection agency.

5.0 DOCUMENTATION

5.1 Along-with the supply : Three (03) copies each of all inspection reports & test certificates (duly signed and stamped by BHEL-IA as per the above QAP).

5.2 Along-with the offer : Duly signed and stamped copy of this Annexure along-with the QAP.

6.0 PROTECTION & PACKING

Each item to be packed in separate sturdy wooden box to avoid damage during transit with proper identification on the box (PO No. and Item No. of PO.). Machined surface is also required to be protected by bubble / corrugated sheet.

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7.0 IDENTIFICATION MARKING

Each casting shall be identified by Heat No., Heat Treatment Batch No., MOC (Material of Construction).

Additionally, each casting shall also be identified by separate identification no. (as per the standard practice of casting manufacturer) so as to co-relate with all test certificates & inspection reports.

All these identifications shall be done by hard stamp on the area as specified in BHEL-drawing which shall require to be protected while machining and grit blasting.

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