TECHNICAL SPECIFICATION
FOR
ISOLATION BALL VALVE

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1.0 SCOPE

The scope of this specification is to establish minimum requirements to manufacture and supply of Isolation Ball Valves used for supply of domestic natural gas.

2.0 STANDARDS:

ANSI B16.33 - Manually Operated Metallic Gas Valves for Use in Gas Piping Systems

EN 331 - Manually operated ball valves and closed bottom taper plug valves for gas installations for buildings

ANSI B1.20.1 - Standard on Pipe Threads, General Purpose, Inch

3.0 GENERAL REQUIREMENTS

The scope of the tender will include manufacture/ supply, inspection/ testing/ marking/ packaging/ handling and despatch of Isolation Ball Valves, as indicated in the Material Requisition & Schedule of Rates, meeting all the requirements as laid down in manufacturing standard ANSI B16.33 / EN 331.

4.0 ITEM DESCRIPTION

Item-Isolation Ball Valve with Full Bore, NPT Female (Confirming to ANSI B1.20.1) ends for natural gas application). of Sizes: ½", ¾" etc with operating Knob and locking arrangement with sealing wire and lead seal (Without Key). Valve full open/ close position shall be at 90° position.

5.0 MATERIAL SPECIFICATION FOR ISOLATION VALVES

Material Specification shall be according to data sheet (attached as Annexure-1).

5.1.1. Markings

Markings shall be provided & shall include:

f) Manufacturer's name or trademark Model designation

ii) Rate working pressure in Bar.

5.1.2. Packaging

Packing size to be mentioned to ensure uniformity in delivery conditions of the material being procured.
Packing size shall be approved by BPCL / BPCL's representative before despatching the material. Bidder shall submit the packaging details during offer and also complied with at the time of delivery.

5.1.3. Leak Tightness

All Valves shall be leak tightness tested at 1.5x 4 bars for a period of 15 seconds and no leakage is permitted. This test shall be performed as per clause no. 4.2 of ASME 16.33.

5.1.4. Temperature resistance test

This test shall be carried out as per 4.3 clause of ASME B 16.33.

5.1.5. Mechanical Strength

i. The body of the valves shall be capable of withstanding without deformation or leakage as per ASME B16.33 with a Min. torque of 90 Nm, as applied to a pipe being connected to the valve.

ii. Valve shall be capable of withstanding without deformation or leakage, when bending moment as per Table 3 of ASME B 16.33, if applied to a pipe connected to the valve.

iii. The valves shall be capable of withstanding 25 Nm impact without breakage or leakage.

iv. Vendor shall submit Model Number along with catalogues in English along with un-priced bids.

1. Maximum turning torque to operate the valve as per table 5 of ASME B 16.33

6.0 INSPECTION AND TESTING

- SUPPLIER shall submit Inspection Test Plan to CLIENT/CLIENT's representative for approval and also provide required certification as mentioned in MR.
- Inspection shall be carried out as per Technical Specifications and approved Inspection Test Plan.
- SUPPLIER shall furnish all the material test certificates, proof of approval/license from specified authority as per specified standard, at the time of final inspection of each supply lot of material. Also, all above mentioned certificates to be furnished in soft copy to BPCL.
- Even after third party inspection, BPCL reserves the right to select a sample randomly from each manufacturing batch and have these independently tested. should the results of these tests fall outside the limits specified in BPCL technical specifications, then BPCL reserves the right to reject all production supplied from the batch.

6.1. Testing

The Isolation valves shall be tested as per EN331/ASME B 16.33 only. Supplier shall submit detailed datasheet and QAP for approval by BPCL/BPCL's representative before commencing the production. Testing shall be carried out as per approved QAP.

7.0 PACKAGING

Packing size to be mentioned to ensure uniformity in delivery conditions of the material being procured. Bidder shall submit the packaging details during offer and also complied with at the time of delivery. The material for each SOR Item is essentially required to be packed in one case/packet /box.

ANNEXURE - I

S.NO	DESCRIPTION	DATA SHEET
1.00	**PROCESS DATA**	
1.01	Fluid	Natural gas
2.00	**Operating condition**	
2.01	pressure	4 bar (g)
2.02	Temperature (^{0}C)	0-48
3.00	**Design condition**	
3.01	pressure	-
3.02	Temperature (^{0}C)	0-60
4.00	**VALVE DATA**	
4.01	Size	As per SOR/Contract
4.02	Type	Isolation Ball Valve with Full Bore, NPT Female (Confirming to ANSI B1.20.1) ends for natural gas application. With operating knob, and locking arrangement with provision for sealing wire and lead seal (without Key). Valve full open/close position shall be at 90^0.
4.03	Rating	125 #
4.04	End connection	End connection should be NPT Female (conforming to ANSI B1.20.1).
4.05	Body material	Forged Brass (ASTM B 283, Alloy UNSC37700) with Nickel/ Chrome Plated.
4.06	Ball material	Forged Brass (ASTM B 283, Alloy UNSC37700) with Hard Chrome/Nickel Plated with Teflon Seat
4.07	Stem	-
4.08	Seat & seal	-
4.09	Fire safe	-
4.10	Anti blow out	-
4.11	Antistatic	-
4.12	Extension stem	-
4.13	Operator	Butterfly arrangement
5.00	**PAINTING**	-
5.01	Surface preparation	-
5.02	Primer	-
5.03	finish	-
5.04	insulation	-
6.00	**TEST**	
6.01	Hydrostatic shell test	
6.02	Test pressure	6.0 bar(g)
6.03	Test medium	-
6.04	Hydrostatic seat test	6.0 bar(g)

6.05	Test pressure	-	
6.06	Test medium	-	
6.07	Functional test	-	
6.08	Test pressure	-	
6.09	Leak test	-	
6.10	Impact test	AS per PARTICULAR SPECIFICATION	
6.12	Bending Test	AS per ASME B 16.33 / PARTICULAR SPECIFICATION	
6.13	Torque test	AS per PARTICULAR SPECIFICATION	
6.14	Turning torque test	As per ASME B 16.33	
6.15	Antistatic test	-	
6.16	Fire test	-	
6.17	Visual and dimensional examination	-	
Note		Unless otherwise stated all tests will be witnessed by the purchaser	
7.0		**QUALITY CONTROL**	-
7.01		Material certificates	EN 10204, 3.2 Certificate
7.02		All testing certificates	-

NOTE: 1. Lever type handle are not acceptable.

2. Minimum Nickel/ Chrome Plated on the ball & body of appliance ball valve shall be 25 Micron.
3. The above specified tests in PARTICULAR SPECIFICATION/Data sheet are minimum However, the other

   Remaining/specified tests shall be done as per ASME B 16.33

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