



INDRAPRASTHA GAS LIMITED

TENDER DOCUMENT

FOR

PROCUREMENT OF BRASS VALVES

TENDER DOCUMENT NO. IGL/ET2/CP/CP18448

**PART - II OF II
TECHNICAL VOLUME**

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SECTION I

INTRODUCTION

OPEN DOMESTIC TENDER**SECTION I
INTRODUCTION****SUPPLY OF BRASS VALVES****TENDER DOCUMENT NO. IGL/ET2/CP/CP18448****1.0 INTRODUCTION**

Indraprastha Gas limited (IGL) (hereinafter referred as “*Purchaser*”) is a leading natural gas retailing and distribution company and is a joint venture of GAIL India Ltd., BPCL and Govt. of NCT of Delhi. It is supplying Piped Natural Gas (PNG) to domestic, commercial and Industrial consumers and Compressed Natural Gas (CNG) to automobiles through steel / PE pipeline networks in NCT of Delhi & NCR along with geographical areas in UP, Haryana and Rajasthan state.

2.0 PURPOSE

The present document covers the technical specifications for the procurement of Brass Valves.

3.0 SCOPE

The brief scope of work includes Manufacturing, Testing, Inspection and supply of Brass valves to IGL’s designated stores located in NCT of Delhi, NCR, UP, Rajasthan and Haryana.



SECTION II

MATERIAL REQUISITION FOR SUPPLY OF BRASS VALVES

1.0 GENERAL

This document along with the referred and attached Technical Specifications for Brass Valves and other referred specifications, codes and standards describes the minimum requirements for design, manufacturing, inspection, testing, supply, and performance guarantee, packing & shipment for Brass Valves.

The VENDOR shall provide a statement of compliance with his technical offer, confirming that the product offered complies with the specification and documents referred to therein. It is the VENDOR's sole responsibility to highlight any deviation/exception made to this MR and its attachments in a separate and complete list of all discrepancies (if any), and deviations in his technical offer for COMPANY review. All deviations subsequently must be agreed by the COMPANY in writing.

2.0 SCOPE

Indraprastha Gas Ltd (IGL) intends to augment the PNG Network. Therefore, Vendor scope shall include, but not limited to the design, manufacturing, inspection, testing, supply, packing & shipment for Brass Valves.

Brass Valves shall be supplied, as per IGL specification for supply of Brass Valves.

VENDOR shall be responsible to meet the requirements of this material requisition with its attachments, and the documents referred to within, in order to ensure safe and trouble free operation.

In case of conflicting requirements amongst any of the specified standards, the standard having the most stringent requirement shall be governing. It is the VENDOR's responsibility to resolve these conflicts before proceeding with design, manufacturing, inspection, testing, supply, and packing & shipment for Brass Valves. All deviations/ conflicts shall be subjected to IGL review and approval.

3.0 DESCRIPTION OF GOODS AND/OR SERVICES

This document covers supply of for Brass valves to be used in City Gas Distribution Project in NCT of Delhi, U.P., Haryana and Rajasthan by IGL.

The scope of supply covers design, manufacturing, inspection, testing, supply, packing & shipment and documentation requirements of these items in accordance with the requirements of this Requisition.

Sr. No.	Material Description	Quantity (Nos.)	Lot Size	
			Minimum	Maximum
1	Isolation Ball Valve 1"	19,700	500	2000
2	Isolation Ball Valve Size 1/2"	15,70,000	10,000	80,000

The above quantities are indicative and for evaluation purpose only. Purchase order/ Release order will be released considering consumption rate and stock position.

4.0 VENDOR'S COMPLIANCE

Vendor shall submit his bid in full compliance with the requirements of this MR and attachments.

Compliance with this material requisition in any instance shall not relieve the Vendor of his responsibility to meet the specified performance.

5.0 COMPLIANCE WITH SPECIFICATION

The VENDOR shall be completely responsible for the design, manufacturing, inspection, testing, supply, and packing & shipment for supply of Brass Valves shall strictly be in accordance with the Material Requisition and all attachments thereto.

Any exception must be highlighted by the Bidder at bid stage and will be considered accepted only after written approval.

6.0 INSPECTION AND TESTING

VENDOR shall carryout various tests as per applicable codes and standards, specifications, other attachments to the bid package and as per the VENDOR's approved QA and QC plan. Tests certificates shall be submitted for IGL review and approval.

IGL / Its authorized representative or certifying agency shall have access to inspect the material at any stage during manufacture.

For all inspections and tests specified to be witnessed or observed, bidder shall ensure that a written notification reaches the purchaser at least 5 days prior to the date of Material getting ready for inspection and testing.

During inspection material certificates, shop test data, certificates for raw material and other relevant information shall be furnished for purchaser's perusal so as to ascertain that the specifications and quality are complied with.

Witnessing of inspection and testing by Third Party Inspector are required as per VENDOR's Quality Assurance System. VENDOR shall obtain approval of their quality Assurance System from IGL prior to commencement of manufacturing activities.

7.0 PACKING AND FORWARDING

VENDOR shall ensure proper support and packaging of the items to avoid any damage during shipment. All exposed parts shall be protected against physical damage and weather conditions.

The packaging shall be suitable for outdoor storage.

Packed material shall have a detailed duplicate packing list clearly identifying the packed items with respective material. One packing list shall be placed inside the material package and other shall be properly secured on the outside.

VENDOR shall dispatch and transport the items to IGL designated places.

8.0 LIST OF ATTACHMENTS

The table below lists the documents which are integral part of this Material Requisition. The applicable revision index of each document is mentioned in the column below the current Material Requisition revision index. However, the documents specified herein represents the minimum requirements. The owner reserves the right to request the additional certification documents relevant to the aforementioned scope, as deemed necessary.

S.NO	DESCRIPTION	DOCUMENT NO.	REVISION
1	Technical Specifications of Brass Valves		
2	Quality Assurance Plan		
3	Datasheet of Brass Valves		

9.0 DOCUMENTS & DATA REQUIREMENTS

The table hereunder specifies the quantities and the nature of the documents to be submitted by the VENDOR to the ENGINEER.

The documents required at the inquiry stage and to be included in the bid are listed under column A. The documents required after award of the AGREEMENT and subject to the written approval of the ENGINEER are listed under column B.

The final and certified documents are listed under column C.

Any document, even when preliminary, shall be binding and therefore duly identified and signed by the VENDOR. It shall bear the ENGINEER's Project reference, the Material Requisition number and the identification number.

THE DOCUMENTS ARE FULLY PART OF THE SUPPLY WHICH SHALL BE COMPLETE ONLY IF AND WHEN THE DOCUMENTS COMPLYING FULLY WITH THE MATERIAL REQUISITION REQUIREMENTS ARE RECEIVED BY THE ENGINEER.

Item	Documents and Data	A	B		C	
		Number of copies	Number of copies	Required date	Number of copies	Required date
1	List of Raw Material Manufacturer	3	3	2 weeks	3	Along With Dispatch/ Shipment
2	Drawing / Catalogue / Data Submittal List	3	3	2 weeks	3	Along with Dispatch/ shipment
3	QA/QC Program	3	3	2 weeks	3	Along with Dispatch/ shipment
4	Manufacturer TestCertificates				3	Along with Dispatch/ shipment
5	Material Certificate				3	Along with Dispatch/ shipment
6	Final Technical File with Inspection Report				3	Before claimof final payment

NOTES

- 1) Durations in column B (Required date) are weeks after Purchase Order date.
- 2) Durations in column C (Required date) are weeks after document approval.
- 3) Due date of each document may be proposed.
- 4) Final technical file shall be supplied in hard copy as indicated, and in electronic format (pdf acrobat) to owner.
- 5) All documents shall be supplied in English language.
- 6) Documents listed in the bid document are the minimum requirement. VENDOR shall submit all documents required to complete design to establish material suitability during supply / Dispatch of the product.

10.0 OTHERS

1. VENDOR shall furnish in his offer the complete details, data, and documents required as per the enquiry and as per the standard practice.
2. VENDOR shall ensure that all the items supplied by him are new and free from defects. Vendor shall adhere to the Particular Technical Specification for the supply of materials specified in section 3 of this document.
3. The VENDOR shall be completely responsible for the design, manufacturing, inspection, testing, supply, packing & shipment, testing, inspection, preparation for shipment and transport of the above pipe shall strictly be in accordance with the Material Requisition and all attachments thereto



SECTION III

PARTICULAR TECHNICAL SPECIFICATION (PTS) FOR SUPPLY OF BRASS VALVES

1.0 SCOPE

The scope of work shall cover design, manufacturing, inspection, testing, supply, packing & shipment and transportation for the supply of Brass Valves as per technical requirements / specification for City Gas Distribution Project in NCT of Delhi, U.P., Haryana and Rajasthan.

2.0 GENERAL

2.1 Definitions

Subject to the requirements of the context, the terms (hereafter listed in alphabetical order) used in this specification are given the following meaning:

Agreement	Designates the agreement concluded between the Client and the Vendor, under which the latter undertakes to the former the Goods and/or Services according to the stipulations which are agreed and specified in the form of an order.
Client	Designates the purchaser of the Goods and/or Services, which are the subject of the Agreement.
Vendor/Supplier	Designates the individual or legal entity with whom the order has been concluded by the Client. The term "Vendor / Supplier" may be used in differently for a Supplier, a Manufacturer, an erection Vendor/Supplier, etc.
Days - Weeks – Months	Specify the number of calendar days, weeks or months and not of working days, weeks or months.
Client's representative	designates the individual or legal entity to which the Client has entrusted various tasks in relation with the carrying out of his project.
Goods and/or Services	Designate, depending on the case, all or part of the drawings or documents, substances, materials, materiel, equipment, structures, plant, tools, machinery, to be studied, designed, manufactured, supplied by the Vendor/Supplier under the agreement, including all the studies, tasks, works and services specified by the order. The terms Goods or Services may by indifferently used one for the other as required by the context.
Project	Designates the aggregate of Goods and/or Services to be provided by one or more Vendor / Supplier.

2.2 Review and/or Approval

Whenever Client review and/or approval is requested on a document to be submitted by the Vendor/Supplier or before an action is implemented by the Vendor/Supplier, such review and/or approval shall always be requested in writing by the Vendor/Supplier to the Client and/or the Client representative before any action subject of this review and/or approval is taken.

Client approval shall always be given in writing.

2.3 Codes, Standard and Legal Requirements

The design, manufacturing, materials, testing of the brass valves shall be in accordance with the International codes and standards mentioned in the present specification. Brass Valves shall be approved to EN 331 (latest edition) or equivalent standards and also with the other Codes, Standards and Legal requirements as applicable for the project. Brass valves shall be in compliance to the PNGRB requirements.

2.4 Material specification for brass valves

Please refer Datasheet

2.4.1 Markings

Markings shall be provided & shall include:

- i) Manufacturer's name (AA) – Nomenclature shall be approved by IGL / IGL representative during QAP approval).
- ii) Month and Year of Manufacturing (MM/YY).
- iii) Nominal Size (Inch).
- iii) Rate working pressure in Bar(g).
- iv) Embossing on valves shall be "EN 331" only.

2.4.2 Packaging

Isolation valve 1"	20 nos. per box	Packed in corrugated cardboard boxes of standard design, & surrounded by polyester band & mentioned description & weight.
Isolation valve 1/2"	100 nos. per box	Packed in corrugated cardboard boxes of standard design, & surrounded by polyester band & mentioned description & weight.

2.4.3 Gas Tightness

Valves shall be leak tightness tested in closed position and shall not leak to atmosphere in open and closed position when subjected progressively to internal air pressure of first 0.006 barg and then to at least 1.5 times the maximum operating pressure (MOP) of the valve. This test shall be performed as per EN331 (latest edition).

2.4.4 Temperature resistance test

This test shall be carried out as per EN331 (latest edition).

2.4.5 Mechanical Strength

- i) The body of the valves shall be capable of withstanding, without deformation or leakage, a min. torque as per EN331 (latest edition) as applied to a pipe being connected to the valve.
- ii) Valve shall be capable of withstanding, without deformation or leakage, a min. bending moment as per EN331 (latest edition) as applied to a pipe being connected to the valve.
- iii) The valves shall be capable of withstanding impact without breakage or leakage as per EN331 (latest edition).
- iv) Vendor shall submit Model Number along with catalogues in English language along with un-priced bids.
- v) Maximum turning torque to operate the valve as per EN331 (latest edition).



SECTION IV

DATASHEET OF BRASS VALVE

DATA SHEET - ISOLATION VALVE

S.NO	DESCRIPTION	DATA
1.00	PROCESS DATA	
1.01	Fluid	Natural Gas
2.00	Operating condition	
2.01	Pressure	4 bar (g)
2.02	Temperature (°C)	0 - 45
3.00	Design condition	
3.01	Pressure	6 bar (g)
3.02	Temperature (°C)	-5 to 60
4.00	VALVE DATA	
4.01	Size	1" & 1/2"
4.02	Type	Isolation Ball Valve, Full Bore with NPT (Confirming to ANSIB1.20.1) Female Threaded Ends (both inlet & outlet) for natural gas application with operating knob and locking arrangement, sealing wire and lead seal (without Key). Valve full open/close position shall be at 90°. The material is required for Domestic Natural Gas Service.
4.03	Pressure Rating	*
4.04	End connection	End connection should be NPT Female (conforming to ANSIB1.20.1).
4.05	Body material	Total body shall be of Forged Brass (ASTM B 283, AlloyUNSC37700) with Nickel / hard Chrome Plated. UTS – Min. 345 Mpa & Elongation 25 %
4.06	Ball material	Hard Chrome / Nickel Plated (*), Forged Brass (ASTM B283, Alloy UNSC37700) with Teflon Seat. UTS – Min. 345 Mpa & Elongation 25 %
4.07	Stem	*
4.08	Seat & seal	*
4.09	Fire safe	*
4.10	Anti blow out	*
4.11	Antistatic	*
4.12	Extension stem	NA
4.13	Operator	Butterfly type Handle withlocking arrangement.
5.00	TEST	
5.01	Functional / PneumaticTest	
	Test Pressure	1.5 times the maximum operating pressure
	Test medium	Air
5.02	Bending Test	As per EN331 (latest edition)
5.03	Torque Test	As per EN331 (latest edition)
5.04	Turning Torque Test	As per EN331 (latest edition)
5.07	Visual and dimensional examination	As per QAP
Note	Unless otherwise stated all tests will be witnessed by the purchaser	
6.00	QUALITY CONTROL	
6.01	Material certificates	EN-10204, 3.2 Certificate
6.02	All testing certificates	*
7.00	Nickel / hard ChromePlating	
7.01	Body, Ball etc.	* (Note-3)

NOTE:


- 1.0 All Tests shall be carried out as per EN-331 (Latest Edition).
- 2.0 Data / Information as marked “ * “ shall be provided by Vendor / Manufacturer for review and approval by Client.
- 3.0 Nickel / hard Chrome Plating thickness shall be 10 micron \pm 2 micron on valve body and ball.



SECTION V

QUALITY ASSURANCE PLAN (QAP) FOR ISOLATION VALVE

INDRAPRASTHA GAS LTD.	QAP – ISOLATION VALVE	IGL/ET2/CP/CP18448
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 INDRAPRASTHA GAS		QUALITY ASSURANCE PLANISOLATION VALVE				QAP NO : QAP/IGL/ET2/CP/CP18448		Rev. 00
						Date :		
SR. NO.	INSPECTION AND TESTING	QUANTUM OF CHECK / TEST	PROCEDURE	ACCEPTANCE CRITERIA AND CERTIFICATE	FORMAT OF RECORD	INSPECTION BY		REMARKS
						Manufacturer	TPIA	
1.0	Raw Material							
1.1	Metallic Parts (Chemical / Physical Requirement)	One in each heat	As per ASTM B 283 (ALLOY UNS C37700) / EN 331	As per ASTM B 283 (ALLOY UNS C37700) / EN 331	MATERIAL TEST CERTIFICATE	P	R	
1.2	Springs, Seat, Stem, Seat, Seals and Lubricants	One in each heat	As per EN 331 / Manufacturer's Standard	As per EN 331 / Manufacturer's Standard	MATERIAL TEST CERTIFICATE	P	R	
2.0	Performance Test of Final Product :							
2.1	Gas Tightness Test	100%	As per EN 331	As per EN 331	TEST REPORT	P	W = Ten nos. per size per Lot	
2.2	Bending Test	One no. per Heat per Size	As per EN 331	As per EN 331	TEST REPORT	P	W = One no. per size per Lot	
2.3	Turning Torque Test	One no. per Heat per Size	As per EN 331	As per EN 331	TEST REPORT	P	W = One no. per size per Lot	
2.4	Temperature Resistance Test	One no. per Heat per Size	As per EN 331	As per EN 331	TEST REPORT	P	W = One no. per size per Lot	
2.5	Flow Capacity Test	One no. per Heat per Size	As per EN 331	As per EN 331	TEST REPORT	P	W = One no. per size perLot	
2.6	Immersion test	100%	As per EN 331	As per EN 331	TEST REPORT	P	W = Ten nos. per sizeper Lot	
3.0	Final Inspection :							
3.1	Visual Inspection (Free from defects)	100%	As per EN 331	As per EN 331	INSPECTION REPORT	P	W = Ten nos. per sizeper Lot	
3.2	Dimension Tolerances (Min. length of engagement , OD , wall thickness)	100%	As per Approved Drawing	As per Approved Drawing	INSPECTION REPORT	P	W = Ten nos. per sizeper Lot	
3.3	Marking	100%	As per EN 331	As per EN 331	INSPECTION REPORT	P	W = Ten nos. per sizeper Lot	
4.0	Final Documentation	100%	As per P.O. / SS	As per P.O. / SS	EN 10204 3.2 CERTIFICATE	P	H	
LEGEND: R - Review, W - Witness, H - Hold, P - Perform, TPIA - Third Party Inspection Agency, CA - Control Authority (Owner / Owner's representative)								

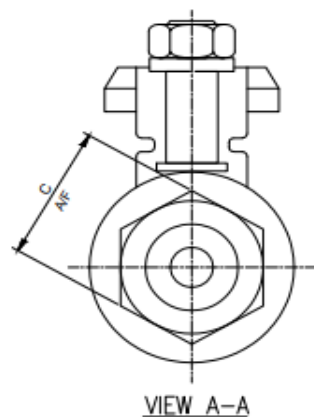
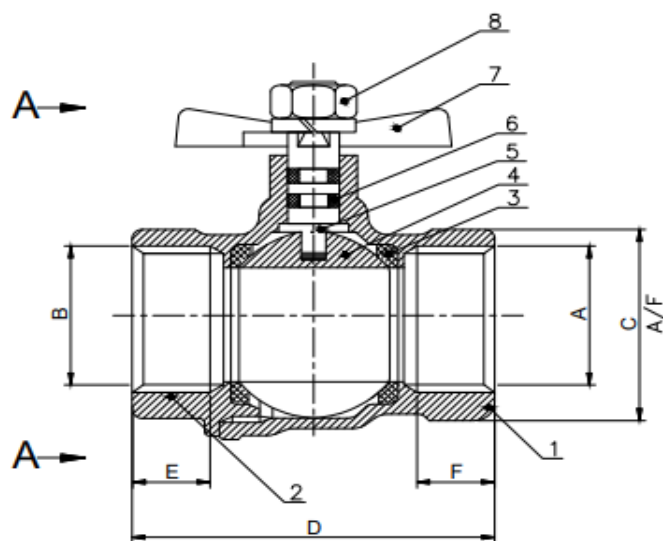
Notes: -

- 1 The Above Testing and acceptance criteria are minimum requirements, however, manufacturer shall ensure that the product shall also comply to the additional requirements as per Standard Specification (SS).
- 2 The supplier shall submit their own detailed QAP prepared on the basis of above / Standard specification for approval of Owner/Owner's representative.
- 3 Owner/Owner representative shall review/approve all the documents related to QAP/Quality manuals/Drawings etc. submitted by supplier.
- 4 Contractor shall in coordination with Supplier/Sub vendor shall issue detailed Production and Inspection schedule indicating the dates and the locations to facilitate Owner/Owner's representative and TPIA to organize Inspection.
- 5 Special manufacturing procedures have to be specially approved or only previously approved procedures have to be used, in case of conflict between specifications more stringent condition shall be applicable.
- 6 Owner / Owner's representative including TPIA will have the right to inspect any activity of manufacturing at any time.
- 7 All reference Codes/ Standards, Documents, P.O. Copies shall be arranged by vendor / supplier for reference of TPIA/IGL at the time of Inspection.
- 8 At the time of delivery of material in stores, vendor will submit copy of all related document of inspection along with release note & MTC.
- 9 All Tests shall be carried out as per EN-331 (Latest Edition).



SECTION VI

DRAWING OF ISOLATION VALVE



TECHNICAL SPECIFICATIONS

MEDIUM	NATURAL GAS
END CONNECTION	1/2", 1" NPT(F) at both Inlet and Outlet
OPERATING PRESSURE	4 bar(g)
OPERATING TEMPERATURE	0°C TO 45°C
DESIGN PRESSURE	6 bar(g)
DESIGN TEMPERATURE	0°C TO 65°C
OPERATOR	Knob and Locking Arrangement with Butterfly type Handle
MATERIAL OF CONSTRUCTION (Refer Data Sheet of Isolation Valve attached in PTS)	<p>Body : Forged Brass (ASTM B 283, Alloy UNSC37700) with Hard Nickel/ Chrome Plated.</p> <p>Ball : Forged Brass (ASTM B 283, Alloy UNSC37700) with Hard Nickel/ Chrome Plated.</p>

MATERIAL LIST


Item	Part	Material
1	Body	Brass
2	End Cap	Brass
3	Ball Seat	PTFE
4	Ball	Brass
5	Stem	Brass
6	O-Ring	NBR
7	Handle	Steel, Nickel Plated / Aluminum, Powder Coating
8	Stem Nut	Steel, Nickel Plated

DIMENSION TABLE

SIZE	A	B	C	D	E (Min.)	F (Min.)
1/2"	1/2" NPT(F) x 14 TPI	1/2" NPT(F) x 14 TPI	$^{+1.0}_{-0.25}$	$^{+1.0}_{-0.56}$	15.5	15.5
1"	1" NPT(F) x 11.5 TPI	1" NPT(F) x 11.5 TPI	$^{+1.0}_{-0.38}$	$^{+1.0}_{-0.76}$	18.5	18.5

NOTE:

1. ALL DIMENSIONS ARE IN MM UNLESS NOTED OTHERWISE.
2. ALL NPT THREADS SHALL BE AS PER ASME B1.20.1.
3. ALL DIMENSIONS MARKED "*" SHALL BE PROVIDED BY VENDOR.
4. DIMENSIONS MENTIONED IN TABLE ARE MINIMUM REQUIREMENT.
5. GA DRAWING AS SHOWN IS INDICATIVE ONLY. ACTUAL SHAPE / SIZE SHALL BE AS PER VENDOR'S OWN GA DRAWING.

OWNER:  INDRAPRASTHA GAS LIMITED

TITLE: **GA DRAWING OF ISOLATION VALVE**

DRG. NO. DRG/IGLET2/CP/CP18 SHEET 1 OF 1