



GOA NATURAL GAS PVT. LTD.

{A Joint Venture of GAIL Gas Ltd & Bharat Petroleum Corporation Limited (BPCL)}

HIRING OF AGENCY UNDER RATE CONTRACT FOR PNG METER INSTALLATION, PNG CONVERSION AND DIRECT MARKETING ACTIVITIES IN GASIFIED SOCIETIES OF NORTH GOA GEOGRAPHICAL AREA

Tender No: GNGPL/PROJ/C&P/2026/T-30 Dated 30/09/2026

Technical Volume - I

**LIMITED DOMESTIC COMPETITIVE BID
(BID SUBMISSION ONLY THROUGH E-MAIL)**

Note to Bidders:

- Sub-contracting is **strictly prohibited** for this tender. Any form of sub-contracting will lead to disqualification or termination of the contract.
- Bidders who are MSME are neither exempted from submission of EMD / bid bond nor eligible for purchase preference under ppp-2012.
- Bidders are required to quote their tenders keeping in view the climatic conditions and geographical terrain of Goa.

1.0 SCOPE OF WORK

The main scope of work comprises laying, testing, and commissioning of GI/ Cu pipe installation (LMC) and Direct Marketing Services for PNG Connections to Domestic, for City Gas Distribution project including installation of Meters / Regulators etc., as per SOR. The scope also covers all the activities associated with the supply of materials (except free issue items).

OWNER's SCOPE OF SUPPLY (FREE ISSUE ITEM).

- PE Pipes of sizes from 20mm up to 125mm Dia. along with meters & Regulators, DRS, MRS, SR without cover box and Metering skid.

CONTRACTOR'S SCOPE OF WORK

Supplied by the contractor

- Powder coated GI Pipes size from 1/2", 3/4", & 12mm copper pipe and its associated fittings.
- Isolation & Appliance Valves.
- Supply of Copper tubing & Surakhsha Rubber hose and all materials required for natural gas conversion.
- As other materials required for smooth execution of project over and above as mentioned.

All above supply quantity as per relevant SOR item and shall be procured from owners approved vendors only after approval from GNGPL/ Or Owner representative & as per instruction of Engineer-in- charge (EIC).

Generally, the following shall constitute the contractor's scope of work but not limited to:

1. Contractor to provide Work Implementation & Execution plan along with a schedule for execution and work implementation as per QA/QC plans to be issued by Owner/ Owner's representative. Contractor has to submit the Construction/ Execution procedures before commencement of work to Owner/ Owner's representative for approval.
2. Prior to start of construction activity, contractor shall carry out the route survey and prepare the approval for construction (APC) drawings marked for proposed gas pipe line laying and submit to OWNER/ PMC for approval. The standard templates and color coding as per Owners standard.
3. Obtaining clearances and coordination with concerned RWA of the allotted area for internal network laying and obtaining NOC from RWA after completion of work.
4. Transportation of Free Issue material from OWNER stores to contractor stores and proper storing, stacking, providing security, insurance cover during transportation and storage, laying, commissioning and handing over pipelines to owner.
5. Obtaining the approval for optimum route and ROU from the concerned authority and EIC.
6. Contractor should submit following set of daily reports (Planning, Manpower, Material Inventory, DPR) and monthly reports (QC, Meter reconciliation, material reconciliation, DPR, etc.) Contractor should submit daily site wise activity geo stamped and timestamped photos to Engineer in Charge.

7. GA. 1 supervisor required for each site area. 1 HSE person required for GA.
8. Fabrication, supply and inspection of approved quality GI sleeve, HDPE duct and half concrete sleeves and other material, fittings to be supplied by the contractors as per the provisions of tender.
9. Supply, fabrication & installation of Plate markers, valve chamber etc. as per the directions of the EIC/Owner's representative.
10. Maintaining the completed pipelines/installation for any failure and defect arising due to poor workmanship during defect liability period.
- 11.

Part II: GI/CU Installation

1. Installation of powder coated GI pipes of $\frac{1}{2}$ " , $\frac{3}{4}$ " , dia. Between transition fittings to customer's kitchen appliances including NPT threading of GI pipes, supply proper seal outs for threads to join fittings such as elbows, tees, connectors, regulators, meters, appliance & isolation valve etc., as per laid procedures and specification including clamping and sealing etc. The scratched powder coated GI pipe and fittings shall be painted after the testing of the GI installation.
2. Supply and Installation of GI fittings such as elbows, tees, connectors, etc., complete as per procedures and specifications including clamping and sealing etc.
3. Supply of clamps for fixing pipes, meters, valves wherever required. Providing consumable grout material, repair/restoration of walls/floors changes for the pipes including the materials required for conversions and tools and tackles etc. shall be complete as per specification.
4. Installation of Isolation Valve, Appliance Valve including supply of SS 316 Corrugated Flexible metal Hose (Copper tubing), etc., to complete the connection to the customer's appliance/stove.
5. Cleaning, flushing, pneumatic testing and commissioning to the GI pipe and fittings, meters, valves etc., as per specification and hand over the same to Owner/customer to the entire satisfaction of EIC.
6. Conversion of all types of LPG kitchen appliance to NG based appliance along with supply and installation of Steel Reinforced Flexible Rubber Hose as per IS 9573.
7. Preparation and submission of Ready for Conversion (RFC) card for each house indicating the laid GI pipe including fittings, mentioned the reasons, if connection is not provided to the customers and deviation statements on completion/commissioning of work.
8. Approval of customer on RFC card & recording Joint Meter Reading (JMR) of customer.
9. Details for commercial connection
10. To Demonstrate the Customer regarding use, safety and maintenance related aspects of NG based appliances and installations.
11. Dismantling of scaffolding/temporary structures and cleaning of site & restore the site as per its original condition.
12. Restoration of walls, flooring and other damages while executing the above ground installation.

13. All risers and lateral pipe shall be clamped to the building at intervals not exceeding 1 m in place of 1.5m. Two clamps to be installed at each bend fittings or Tee fittings. Clamps should be 150mm away from each joint.

Contractor shall conduct Cu joining Qualification Test for jointers Contractor has to supply different types/sizes of approved clamps.

14. Pneumatic testing of Riser at 2 bar (g) for 2 hours and Copper testing at 80 mbar for 5 minutes shall be done.
15. Only pretested riser shall be erected using pulley. Pretesting shall be done with compressed air @ 2 bar (g) for minimum duration of 30 minutes.

All the painting work must be done after completion of testing activity only

Testing of GI / Copper Installation * Arrangement for pressurizing the installation should be shown with diagram. The testing of GI riser pipe up to regulator inlet point shall be done with isolation valve in open condition at TF side and closed condition at regulator side. PPT/Riser Testing and MMT/RFC must be certified by TPIA.

16. If tapping exceeds more than 15meters, will be chargeable from customer." It should be aware to customer at the time of either route survey or AFC drawing and shall be communicated to GNGPL/ Or Owner representative.

17. All GI fittings must be Powder coated.

18. Inspection: It is responsibility of contractor to get Job Card / RCF check drawing certified at site only by TPIA/Owner's Representatives. Each meter geo tagged location and time stamped photo required at the time of commissioning

19. Certified copies of RFC card in form of editable Auto-Cad drawings, PDF and hard copy to be submitted along with geo co-ordinates of Riser to be submitted. JMR to mention geo co-ordinates stamped and time stamped meter reading photo WAH ropes must be certified by PETZL and all WAH accessories must be of PETZL make, only Printable

material i.e. RFC book and sticker as per owner design for each connection must be in contractor's scope in place of Client's scope as per their format.

20. The contractor shall supply the Calibrated Go-No Go Gauge and BSPT/ NPT (as decided) Gauges 1 set each of 1/2" and 1".
21. Any other activities not mentioned/covered explicitly above, but otherwise required for satisfactory completion/operation/ safety/ statutory/ maintenance of the works shall also be covered under the Scope of work and has to be completed by the Contractor within specified schedule at no extra cost to Owner.

Part IV: Marketing of PNG

1. Contractor shall coordinate with Resident Welfare Associations/Managing committee of the Societies/areas/House owners for various types of permissions/assistance required for conducting the survey, completing the registration process, and other activities related to laying of pipeline network & project execution.

2. Surveys of household population in the colony/society allocated by owner/owner's representative for collection of registration for creating a database with respect to potential domestic customers and then submit a report in the format prescribed by owner.
3. Contractor shall collect the refundable security deposit and other applicable charges as informed by EIC for providing domestic connections within the customer's premises from all individual households as per the areas released by EIC on prevailing terms and conditions as decided by GNGPL from time to time.
4. Contractor shall collect filled registration forms along with Cheques/Drafts and submit the listing with details of registration form and corresponding payment details in the prescribed formats. The listing of cheques/DD's being deposited to be provided in the prescribed formats along with duly stamped bank deposit slip on a weekly basis.
5. Contractor shall seek information from GNGPL/EPMC regarding the approximate time period in which connection will be given to the customers and inform them accordingly through a formal communication.
6. Contractor shall attend meeting the RWA or any other public forum as per day and time specified by the EIC.
7. For marketing of the PNG connections, contractor shall use an intelligent combination of the following techniques. Marketing and advertisement shall be in consultation with

EIC after obtaining the necessary permissions from all concerned authorities/RWA's etc. All promotional items stated below shall be in scope of contractor.

- a. Leaflets
 - b. Posters
 - c. Frequently asked questions (FAQ)
 - d. Banners
 - e. Awareness cum Registrations Camps
 - f. Inserts in Cable TV's
 - g. Audio/Visual Presentations
 - h. Demonstrations of Meter/Regulators
 - i. Tele Marketing
 - j. Door to Door Marketing
 - k. Mailers
 - l. Any other marketing activities, as advised by EIC.
8. Depending on need EIC may instruct DMA to undertake special campaign for registration of domestic connections by combination of one or more than one activity in specified/all areas.

9. Contractor shall generate MIS for all visits, Payment collected, progress/action plan of sales team regarding the status of registrations, market penetration and submission of the cheques to GNGPL on day to day basis. These records will be maintained in the prescribed formats specified by EIC and copies (Soft copy in USB/Pen drives/CDs and hard copy in printouts) will be submitted to EIC/Authorized representatives on weekly basis.
10. Contractor shall mobilize the marketing team of sufficient size for carrying out marketing activities. The number of personnel to be mobilized will be as per the requirements as advised by EIC depending on the number of households targeted from time to time.
11. Contractor shall ensure that its marketing executives/office staff should communicate the correct information to consumers and conduct them in a dignified manner when representing GNGPL. On receipt of any complaint regarding misbehavior/any other conduct by the persons employed by the contractor, the same shall be immediately brought to the knowledge of EIC. The contractor shall be completely responsible for consequences including any legal or financial implication for any act misbehavior on the part of persons employed/Contracted by him/her with prospective customer of GNGPL.
12. Contractor shall ensure that their marketing executives/office staffs have proper police verification(s) and should carry the photo identity card (P-ID), issued by the contractor, while making visits on behalf of GNGPL.
13. Registrations from unassigned areas will not qualify as successful & complete registration.

2.0 CONDITIONS FOR ISSUE OF MATERIALS

Whenever any material is issued by Owner, following conditions for issue of material in addition to other conditions specified in the contract shall be applicable.

1. Necessary indents will have to be raised by the Contractor as per procedure laid down by the Engineer-in-charge from time to time, when he requires the above material for incorporation in permanent works.
2. Materials will be issued only for permanent works and not for temporary works, enabling works etc. unless specifically approved by the Engineer-in-charge and the same shall not be taken into account for the purpose of materials reconciliation.
3. The contractor shall bear all other cost including lifting, carting from issue points to work site/ contractor's store, custody and handling etc. and return of surplus/ serviceable scrap materials to Owner's storage points to be designated by the Engineer-in-charge etc. No separate payment for such expenditure will be made.
4. No material shall be allowed to be taken outside the plant without a gate pass.
5. The contractor shall be responsible for proper storage, preservation and watch & ward of the materials.

3.0 RECONCILIATION OF OWNER SUPPLIED MATERIALS

Every month, the contractor shall submit an account for all materials issued by Owner in the Performa prescribed by the Engineer-in-charge. On completion of the work the contractor shall submit "Material Appropriation Statement" for all materials issued by the Owner in the Performa prescribed by the Engineer-in-charge.

		QUALITY ASSURANCE PLAN ISOLATION VALVE				QAP NO : 1007-CD-MC-QAP-001		Rev. 0
						Date : 13.04.17		
						Prepared by: MD		
						Checked by: ADE		Approved by: AD
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	Seat & Stem Seal	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	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 per Lot	
3.0	Visual Inspection (Free from defects)	100%	As per EN 331	As per EN 331	INSPECTION REPORT	P	W = Ten nos. per size per Lot	
4.0	Dimension Tolerances (Min. length of engagement , OD , wall thk.)	100%	As per Approved Drawing	As per Approved Drawing	INSPECTION REPORT	P	W = Ten nos. per size per Lot	
5.0	Marking	100%	As per EN 331	As per EN 331	INSPECTION REPORT	P	W = Ten nos. per size per Lot	
6.0	Final Documentation		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 / GNGPL Consortium 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).								



QUALITY ASSURANCE PLAN

VPC-QAP-PE-003

11	Pressure Drop.	Mechanical Characteristics		ISO 17778	EN 1555-3	Approval Certificate	P	R	
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Note:

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 / technical 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.
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LEGENDS:

M – Monitor

R – Review

H – Hold

TPIA – Third Party Inspection Agency

P – Perform

W – Witness

C – Customer

V – Verification of Mfg. Test Certificate

Prepared by	Reviewed / Checked by	Approved by
(Name / Signature / Date / Stamp)	(Name / Signature / Date / Stamp)	(Name / Signature / Date / Stamp)



QUALITY ASSURANCE PLAN APPLIANCE VALVE

QAP NO : 1007-CD-MC-QAP-002

Rev. 0

Date : 13.04.17

Prepared by: MD

Checked by: ADE

Approved by: AD

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	Seat & Stem Seal	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	Final Product							
2.1	Gas Leak Tightness Test	100%	As per EN 331	As per EN 331	TEST REPORT	P	W = Ten nos. per size per Lot	
2.2	Bending & 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	
2.3	Operating 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 per Lot	
3.0	Visual Inspection (Free from defects)	100%	As per EN 331	As per EN 331	INSPECTION REPORT	P	W = Ten nos. per size per Lot	
4.0	Dimension Tolerances (Min. length of engagement , OD , wall thk.)	100%	As per Approved Drawing	As per Approved Drawing	INSPECTION REPORT	P	W = Ten nos. per size per Lot	
5.0	Marking	100%	As per EN 331	As per EN 331	INSPECTION REPORT	P	W = Ten nos. per size per Lot	
6.0	Final Documentation		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: -

- 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)
- The supplier shall submit their own detailed QAP prepared on the basis of above / Technical specification for approval of Owner/Owner's representative.
- Owner/Owner representative shall review/approve all the documents related to QAP/Quality manuals/Drawings etc. submitted by supplier.
- 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.
- 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.
- Owner / Owner's representative including TPIA will have the right to inspect any activity of manufacturing at any time
- All reference Codes/ Standards, Documents, P.O. Copies shall be arranged by vendor / supplier for reference of TPIA / GNGPL Consortium at the time of Inspection
- At the time of delivery of material in stores, vendor will submit copy of all related document of inspection along with release note & MTC.
- All Tests shall be carried out as per EN-331. However, other additional tests, which are not covered in EN-331, shall be carried out as per ASME B16.33.



QUALITY CONTROL TABLES

GI PIPES CONFORMING TO IS:1239 (PART-1):2004 (Latest edition)

S.NO.	COMPONENTS /OPERATIONS	CHARACTERISTICS	CLASSIFICATION	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENTS	ACCEPTANCE NORMS	FORMAT OF RECORD	VENDOR	TPIA
1	2	3	4	5	6	7	8	9	10	11
1	Raw Material Inspection									
1.1	RAW MATERIAL	IDENTIFICATION	Major	Co-relation with MIC.	100%	IS: 1239 / P.O. Spec.	IS: 1239 / P.O. Spec.	T.C.	p	R
		CHEMICAL COMPOSITION	Major	Chem. Analysis	One I Heat	IS: 1239 / P.P. Spec.	IS: 1239 / P.O. Spec.	IIR	p	R
		PHYSICAL PROPERTIES (T.S., Y.S., % Elong.)	Major	Lab. Test	One/ Heat	IS: 1239 / P.O. Spec.	IS: 1239 / P.O. Spec.	IIR	p	R
		VISUAL & DIMENSIONS	Major	Visual & Measur.	100%	IS: 1239 / P.O. Spec.	IS: 1239 / P.O. Spec.	IIR	p	R
2	IN PROCESS INSPECTION									
2.1	PIPE MANUFACTURING	SURFACE DEFECT	Major	Visual	100%	IS:1239/P.O. Spec.	IS: 1239 / P.O. Spec.	IIR	p	R
		DIMENSIONS (O.D., THK., LENGTH etc.)	Major	Measure.	As Per Relevant Std.	IS: 1239 / P.O. Spec.	IS: 1239 / P.O. Spec.	IIR	p	R
		MASS (Kg Mtr.)	Major	Measure.	As Per Relevant Std.	IS: 1239 / P.O. Spec.	IS:1239/P.O. Spec.	IIR	p	R
2.2	END PREPARATION	END TYPE & DIMENSIONS	Major	Visual & Measur.	100%	IS: 1239 / P.O. Spec.	IS:1239/P.O. Spec.	IIR	p	R
2.3	PHYSICAL PROPERTIES	TENSILE, ELONGATION & BEND FLATTENING TEST AS APPLICABLE	Major	Lab. Test	As Per Relevant Std.	IS: 1239 / P.O. Spec.	IS: 1239 / P.O. Spec.	IIR	p	R
2.4	LEAK TEST	HYDRAULIC	Critical	Leak Test	100%	IS: 1239 / P.O. Spec.	IS: 1239 / P.O. Spec.	IIR	p	w
2.5	GALVANIZING	ZINC COATING UNIFORMITY & MASS	Major	Mass of Zinc Coating & Uniformity	2 Sample 1 Shift	IS: 4736	IS: 4736	IIR	p	w
2.6	FINISH, PAINTING & MARKING	OVERALL FINISH, PAINTING & MARKING	Major	Visual	100%	IS: 1239 / P.O. Spec.	IS: 1239 / P.O. Spec.	IIR	p	R

 QUALITY CONTROL TABLES										
GI PIPES CONFORMING TO IS:1239 (PART-1):2004 (Latest edition)										
S.No.	COMPONENTS/ OPERATIONS	CHARACTERISTICS	CLASSIFICATION	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENTS	ACCEPTANCE NORMS	FORMAT OF RECORD	VENDOR	TPI A
1	2	3	4	5	6	7	8	9	10	11
3	FINAL INSPECTION									
3.1		FINISH DIMENSIONS	Major	Visual & Measur.	Random As Per IS:4711	IS: 1239 / P.O. Spec.	IS: 1239 / P.O. Spec.	IR	P	W
	FINISHED PRODUCT	PHYSICAL PROPERTIES (TENSILE, ELONGATION & BEND FLATTENING TEST AS APPLICABLE)	Major		Random As Per IS:4711	IS: 1239 / P.O. Spec.	IS: 1239 / P.O. Spec.	IR	P	W
		LEAK TEST (HYDRAULIC TEST)	Critical	Leak Test	Randomly (10% of lot qty)	IS: 1239 / P.O. Spec.	IS: 1239 / P.O. Spec.	IR	P	W
		REVIEW OF ALL TEST CERTIFICATE / REPORTS & VENDOR'S IIR	Major	Review	-	IS:1239/ P.O. Spec., EN 10204	IS:1239/ P.O. Spec., EN	R	P	R

LEGENDS H-HOLD P-PERFORMANCE R-REVIEW W-WITNESS TC-TEST CERTIFICATE IIR-INTERNAL INSPECTION REPORT CA-CONTROL AUTHORITY TPIA - THIRD PARTY INSPECTION AGENCY

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 Particular Technical specifications (PTS).
2. The supplier shall submit their own detailed ITP prepared on the basis of above I Technical specification for approval of Owner/ Owner's representative.
3. Owner / Owner representative shall review / approve all the documents related to ITP / Quality manuals / Drawings etc. submitted by supplier
4. Contractor shall in coordination with Supplier / Sub vendor 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 / GNGPL consortium 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, dispatch clearance note & MTC.



QUALITY CONTROL TABLES GI FITTINGS

SR. No	DESCRIPTION	COMPONENT	CHARACTERISTICS	QUANTUM CHECK	OF	REF. DOC.	ACCEPTANCE NORMS	RECORD	INSPECTION			REMARKS
									MANUF.	TPIA	CA	
1	Chemical composition of material	Test Bar	Marking and correlation	IS: 14329 Grade BM 300		PO, Material specification	IS 14329/ PO, Material specifications	Mill TC	R	R	R	
2	Chemical composition of Final product	Fitting	Chemical properties	IS: 14329 Grade BM 300		PO, Material specification	IS 14329/ PTS	TC	P	E	R	
3	Cleaning and Flushing	Fitting	Descaling	100%		IS 14329/ PTS	IS 14329/ PTS	Inspection Report	W	RW	R	
4	Destructive Testing (Tensile, Elongation & Hardness)	Fitting	Mechanical Properties	IS 14329		IS 14329/ PTS	IS 14329/ PTS	Lab Report	W	W	RW	
5	Compression Test	-	Malleability	Three samples per Heat		IS 1879/ PTS	IS 1879/ PTS	Inspection Report	P	W	RW	
6	Pressure Test	-	-	IS 1879		IS 1879/ PTS	IS 1879/ PTS	Inspection Report	P	W	RW	As per sampling procedure of IS 1839
7	Alignments of Thread	-	-	IS 1879		IS 1879/ PTS	IS 1879/ PTS	Inspection Report	P	W	RW	
8	Galvanizing	Fitting	Integrity of galvanized coating	As listed in IS 4759		IS 4736/ PTS	PTS	Inspection / Lab Report	W	W	RW	
9	Final inspection	Fitting	Visual, Dimensions, Finish, weld bevel, Bore, Marking, Colour coding	IS 1879		IS 1879/ PTS	IS 1879/ PTS	Inspection Report	W	W	R	
10	Marking	-	-	100%		PTS	PTS	Inspection Report	P	R	R	
11	Documentation	-	-	-		As per the terms and conditions of the PO & PTS	As per the terms and conditions of the PO & PTS	Compliance certificate	-	-	-	

LEGENDS H-HOLD P-PERFORMANCE R-REVIEW W-WITNESS TC-TEST CERTIFICATE IIR-INTERNAL INSPECTION REPORT

CA-CONTROL AUTHORITY TPIA-THIRD PARTY INSPECTION AGENCY

- 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 Particular Technical specifications(PTS)
- The supplier shall submit their own detailed ITP prepared on the basis of above I Technical specification for approval of Owner / Owner's representative
- Owner / Owner representative shall review / approve all the documents related to ITP / Quality manuals / Drawings etc. submitted by supplier
- Contractor shall in coordination with Supplier / Sub vendor issue detailed Production and Inspection schedule indicating the dates and the locations to facilitate Owner / Owner's representative and TPIA to organize Inspection
- Special manufacturing procedure shall 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.
- Owner/ Owner's representative including TPIA will have the right to inspect any activity of manufacturing at any time.
- All reference Codes / Standards documents, P.O. Copies shall be arranged by vendor I supplier for reference of TPIA / GNGPL Consortium at the time of inspection.
- At the time of delivery of material in stores, vendor will submit copy of all related document of inspection along with release note, dispatch clearance note & MTC.



QUALITY CONTROL TABLES COPPER TUBE

						INSPECTION		
SR. No	DESCRIPTION	QUANTUM OF CHECK	PROCEDURE	ACCEPTANCE CRITERIA (As per EN 1057/ PTS)	FORMAT OF RECORD	VENDOR	TPIA/ CLIENT	REMARKS
1	Raw material: Chemical Requirement	As per EN 1057	As per EN 1057	Material grade Cu-DHP/ CW 024A Cu + Ag : Min 99.9% P: 0.0015% TO 0.040%	MTC	P	R	
2	Final product: Chemical Requirement	As per EN 1057	As per EN 1057		Inspection Report	P	W	
3	Physical test (Tensile, Elongation, Hardness etc.)	As per EN 1057	As per EN 1057	Elongation - Min 30% Hardness- 75 to 100 HV	Inspection Report	P	W	
4	Carbon film test	As per EN 1057	As per EN 1057	Maximum Residual carbon- 0.20 mm/ sq. dm	Inspection Report	P	W	
5	Carbon content test	As per EN 1057	As per EN 1057	As per EN 1057/ PTS	Inspection Report	P	W	
6	Drift expanding test	As per EN 1057	As per EN 1057	As per EN 1057/ PTS	Inspection Report	P	W	
7	Hydrostatic test	As per EN 1057	As per EN 1057	Min 35 bar/ 10 second	Inspection Report	P	W	
8	Eddy current test	As per EN 1057	As per EN 1057	As per EN 1057/ PTS	Inspection Report	P	W	
9	Dimensional Inspection (O.D, Wall thk, Length etc.)	As per EN 1057	As per EN 1057	As per EN 1057/ PTS	Inspection Report	P	W	
10	Visual Inspection (Free from defect)	As per EN 1057	As per EN 1057	As per EN 1057/ PTS	Inspection Report	P	R	
11	Marking	As per EN 1057	As per EN 1057	As per EN 1057/ PTS	Inspection Report	P	R	
12	Documentation	-	As per EN 1057	As per EN 1057/ PTS	Inspection Report	P	R	

LEGENDS H-HOLD W- WITNESS

P- PERFORM

TPIA- THIRD PARTY INSPECTION AGENCY

CA- CONTROL AUTHORITY

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QUALITY CONTROL TABLES COPPER FITTINGS

						INSPECTIO		
SR. No	DESCRIPTION	QUANTUM OF CHECK	PROCEDURE	ACCEPTANCE CRITERIA (As per EN 1057/ PTS)	FORMAT OF	VENDOR	TPIA/ CLIENT	REMARKS
1	Raw material: Chemical Requirement	one in each heat	As per EN 1254	Material grade Cu-DHP/ CW 024A Cu+ Ag : Min 99.9% P: 0.0015% TO 0.040%	MTC	P	R	
2	Final product: Chemical Requirement	one in each heat	As per EN 1254		Test Report	P	W	
3	Carbon in bore tests (Carbon film test, carbon content test)	one in each heat	As per EN 1254	As per EN 1254/ PTS	Test Report	P	W	
4	Stress corrosion resistance test	one in each heat	As per EN 6957	As per ISO 6957/ PTS	Test Report	P	W	
5	Hydrostatic pressure test	100%	As per EN 1254	Min 37.5 bar @ 15 min.	Test Report	P	W	
6	Pneumatic pressure test	100%	As per EN 1254	Min 6 bar @ 10 second	Test Report	P	W	
7	Dimensional Inspection (O.D, Wall thk, Length	100%	As per EN 1254	As per EN 1254/ PTS	Test Report	P	W	
8	Visual Inspection (Free from defect)	100%	As per EN 1254	As per EN 1254/ PTS	Test Report	P	R	
9	Marking	100%	As per EN 1254	As per EN 1254/ PTS		P	R	
10	Documentation	-	As per EN 1254	As per EN 1254/ PTS	Inspection Report	P	R	

LEGENDS H-HOLD W-WITNESS P-PERFORM TPIA- THIRD PARTY INSPECTION AGENCY CA- CONTROL AUTHOIRTY

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QUALITY CONTROL TABLES BRASS FITTINGS

SR. No	DESCRIPTION	QUANTUM OF CHECK	PROCEDURE	ACCEPTANCE CRITERIA (As per EN 1057/ PTS)	FORMAT OF RECORD	INSPECTION		REMARKS
						VENDOR	TPIA/ CLIENT	
1	Raw material: Chemical/ Physical Requirement	one in each heat	As per EN 2164	As per EN 12164/ PTS	MTC	P	W	Preferably witness by CA
2	Final product		As per EN 2164			P	W	
3	Resistance dezincification	one in each heat	As per EN 6957	As per EN 1254	Test Report	P	W	
4	Carbon bore test	one in each heat	As per EN 2164	As per ISO 6957/ PTS	Test Report			
5	Stress corrosion resistance test	one in each heat	As per EN 2164	As per ISO 1254/ PTS	Test Report	P	W	
6	Hydrostatic pressure test	100%	As per EN 2164	Min 37.5 bar @ 15 min.	Test Report	P	W	Preferably witness by CA
7	Pneumatic pressure test	100%	As per EN 12164	Min 6 bar @ 15 second	Test Report	P	W	Preferably witness by CA
8	Visual Inspection (Free from defect)	100%	As per EN 12164	As per EN 1254/ PTS	Test Report	P	R	
9	Dimensional Inspection (O.D, Wall thk, Length etc.)	100%	As per EN 12164	As per EN 1254/ PTS	Test Report	P	W	
10	Marking	100%	As per EN 12164	As per EN 1254		P	R	
11	Documentation	-	PO/ PTS	PO/ PTS	Test Report	P	H	

LEGENDS H-HOLD W-WITNESS

P-PERFORM

TPIA- THIRD PARTY INSPECTION AGENCY

CA- CONTROL AUTHORITY

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QUALITY CONTROL TABLES STEEL REINFORCED RUBBER HOSE

SR. No	DESCRIPTION	TEST PARAMETERS	QUANTUM OF CHECK	PROCEDURE	ACCEPTANCE CRITERIA (As per EN 1057/ PTS)	CERTIFICATE	INSPECTION		REMARKS
							VENDOR	TPIA/ CLIENT	
1	Raw Material	Chemical & Mech Test of material os Steel Reinforced Rubber Hose (Lining, Reinforced	100%	IS 9573	IS 9573	MTC	P	R	
2	Final Product								
3	Final Inspection	Mechanical Properties	one (1) per batch	Tensile Strength = 10Mpa (Min.) El (Lining & Cover) is 200 & 250 resp.	PTS & IS 9573	Inspection Report	P	W	
		Resistance of Lining to n-pentane	one (1) per batch	Shall not exceed 10% absorbed & 5% extractable as per Cl. No. 5.2 of PTS	Cl. 5.4.3.2 of IS 9573	Inspection Report	P	W	
		Adhesion Test	one (1) per batch	Min. Adhesion shall be 2 KN/m as Cl. No. 5.3 of PTS	Cl. 5.5.1 of IS 9573	Inspection Report	P	W	
		Low Temperature Flexibility Test	One (1) per batch	Conditioned at -40 deg for 50 hours and bent at 180 deg around mandrel of dia 12 times the Nominal Bore of hose as per Cl no. 5.4 of PTS	Cl. 5.5.2 of IS 9573	Inspection Report	P	W	
		Flexibility of hose at 1.5 x design pressure	one (1) per batch	Bend empty to radius 95 mm without Flattening & suffering structural damages.	Cl. 5.5.3 of IS 9573	Inspection Report	P	W	Witness by CA
		Ozone Resistance Test	one (1) per batch	Cl. No 5.9 of PTS	Cl. 5.5.4 of IS 9573	Inspection Report	P	W	Witness by CA
		Hydrostatic/ Proof Pr. Test	100%	Min. as per Cl. No. 5.7 of PTS	Cl. 5.5.1 of IS 9573	Inspection Report	P	W	Witness by CA
		Burst test	one (1) per batch	Cl. No. 5.9 of PTS	Cl. 5.5.2 of IS 9573	Inspection Report	P	W	
		Grip Strength test	one (1) per batch		Cl. 5.5.7 of IS 9573 & Annex A of IS 9573	Inspection Report	P	W	
		Burning Test	one (1) per batch	Shall not burn till 45 sec. as per Cl. No. 5.10	Cl. 5.5.8 of IS 9573	Inspection Report	P	W	
		Visual & dimensional check	100%	Cl. No. 4.0 of PTS & IS 9573	IS 9573	Inspection Report	P	R	
		Cover color- Orange	100%	Cl. No. 5.2.3 of PTS	PTS & IS 9573	Inspection Report	P	R	
4	End Fittings (Adaptors, nuts, washer)	-	100%	As per Cl. No. 6.0 of PTS	PTS & IS 9573	Inspection Report		R	
5	Marking	-	100%	As per Cl. No. 7.0 of PTS	PTS & IS 9573	Inspection Report	P	R	
6	Documentation	-	-	As per term & conditions of P.O & PTS	As per term & conditions of P.O & PTS	3.2 Certification as per EN 1024	P	H	

LEGENDS H-HOLD W-WITNESS

P-PERFORM TPIA- THIRD PARTY INSPECTION AGENCY

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