REPLY TO BIDDER'S PRE-BID QUERIES-1

TENDER FOR PROCUREMENT OF 229 KM STEEL LINEPIPE TO MEET PROJECTS REQUIREMENT FOR ALL GAs OF IGL

TENDER DOCUMENT NO. IGL/ET2/CP/CP17996, Dated 20.05.2024

VCS REFRENCE NO. VCS/C&P/17028/PC/CS PIPE/17

Owner: Indraprastha Gas Ltd.

Consultant: VCS Quality Services Pvt. Ltd.

Pre-bid meeting held on 29.05.2024

Date: 24.06.2024

Sl. No.	Cl No.	Page No./Section	Description	Bidder's Query/Clarification	IGL/VCS Reply
			Technical		
1	Table-12 (Sr. No. 2.11,2.12,2.13)	113	Testing frequency during production: 1) Hot water Adhesion 24 h at 75°C ±3°C : 1/ shift (1 sample) 2) Cross section porosity : 1/ shift (2 samples) 3) Interface porosity : 1/ shift (2 samples)	Noted to conduct these tests, however for information these tests are required to conduct on FBE coating & destructive type test so we need to cut one pipe every shift for testing purpose. We propose to accept these testing during PQT only. Kindly Consider	Confirmed
2	5.4.4,Table- 5, 6 & 7	84,85	2) Adhesive layer: Strain at Break at 23°C ± 3°C ≥ 600% Stress at Yield at 23°C ± 3°C: ≥ 8 Mpa	Adhesive sample for testing shall be taken from extruded film.	Tender conditions shall prevail
3	8.4	100	Cosmetic Repair, Repair with Melt Stick, Patch Repair & Heat- shrinkable Sleeve (HSS) Repair	We will submit the repair qualification report provided by repair material manufacturer. During production we will perform the repair as per manufacturer recommendation and Approved Repair procedure.	Confirmed
4	Cl. 11.0 of Doc. No.: 17996-CGD-PL-MR-001	7	Bidder shall inspect of all coated line pipes in presence of Owner representative while handing over of pipes. Holiday inspection for visually damaged, coating damaged pipes etc. shall be carried out by bidder while handing over of pipes. Repair of damaged pipes, beveled end defects and damaged coating (including supply of coating materials for repair) noticed at the time of handing over of coated pipes. All handling, lifting tools etc. required for inspection of coated pipes at Storage Yards shall be carried out by the bidder.	Bidder clarifies based on our standard practice that pipes are finally accepted through the holiday inspection and after satisfaction of the holiday inspection the pipe tagged by the accepted coated pipe number. Further that pipe to be shifted to the coating yard/storage area. Hence, the coating requirement is external 3LPE and the external PE thick surface is generally applicable for the mechanical protection during the handling of the pipes and there is minimum possible chance to observed holiday on 3LPE coating. However, the probability of holiday is only possible to come in case of coating damage. Hence, during the unloading of the pipes will be visually checked for damage, if the damage observed on the coated pipes, then the pipe to be checked for holiday inspection and the subsequent repair to be carried out as per approved repair procedure. Please Confirm.	Confirmed

REPLY TO BIDDER'S PRE-BID QUERIES-1

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VCS REFRENCE NO. VCS/C&P/17028/PC/CS PIPE/17

Owner: Indraprastha Gas Ltd.

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Sl. No.	Cl No.	Page No./Section	Description	Bidder's Query/Clarification	IGL/VCS Reply
5	Cl. 4.2 of Doc. No.: VCS-SS-PP-2003	79	The coating material manufacturers shall carry out tests for all properties specified in clause 5.4.1, 5.4.2 & 5.4.3 and Table 2, 3 & 4 respectively for each batch of epoxy, adhesive and polyethylene compound. The coating materials manufacturer shall issue test certificates as per BS EN 10204, 3.1 for each batch of materials supplied to Applicator/ Contractor indicating all contents/ parameters required for batch certification as per clause 9.3, Table 6 of ISO 21809-1:2018 and the same shall be submitted to Owner for approval prior to their use.	Bidder clarifies that material manufacturer will provide test certificate for all properties specified in Table 2, Table 3 and Table 4 of specification for each batch of epoxy, adhesive and polyethylene compound respectively. However all the properties will not be tested for each batch. Epoxy, Adhesive and Polyethylene manufacturer will provide batch test certificate for the measured value and typical value as mentioned below: **Epoxy Powder:** All Properties tested for each batch as per Table 2 **PE Adhesive:** MFR, Density and Water content results shall be reported as measured value for each batch whereas the Strain at break, Stress at yield and Vicat Softening Temperature will be reported as typical values supported by reputed lab reports. **High Density Polyethylene:** Density, Melt Flow Rate, Oxidation Induction Time, Carbon Black Content, Water Content results shall be reported as measured value for each batch. The properties –Hardness Shore D, Strain at break, Stress at yield, Vicat Softening Temperature, ESCR, Carbon black dispersion, UV resistance, Thermal Aging, Volume resistivity and Dielectric Withstand shall be reported as typical value supported by independent lab test report valid for one year. For UV resistance, Thermal ageing and Coating Resistivity test bidder will submit independent laboratory test report furnished by material manufacturer. These test certificates will not be older than three years. Please Confirm.	Confirmed
6	FORM-A	164 of 208	FORM - A CHECK LIST - TECHNICAL d) A certificate from reputed international inspection agency (i.e. CEIL/ Lloyds/ BV/ DNV/ TUV/ ABS/ Moody/ AIBVincotte) is enclosed in 'Form-A' for proposed pipe mill, certifying that the proposed mill has the capability to produce linepipes complying technical requirements specified in the bid document.	This is with reference to the reply to our queries that we have received against the subject tender of IGL. Please note that we have received a format for the LINE PIPE MANUFACTURING MILL CAPABILITY CERTIFICATE, but the format for the COATING PLANT CAPABILITY CERTIFICATE is missing. Apart from that, we request that you please allow us to submit the mill capability certificate from the approved list of third-party inspection agencies specified in the tender for the proposed mill for the same type and equal or higher in terms of diameter, wall thickness, and material grade as quoted, issued in the last 12 months, reckoned from the bid due date, for any of the CGD projects, which shall be considered acceptable for this project as well. Please confirm so that we can proceed accordingly.	Refer Annexure-3, Corrigendum#4

TENDER FOR
PROCUREMENT OF 229 KM STEEL LINEPIPE TO MEET PROJECTS REQUIREMENT FOR ALL GAs OF IGL
TENDER NO. IGL/ET2/CP/CP17996

FORM-A **(SMLS)**

LINE PIPE MANUFACTURING MILL CAPABILITY CERTIFICATION

This is to certify that M/s _____ reference plant's production line _____ has following manufacturing facilities to manufacture _____ (type of pipes) line pipes as per API 5L PSL2 or equivalent.

Sl. No.	Description	Inspection Agency	
		Observation	Remarks on Conformity
A	**GENERAL INFORMATION**		
1.0	Detailed description of Organization (Structure, number of Employees, facilities, equipments, etc,) concerning the following:		
1.1	Overall structure of Mill Organization		
1.2	Line Pipe production facilities and Capacity		
1.3	Testing Laboratories		
1.4	Quality Control/Quality Assurance (QA/QC): Type and location of the testing facility and step-by-step operations followed to achieve High quality product as per technical specifications.		
1.5	Destructive & Non-Destructive testing facilities.		
1.6	Latest Audit certified documents performed during production by one of the International Inspection Agencies (as listed in SCC).		
2.0	Company has valid ISO 9001-2000 Certificate and established Quality manual.		
B	**Manufacturing Process & INSPECTION PROCEDURES**		
1.0	Give detailed description of the Manufacturing Process to produce Line pipes as per technical documents		
1.1	Inspection of raw material (Billets)		
1.2	Billet cutting		
1.3	Charging		
1.4	Piercing		
1.5	Rolling & Hot cutting		

Sl. No.	Description	Inspection Agency	
		Observation	Remarks on Conformity
1.6	Heat Treatment		
2.0	**Following shall be certified for Mill capability:**		
2.1	Inspection of raw material (Billets))		
2.2	**Piercing of Billets** During piercing the billets machine should have tracking system to control piercing and temperature.		
2.3	**Reheating & rolling** Pipe mill shall have a continuous monitoring arrangement for better dimensional control, minimum repairs and higher production.		
2.4	**Inspection & Testing**		
	Type and location of the testing facility and step-by-step operations followed to achieve High quality product as per technical specifications.		
	List of all relevant DT & NDT procedures (including Acceptance criteria)		
	List of NDT qualified personnel with valid ASNT-1A certificates for level III and Level II operators.		
	All instruments used shall have a valid Calibration certificates.		
	Capability of mill and procedure followed to produce pipes within the technical specifications with special attention to clause number 7.2 of TS (Out of roundness limited to 5 mm).		
	Capability of Mill and procedure followed to perform Impact test at –20/0 Deg.C. as per technical document requirements.		
	Work Instructions and approved procedures to be displayed at each and every work centres for ready reference		
	Pipe mill shall have the facilities, controls		

Sl. No.	Description	Inspection Agency	
		Observation	Remarks on Conformity
	and recording facility for all furnaces for online process and heat treatment		
	Various procedures established shall have approval from International Inspection agencies as listed in SCC.		

Overall acceptability

Acceptable / Not Acceptable

For & On behalf of

Signature
Name
Designation
Agency's name & Seal

Note: All pages of this report (Form-10A) shall be signed and stamped by the agency

FORM-A **(HFW/ERW)**

LINE PIPE MANUFACTURING MILL CAPABILITY CERTIFICATION

This is to certify that M/s _____ reference plant's production line _____ has following manufacturing facilities to manufacture _____ (type of pipes) line pipes as per API 5L PSL2 or equivalent.

Sl. No.	Description	Inspection Agency	
		Observation	Remarks on Conformity
A	**GENERAL INFORMATION**		
1.0	Detailed description of Organization (Structure, number of Employees, facilities, equipments, etc,) concerning the following:		
1.1	Overall structure of Mill Organization		
1.2	Line Pipe production facilities and Capacity		
1.3	Testing Laboratories		
1.4	Quality Control/Quality Assurance (QA/QC): Type and location of the testing facility and step-by-step operations followed to achieve High quality product as per technical specifications.		
1.5	Non-Destructive testing facilities.		
1.6	Latest Audit certified documents performed during production by one of the International Inspection Agencies (as listed in SCC).		
2.0	Company has valid ISO 9001-2000 Certificate and established Quality manual.		
B	**FABRICATION & INSPECTION PROCEDURES**		
1.0	Give detailed description of the Fabrication Process to produce Line pipes as per technical documents		
1.1	Inspection of raw material (Plates/Coils)		
1.2	Forming of the plates/Coils		

Sl. No.	Description	Inspection Agency	
		Observation	Remarks on Conformity
1.3	De-coiling and Inspection		
1.4	Edge preparation		
1.5	Forming		
1.6	Welding		
1.7	Testing		
2.0	**Following shall be certified for Mill capability:**		
2.1	Inspection of raw material (Plates/Coils) The machine shall have an inbuilt edge machining and Ultrasonic testing to test about 25mm width on both sides of the plate edges.		
2.2	**Forming of the plates/ Coils** During Forming and welding the machine should have tracking system to control welding groove and edge offsets.		
2.3	**Welding** Pipe mill shall have a continuous tack welding arrangement for better dimensional control, minimum repairs and higher production. Weld procedure qualified shall ensure testing of Impact at –20° C for Weld and HAZ.		
2.4	**Inspection & Testing**		
	Type and location of the testing facility and step-by-step operations followed to achieve High quality product as per technical specifications.		
	List of all relevant NDT procedures (including Acceptance criteria)		
	List of NDT qualified personnel with valid ASNT-1A certificates for level III and Level II operators.		
	Ultrasonic machines being used should		

Sl. No.	Description	Inspection Agency	
		Observation	Remarks on Conformity
	ensure tracking of weld seam during testing and representing defects on a printout.		
	All instruments used shall have a valid Calibration certificates.		
	Capability of mill and procedure followed to produce pipes within the technical specifications with special attention to clause number 7.2 of TS (Out of roundness limited to 5 mm).		
	HSAW mill shall ensure, prove and establish adequate methodology that the residual stresses are within acceptable limits (at least equal to cold expanded pipes).		
	Capability of Mill and procedure followed to perform Impact test at –20/0 Deg.C. as per technical document requirements.		
	Work Instructions and approved procedures to be displayed at each and every work centres for ready reference		
	Various procedures established shall have approval from International Inspection agencies as listed in SCC.		

Overall acceptability

Acceptable / Not Acceptable

For & On behalf of

Signature
Name

Designation
Agency's name & Seal

Note: All pages of this report (Form-10A) shall be signed and stamped by the agency

FORM-A

3 LPE EXTERNAL / INTERNAL COATING PLANT CAPABILITY ASSESSMENT

This is to certify that M/s _____ reference plant's production line _____ has following coating facilities to undertake 3 LPE External Coating and Internal Liquid Epoxy coating of Bare Line Pipes as per relevant standards attached in bid document.

S. No.	DESCRIPTION	INSPECTION AGENCY	
		OBSERVATION	REMARKS ON CONFORMITY
A.	**GENERAL INFORMATION**		
1.0	Detailed description of Organisation (Structure, number of employees, facilities, equipments, etc.) concerning the following		
1.1	Overall structure of Plant Organisation		
B	**EXTERNAL AND INTERNAL COATING FACILITIES & CAPACITY**		
1.0	Testing Laboratories		
1.1	Qualify Control/ Quality Assurance (QA / QC): Type and location of the testing facility and step-by-step operations followed to achieve high quality product as per technical specifications.		
1.2	Company shall have valid ISO 9001- 2000 certificate and established quality manual.		
C	**3 LPE COATING & INSPECTION PROCEDURES**		
1.0	Give detailed description of the coating process to produce coated pipes as per technical documents.		
1.1	Identification		
1.2	Review of the manufacturer's certificates of Base material (PE/Epoxy/Adhesive)		
1.3	Inspection of raw material (Epoxy / Adhesive / PE) batch wise at vendor laboratory		
	Surface preparation (Blasting & surface treatment)		
1.4	Pre-heating before abrasive blasting		

S. No.	DESCRIPTION	INSPECTION AGENCY	
		OBSERVATION	REMARKS ON CONFORMITY
1.6	Phosphoric acid treatment		
1.7	PH of pipe surface after phosphoric acid wash		
1.8	Salt contamination check after abrasive blasting		
1.9	Anchor pattern and degree of cleaned surface & degree of dust		
D	**COATING**		
2.1	Temperature of pipe before chromate application and visual application		
2.2	Temperature of pipe before epoxy application		
2.3	Temperature of PE, adhesive, epoxy		
2.4	Coating chamber and cooling chamber (inter coat time / cure time)		
2.5	Epoxy chamber / gun location/ number of guns / gun pressure		
2.6	PE & adhesive extruders RPM		
2.7	Line speed. Monitoring system for line speed shall be in place		
2.8	Epoxy/Adhesive/ PE film thickness / Total coating thickness		
2.9	**Following shall be certified for Plant Capability:**		
2.10	Inspection of Raw Material (Epoxy /Adhesive / PE) The plant shall have all in house test facilities for batch testing of incoming raw materials		
2.11	Pre Heating of Pipes before blasting Mill shall be equipped with required number of blasting stations and pre heating arrangement before 1 st blasting and also with facility for surface treatment before blasting (DM water wash station)		
2.12	Surface Treatment Mill shall be equipped with surface treatment facilities (chromating) before pre heating before epoxy chamber		

S. No.	DESCRIPTION	INSPECTION AGENCY	
		OBSERVATION	REMARKS ON CONFORMITY
2.13	Pre heating before Epoxy application Induction heater with high temperature tripping system along with visual and audio alarm indicators shall be installed		
2.14	Number of Epoxy guns and Positioning before adhesive application: Number of guns and gun pressure shall be sufficient to achieve desired thickness of epoxy on the pipe surface. Positioning / location (distance before adhesive application) of guns should be maintained to satisfy cure time requirement of epoxy.		
2.15	PE / Adhesive Extruders: PE / adhesive extruders RPM shall be maintained to achieve adhesive and final coating thickness.		
2.16	Cooling Chamber (Chiller): Length of cooling chamber should be sufficient to attain the coating pipe temperature out of cooling chamber as per requirement.		
2.17	Total coating thickness		
E	**Inspection and Testing**		
1.1	In house testing facility for all the lab testing and plant testing shall be in place.		
1.2	All the testing procedures for Raw material testing, 1st day production testing and routine testing shall be available.		
1.3	Lab testing: Raw Material testing Procedure qualification testing Routine testing etc.		
1.4	Plant testing: Impact test, Holiday test, Peel off testing, Procedures qualification tests, St Andrew Cross Test, cathodic disbandment test, Test on partly coated pipes etc.		

S. No.	DESCRIPTION	INSPECTION AGENCY	
		OBSERVATION	REMARKS ON CONFORMITY
1.5	All instruments used shall have valid calibration certificates. Availability of calibration reference standards and instruments.		
1.6	Final Dimensional & Visual check (cut back on both ends of the pipe)		
F	**Internal Coating**		
1.1	For internal coating facility for the in house testing of raw material and long duration procedure qualification test shall be ensured.		
1.2	Dust level after internal blasting to be ensured.		
1.3	Mixing ratio of Hardener and Liquid epoxy to be ensured.		
1.4	Facilities at yard for handling and storage of internal coated pipes to be ensured.		
1.5	Work instructions and procedures to be displayed at each and every work station for ready reference for both internal / external coating.		
1.6	Various procedures established shall have approval from international inspection Agencies.		
G	**Documentation & final certification**		

Overall acceptability:

ACCEPTABLE / NOT ACCEPTABLE

For & On behalf of

Signature
Name
Designation
Agency's Name & Seal

Note: all pages of this report (Form-13) shall be signed and stamped by agency

ANNEXURE-I

LIST OF ACCEPTABLE COMBINATIONS OF COATING MATERIALS

The following combinations of coating materials are considered acceptable. In case any of the combinations listed below are offered, details regarding properties of the offered materials need not be furnished with bid. However, In the event of award of contract, Applicator/ Contractor shall furnish the combination(s) proposed and re-confirmation of compatibility of the proposed combination (s) from the raw materials Manufacturers.

Epoxy Powder (Manufacturer)	Adhesive (Manufacturer)	PE Compound (Manufacturer)
JOTAPIPE AC 2002 (Formerly, CORRO-COAT EP-F 2002HW) (JOTUN) or SCOTCHKOTE 226N (3M) or PIPECLAD 2000/PIPECLAD 1000 (SHERWIN-WILLIAMS)	LUCALEN G3710E (LYONDELLBASELL)	LUPOLEN 4552 D (LYONDELLBASELL)
JOTAPIPE AC 2001 (Formerly, CORRO-COAT EP-F 2001) / JOTAPIPE AC 2002 (Formerly, CORRO-COAT EP-F 2002HW) / JOTAPIPE AC 1003 (Formerly, CORRO-COAT EP-F -1003HW) (JOTUN) or SCOTCHKOTE 226N (3M) or PIPECLAD 2000/PIPECLAD 1000 (SHERWIN-WILLIAMS)	ME 0420 (BOREALIS)	HE 3450H (BOREALIS / BOROUGE)
JOTAPIPE AC 2001 (Formerly, CORRO-COAT EP-F 2001) (JOTUN) or PIPECLAD 2000/PIPECLAD 1000 (SHERWIN-WILLIAMS) or SCOTCHKOTE 226N(3M)	LE149V (HYUNDAI ENGINEERING PLASTICS)	ET509B (HYUNDAI ENGINEERING PLASTICS)

Although the above combinations would be acceptable to the owner, the responsibility of suitability for application, performance and compliance to the coating system requirements shall unconditionally lie with the applicator / contractor.