



**REPLY TO BIDDER'S PRE-BID QUERIES**

**SUPPLY OF 3LPE COATED CS LINE PIPE IN NCT OF DELHI, UTTAR PRADESH, HARYANA AND RAJASTHAN**

**TENDER DOCUMENT NO. IGL/ET2/CP/CP17294, Dated 30.12.2022**

VCS REFERENCE NO. VCS/C&P/17028/PC/CS PIPE/05

Owner: Indraprastha Gas Ltd.

Consultant: VCS Quality Services Pvt Ltd.

Pre-bid meeting held on 05.01.2023

Date: 17.01.2023

Sl. No.	Reference & Cl No.	Section Description	Subject Description	Bidder's Query/Clarification	IGL/VCS Reply
<b>Commercial</b>					
1	Clause No. 7.6 of IFB Commercial Vol. I of II	Page No. 11 of 109	Bid Submission date and time	Our request to kindly extend the bid due date for atleast 10-15 days from 13.01.2023.	Refer Corrigendum-1, dated 13.01.2023
2	Clause No. 4.2 of IFB Commercial Vol. I of II	Page No. 10 of 109	<b>Basis of Delivery</b>	Please provide the destination wise detailed delivery address.	The state-wise quantities are already mentioned in Cl. No. 4.2 of IFB. The final destination for deliveries shall be shared during issuance of dispatch clearance as per tender.
3	Forms & Formats Commercial Vol. I of II	Page No. 81 of 109	<b>FORM 3</b> FORMAT FOR CERTIFICATE FROM STATUTORY AUDITOR FOR DETAILS OF SIMILAR GOODS/ WORK/ SERVICES SUPPLIED/ DONE DURING PAST 7 YEARS	Please allow us to authenticate Form 3 by Chartered Accountant / Statutory Auditor in place of Statutory Auditor only.	Tender Conditions shall Prevail
4	Forms & Formats Commercial Vol. I of II	Page No. 83 of 109	<b>FORM 4</b> CERTIFICATE FROM THE STATUTORY AUDITOR REGARDING SUPPLY OF GOODS/WORKS/SERVICES	Please allow us to authenticate Form 4 by Chartered Accountant / Statutory Auditor in place of Statutory Auditor only.	Tender Conditions shall Prevail
5	Forms & Formats Commercial Vol. I of II	Page No. 87 of 109	<b>FORM 8</b> COVERING LETTER ON LETTER HEAD FOR STATUTORY AUDITOR	Please allow us to authenticate Form 8 by Chartered Accountant / Statutory Auditor in place of Statutory Auditor only.	Tender Conditions shall Prevail
6	Forms & Formats Commercial Vol. I of II	Page No. 81 of 109	<b>FORM 3</b> FORMAT FOR CERTIFICATE FROM STATUTORY AUDITOR FOR DETAILS OF SIMILAR GOODS/ WORK/ SERVICES SUPPLIED/ DONE DURING PAST 7 YEARS  <b>Instructions 2:</b> The supply/ work/ services completed earlier than 5 years shall not be indicated here.	Please clarify whether the supply/ work/ services completed earlier than 5 years shall not be indicated or the supply/ work/ services completed earlier than 7 years shall not be indicated.	Refer Corrigendum-2
7	General Query	-	Stockpile readiness	To avoid difficulties due to undeveloped stockpiles and delay in deliveries due to the same, we request IGL to keep sites ready for unloading before despatch of material. LD shall not be imposed if the reasons for delay in delivery are found to be not attributable to us.	Noted. At the time of DCN we will ensure the availability of store/site.
8	Clause No. 5.1 of IFB Commercial Vol. I of II	Page No. 10 of 109	Bid should be valid for 90 days from the date of schedule submission.	Steel suppliers do not offer us the validity of more than 15 days. Considering the steel as a major input for manufacturing of pipes our pricing depend on the same. Hence we are requesting to keep the bid validity 45 days.	Tender Conditions shall Prevail
9	Clause No. 37.1 of ITB Commercial Vol. I of II	Page No. 35 of 109	<b>37.0 SPLIT OF AWARD</b> 37.1 It is intended to have two (2) suppliers for each of the items i.e. A, B, C & D in 70:30 ratio on L1/L1 negotiated rates. For this L-2 (L3...) bidder (or next available bidder in case L-2 does not agree to match) shall be called to match the price of respective item of SOR of L-1 bidder.	We request you to please do not to split the quantity in 70:30 ratio between L1 & L2 or L3 and award the full quantity of particular item to the single bidder.	Tender Conditions shall Prevail



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Sl. No.	Reference & Cl No.	Section Description	Subject Description	Bidder's Query/Clarification	IGL/VCS Reply
10	-	-	Legal and statutory requirement.	Please provide Legal and statutory requirement (if any)	Tender Conditions shall Prevail
11	Clause No. 4.1 of IFB Commercial Vol. I of II	Page No. 10 of 109	<p><b>Delivery Schedule</b></p> <p>Delivery of CS Pipes shall be completed in 4 lots and the details are as follow:-</p> <ul style="list-style-type: none"> <li>- Delivery of 1st lot shall be completed within 20 weeks from placement date of LOA/PO/ first intimation from IGL.</li> <li>- Delivery of 2nd lot shall be completed within 26-30 weeks from placement date of LOA/PO/ intimation from IGL.</li> <li>- Delivery of 3rd lot shall be completed within 36-40 weeks from placement date of LOA/PO/ intimation from IGL.</li> <li>- Delivery of 4th lot shall be completed within 46-50 weeks from placement date of LOA/PO/ intimation from IGL.</li> </ul>	Location wise & lot wise delivery needs to clarify in details for better understanding of delivery schedule	<p>Tender conditions shall Prevail. Further, Refer Annexure-I.</p> <p>However, there is no delivery required in Kanpur, Banda &amp; Chitrakoot in 1st &amp; 2nd lot. There may be variation in quantities in any location upto limit of 10% as already mentioned in Cl No. 4.2 of IFB.</p> <p>For 3rd and 4th lot, the details of final quantities shall be given during award of purchase order.</p>
12	Clause No. 8.1.2 of IFB Commercial Vol. I of II	Page No. 13 of 109	<p><b>Bidder Evaluation Criteria (BEC) - Technical</b></p> <p>The bidder must be a manufacturer of Carbon Steel Line Pipe and must have successfully supplied at least following specified quantities in a single order for hydrocarbon application during last 7 years reckon from the date of floating of e-Tender.</p>	The past track records of sizes & grades requested in the BEC Technical (8.1.2) are not matching with sizes & grades mentioned in the Brief Scope of Supply. Bidder request to provide clarification for the same.	We have checked the brief scope with relation to your queries & BEC as well which is in order. Hence, Tender conditions shall prevail
13	Clause No. 8.2.3 of IFB Commercial Vol. I of II	Page No. 14 of 109	<p><b>FINANCIAL</b></p> <p>If the bidder's working capital is inadequate for the item(s) quoted, the bidder should supplement this with a letter from the bidder's bank, having net worth not less than Rs.100 Crore, confirming the availability of the line of credit to cover the inadequacy of working capital required as above. Line of credit must contain Tender No., Tender Description and Client Name. Letter for line of credit must be issued by a scheduled bank. Format of line of credit letter from bank has been enclosed at Annexure-2.</p>	As the Working Capital requirement mentioned in the Tender Doc. is Rs.21,13,13,000/-. In case the Working Capital is inadequate or negative, our understanding is that we have to provide Line of Credit from our Bank confirming specific working capital requirement of Rs.21,13,13,000/- only for meeting minimum working capital requirement for the above mentioned tender. Please clarify in case different interpretation.	<p>Bidders understanding is correct.</p> <p>Refer Clause No. 8.2.3 Note-(a)</p> <p>If Working Capital is inadequate to meet the BEC requirement (For all items i.e. Rs. 21,13,13,000/-) Bidders needs to provide Line of Credit letter from Bank for working capital requirement of Rs.21,13,13,000/- only</p>
14	Clause No. 23.1 (iii) of ITB Commercial Vol. I of II	Page No. 29 of 109	<p><b>Preparation of Bids</b></p> <p>iii. Format for Certificate from Statutory Auditor for Details of Similar Goods/ Work/ Services Supplied/ Done During Past 7 Years as per Form 3</p> <p>iv. Certificate from the Statutory Auditor regarding Supply of Goods/Works/Services as per Form 4</p>	Bidder request to kindly allow to include Cost Auditors/Chartered Accountant/Chartered Engineer as well to provide Form-3 & Form-4 for the tender as it has been followed in past tender of IGL and other PSU's.	Tender Conditions shall Prevail



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Sl. No.	Reference & Cl No.	Section Description	Subject Description	Bidder's Query/Clarification	IGL/VCS Reply
15	Clause No. 22.1 of SCC Commercial Vol. I of II	Page No. 75 of 109	<b>CONTRACT-CUM-EQUIPMENT PERFORMANCE BANK GUARANTEE</b> Within twenty-one (21) Days of receipt of the Letter of Acceptance / Notification of Award, the successful bidder shall furnish to the Purchaser the Contract-Cum-Equipment Performance Bank Guarantee (CPBG) equivalent to 2.5% of contract value initially and 7.5% of individual release/purchase order value (Total order value will be inclusive of all taxes, duties and charges towards transportation, unloading etc. up to IGL site/store)	Considering Govt. of India Notification No. F.9/4/2020-PPD, dated 12/11/2020, bidder request to kindly allow to submit CPBG @ 3% of the total Contract/PO value.	Tender conditions shall Prevail. Further, Refer Corrigendum-2
16	Clause No. 9.0 of IFB Commercial Vol. I of II	Page No. 16 of 109	Bid Security	We understand that if a bidder will participate in more than one group ,bidder has to pay Maximum bid security amount of INR 20.00 Lakh only.	Bidders understanding is correct.
17	Clause No. 4.1 of IFB Commercial Vol. I of II	Page No. 10 of 109	<b>Delivery :</b> Delivery of CS Pipes shall be completed in 4 lots and the details are as follows :  - Delivery of 1st lot shall be completed within 20 weeks from placement date of LOA/PO/ first intimation from IGL.  - Delivery of 2nd lot shall be completed within 26-30 weeks from placement date of LOA/PO/ intimation from IGL.  Delivery of 3rd lot shall be completed within 36-40 weeks from placement date of LOA/PO/ intimation from IGL.  - Delivery of 4th lot shall be completed within 46-50 weeks from placement date of LOA/PO/ intimation from IGL.	1. Since the subject procurement is in 4 lots in view of this we request you to please clear lot wise quantities for all the Four lots at the time of Bidding stage before submission of bid.  2. We understand that deliveries of Lot 2, Lot 3 & Lot 4 quantities are linked with Lot 1 LOA/PO/ first intimation from IGL. Please confirm.	1. Tender conditions shall Prevail. Further, Refer Annexure-I. However, there is no delivery required in Kanpur, Banda & Chitrakoot in 1st & 2nd lot. There may be variation in quantities in any location upto limit of 10% as already mentioned in Cl No. 4.2 of IFB.  For 3rd and 4th lot, the details of final quantities shall be given during award of purchase order.  2. Confirmed, deliveries of lot-2, lot-3 and lot-4 is linked with LOA/PO/first intimation of IGL
18	Clause No. 4.2 of IFB Commercial Vol. I of II	Page No. 10 of 109	<b>Basis of Delivery</b> The basis of delivery shall be FOT, IGL Site/Store basis including unloading and stacking at IGL Site / Store at NCT of Delhi, Uttar Pradesh (Ghaziabad, Greater Noida, Muzaffarnagar, Meerut, Kanpur, Banda & Chitrakoot), Haryana (Gurugram & Karnal) and Rajasthan (Pali & Ajmer).	As the material will be supplied in IGL Stockyard located in Rajasthan, Haryana, UP, and Delhi -NCR State's which covers very large area. So we request you to please provide us location wise quantity distribution of each size supplied in the above-mentioned states. As transportation charges are very crucial & important aspect in bidding also it will have commercial implication and hence location wise size wise quantity details must be specified in a tender.	Tender Condition Prevails.  However, there is no requirement of delivery of steel linepipe in Banda, Kanpur & Chitrakoot in Lot-1 & lot-2.  For 3rd and 4th lot, the details of final quantities shall be given during award of purchase order.



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19	Clause No. 3.2 of IFB Commercial Vol. I of II	Page No. 9 of 109	The above quantities are indicative and for evaluation purpose only. Purchaser reserves the right to increase or decrease at the time of award.	<p>A) As there may be more than one Bidder in the ratio of 70%:30% for each item defined in the bidding documents. In view of this We request to give clarity on Quantity Variation percent. Please note that 30 % item wise quantity for item no. A, B &amp; D are too small to accommodate high quantity variation. So, negative quantity variation is likely to have cost impact on account raw material (steel) sourcing constraints. Hence we request you to clarify quantity variation at bid stage only so that any cost impact can considered at bid stage.</p> <p>B) We request for no negative variation for items with quantity less than 750 MT. Please note that such items will attract Minimum Order Quantity from steel suppliers. Hence any negative quantity variation will have huge cost impact.</p>	There will be quantity variation among locations only as per tender and there will be no negative quantity variation in overall tendered quantity.
20	Forms & Formats Commercial Vol. I of II	Page No. 81-83 of 109 & 87 of 109	<b>Form 3 , Form 4 , Form 8</b>	<p>We request IGL to accept authenticated formats from Chartered Accountant along with Statutory Auditor defined in the bidding documents.</p> <p>Note: Same was also accepted in a recent concluded tender No IGL/ET2/CP/EP16068, Dated 23.09.2020, IGL/ET2/CP/CP16483, Dated 14.06.2021.</p> <p>Also, we request IGL to accept the same authenticated documents used by Bidder in above refereed tender this will help IGL to reduce the bidding time and also save Bidder's cost for authentications.</p>	<p>Exemption was provided due to covid pandemic situation.</p> <p>Tender Conditions shall Prevail,</p>
21	Calause No. 37.0 of ITB Commercial Vol. I of II	Page No. 35 of 109	<p><b>Split of Award</b></p> <p>37.1 It is intended to have two (2) suppliers for each of the items i.e. A, B, C &amp; D in 70:30 ratio on L1/L1 negotiated rates. For this L-2 (L3...) bidder (or next available bidder in case L-2 does not agree to match) shall be called to match the price of respective item of SOR of L-1 bidder.</p> <p>37.2 However, IGL reserves the right to award complete supply to one bidder in case L2 (L3...) do not matches the L1 rates.</p>	<p>1. Please note that the given ratio of 70:30 is not workable for L2 (L3...) bidder as the 30% quantity defined is approx. 478MT for Item A, 650 MT for Item B which is not workable considering Manufacturing capacities of the prospective bidders &amp; Raw Material sourcing of part quantities.</p> <p>In the view of above we kindly request you to Limit the award of contract to L1 Bidder only.</p> <p>2. Also, if our above proposal is not accepted we request you to please accept single Lot delivery for 30% quantities</p>	Tender Conditions shall Prevail
22	Clause No. 57.0 of GCC Commercial Vol. I of II	62 of 109	<p><b>REPEAT ORDER</b></p> <p>Purchaser reserves the right, within 6 months of order to place repeat order upto 50% of the total order value without any change in unit price or other terms and conditions.</p>	We request you to limit repeat order within a month of PO instead of within a period of Six Month. Considering the less quantity of 30% for L2 Bidder. Please confirm	Not Applicable Refer Clause No. 19.0 of SCC
23	General		<b>General</b>	Please confirm whether Reverse Auction is applicable.	Not Applicable

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Sl. No.	Reference & CI No.	Section Description	Subject Description	Bidder's Query/Clarification	IGL/VCS Reply
<b>Technical</b>					
1	VCS-SS-PP-2003 REV. 04 Date: 05.08.2022 CI No.8.3.4.1	Chemical Pre-treatment	Phosphoric Acid Wash followed by De-ionized Water Wash (If specified)	JIL proposes that if salt contamination will more than 2 $\mu\text{g}/\text{cm}^2$ , Then Phosphoric Acid Wash followed by De-ionized Water Wash shall be done. Kindly consider.	Bidder's understanding is correct.
2	VCS-SS-PP-2003 REV. 04 Date: 05.08.2022 CI No.8.3.4.2		Chromate Treatment (if specified)	JIL proposed that chromate application shall be waived off. All Testes will be demonstrated as per approved QAP without application of chromate solution. Kindly Consider.	Tender Conditions shall prevail.
3	VCS-SS-PP-2003 REV. 04 Date: 05.08.2022 CI No.8.5.1.9	Impact Test	1.5 J Impact test at 0 °C shall be conducted on ring specimen obtained from epoxy coated pipe section of two pipes as per clause A.14 of ISO 21809-2. There shall be no holiday on impact area	JIL proposes that the impact test shall be reviewed in Raw Material Test Certificate. We don't have this test facility. Kindly Consider.	Tender Conditions shall prevail.
4	VCS-SS-PP-2003 REV. 04 Date: 05.08.2022 Table 10, SI. No.4	Size, shape and properties of virgin abrasive	Visual + Certification as per ISO 11124-3 Conformity to certificate and compliance with manufacturing/ working procedure	JIL understands that TC shall be reviewed. We don't have this test facility. Kindly Consider	Tender Conditions shall prevail.
5	VCS-SS-PP-2003 REV. 04 Date: 05.08.2022 Table 12, SI. No.2.7	Minimum Epoxy Layer Thickness (DFT)	Frequency: During Production: Start of shift & at breakdown / restart (partly coated)	JIL Purposes that Epoxy & Adhesive Layer Thickness shall be checked once in the beginning of shift every shift and whenever plant restart after any stoppage more than 6 hrs. Kindly Confirm.	Tender Conditions shall prevail.
6	VCS-SS-PP-2003 REV. 04 Date: 05.08.2022 Table 12, SI. No.3.1	Minimum Adhesive Layer Thickness			Tender Conditions shall prevail.



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7	VCS-SS-PP-2003 REV. 04 Date: 05.08.2022 Table 12, Sl. No.2.11	Hot Water Adhesion 24 h at 75°C+/3°C	Frequency: During Production: 1/shift (1 sample)	JIL proposes that the test is a destructive test. Hence the frequency of the test shall be 1/day. Kindly Consider.	Tender Conditions shall prevail.
8	VCS-SS-PP-2003 REV. 04 Date: 05.08.2022 Table 12, Sl. No.2.12	Cross-Section Porosity	Frequency: During Production: 1/shift (2 sample)		Tender Conditions shall prevail.
9	VCS-SS-PP-2003 REV. 04 Date: 05.08.2022 Table 12, Sl. No.2.13	Interface Porosity			Tender Conditions shall prevail.

BARE PIPE

10	VPC-SS-PP-2008 Rev No : 02 CI No. 9.3.2	Tensile Properties	The finished pipe (after all heat treatment an expansion or sizing operations) shall conform to the requirements of Table 3B of API Spec. 5L and as modified herein. The actual yield strength shall be as close as possible to the specified minimum yield strength (SMYS) but in no case it shall exceed the limits specified here under : <u>API Spec. 5L Grade Permissible in excess of SMYS, Mpa (PSI)</u> Up to and including X46M 131 (19000) X52M to X60M 125 (18,000)	TSL requested kindly allow Tensile Properties as per API 5L 46th edition.	Tender Conditions shall prevail.
11	VPC-SS-PP-2008 Rev No : 02 CI No.9.3.2	Tensile Properties	The ratio of body yield strength and body tensile strength of each test pipe on which yield strength and ultimate tensile strength are determined, shall not exceed 0.90	TSL requested kindly allow ratio of body yield strength and body tensile strength of each test pipe as per API 5L 46th edition.	Tender Conditions shall prevail.
12	VPC-SS-PP-2008 Rev No : 02 CI No. 9.10.7 (a)	Surface Imperfection	Imperfections that have a depth < 0.05t and do not encroach on the minimum specified wall thickness shall be classified as acceptable imperfections and shall be treated in accordance with Clause C.1 of this specification.	As per API 5L 46th edition CI No. 9.10.7 (a) Imperfections that have a depth ≤ 0.125t and do not encroach on the minimum permissible wall thickness shall be classified as acceptable imperfections and shall be treated in accordance with C.1. So TSL requested kindly allow surface imperfection as per API 5L 46th edition.	Tender Conditions shall prevail.
13	VPC-SS-PP-2008 Rev No : 02 CI No. 9.11.3.3	Minimum Avg. Length	All pipes shall be supplied with length between 11.5 m and 12.5 m. However pipe with length between 10.0 m and 11.5 m can also be accepted for a maximum of 5% of the ordered quantity. The minimum average length of the entire ordered quantity in any case shall be 12.0 m	TSL understanding The definition of average length is applicable for 95 % of order quantity & 5 % supplies will be from 10.5 mtr to 11.50mtr. However TSL requesting you that the minimum average length should be 11.5 meter.	Tender Conditions shall prevail.



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14	VPC-SS-PP-2008 Rev No : 02 CI No. 9.12.5.7	Bevel Protectors	Both pipe ends of each pipe shall be provided with metallic or high impact plastic bevel protectors as per Manufacturer's standard. Bevel protectors shall be of a design such that they can be re-used by coating applicator for providing on externally anti corrosion coated pipes subsequent to coating of line.	Design of Bevel Protector acceptable.  TSL Understand Bevel protector shall be used after 3LPE Coating. Please confirm.	Bidder's understanding is correct.
15	VPC-SS-PP-2008 Rev No : 02 CI No. 10.2.6.2	Hydrostatic Test Pressure	The pressure gauge used for hydrostatic testing shall have a minimum range of 1.5 times and maximum range of 4 times the test pressure. The test-pressure measuring device shall be calibrated by means of a dead-weight tester only. The test configuration shall permit bleeding of trapped air prior to pressurization of the pipe.	TSL understand test pressure measuring device requirements which is ok.  Moreover, TSL request the calibration of pressure gauge by dead-weight tester on weekly basis. Please confirm.	Tender Conditions shall prevail.
16	VPC-SS-PP-2008 Rev No : 02 CI No. 11.2.8	Pipe Marking	A colour code band shall be marked on inside surface of finished pipe for identification of pipes of same diameter but different wall thickness, as indicated in the Purchase Order. The colour code band shall be 50 mm wide and shall be marked at a distance of 150 mm from the pipe ends.	We are doing stencilling by paint at a distance of 150 mm from pipe end. And also for color code band marking at a distance of 150 mm, which may overlap with stencil marking. So TSL requested, kindly allow for color code band marking at a distance of 50mm from pipe at outside of the pipe.	Tender Conditions shall prevail.
17	VPC-SS-PP-2008 Rev No : 02 CI No. B.1.2	Manufacturing Procedure Qualification for PSL2 Pipe	These manufacturing procedure qualification tests (MPQT) shall be repeated upon any change in the manufacturing procedure as deemed necessary by Purchaser's Representative. The manufacturing procedure qualification tests shall be carried out on pipes for each wall thickness, each diameter and each grade of steel.	TSL understanding - for first day of production is that any in between stoppage like mechanical & electrical stoppage including tool change breakage will not call for Re-PQT while rolling the coils of different heat on first day of production if the parameter mentioned (WPS) is not getting changed	Tender Conditions shall prevail.
18	VPC-SS-PP-2008 Rev No : 02 CI No. E.5.2.3.2	Reference Standards for pipe body UT	<b>Reference Standards for pipe body UT:</b>  Reference standards for the ultrasonic inspection of coil or pipe body (except the coil edges /pipe ends) shall contain continuous machined notch of following dimension: a) width, w : 8mm, with a tolerance +0.8/0.0 mm b) depth, d : 0.25<d<0.5 t, where 't' is the specified wall thickness  Reference standards for the ultrasonic inspection of coil edges (area adjoining weld seam)/pipe ends shall have 6.4 mm diameter FBH of a depth 0.5t, where 't' is the specified wall thickness.	Body UT will carried out as per referce standards: a) width, w : 8mm, with a tolerance +0.8/0.0 mm b) depth, d : 0.25<d<0.5 t, where 't' is the specified wall thickness  TSL requeste, kindly wave off of FBH for referace standard.	Tender Conditions shall prevail.

**COATED PIPE**

19	Doc no. VCS-SS-PP-2003 Rev.04 Dated.05.08.2022 CI No. 4.3.1	Epoxy Powder	Particle size	TSL would like to inform that, mentioned test perform by material manufacturer and provide RMTC for test result, TSL will submit same for Review and acceptance.	Tender Conditions shall prevail.
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Sl. No.	Reference & Cl No.	Section Description	Subject Description	Bidder's Query/Clarification	IGL/VCS Reply
20	Doc no. VCS-SS-PP-2003 Rev.04 Dated.05.08.2022 Cl No. 5.4.4	Table 5 - On Cured Epoxy (FBE) film of 3LPE Coating	2.Degree of Cure $\Delta Tg -3^{\circ}C \leq \Delta Tg \leq +3^{\circ}C$	TSL would like to inform that Degree of cure requirement i.e. $\Delta Tg = +3/-2^{\circ}C$ specified in old version of CSA Z245.20 but in latest edition of CSA Z245.20-16 requirement is $\leq 5^{\circ}C$ . TSL will be follow latest edition of specification.	Bidder to Comply requirement stated in DOC NO: VCS-SS-PP-2003.
21	Doc no. VCS-SS-PP-2003 Rev.04 Dated.05.08.2022 Cl No. 5.4.4	Table 5 - On Cured Epoxy (FBE) film of 3LPE Coating	6.Hot Water Adhesion 28 days at $75^{\circ}C \pm 3^{\circ}C$	TSL would like to inform that, This is long duration test and it is conduct by raw material manufacturer, however it is not possible to provide test result at the time of material shipment. Hence, we request to you test result shall be Once per each grade of epoxy.	Tender Conditions shall prevail.
22	Doc no. VCS-SS-PP-2003 Rev.04 Dated.05.08.2022 Cl No. 5.4.4	Table 5 - On Cured Epoxy (FBE) film of 3LPE Coating	10. Impact Resistance at $0^{\circ}C$	TSL would like to inform that, mentioned test perform by material manufacturer and provide RMTC for test result, TSL will submit same for Review and acceptance.	Tender Conditions shall prevail.
23	Doc no. VCS-SS-PP-2003 Rev.04 Dated.05.08.2022 Cl No. 5.4.4	Table 6 - On Extruded Adhesive film of 3LPE coating	2. Strain at Break at $23^{\circ}C \pm 3^{\circ}C$	TSL would like to inform that, mentioned test perform by material manufacturer and provide RMTC for test result, TSL will submit same for Review and acceptance.	Tender Conditions shall prevail.
24	Doc no. VCS-SS-PP-2003 Rev.04 Dated.05.08.2022 Cl No. 5.4.4	Table 6 - On Extruded Adhesive film of 3LPE coating	3. Stress at Yield at $23^{\circ}C \pm 3^{\circ}C$	TSL would like to inform that, mentioned test perform by material manufacturer and provide RMTC for test result, TSL will submit same for Review and acceptance.	Tender Conditions shall prevail.
25	Doc no. VCS-SS-PP-2003 Rev.04 Dated.05.08.2022 Cl No. 5.4.4	Table 7 - On HDPE Top Coat layer and 3LPE coating	10.Specific Electrical Coating Resistance ( $23^{\circ}C \pm 2^{\circ}C$ )	TSL would like to inform that, This is long duration test and it will be performed by the material manufacturer and report shall be submitted for review and acceptance.	Tender Conditions shall prevail.
26	Doc no. VCS-SS-PP-2003 Rev.04 Dated.05.08.2022 Cl No. 5.4.4	Table 7 - On HDPE Top Coat layer and 3LPE coating	12. $\Delta Tg = -3^{\circ}C \leq \Delta Tg \leq +3^{\circ}C$	TSL would like to inform that Degree of cure requirement i.e. $\Delta Tg = +3/-2^{\circ}C$ specified in old version of CSA Z245.20 but in latest edition of CSA Z245.20-16 requirement is $\leq 5^{\circ}C$ . TSL will be follow latest edition of specification.	Bidder to Comply requirement stated in DOC NO: VCS-SS-PP-2003.
27	Doc no. VCS-SS-PP-2003 Rev.04 Dated.05.08.2022 Cl No. 7.2.9	Salt test	The salt tests shall be carried out after de-ionized water rinse at one end of each pipe at the blasting inspection bed.	TSL would like to inform that, All pipe shall be provided chemical pretreatment with phosphoric acid for removal of salt contamination from the pipe surface. Hence, We propose that test shall be conduct in 1 in 10 pipes.	Tender Conditions shall prevail.





**REPLY TO BIDDER'S PRE-BID QUERIES**

**SUPPLY OF 3LPE COATED CS LINE PIPE IN NCT OF DELHI, UTTAR PRADESH, HARYANA AND RAJASTHAN**

**TENDER DOCUMENT NO. IGL/ET2/CP/CP17294, Dated 30.12.2022**

**VCS REFERENCE NO. VCS/C&P/17028/PC/CS PIPE/05**

**Owner: Indraprastha Gas Ltd.**

**Consultant: VCS Quality Services Pvt Ltd.**

**Pre-bid meeting held on 05.01.2023**

**Date: 17.01.2023**

Sl. No.	Reference & Cl No.	Section Description	Subject Description	Bidder's Query/Clarification	IGL/VCS Reply
28	Doc no. VCS-SS-PP-2003 Rev.04 Dated.05.08.2022 CI No. 7.4.1	Pipe Heating	Temperature measuring & monitoring equipment shall be calibrated twice every shift and/or as per Owner Representative's instruction.	Once in year we are doing the calibration of all Temperature measuring instruments by external calibration agency and calibration certificate shall be provided to you for review and acceptance. PI confirm.	Tender Conditions shall prevail.
29	Doc no. VCS-SS-PP-2003 Rev.04 Dated.05.08.2022 Clause No. 7.4.3	Extrusion temperature	The extrusion temperature of polyethylene film shall be continuously recorded. The monitoring instruments shall be independent of the temperature control equipment. The instruments shall be calibrated prior to start of each shift.	TSL Would propose that continuously monitoring facility is available and recording a temperature in logbook at regular interval. The instruments use for PE and adhesive shall be calibrate in specialized equipment outside laboratory so we proposed review of outside lab calibration certificate.	Tender Conditions shall prevail.
30	Doc no. VCS-SS-PP-2003 Rev.04 Dated.05.08.2022 CI No. 10.5	Table 10 — Requirements for inspection of surface preparation of pipe	4. Size, shape and properties of virgin abrasive	TSL would like to inform that, mentioned details perform by material manufacturer and provide RMTC for test results, TSL will submit same for Review and acceptance.	Tender Conditions shall prevail.
31	Doc no. VCS-SS-PP-2003 Rev.04 Dated.05.08.2022 CI No. 15	INSPECTION, MEASURING AND TEST EQUIPMENT:	Optical Pyrometer	Once in year we are doing the calibration of all Temperature measuring instruments by external calibration agency and calibration certificate shall be provided to you for review and acceptance. PI confirm.	Tender Conditions shall prevail.
<b>BARE PIPE</b>					
32	Clause 6.0 Note 14		For butt weld end, bevel shall be in accordance with API specification 5L.	As per current project MR, the bevel shall be as per API 5L, accordingly, bevel end preparation has been considered as per CL 9.12.5.2 of API 5L.  Please confirm.	Confirmed
	9.12.5 9.12.5.6		<b>Plain ends</b> During removal of inside burrs at the pipe ends, care shall be taken not to remove excess metal and not to form an inside cavity on bevel. Removal of excess metal beyond the minimum wall thickness as indicated in clause 9.11.3.2 of this specification shall be a cause for re-beveling. In case root face of bevel is less than that specified, the pipe ends shall be re-bevelled and rectification by filing or grinding shall not be done.		
	PBQ Sr. No. 20		Shall be as per ASME B 16.25		



REPLY TO BIDDER'S PRE-BID QUERIES

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VCS REFERENCE NO. VCS/C&P/17028/PC/CS PIPE/05

Owner: Indraprastha Gas Ltd.

Consultant: VCS Quality Services Pvt Ltd.

Pre-bid meeting held on 05.01.2023

Date: 17.01.2023

Sl. No.	Reference & Cl No.	Section Description	Subject Description	Bidder's Query/Clarification	IGL/VCS Reply
33	Clause 6.0 Note 15.0		Both pipe ends of each pipe shall be provided with metallic or high impact plastic bevel protectors/end cap as per Manufacturer's standard. Bevel protectors/end shall be of a design such that they can be re-used by coating applicator for providing on externally anticorrosion coated pipes subsequent to coating of line pipe. The details of the bevel protector/end caps shall be furnished for approval prior to start of the production.	Bidder confirms to supply small diameter pipes (4.5" and 6.625" OD) with plastic end caps. However, 8.625" and 12.75" OD pipes shall be supplied with metallic bevel end protectors. Please confirm.	Confirmed
	Clause 6.0 Note 16.0		Plastic push fit types end caps shall be installed on all small diameter pipe ends.		
	HFW Spec CL 9.12.5.7		Bevel Protectors Both pipe ends of each pipe shall be provided with metallic or high impact plastic bevel protectors as per Manufacturer's standard. Bevel protectors shall be of a design such that they can be re-used by coating applicator for providing on externally anti-corrosion coated pipes subsequent to coating of line pipe. The details of the bevel protector/end caps shall be furnished for approval prior to start of the production.		
34	Clause 6.0 Note 13.0		Pipe roughness shall be 40 Micron.	Bidder understands that the requirement specified herein is typographical error as there is no internal coating required for this tender.  Please reconfirm.	Internal Coating is not required. However outside roughness shall be 40 Micron.
35	Note 22.0		Color bands of 50 mm width to be placed at both the ends, inside of Bare Pipes at a distance of 150 mm from the pipe ends and outside of 3LPE Coated Pipes at a distance of 450 mm from the pipe ends.	As specified in PBQ Sr. no. 29, attached in the tender document colour band shall not be applied being only one wall thickness for the project.  Please confirm.	Bidder's understanding is correct.
	HFW Spec CL 10.2.8		A colour code band shall be marked on inside surface of finished pipe for identification of pipes of same diameter but different wall thickness, as indicated in the Purchase Order. The colour code band shall be 50 mm wide and shall be marked at a distance of 150 mm from the pipe ends.		
36	2		<b>NORMATIVE REFERENCES</b> The latest edition (edition enforce at the time of issue of enquiry) of following additional references are included in this specification: ASTM E112-12: Standard Test Methods for Determining Average Grain size	Bidder understands that the latest year edition of ASTM E112 is of 2013. We confirm to follow this latest edition.  Please confirm.	Tender Conditions shall prevail.
	9.8.2.2		<b>Pipe body tests</b> The minimum average (set of three test pieces) shear fracture area shall be at least 85 % with one minimum value of 75%, based at a test temperature of 0 °C (32 OF) or at a lower test temperature as specified in the Purchase Order / Material Requisition (MR).		



REPLY TO BIDDER'S PRE-BID QUERIES

SUPPLY OF 3LPE COATED CS LINE PIPE IN NCT OF DELHI, UTTAR PRADESH, HARYANA AND RAJASTHAN

TENDER DOCUMENT NO. IGL/ET2/CP/CP17294, Dated 30.12.2022

VCS REFERENCE NO. VCS/C&P/17028/PC/CS PIPE/05

Owner: Indraprastha Gas Ltd.

Consultant: VCS Quality Services Pvt Ltd.

Pre-bid meeting held on 05.01.2023

Date: 17.01.2023

Sl. No.	Reference & Cl No.	Section Description	Subject Description	Bidder's Query/Clarification	IGL/VCS Reply					
37	9.8.3		<p><b>Pipe body tests</b> The minimum average (set of three test pieces) shear fracture area shall be at least 85 % with one minimum value of 75%, based at a test temperature of 0 °C (32 0F) or at a lower test temperature as specified in the Purchase Order / Material Requisition (MR).</p> <p><b>Pipe weld and HAZ tests</b> The average (set of three test pieces) absorbed energy value (Kv1) for each pipe weld and HAZ test shall be as specified in Table 8 of this specification, based upon full-size test pieces at a test temperature of 0°C (32°F) or at a lower test temperature as specified in the Purchase Order / Material Requisition (MR).</p>	<p>Bidder Clarifies that CVN absorbed energy value for Pipe body, Weld and HAZ of PSL2 Pipe is considered as per Table 8 of Client Spec.</p> <p>However, Annex G is not considered.</p> <p>Please confirm.</p>	Tender Conditions shall prevail.					
38	10.2.3.3		<p><b>Test pieces for the CVN impact test</b> In addition to the API Spec 5L requirements, following shall also be applicable: The test pieces shall be prepared in accordance with ASTM A370. Non-flattened test pieces shall be used. The axis of the notch shall be perpendicular to the pipe surface. Charpy V-notch impact testing shall be performed on full-sized test pieces. However, if preparation of full size test piece is not possible, then standard sub-sized test pieces shall be prepared as per ASTM A370. Lower pipe sizes wherein preparation of transverse sub-sized specimen is not possible, CVN impact testing shall be carried out on longitudinal test specimen [see Note 'a' of Table 8 of this specification].</p>	<p>Bidder clarifies that sample extraction for 4.5" OD and 6.625" OD with the specified wall thickness in transverse direction is not feasible.</p> <p>However, non-flattened sub-size specimen can be extracted in longitudinal direction for 4.5" &amp; 6.625" OD for base metal only.</p> <p>For HFW pipes, sample extraction for weld &amp; HAZ in longitudinal direction is also not feasible for 4.5" and 6.625" OD.</p> <p>Please confirm.</p>	Tender Conditions shall prevail.					
	10.2.3.1	<p>General</p> <table border="1"> <thead> <tr> <th>Sample Location</th> <th>Type of test</th> <th>Number, Orientation and location of test pieces per sample</th> </tr> </thead> <tbody> <tr> <td>Pipe body</td> <td>CVN</td> <td>3T90 &lt; 219.1 mm (8.625 in)</td> </tr> <tr> <td>Seam Weld</td> <td>CVN</td> <td>3W and 3HAZ</td> </tr> </tbody> </table>	Sample Location			Type of test	Number, Orientation and location of test pieces per sample	Pipe body	CVN	3T90 < 219.1 mm (8.625 in)
Sample Location	Type of test	Number, Orientation and location of test pieces per sample								
Pipe body	CVN	3T90 < 219.1 mm (8.625 in)								
Seam Weld	CVN	3W and 3HAZ								
39	10.2.1.2 Table 18		<table border="1"> <tr> <td>2</td> <td>Product Analysis</td> <td>Two Pipes per lot(maximum 100 pipes) per heat</td> </tr> </table> <p>b Pipes selected shall be such that one at the beginning of the heat and one at the end of the heat are also represented.</p>	2	Product Analysis	Two Pipes per lot(maximum 100 pipes) per heat	<p>Bidder confirms for product analysis in pipes with 2 samples / 100 pipes / heat shall be selected randomly from the heat used at pipe mill for pipe production with lot of 100 pipes.</p> <p>Please confirm.</p>	Tender Conditions shall prevail.		
2	Product Analysis	Two Pipes per lot(maximum 100 pipes) per heat								
40	10.2.8.7		<p>The measuring equipment requiring calibration or verification under the provisions of API Spec 5L shall be calibrated with manual instruments at least once per operating shift (12 hours maximum). Such calibration records shall be furnished to Purchaser's Representative on request</p>	<p>Bidder confirms that repeatability of measuring instruments Verification of all measuring instruments shall be done in each shift of 12 hours at final station. Record of same shall be furnished to the appointed representative.</p> <p>However, Bidder clarifies that calibration of dimension measuring equipment shall be done on yearly basis from an external NABL lab.</p> <p>Please confirm.</p>	Tender Conditions shall prevail.					



**REPLY TO BIDDER'S PRE-BID QUERIES**

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**TENDER DOCUMENT NO. IGL/ET2/CP/CP17294, Dated 30.12.2022**

VCS REFERENCE NO. VCS/C&P/17028/PC/CS PIPE/05

Owner: Indraprastha Gas Ltd.

Consultant: VCS Quality Services Pvt Ltd.

Pre-bid meeting held on 05.01.2023

Date: 17.01.2023

Sl. No.	Reference & Cl No.	Section Description	Subject Description	Bidder's Query/Clarification	IGL/VCS Reply
41	11.2.4		The pipe number shall be placed by cold rolling or low stress dot marking or vibro-etching on the outside surface of the pipe at an approximate distance of 50 mm from both ends. In case of non-availability of either cold rolling or low stress dot marking facility in pipe mill, an alternative marking scheme of a permanent nature may be proposed by the Manufacturer.	As permitted in Technical specification, as an alternate marking scheme, Bidder proposes that the use of Laser Marking machine shall also be permitted (permanent in nature) for placing the pipe number on OD surface.  Please confirm.	Tender Conditions shall prevail.
42	11.2.8		A colour code band shall be marked on inside surface of finished pipe for identification of pipes of same diameter but different wall thickness, as indicated in the Purchase Order. The colour code band shall be 50 mm wide and shall be marked at a distance of 150 mm from the pipe ends.	Bidder understand that the specified requirement for colour code is not applicable. Accordingly not considered.  Please confirm.	Bidder's understanding is correct.
43	E.5.1.1		In addition to the API Spec 5L requirements, all automatic ultrasonic equipment shall have an alarm device, which continuously monitors the effectiveness of the coupling. The equipment for the automatic inspection shall allow the localization of both longitudinal and transverse defects corresponding to the signals exceeding the acceptance limits of the reference standard. The equipment shall be fitted with a paint spray or automatic marking device and alarm device for areas giving unacceptable ultrasonic indications. All ultrasonic testing equipment shall be provided with recording device. In addition, an automatic weld tracking system shall be provided for correct positioning of the probes with respect to weld centre.	Bidder intend to clarify that Ultrasonic testing for pipe Body for size 4.5" and 6.625" OD will be carried out after pipe forming using ROTO UT (immersion technique) as per Client Spec CL E.11, where seam tracking will not be applicable.  However, the requirement of automatic weld seam tracking system is confirmed for the pipe size OD 8.625" and 12.75".  Please confirm.	Tender Conditions shall prevail.
44	-		General	Bidder has retained Inspection & Test Plan of Electric Welded Line Pipes for information only, however project specific ITP shall be submitted upon receipt of award of Contract. Please confirm.	Confirmed
45	-		INSPECTION AND TEST REQUIREMENTS:	Quantum of check of steel / coil at steel mill shall be as agreed with the opted steel mill and can be further agreed with Client in case of order award. Please confirm.	Tender Conditions shall prevail.

**COATED PIPE**

46	REPLY TO BIDDER'S PRE-BID QUERIES IN PREVIOUS TENDERS SUPPLY OF 3LPE COATED CS PIPELINE IN NCT OF DELHI, UTTAR PRADESH, NCR, HARYANA AND RAJASTHAN		IGL/VCS Reply against VPC-SS-PL-0002	Coating specification provided with Bid is VPC-SS-PP-2003, Rev.04 and response provided against VPC-SS-PL-0002. Both specifications are different. Hence Bidder understands these clarifications are not applicable.  Please Confirm.	Bidder to Comply requirement stated in DOC NO: VCS-SS-PP-2003.
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REPLY TO BIDDER'S PRE-BID QUERIES

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VCS REFERENCE NO. VCS/C&P/17028/PC/CS PIPE/05

Owner: Indraprastha Gas Ltd.

Consultant: VCS Quality Services Pvt Ltd.

Pre-bid meeting held on 05.01.2023

Date: 17.01.2023

Sl. No.	Reference & Cl No.	Section Description	Subject Description	Bidder's Query/Clarification	IGL/VCS Reply
47	VCS-SS-PP-2027 Rev No. 02		STANDARD SPECIFICATION FOR REPAIR OF POLYETHYLENE COATING SCOPE: This specification covers the minimum requirements for materials and equipment, application procedure and inspection of repair of damaged Polyethylene coatings on steel pipes. This specification is applicable for repairing damages less than 100 mm x 100 mm for pipe sizes less than 10", 150 mm x 150 mm for pipe sizes between 12" to 28" and 300mm x 300mm for pipe sizes more than 28".	Bidder understands that VCS-SS-PP-2027 Rev No. 02 is applicable for field repairs only.  Coating repair shall be carried out as per 13.0 of VCS-SS-PP-2003 Rev. No. 04 for plant level.  Please Confirm.	Bidder to Comply requirement stated in DOC NO: VCS-SS-PP-2003.
48	Cl. 6.0 (Note 13.0) of 17028-CGD-PL-MR-001		Pipe roughness shall be 40 Micron.	Please clarify the requirement.	Internal Coating is not required. However outside roughness shall be 40 Micron.
49	Cl. 6.0 (Note 15.0 & 16.0) of 17028-CGD-PL-MR-001		15.0 - Both pipe ends of each pipe shall be provided with metallic or high impact plastic bevel protectors/end cap as per Manufacturer's standard. Bevel protectors/end shall be of a design such that they can be re-used by coating applicator for providing on externally anticorrosion coated pipes subsequent to coating of line pipe. The details of the bevel protector/end caps shall be furnished for approval prior to start of the production. 16.0 - Plastic push fit types end caps shall be installed on all small diameter pipe ends.	Bidder understands that type of end cap shall be either metallic or plastic. Bidder can select type of end cap according to pipe diameter.  Please Confirm.	Confirmed
50	4.2 of VPC-SS-PP-2003, Rev.04		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: <b>Epoxy Powder:</b> All Properties tested for each batch as per Table 2 <b>PE Adhesive:</b> MFI, Density and Water content results shall be reported as measured value for each batch whereas the Tensile Yield Strength, Elongation at break, Vicat Softening Temperature and Flexural Modulus will be reported as typical values supported by reputed lab reports. <b>High Density Polyethylene:</b> Density, Melt Flow Rate, Oxidation Induction Time, Carbon Black Content, Water Content results shall be reported as measured value for each batch. The properties –Melting Point, Hardness Shore D, Elongation at break, Tensile Strength, Vicat Softening Temperature, ESCR, Indentation, Impact Resistance, 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.	Tender Conditions shall prevail.



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51	7.0 of VPC-SS-PP-2003, Rev.04		<p><b>APPLICATION OF COATING</b></p> <p><b>7.2 Chemical pre-treatment with phosphoric acid solution (if specified):</b></p> <p><b>7.3 Chemical Pre-treatment with Chromate Solution (if specified):</b></p>	<p>Bidder understands that phosphoric acid wash &amp; chromate application are not mandatory requirements. Hence bidder will not apply phosphoric acid wash &amp; chromate application. However Bidder propose that, In case salt level exceeds, Phosphoric acid wash may carryout to reduce salt level as per 7.1.12.</p> <p>Please Confirm.</p>	Bidder's understanding is correct.																			
52	7.2.9 of VPC-SS-PP-2003, Rev.04		The salt tests shall be carried out after de-ionized water rinse at one end of each pipe at the blasting inspection bed. The acceptance criteria shall be 2µg/cm <sup>2</sup> . An approved salt meter (SCM 400 or equivalent) shall be used to carry out salt tests and shall be calibrated in accordance with the equipment manufacturer's recommendations.	<p>Bidder understands that salt level shall be check for each pipe after final blast cleaning as per 7.1.12 of VCS-SS-PP-2003 Rev. 04.</p> <p>Please Confirm.</p>	Bidder's understanding is correct.																			
53	7.2.9 of VPC-SS-PP-2003, Rev.04 7.4.2.3 of VPC-SS-PP-2003, Rev.04		Variation of the recorded temperature values versus the set pre-heating temperature shall be within range of 5% along the pipe length with the exception of the cut back lengths. During production, if the above parameters (i.e., blasting speed, pre-heating temperature and the coating line speed, etc.) require modification from the approved PQT, a new PQT shall be performed.	<p>Bidder propose that pipe surface temperature shall be within epoxy powder recommendation.</p> <p>Please Confirm.</p>	Tender Conditions shall prevail.																			
54	8.4 of VPC-SS-PP-2003, Rev.04		<p>Qualification of Coating Repair</p> <table border="1"> <thead> <tr> <th>Type of Repair</th> <th>No. of Location / Test</th> <th>Detailed Inspection</th> </tr> </thead> <tbody> <tr> <td rowspan="3">Patch Repair</td> <td rowspan="3">1 Pipe (2 Patches)</td> <td>Peel Test:</td> </tr> <tr> <td>≥ 2.5 N/mm @23±3°C;</td> </tr> <tr> <td>≥ 0.2 N/mm @80±3°C;</td> </tr> <tr> <td colspan="2"></td> <td>No separation of epoxy layer from the steel surface.</td> </tr> <tr> <td rowspan="3">Heat-shrinkable Sleeve (HSS) Repair (System 14-B of ISO 21809-3)</td> <td rowspan="3">1 Pipes (2 HSS)</td> <td>Peel Test (Table 17 of ISO 21809-3):</td> </tr> <tr> <td>≥ 5 N/mm @23±3°C;</td> </tr> <tr> <td>≥ 0.3 N/mm @80±3°C;</td> </tr> <tr> <td colspan="2"></td> <td>No separation of epoxy layer from the steel surface.</td> </tr> </tbody> </table>	Type of Repair	No. of Location / Test	Detailed Inspection	Patch Repair	1 Pipe (2 Patches)	Peel Test:	≥ 2.5 N/mm @23±3°C;	≥ 0.2 N/mm @80±3°C;			No separation of epoxy layer from the steel surface.	Heat-shrinkable Sleeve (HSS) Repair (System 14-B of ISO 21809-3)	1 Pipes (2 HSS)	Peel Test (Table 17 of ISO 21809-3):	≥ 5 N/mm @23±3°C;	≥ 0.3 N/mm @80±3°C;			No separation of epoxy layer from the steel surface.	<p>Bidder propose that peel test values shall be as per repair material manufacturer.</p> <p>Please Confirm.</p>	Tender Conditions shall prevail.
Type of Repair	No. of Location / Test	Detailed Inspection																						
Patch Repair	1 Pipe (2 Patches)	Peel Test:																						
		≥ 2.5 N/mm @23±3°C;																						
		≥ 0.2 N/mm @80±3°C;																						
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Date: 17.01.2023

Sl. No.	Reference & Cl No.	Section Description	Subject Description	Bidder's Query/Clarification	IGL/VCS Reply
55	8.5.2.4 of VPC-SS-PP-2003, Rev.04		<b>Peel (Adhesion) Strength:</b> Five test pipes shall be selected for Peel strength tests as per Annex C (C2) of ISO21809 -1. On each of the selected pipes, three peel tests shall be performed for each specified temperature (23±3°C & 80±3°C), one at each end and one in the middle of the pipe.	<p>Bidder proposes to bond strength test shall be carried out by manual peel test machine (Spring loaded type test assembly) due to size constraint for 4"OD pipes. Please confirm.</p> <p>We request to kindly consider the practical difficulty.</p> <p>Bidder proposes to perform bond strength test at maximum feasible distance from either end instead of middle of the pipe. It is not possible to maintain the test temperature required at the middle of the pipe due to size constraint.</p> <p>For bond strength at each cut back ends, bidder confirms to comply specification.</p> <p>Please Confirm.</p>	Tender Conditions shall prevail.
56	8.5.2.15 of VPC-SS-PP-2003, Rev.04		<b>Specific Electrical Coating Resistance:</b> The test certificate (not older than 3 years) submitted by the PE manufacturer shall be of recognized independent test laboratory with a track record of 3LPE coating testing. The test laboratory should be NABL / ISO 17025 accredited and shall have approval for conducting the above specific test as per DIN 30670. Owner may decide to get the test conducted for 3LPE coating applied during PQT and get tested for the above long-term test at the cost of the coating applicator at an accredited independent laboratory as per above requirement.	<p>Bidder understands that the Coating resistivity is the long term tests and shall be performed by PE topcoat raw material supplier / manufacturer. Test certificates shall be furnished by raw material supplier / manufacturer shall be submitted for review and acceptance.</p> <p>Please Confirm.</p>	Tender Conditions shall prevail.
57	8.5.2.16 of VPC-SS-PP-2003, Rev.04		<b>UV Resistance and Thermal Ageing:</b> The test certificate (not older than 3 years) submitted by the PE manufacturer shall be of recognized independent test laboratory with a track record of 3LPE coating testing. The test laboratory should be NABL / ISO 17025 accredited and shall have approval for conducting the above specific tests as per ISO 21809-1. Owner may decide to get the test conducted for PE top coat material 3LPE coating applied during PQT and get tested for the above long-term tests at the cost of the coating applicator at an accredited independent laboratory as per above requirements.	<p>Bidder understands that the UV Resistance and Thermal Ageing is the long term tests and shall be performed by PE topcoat raw material supplier / manufacturer. Test certificates shall be furnished by raw material supplier / manufacturer shall be submitted for review and acceptance.</p> <p>Please Confirm.</p>	Tender Conditions shall prevail.



REPLY TO BIDDER'S PRE-BID QUERIES

SUPPLY OF 3LPE COATED CS LINE PIPE IN NCT OF DELHI, UTTAR PRADESH, HARYANA AND RAJASTHAN

TENDER DOCUMENT NO. IGL/ET2/CP/CP17294, Dated 30.12.2022

VCS REFERENCE NO. VCS/C&P/17028/PC/CS PIPE/05

Owner: Indraprastha Gas Ltd.

Consultant: VCS Quality Services Pvt Ltd.

Pre-bid meeting held on 05.01.2023

Date: 17.01.2023

Sl. No.	Reference & Cl No.	Section Description	Subject Description	Bidder's Query/Clarification	IGL/VCS Reply										
58	8.5.2.16 of VPC-SS-PP-2003, Rev.04 Table 12 of VPC-SS-PP-2003, Rev.04		Requirements for Inspection of Plant Applied Coating (PQT & Production) Epoxy (FBE) Layer : <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Properties</th> <th>Frequency (Production)</th> </tr> </thead> <tbody> <tr> <td>Hot Water Adhesion 24 h at 75°C+/-3°C</td> <td>1/shift (1 sample)</td> </tr> <tr> <td>Cross-Section Porosity</td> <td>1/shift (2 samples)</td> </tr> <tr> <td>Interface Porosity</td> <td>1/shift (2 samples)</td> </tr> </tbody> </table>	Properties	Frequency (Production)	Hot Water Adhesion 24 h at 75°C+/-3°C	1/shift (1 sample)	Cross-Section Porosity	1/shift (2 samples)	Interface Porosity	1/shift (2 samples)	Bidder understands that Hot Water Adhesion 24 h, Cross-Section Porosity & Interface Porosity to be conduct during PQT only.  These tests are not required for production, as these tests are destructive tests.  Please Confirm.	Tender Conditions shall prevail.		
Properties	Frequency (Production)														
Hot Water Adhesion 24 h at 75°C+/-3°C	1/shift (1 sample)														
Cross-Section Porosity	1/shift (2 samples)														
Interface Porosity	1/shift (2 samples)														
59	Table 12 of VPC-SS-PP-2003, Rev.04		Requirements for Inspection of Plant Applied Coating (PQT & Production) <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Properties</th> <th>Frequency (PQT/ Production)</th> </tr> </thead> <tbody> <tr> <td>Pipe temperature</td> <td>Continuous monitoring &amp; recording</td> </tr> <tr> <td>Air pressure in epoxy spray guns</td> <td>Continuous monitoring &amp; recording</td> </tr> <tr> <td>Extrusion temperature of adhesive</td> <td>Continuous monitoring &amp; recording</td> </tr> <tr> <td>PE Extrusion temperature</td> <td>Continuous monitoring &amp; recording</td> </tr> </tbody> </table>	Properties	Frequency (PQT/ Production)	Pipe temperature	Continuous monitoring & recording	Air pressure in epoxy spray guns	Continuous monitoring & recording	Extrusion temperature of adhesive	Continuous monitoring & recording	PE Extrusion temperature	Continuous monitoring & recording	Bidder propose Continuous monitoring and record every hour.  Please Confirm.	Tender Conditions shall prevail.
Properties	Frequency (PQT/ Production)														
Pipe temperature	Continuous monitoring & recording														
Air pressure in epoxy spray guns	Continuous monitoring & recording														
Extrusion temperature of adhesive	Continuous monitoring & recording														
PE Extrusion temperature	Continuous monitoring & recording														
60	Note.2.0 to MR Page No. 7 of 201		Overall length tolerance shall be (-) Zero and (+) One pipe length to complete the ordered quantity.	Given quantity tolerance is -0/+1 pipe length. Please confirm whether it is item wise or "item wise & location wise".	Overall length tolerance shall be "Item Wise"										
61	VCS -SSPP2008 Cl. No. 11.2.4		The pipe number shall be placed by cold rolling or low stress dot marking or vibroetching on the outside surface of the pipe at an approximate distance of 50 mm from both ends.	Stamping on pipe is technically not advisable. Also stamping is not a safe practice. Hence we propose to waive off the requirement of stamping.	Tender Conditions shall prevail.										
62	4.3.1. of VCS-SS-PP-2003 Rev.04	Raw material test	Particle size	We do not have facility for particle size measurement. Particle size shall be mentioned in manufacturer certificate.	Tender Conditions shall prevail.										





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VCS REFERENCE NO. VCS/C&P/17028/PC/CS PIPE/05

Owner: Indraprastha Gas Ltd.

Consultant: VCS Quality Services Pvt Ltd.

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Date: 17.01.2023

Sl. No.	Reference & Cl No.	Section Description	Subject Description	Bidder's Query/Clarification	IGL/VCS Reply				
63	5.4.3 of VCS-SS-PP-2003 Rev.04	Test certificate	≥30 at 2100C	We consider that it was a typo-error in temperature and it shall be read as ≥ 30 at 210°C as per table 5 of ISO 21809-1:2018	Bidder's understanding is correct.				
64	Sr no. 4 & 5 )Table 7 of VCS-SSPP-2003 Rev.04	Unit	<table border="1"> <tr> <td>4</td> <td>Indentation of PE top coat @ 230C +/-20C @800C +/-20C</td> </tr> <tr> <td>5</td> <td>Strain at Break of PE Top Coat at 230C +/-30C</td> </tr> </table>	4	Indentation of PE top coat @ 230C +/-20C @800C +/-20C	5	Strain at Break of PE Top Coat at 230C +/-30C	We consider that it is a typo error in temperature unit at various places like cl. no. 8.5.1.8, 8.5.1.9 & table 11 so it shall be read as a °C.	Bidder's understanding is correct.
4	Indentation of PE top coat @ 230C +/-20C @800C +/-20C								
5	Strain at Break of PE Top Coat at 230C +/-30C								
65	Cl no. 8.2.4 of VCS-SSPP-2003 Rev.04	Recycling of PQT pipes	On successful completion of PQT, coating of all seven pipes shall be removed completely and recoated as per approved coating procedure at Applicator's expense. Remaining 8 (eight) pipes will be accepted by Owner provided they meet the requirements of this specification and need not be stripped and re-cycled.	We proposed that all the pipes including 5 PQT pipes shall be considered acceptable provided they meet the requirements of this specification and need not to be stripped and re-cycled. Please confirm	Tender Conditions shall prevail.				
66	7.2 of VCSSS-PP-2003 Rev.04	Phosphoric Acid Wash & Chromate Treatment	Chemical pre-treatment with phosphoric acid solution (if specified):	Please confirm whether phosphoric acid wash & chromate treatment is applicable for this project or not.	Phosphoric acid wash followed by de-ionized water wash shall be carried out only if salt contamination level is observed more than 2µg/cm2 after blast cleaning.				
67	8.3.4.1 of VCS-SS-PP-2003 Rev.04		Phosphoric Acid Wash followed by De-ionized Water Wash (If specified):						
68	7.3 of VCSSS-PP-2003 Rev.04		Chemical Pre-treatment with Chromate Solution (If specified):						
69	8.3.4.2 of VCS-SS-PP-2003 Rev.04		Chromate Treatment (if specified):						



REPLY TO BIDDER'S PRE-BID QUERIES

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Owner: Indraprastha Gas Ltd.

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Sl. No.	Reference & Cl No.	Section Description	Subject Description	Bidder's Query/Clarification	IGL/VCS Reply														
70	8.5.2.5 of VCS-SS-PP-2003 Rev.04	Impact test temperature	Three test pipes shall be selected for impact strength test as per Annex E of ISO 21809-1 at 23±3°C. Minimum thirty (30) impacts (with impact energy min. 7J/mm)	It is practically difficult to perform impact test at 23±3°C along the pipe length in the plant. We propose that we can perform the test at ambient condition.	Tender Conditions shall prevail.														
71	Table 12 of VCS-SS-PP-2003 Rev.04		<table border="1"> <thead> <tr> <th>Sl. No.</th> <th>Properties</th> <th>Test Method</th> <th>Requirements</th> <th>Frequency</th> </tr> </thead> <tbody> <tr> <td>4.7</td> <td>Impact Strength @ 23±3°C, 30 impacts</td> <td>ISO 21809-1 Annex E, Clause 8.6.2.5.</td> <td>&gt;7J/mm. No holiday on impact area</td> <td>3 Pipes 2 Pipes/shift</td> </tr> </tbody> </table>			Sl. No.	Properties	Test Method	Requirements	Frequency	4.7	Impact Strength @ 23±3°C, 30 impacts	ISO 21809-1 Annex E, Clause 8.6.2.5.	>7J/mm. No holiday on impact area	3 Pipes 2 Pipes/shift				
Sl. No.	Properties	Test Method	Requirements	Frequency															
4.7	Impact Strength @ 23±3°C, 30 impacts	ISO 21809-1 Annex E, Clause 8.6.2.5.	>7J/mm. No holiday on impact area	3 Pipes 2 Pipes/shift															
72	8.5.2.9 of VCS-SS-PP-2003 Rev.04	C.D. test	The following CD tests shall be carried out on samples selected from 1 PQT test pipe in accordance with Annex H of ISO 21809-1: <ul style="list-style-type: none"> <li>65±3°C/24h/-3.38V;</li> <li>23±3°C/28d/-1.38V;</li> <li>80 ±3°C/28d/-1.38 V.</li> </ul>	We propose that we will perform c.d. test on 3 sample for 65±3°C/24h/- 3.38V, 1 sample for 23±3°C/28d/-1.38V; and 1 sample 80 ±3°C/28d/-1.38 V in PQT.	Tender Conditions shall prevail.														
73	Table 12 of VCS-SS-PP-2003 Rev.04	Bond Strength (Peel Test)	<table border="1"> <thead> <tr> <th>Sl. No.</th> <th>Properties</th> <th>Test Method</th> <th>Requirements</th> <th>Frequency</th> </tr> </thead> <tbody> <tr> <td>4,6</td> <td>Peel Strength of 3LPE Coating at 23°C +/-3°C at 80°C +/-3°C</td> <td>ISO 21809-1 Annex C2, Clause 8.6.2.4.</td> <td>≥18 N/mm 23±3°C, ≥5 N/mm 80±3°C, (No disbonding between steel &amp; epoxy)</td> <td>5 pipes x 3 tests (@ both ends &amp; middle) 2 h for pipe ends (cutback portion) &amp; 4 h for middle of pipe</td> </tr> </tbody> </table>	Sl. No.	Properties	Test Method	Requirements	Frequency	4,6	Peel Strength of 3LPE Coating at 23°C +/-3°C at 80°C +/-3°C	ISO 21809-1 Annex C2, Clause 8.6.2.4.	≥18 N/mm 23±3°C, ≥5 N/mm 80±3°C, (No disbonding between steel & epoxy)	5 pipes x 3 tests (@ both ends & middle) 2 h for pipe ends (cutback portion) & 4 h for middle of pipe	We propose that for middle peel test requirement, the peel test shall be performed at maximum feasible distance from pipe end. It is not possible to maintain the specified test temperature at the middle of the pipe due to size constraint and safety issue. Location to be decided / establish in PQT by customer / their representative.	Considered				
Sl. No.	Properties	Test Method	Requirements	Frequency															
4,6	Peel Strength of 3LPE Coating at 23°C +/-3°C at 80°C +/-3°C	ISO 21809-1 Annex C2, Clause 8.6.2.4.	≥18 N/mm 23±3°C, ≥5 N/mm 80±3°C, (No disbonding between steel & epoxy)	5 pipes x 3 tests (@ both ends & middle) 2 h for pipe ends (cutback portion) & 4 h for middle of pipe															
74	Table 12 of VCS-SS-PP-2003 Rev.04	Specific electrical coating resistivity	<table border="1"> <thead> <tr> <th rowspan="2">Sl. No.</th> <th rowspan="2">Properties</th> <th rowspan="2">Test Method</th> <th rowspan="2">Requirements</th> <th colspan="2">Frequency</th> </tr> <tr> <th>During PQT</th> <th>During Production</th> </tr> </thead> <tbody> <tr> <td>4.17</td> <td>Specific Electrical Coating Resistance (23 °C ± 2 °C)</td> <td>DIN 30670 Annex J, Clause 8.6.2.15.</td> <td>≥108 Ωm²</td> <td>Review of Independent test certificate not older than 3 years as per clause 8.6.2.0</td> <td>Not required (However, Owner may request to conduct the test for 3LPE coating at an accredited independent laboratory)</td> </tr> </tbody> </table>	Sl. No.	Properties	Test Method	Requirements	Frequency		During PQT	During Production	4.17	Specific Electrical Coating Resistance (23 °C ± 2 °C)	DIN 30670 Annex J, Clause 8.6.2.15.	≥108 Ωm²	Review of Independent test certificate not older than 3 years as per clause 8.6.2.0	Not required (However, Owner may request to conduct the test for 3LPE coating at an accredited independent laboratory)	Since it is carried out by material manufacturer at interval of 3 year. We will provide raw material test certificate from manufacturer in production as and when applicable.	Tender Conditions shall prevail.
Sl. No.	Properties	Test Method	Requirements					Frequency											
				During PQT	During Production														
4.17	Specific Electrical Coating Resistance (23 °C ± 2 °C)	DIN 30670 Annex J, Clause 8.6.2.15.	≥108 Ωm²	Review of Independent test certificate not older than 3 years as per clause 8.6.2.0	Not required (However, Owner may request to conduct the test for 3LPE coating at an accredited independent laboratory)														
75	Table 12 of VCS-SS-PP-2003 Rev.04	UV resistance and thermal ageing.	<table border="1"> <thead> <tr> <th rowspan="2">Sl. No.</th> <th rowspan="2">Properties</th> <th rowspan="2">Test Method</th> <th rowspan="2">Requirements</th> <th colspan="2">Frequency</th> </tr> <tr> <th>During PQT</th> <th>During Production</th> </tr> </thead> <tbody> <tr> <td>4.18</td> <td>UV Resistance and Thermal Ageing</td> <td>ISO 21809-1 Annex G, Clause 8.6.2.16</td> <td>Δ MFR: ≤35 %</td> <td>Review of Independent test certificate not older than 3 years as per clause 8.6.2. p</td> <td>Not required (However, Owner may request to conduct the test for PE top coat material at an accredited independent laboratory)</td> </tr> </tbody> </table>	Sl. No.	Properties	Test Method	Requirements	Frequency		During PQT	During Production	4.18	UV Resistance and Thermal Ageing	ISO 21809-1 Annex G, Clause 8.6.2.16	Δ MFR: ≤35 %	Review of Independent test certificate not older than 3 years as per clause 8.6.2. p	Not required (However, Owner may request to conduct the test for PE top coat material at an accredited independent laboratory)		
Sl. No.	Properties	Test Method	Requirements					Frequency											
				During PQT	During Production														
4.18	UV Resistance and Thermal Ageing	ISO 21809-1 Annex G, Clause 8.6.2.16	Δ MFR: ≤35 %	Review of Independent test certificate not older than 3 years as per clause 8.6.2. p	Not required (However, Owner may request to conduct the test for PE top coat material at an accredited independent laboratory)														



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VCS REFERENCE NO. VCS/C&P/17028/PC/CS PIPE/05

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Date: 17.01.2023

Sl. No.	Reference & Cl No.	Section Description	Subject Description	Bidder's Query/Clarification	IGL/VCS Reply												
76	Cl no. 15 of VCS-SS-PP-2003 Rev.04	Tolerance for verification of digital thermometer and optical pyrometer	<table border="1"> <thead> <tr> <th>Device Name</th> <th>Reference Clause No.</th> <th>Frequency of in-house Verification</th> <th>Tolerance</th> </tr> </thead> <tbody> <tr> <td>Digital Contact Thermometer</td> <td>7.4.1.5</td> <td>Twice / shift</td> <td>Standard value <math>\pm 2\%</math></td> </tr> <tr> <td>Optical Pyrometer</td> <td>7.4.1.5</td> <td>Twice / shift</td> <td>Standard value <math>\pm 2\%</math></td> </tr> </tbody> </table>	Device Name	Reference Clause No.	Frequency of in-house Verification	Tolerance	Digital Contact Thermometer	7.4.1.5	Twice / shift	Standard value $\pm 2\%$	Optical Pyrometer	7.4.1.5	Twice / shift	Standard value $\pm 2\%$	Mention tolerance for verification is to stringent for comply. Temperature measurement is continuous in coating so we propose that the tolerance shall be within $\pm 3\%$ .	Tender Conditions shall prevail.
Device Name	Reference Clause No.	Frequency of in-house Verification	Tolerance														
Digital Contact Thermometer	7.4.1.5	Twice / shift	Standard value $\pm 2\%$														
Optical Pyrometer	7.4.1.5	Twice / shift	Standard value $\pm 2\%$														
77	Cl no. 15 of VCS-SS-PP-2003 Rev.04	Tolerance for verification of Holiday test voltage	<table border="1"> <thead> <tr> <th>Device Name</th> <th>Reference Clause No.</th> <th>Frequency of in-house Verification</th> <th>Tolerance</th> </tr> </thead> <tbody> <tr> <td>Holiday Detector</td> <td>8.6.2.3.</td> <td>Every 4 hours</td> <td>Standard value <math>\pm 2\%</math></td> </tr> </tbody> </table>	Device Name	Reference Clause No.	Frequency of in-house Verification	Tolerance	Holiday Detector	8.6.2.3.	Every 4 hours	Standard value $\pm 2\%$	This requirement is stringent for compliance. Practically it is not possible to set voltage within tolerance of 2% of 25KV (24.95 KV to 25.05 KV) in plant condition. We can comply voltage as per annex B of ISO 21809- 1:2018 i.e. 25 kV $\pm 2.5$ kV or minimum 25 as per sl no. 4.5 of table 12. Please confirm.	Tender Conditions shall prevail.				
Device Name	Reference Clause No.	Frequency of in-house Verification	Tolerance														
Holiday Detector	8.6.2.3.	Every 4 hours	Standard value $\pm 2\%$														
78	Annexure-I of VCS-SSPP-2003 Rev.04	Tolerance for verification of Holiday test voltage	PE Compound (Manufacturer) HE 3450H( BOREALIS / BOROUGE)	We proposed that borouge has HE3450 grade which meet the technical specification requirement. Request to consider the HE3450	Tender Conditions shall prevail.												
79	Cl. no. 11.0 of Doc. no.: 17028-CGD-PL-MR-001		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.	Bidder shall visually inspect all the coated pipes at presence of owner representative while handing over of pipe. In case any pipes showing coating damaged due to handling & transportation shall be considered for repair and that will carried out within acceptance limit of 3LPE coating specification & approved procedure. After repaired of pipes (if any) shall be checked by holiday detector of 100% surfaces are of the pipes.	Bidder's understanding is correct.												
80	Cl. no. 22.0 of Doc. no.: 17028-CGD-PL-MR-001 & CS. Cl. no. 14 of Doc. no.: VCS-SS-PP-2003		Color bands of 50 mm width to be placed at both the ends, inside of Bare Pipes at a distance of 150 mm from the pipe ends and outside of 3LPE Coated Pipes at a distance of 450 mm from the pipe ends.	Please provide the colour code for color bands at outside of 3LPE Coated Pipes; if any.	Tender Conditions shall prevail.												
81	CS. Cl. no. 3.4 of Doc. no.: VCS-SS-PP-2003		Conveying of epoxy powder from storage room to fluidized bed shall be thru a suitably designed conveying system. Manual powder feeding shall not be permitted. Proper sieving system shall be available for both virgin and re-cycled powder. System for ratio control of virgin & re-cycled powder should be available.	We would like to clarify that we are using fluidized bed with maximum capacity of 200 kg and maintained it with maximum 25 kg of epoxy powder (from 1 Ton jumbo bag) to avoid of open. In between process storage temperature and relative humidity are maintained as per FBE powder manufactured recommendation.	Tender Conditions shall prevail.												



REPLY TO BIDDER'S PRE-BID QUERIES

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Consultant: VCS Quality Services Pvt Ltd.

Pre-bid meeting held on 05.01.2023

Date: 17.01.2023

Sl. No.	Reference & Cl No.	Section Description	Subject Description	Bidder's Query/Clarification	IGL/VCS Reply
82	CS. Cl. no. 3.7, 7.2.6 & 10.5.1 of Doc. no.: VCS-SS-PP-2003		<p>The conductivity of DI (De-Ionized) water (if used) shall be less than 5 micro-Siemens/cm and rinse water pressure shall be minimum 1500 psi.</p> <p>High pressure water rinse (&gt;1500 psi) after phosphoric acid wash shall be used to remove any trace of treatment residue. A minimum 1 liter of de-ionized water per square meter of pipe surface area shall be used.</p> <p><b>Table 11 — Requirements for Inspection of Chemical Pre-treatment (If specified):</b> Pressure of water rinse after acid wash Min. 1500 psi (*) (*A minimum of 1 liter of DI water per m2 shall be used to be established during PQT)</p>	<p>Bidder clarify that as per Epoxy powder manufacturer the required Rinse water pressure for surfaces preparation should be Minimum 1000 PSI. Therefore we will maintain rinse water pressure Minimum 1000 PSI.</p> <p>Please confirm</p>	Tender Conditions shall prevail.
83	CS. Cl. no. 7.1.12 7.2 & 10.5.1 of Doc. no.: VCS-SS-PP-2003		<p>Any pipe having salt contamination exceeding 2µg/cm<sup>2</sup> shall be de-ionized water washed and then re-checked for salt contamination.</p> <p>In case, salt level is still greater than 2 µg/cm<sup>2</sup>, chemical pre-treatment of steel pipes after abrasive blasting using phosphoric acid wash, followed by high pressure water wash (&gt;1500 psi) shall be carried out as per clause 7.2.</p> <p><b>7.2 Chemical pre-treatment with phosphoric acid solution (if specified):</b> All pipes shall be provided chemical pre-treatment with phosphoric acid solution having concentration of 10% (+2%). Oakite 31 / 33 or equivalent shall be used to remove all soluble salts and other soluble contaminant.</p> <p><b>10.3 Chemical Pre-treatment with Phosphoric Acid Solution and / or Chromate Treatment (If specified by the Owner):</b> Depending on requirements, each pipe shall be subjected to Chemical Pre-treatment with Phosphoric Acid Solution followed by high pressure water rinse and / or Chromate Treatment in accordance with Clauses 7.2 &amp; 7.3 of this specification. Treated pipe surface shall be inspected and tested in accordance with Table 11 in order to ensure characteristics of pipe surface prior to induction heating.</p> <p><b>Table 11 — Requirements for Inspection of Chemical Pre-treatment (If specified):</b></p>	<p>Please confirm the chemical pretreatment with phosphoric acid wash followed by de-ionized water wash is applicable when salt contamination is exceeding 2µg/cm<sup>2</sup>.</p> <p>Please also confirm the chromate treatment before FBE application is required or not.</p> <p>Please confirm the both.</p>	Phosphoric acid wash followed by de-ionized water wash & chromate treatment shall be carried out only if salt contamination level is observed more than 2µg/cm <sup>2</sup> after blast cleaning.
84	CS. Cl. no. 4.3.1 of Doc. no.: VCS-SS-PP-2003		<p>In addition to Manufacturer's certificate, the Applicator/ Contractor shall draw two samples per batch of epoxy, adhesive and polyethylene in the presence of Owner Representative and test for the following properties at the coating laboratory prior to its use in order to establish compliance with the manufacturer's test certificates.</p> <p>Epoxy Powder:</p> <ul style="list-style-type: none"> <li>• Density</li> <li>• Gel Time</li> <li>• Particle size</li> <li>• Moisture content</li> <li>• Thermal characteristics (Tg1, Tg2 &amp; ΔH)</li> </ul>	<p>We would like to clarify that all specified test shall be carried out except of Particle size. The epoxy raw material manufacturer perform the Particle size test and provide test certificates, the same certificates will submitted to the client/ client's representative for review.</p> <p>Please confirm.</p>	Tender Conditions shall prevail.



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Date: 17.01.2023

Sl. No.	Reference & Cl No.	Section Description	Subject Description	Bidder's Query/Clarification	IGL/VCS Reply
85	CS. Cl. no. 4.4 of Doc. no.: VCS-SS-PP-2003		All materials to be used shall be supplied in sealed, damage free containers and shall be suitably marked with the following minimum information: <ul style="list-style-type: none"><li>Name of the Manufacturer</li><li>Grade or Trade name</li><li>Health, safety and environmental Instructions</li><li>Type of Material</li><li>Batch Number</li><li>Place of Manufacture</li><li>Manufacturing Date / Shelf Life/Expiry Date (if applicable)</li><li>Quantity.</li></ul>	Bidder clarifies that all required mark are printed on each batch of polyethylene and adhesive material except manufacturing date, shelf life/expiry date and storage condition are mentioned on product data sheet and test certificate.  Epoxy powder complies all specified required printed on each batch of bag.	Tender Conditions shall prevail.
86	CS. Cl. no. 5.4.4 of Doc. no.: VCS-SS-PP-2003		<b>Table 5 - On Cured Epoxy (FBE) film of 3LPE Coating:</b> 6. Hot Water Adhesion 28 days at 75°C+/-3°C	Bidder clarify that Hot Water Adhesion test 28 days at 75°C+/-3°C shall be conducted in epoxy powder manufacturer lab and they provides test certificates, the same certificates will be submitted to the client/ client's representative for review.  Please confirm.	Tender Conditions shall prevail.
87	CS. Cl. no. 5.4.4, 8.5.1.9 & 10.5.1 of Doc. no.: VCS-SS-PP-2003		<b>Table 5 - On Cured Epoxy (FBE) film of 3LPE Coating:</b> 10. Impact Resistance at 0 °C >1.5 J <b>Impact Test:</b> 1.5 J Impact test at 00C shall be conducted on ring specimen obtained from epoxy coated pipe section of two pipes as per clause A.14 of ISO 21809-2. There shall be no holiday on impact area (Refer Clause 5.4.4 and Table 5). <b>Table 12 — Requirements for Inspection of Plant Applied Coating (PQT &amp; Production)</b> 2.15. Impact Resistance at 0 °C >1.5 J	Bidder clarify that Impact Resistance at 0 °C @ >1.5 J shall be conducted in epoxy powder manufacturer lab and they provides test certificates, the same certificates will be submitted to the client/ client's representative for review.  Please confirm.	Tender Conditions shall prevail.
88	CS. Cl. no. 5.4.4 of Doc. no.: VCS-SS-PP-2003		<b>Table 6 - On Extruded Adhesive film of 3LPE coating:</b> 2. Strain at Break at 23°C ± 3°C ≥600  3. Stress at Yield at 23°C ± 3°C ≥8 Mpa	Bidder clarify that Strain and stress test shall be conducted by Adhesive material manufacturer and they provide the test certificates, the same certificates will be submitted to the client/ client's representative for review.  Please confirm.	Tender Conditions shall prevail.



REPLY TO BIDDER'S PRE-BID QUERIES

SUPPLY OF 3LPE COATED CS LINE PIPE IN NCT OF DELHI, UTTAR PRADESH, HARYANA AND RAJASTHAN

TENDER DOCUMENT NO. IGL/ET2/CP/CP17294, Dated 30.12.2022

VCS REFERENCE NO. VCS/C&P/17028/PC/CS PIPE/05

Owner: Indraprastha Gas Ltd.

Consultant: VCS Quality Services Pvt Ltd.

Pre-bid meeting held on 05.01.2023

Date: 17.01.2023

Sl. No.	Reference & Cl No.	Section Description	Subject Description	Bidder's Query/Clarification	IGL/VCS Reply
89	CS. Cl. no. 5.4.4 & 8.5.2.4 & 10.5.1 of Doc. no.: VCS-SS-PP-2003		<p><b>Table 7 - On HDPE Top Coat layer and 3LPE coating:</b> 2. Peel Strength of 3LPE Coating at 23°C +/-3°C; ≥18 N/mm at 80°C +/-3°C; ≥ 5 N/mm</p> <p><b>Peel (Adhesion) Strength:</b> Five test pipes shall be selected for Peel strength tests as per Annex C (C2) of ISO21809 -1. On each of the selected pipes, three peel tests shall be performed for each specified temperature (23±3°C &amp; 80±3°C), one at each end and one in the middle of the pipe.</p> <p><b>Table 12 — Requirements for Inspection of Plant Applied Coating (PQT &amp; Production)</b> 4.6. Peel Strength of 3LPE Coating at 23°C +/-3°C; ≥18 N/mm at 80°C +/-3°C; ≥ 5 N/mm 5 pipes x 3 tests (@ both ends &amp; middle)</p>	<p>Bidder clarifies that peel test shall be carried out by spring loaded test assembly by manual peel tester machine i.e. Annex C (C1) of ISO 21809-1.</p> <p>Please confirm.</p> <p>Bidder also clarifies that middle peel test shall be carried out at maximum feasible distance from the pipe end due to constraint pipe size and safety point of view.</p> <p>Please confirm.</p>	Tender Conditions shall prevail.
90	CS. Cl. no. 5.4.4, 8.5.2.9 & 10.5.1 (Table-12) of Doc. no.: VCS-SS-PP-2003		<p><b>Table 7 - On HDPE Top Coat layer and 3LPE coating:</b> Test : Cathodic disbondment Test condition &amp; avg. disbondment radius • 65±3°C/24h/-3.38V: ≤ 4 mm • 23±3°C/28d/-1.38V: ≤ 5 mm • 80 ±3°C/28d/-1.38 V: ≤ 15 mm Frequency: one pipe in PQT &amp; 1 Pipe / day for production in only @65±3 °C/ 24 h/ -3.38 V: ≤ 4 mm</p>	<p>Bidder would like to clarify that we are using digital operating set up of Cathodic disbondment test assembly in which the test voltage set in only two option i.e. -1.5V or -3.5V. Therefore we would like to propose that we shall maintain test voltage and acceptance disbondment criteria as per ISO 21809-1: 2011. @65 °C/ 24 h; -3.50 V : ≤ 7 mm @23 °C/ 28 d; -1.50 V : ≤ 7 mm @80 °C/ 28 d; -1.50 V : ≤ 15 mm</p>	Tender Conditions shall prevail.
91	CS. Cl. no. 10.5.1 (Table-12) of Doc. no.: VCS-SS-PP-2003		<p><b>Table 12 — Requirements for Inspection of Plant Applied Coating (PQT &amp; Production)</b> <b>Test:</b> Hot Water Adhesion 24 h at 75°C+3°C <b>Frequency in Production:</b> 1/shift (1 sample) <b>Test:</b> Cross-Section Porosity &amp; Interface Porosity <b>Frequency in Production:</b> 1/shift (2 samples)</p>	<p>Bidder clarify that due to short quantity of pipe, test frequency during regular production of Hot Water Adhesion, Cross-Section Porosity &amp; Interface Porosity test shall be carried out 1 (one) pipe per day instead of 1/shift.</p> <p>Please confirm.</p>	Tender Conditions shall prevail.
92	CS. Cl. no. 8.5.2.14 & 10.5.1 (Table-12) of Doc. no.: VCS-SS-PP-2003		<p>Three test pipes shall be selected for product stability test of PE top layer. The test method shall be as per ISO 1133-1.</p> <p>Table 12 — Requirements for Inspection of Plant Applied Coating (PQT &amp; Production) Test: Product Stability during Application of PE Top Layer Frequency in PQT: Each pipe</p>	<p>Bidder intent to clarify that during PQT Product stability test shall be carried out from one pipe (One sample) from selected test pipes for PQT. The test method shall be as per ISO 1133-1.</p> <p>Please confirm.</p>	Tender Conditions shall prevail.
93	CS. Cl. no. 8.4 of Doc. no.: VCS-SS-PP-2003		<p><b>Patch Repair</b> • <b>Peel Test:</b> ≥ 2.5 N/mm @23±3°C; ≥ 0.2 N/mm @80±3°C; No separation of epoxy layer</p>	<p>Bidder proposed that Peel test on patch repair should be waived off.</p>	Tender Conditions shall prevail.



**REPLY TO BIDDER'S PRE-BID QUERIES**

**SUPPLY OF 3LPE COATED CS LINE PIPE IN NCT OF DELHI, UTTAR PRADESH, HARYANA AND RAJASTHAN**

**TENDER DOCUMENT NO. IGL/ET2/CP/CP17294, Dated 30.12.2022**

VCS REFERENCE NO. VCS/C&P/17028/PC/CS PIPE/05

Owner: Indraprastha Gas Ltd.

Consultant: VCS Quality Services Pvt Ltd.

Pre-bid meeting held on 05.01.2023

Date: 17.01.2023

Sl. No.	Reference & Cl No.	Section Description	Subject Description	Bidder's Query/Clarification	IGL/VCS Reply																
94	CS. Cl. no. 8.4 of Doc. no.: VCS-SS-PP-2003		Heat- shrinkable Sleeve (HSS) Repair (System 14-B) of ISO 21809-3 Peel Test (Table 17 of ISO 21809-3): ≥ 5 N/mm @23±3°C; ≥ 0.3 N/mm @80±3°C; No separation of epoxy layer from the steel surface.	Bidder proposed that Peel test on Heat-shrinkable Sleeve (HSS) Repair shall be carried out as per Raw material manufacturer's recommendation.	Tender Conditions shall prevail.																
95	7.4.2.3 of Doc No.: VCS-SS-PP-2003		Variation of the recorded temperature values versus the set pre-heating temperature shall be within range of 5% along the pipe length with the exception of the cut back lengths	Bidder clarifies that Variation of the recorded temperature values versus the set pre-heating temperature shall be within range of ± 12.5% age or as per Raw materials manufacturer recommendation instead of 5% along the pipe length with the exception of the cut back lengths. Please confirm.	Tender Conditions shall prevail.																
96	CS. Cl. no. 11.7 of Doc. no.: VCS-SS-PP-2003		The coating pipe mill shall have internal tracking system for pipe traceability during regular coating to reduce manual interference. SAP base system is preferred.	We would like to clarify that we have using ERP based internal pipe tracking system. Hence, We shall maintain DATA in ERP system.	Tender Conditions shall prevail.																
97	CS. Cl. no. 12.5 of Doc. no.: VCS-SS-PP-2003		Bare/coated pipes at all times shall be stacked completely clear from the ground, at least 500 mm, so that the bottom row of pipes remains free from any surface water.	Bidder proposed that we shall maintain minimum 300 mm clearance between pipes and ground And the raw shall be made as in slope which will drain out of rain water & prevented of rain water collect inside the pipes	Tender Conditions shall prevail.																
98	CS. Cl. no. 15 of Doc. no.: VCS-SS-PP-2003		<p><b>INSPECTION, MEASURING AND TEST EQUIPMENT:</b></p> <table border="1"> <thead> <tr> <th>Device Name</th> <th>Clause No.</th> <th>Frequency of in house Verification</th> <th>Tolerance</th> </tr> </thead> <tbody> <tr> <td>Digital Contact Thermometer</td> <td>7.4.1.5</td> <td>Twice / shift</td> <td>Standard value ± 2 %</td> </tr> <tr> <td>Optical Pyrometer</td> <td>7.4.1.5</td> <td>Twice / shift</td> <td>Standard value ± 2 %</td> </tr> <tr> <td>Holiday Detector</td> <td>8.6.2.3.</td> <td>Every 4 hours</td> <td>Standard value ± 2 %</td> </tr> </tbody> </table>	Device Name	Clause No.	Frequency of in house Verification	Tolerance	Digital Contact Thermometer	7.4.1.5	Twice / shift	Standard value ± 2 %	Optical Pyrometer	7.4.1.5	Twice / shift	Standard value ± 2 %	Holiday Detector	8.6.2.3.	Every 4 hours	Standard value ± 2 %	We wish to clarify that the required in house verification of inspection, measuring and test equipment is narrow tolerance. Therefore We shall maintain the within the acceptance Criteria of calibration certificates which have calibrated from independent laboratory (specialized calibration agency) i.e. ± 3% for digital contact thermometer & optical pyrometer and ± 5% of holiday detector. Please confirm the same.	Tender Conditions shall prevail.
Device Name	Clause No.	Frequency of in house Verification	Tolerance																		
Digital Contact Thermometer	7.4.1.5	Twice / shift	Standard value ± 2 %																		
Optical Pyrometer	7.4.1.5	Twice / shift	Standard value ± 2 %																		
Holiday Detector	8.6.2.3.	Every 4 hours	Standard value ± 2 %																		
99	CS. Cl. no. 8.5.2.15 of Doc. no.: VCS-SS-PP-2003		<p><b>Specific Electrical Coating Resistance:</b> The long term Specific Electrical Coating Resistance test of 3LPE coated pipes section shall be conducted for 100 days @ 23°C in accordance with Annex J of DIN 30670. Tested value shall be ≥108 Ωm² (refer Clause 5.4.4 and Table 7). Owner may decide to get the test conducted for 3LPE coating applied during PQT and get tested for the above long-term test at the cost of the coating applicator at an accredited independent laboratory as per above requirement.</p>	We will submit reputed lab test reports of each grade of PE which has provided by polyethylene material manufacturer for review and acceptance  Please confirm.	Tender Conditions shall prevail.																
100	CS. Cl. no. 8.5.2.16 of Doc. no.: VCS-SS-PP-2003		<p><b>UV Resistance and Thermal Ageing:</b> Owner may decide to get the test conducted for PE top coat material 3LPE coating applied during PQT and get tested for the above long-term tests at the cost of the coating applicator at an accredited independent laboratory as per above requirements.</p>	We will submit reputed lab test reports of each grade of PE which has provided by polyethylene material manufacturer for review and acceptance.  Please confirm.	Tender Conditions shall prevail.																