



**PRE-BID QUERIES RAISED DURING PRE-BID MEETING
OPEN E-TENDER FOR
PROCUREMENT OF STEEL LINE PIPE (10")**



Tender Doc No. REPL/MNGL/NGLP/08/21
Tender Type- Open

Date / Time of Pre- Bid :
13/09/2021 / 11:00:00

Sr. No.	Tender Clause No. / Annexures	Tender Clause	Bidder Query	REPL/MNGL Replies
Commercial Queries				
1	BID SECURITY / EMD- Rs. 23,25,600/-	The bid security shall be in the form of Demand Draft or Bank Guarantee in favor of Maharashtra Natural Gas Limited, Pune, Maharashtra (India), valid for 2 months in excess of bid validity period i.e., for 6 months in the prescribed format (Form F-4) of the bid document	Government of India has waived off bid security requirement till 31.12.2021 vide Notification F.9/4/2020-PPD dated 12.11.2020. Therefore we understand that MNGL will also follow the GOVT. notification and waived off the requirement of EMD in this tender. Please confirm.	Following clause to be added with format Clause : DECLARATION FOR BID SECURITY Earnest Money Deposit/ Bid Security is not applicable However, all the bidder (including MSEs, Startups) is required to submit declaration for bid Security in bid as per performa at FORM/Annexure (Format is attached as per GAIL)
2	BID EVALUATION CRITERIA Qualification Criteria for Coating Work	The proposed coating plant by the bidder for three-layer side extruded PE (3 LPE) coating on bare line pipes shall have coated at 50% of the quoted quantity of bare pipe of 10 inches as per API 5L- X70 that are of same type, equal or higher using three layers side extruded PE coating, during any of the last five years reckoned from the bid due date.	We would like to mention that Grade of the pipes have not any role for the coating of the pipes. Therefore we understand that against the qualification criteria of coating work bidders have to submit the track record of 3LPE Coating of minimum 10 inches pipe size of any grade that are of same type, equal or higher, during any of the last five years reckoned from the bid due date. Please confirm.	Tender conditions prevail
3	Mill Qualification:	The bidder shall furnish a certificate for proposed pipe mill along with their bid, manufacturing same or higher size diameter and material grade from reputed international inspection agency (i.e., CEIL/LLOYDS/BV/DNV/TUV /ABS/ MOODY/AIB-Vincotte), certifying mill has capability to produce line pipes complying with technical requirements specified in bid documents.	Bidder sincerely request to please consider the following: The mill capability certificate from any of the reputed international inspection agency (i.e., CEIL/LLOYDS/BV/DNV/TUV /ABS/ MOODY/AIB-Vincotte), for the proposed mill certifying that mill has capability to produce line pipes complying with technical requirements specified in bid documents, issued in the last 12 months for any projects in oil & gas sector shall be considered acceptable for this project also. Please confirm.	Accepted
4	Scope of Inspection: Not Mentioned	Scope of Inspection: Not Mentioned	We would like to know whether scope of inspection lies with the purchaser or bidder	Inspection test procedure should be provided. We will follow standard ITP witnessing and test data review by purchaser
5		MoPNG Policy for providing Purchase Preference to the manufactures/services providers (linked with local content) - PP LC	Bidder understand that MoPNG Policy for providing Purchase Preference is not applicable for subject tender. Please confirm.	Yes
6		Applicability of Domestic Value Addition (DVA) policy:	Bidder understand that Domestic Value Addition (DVA) Policy is not applicable for subject tender. Please confirm.	DVA Policy applicability is confirmed
7		Bid validity The bid validity period shall be 04 (four) months from final 'Bid Due Date'.	We wish to bring it your notice that steel market is highly volatile and long validity of steel price is far-fetched. We therefore request you to please consider the bid validity for 3 months instead of 4 months from bid due date .This is in line with tenders of other PSU'S.	Tender conditions prevail
8		Integrity Pact	Bidder Understand that Integrity Pact is not applicable for subject Tender. Please confirm.	Integrity Pact applicability is confirmed
9		Scope of work	We understand as Delivery Incoterms being FOT site basis, Unloading of Pipes at site, Sand Row Preparation, Development, Maintenance of Storage Yard at Sindhudurg and Ramanagara shall be in MNGL's scope. Please confirm.	MNGL shall provide only space. All other activities for unloading and stacking shall be in the scope of bidder.
10		Bid Security	Bidder hereby bring to your attention that as per Circular No. F/9/4/2020-PPD, issued by Govt. of India, Ministry of Finance, Department of Expenditure Procurement policy division, on dated 12.11.2020, Tender Fee/Bid Security/ EMD has been waived in all tenders upto December'21 and Bidders must submit declaration in lieu of Bid Security/EMD. Hence, we request to waive off EMD and accept the Bid Security Declaration in lieu of EMD. Kindly provide the format for the same	Following clause to be added with format Clause : DECLARATION FOR BID SECURITY Earnest Money Deposit/ Bid Security is not applicable However, all the bidder (including MSEs, Startups) is required to submit declaration for bid Security in bid as per performa at FORM/Annexure (Format is attached as per GAIL)
11		Performance Guarantee	Bidder hereby bring to your attention that as per Circular No. F/9/4/2020-PPD, issued by Govt. of India, Ministry of Finance, Department of Expenditure Procurement policy division, on dated 12.11.2020, Performance Guarantee has been revised to 3% of the total value of the CONTRACT in all tenders upto December'21. Hence, we propose the same to be applicable for subject tender.	Modify as per 3%



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Sr. No.	Tender Clause No. / Annexures	Tender Clause	Bidder Query	REPL/MNGL Replies
12		Hard Copy of Online Uploaded Documents	Bidder hereby bring to kind attention that due to prevailing Covid-19 pandemic submission of Hard Copy of Online Uploaded Documents is really difficult. Hence, we propose to accept the soft of Online Uploaded Documents vide email. Please confirm.	Hardcopy is not required.
13		Evaluation	Bidder understand that Reverse Auction is not applicable in tender.	Bidder's understanding is correct
14		Authentication of BEC Documents	Bidder hereby bring to kind attention that due to prevailing Covid-19 pandemic authentication of Documents by Chartered Engineer & Notary Public is really difficult. Hence, we propose to accept the Self Attested Documents towards Qualification of BEC. Further, the authenticated documents shall be submitted by the successful bidder at the time of award of contract.	Tender conditions prevail
15		Delivery Location	Bidder request to provide location wise quantity allocation as the same bears commercial impact and is required for factoring in Logistics Cost.	Already provided in SOR
16		Delivery Period	Bidder hereby bring put forth that Tendered Quantity already being lesser, supply in multiple lots as per Delivery Order (DO) is not viable. Hence, we propose to kindly issue DO for complete tendered quantity under single Delivery Order (DO) i.e. complete tendered quantity delivery being within 20 weeks.	To Optimize the Inventory carrying cost it is proposed procure the Sindhudurg Pipes in two lots (6 KM and 5 KM) and Ramanagara Pipe in one Lot., Lot1 within 14 weeks and Lot2 with in 18 Weeks.
17		Price Reduction Schedule for Delayed Delivery	We propose that in case of delay in delivery of equipment/ materials or delay in completion, contract price shall be reduced by ½% (half percent) of the respective price for undelivered portion per complete week of delay or part thereof subject to a maximum of 5% (five percent) of the contract price.	Bidder's understanding is correct
18		Item & location wise length tolerance	Given quantity tolerance is -0/+1 pipe length. Please confirm whether it is item wise or "item wise & location wise".	Item wise location wise
19		Steel Raw Material Vendor List	Bidder understands that bidder can source Steel Raw material from any of the globally recognised Steel Supplier. Please confirm.	Yes. The mill should be API approved
20		Steel suppliers	We understand the steel can be procured from any reputed steel manufacturer. Please confirm.	Bidder understanding is correct
21		PP-LC	Please confirm the applicability of PP-LC policy. Please let us know whether we have to provide the PP-LC certificate from cost auditor/statutory auditor.	Tender conditions prevail
22		DMI&SP	Please confirm the applicability of DMI&SP policy.	DMI & SP Policy applicability is confirmed
23		Stockpile development	We understand the development of stockpile is in MNGL's scope and bidder has to deliver and unload the pipes at stockpile. Please confirm.	Bidder understanding is correct
24		Quantity tolerance	We understand that the quantity tolerance is -Nil/+1 pipe length item-wise and delivery location-wise. Please confirm.	Acceptable
25		Mill capability certificate	We would request you to accept the mill capability certificate issued by approved TPIA against any tender in the last 12 months. Certificate to fulfill the requirements of the subject tender.	Bidder understanding is correct
26		Submission of hard copy	During the COVID-19 pandemic our offices are working at minimum capacity and most of the staff is working from home. Considering this we would request you to waive off the submission of hard copy of documents. However, EMD/Bid security declaration, PP-LC Certificate, DMI&SP affidavit and Integrity pact (applicable documents) would be submitted in hard copy.	Hardcopy is not required.
27		Authentication of documents	Kindly allow us to submit the self-certified documents.L1 bidder to submit the required documents certified by chartered engineer and duly notarized.	Tender conditions prevail
Technical Queries				
1	CS. Cl.no. 4.1 & 5.3.2(c & d) 3LPE coating specification of tender Doc. No. REPL/MNGL/NGLP/08/21	CS. Cl.no. 4.1 The three layer coating system shall comprise of a powder epoxy primer, polymeric adhesive and a Medium Density Polyethylene topcoat. CS. Cl.no. 5.3.2 (c & d) Properties of Polyethylene Compound b) Density at 23°C ≥ 0.940 (HDPE) c) Hardness at 23°C ≥ 60 (HDPE)	Bidder Clarify that there is contradiction in topcoat material. MDPE or HDPE Please confirm.	The technical specifications prevail. Nomenclature is secondary. As such the top layer may be considered as HDPE. Please refer clause 7.2 of ISO 21809-1



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2	CS. Cl.no. 4.2 of 3LPE coating specification of tender Doc. No. REPL/MNGL/NGLP/08/21	The coating materials Manufacturer shall carry out tests for all properties specified in Para 5.3.1 and 5.3.2 for each batch of epoxy, adhesive and polyethylene compound. In addition, the Manufacturer shall also furnish Infra-red Scan for each batch of epoxy powder. The coating materials Manufacturer shall issue test certificates as per BS EN 10204, 3.1 for each batch of materials supplied to Contractor indicating all contents/ parameters required for batch certification as per clause 8.3 of ISO-21809-1 and the same shall be submitted to Owner for approval prior to their use.	Bidder clarify that epoxy powder manufacturer provides raw material test certificate of each bath epoxy powder specified in para 5.3.1.1 Whereas adhesive and polyethylene material manufacture provided raw material test certificate of measured values and typical values of each batch and same shall be submitted to TPI/Client for reviewed. Please confirm.	The bidder intent is not clear in respect to adhesive and PE test certificate which need be conforming to specified standards in the tender document
3	CS. Cl.no. 4.3 (a) of 3LPE coating specification of tender Doc. No. REPL/MNGL/NGLP/08/21	Epoxy Powder: i. Density ii. Gel Time iii. Cure time iv. Moisture content v. Thermal Characteristics (Tg1, Tg2, H) vi. Particle Size or Sieve Analysis vii. Infrared Scan	Bidder clarifies that all specified required testing shall be carried out which has given in cl.no. 4.3 in In-house laboratory except of Particle Size or Sieve Analysis and Infrared Scan test. Particle size and infrared test shall be carried out in epoxy powder material manufacturer and they will provides test certificates of each batch and same shall be reviewed by client/TPI.	Accepted
4	CS. Cl.no. 5.0 of 3LPE coating specification of tender Doc. No. REPL/MNGL/NGLP/08/21	The coating shall be able to withstand a maximum in service operating temperature of 60°C and shall conform to Class B as per ISO 21809-1. Test name: Shore D Hardness at 23°C Requirement: ≥60 shore D (HDPE) Test method: ISO 868	Bidder clarifies that Shore D hardness of polyethylene compound is ≥55 shore D accordance with ISO 21809-1 Class B method	Provision of ISO 21809-1 class B will prevail under which ≥55 shore D is acceptable.
5	CS. Cl.no. 5.3 of 3LPE coating specification of tender Doc. No. REPL/MNGL/NGLP/08/21	The acceptable combinations of coating material shall be as per Annexure-1.	Bidder clarifies that material grade for PE compound manufacturer (BOREALIS /BOROUGE) in Annexure-1 given as HE3450, which has property as a medium density as per your requirements in cl.no. 5.3.2 Properties of Polyethylene Compound. Therefore please confirm material grade for PE compound make (BOREALIS /BOROUGE).	The product of Borealis or Borouge is acceptable as long as it meets the technical specifications mentioned in the tender. Eg. When the density is required to be ≥ 0.940, the PE grade becomes HDPE
6	CS. Cl.no. 9.2.11 & ANNEXURE-3 of 3LPE coating specification of tender Doc. No. REPL/MNGL/NGLP/08/21	Cl.no. 9.2.11 Coating and/or adhesive shall terminate at the below mentioned distance from pipe ends: S. No. Pipeline Size Coating cut back length 1 Above 24" NB150 mm +10 mm / (-)0 mm 24" NB to 24"NB110 mm +10 mm / (-)0 mm ANNEXURE-3 It shall be ensured that end seal tape at pipe transition area is applied as soon as possible after creation of cut back of 150 mm +25/ (-) 0 mm on each pipe end	There is contradiction in between cl.no 9.2.11 and Annexure-3 for cut back length. Hence Bidder has considered as per Annexure-3 i.e. cut back length is 150 mm +25/ (-) 0 mm. Please confirm	The cutback size shall be 110 mm +10 mm / (-)0 mm as per Clause no. 9.2.11
7	CS. Cl.no. 10.2.3 (b) 3LPE coating specification of tender Doc. No. REPL/MNGL/NGLP/08/21	Travel speed shall not exceed 200 mm/s.	Bidder clarifies that travel speed of pipe passing through holiday detectors shall be maximum 300 mm/s. Please confirm	Travel speed of not exceeding 300 mm/s is acceptable



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8	CS. Cl.no. 10.2.4 (b) 3LPE coating specification of tender Doc. No. REPL/MNGL/NGLP/08/21	Bond Strength (Peel Test) The frequency of test shall be one pipe in every fifteen (15) pipes coated. On each selected pipe, bond strength shall be performed for each specified temperature. Test shall be performed at each cut back portion and one in the middle of pipe. The system shall disbond/separate cohesively. Either in adhesive layer or in polyethylene layer as described in ISO 21809-1 Table 7, Note C. Majority of the peeled off area on the pipe shall show presence of adhesive. Disbondment/separation at epoxy to steel interface or epoxy / adhesive interface or adhesive / polyethylene interface shall not be permitted. The failure mode shall be recorded for each test.	Bidder clarifies that peel test at middle of the pipe this practically not possible at specified required temperature due size constraint. Hence Bidder proposes that middle peel test shall be carried out at maximum feasible distance from the pipe end. Bidder proposes to deviate cohesive criteria for grafted adhesive, as describe in ISO 21809-1 table 7, Note C.	Tender condition prevails
9	CS. Cl.no. 10.6 3LPE coating specification of tender Doc. No. REPL/MNGL/NGLP/08/21	In case rate of defective or rejected pipes and/or samples tests are 10% or more for a single shift (typically 8 hours), Contractor shall be required to stop production and carry out a full and detailed investigation and shall submit findings to Owner for approval. Contractor shall recommence the production only after getting the written permission from Owner.	Bidder clarifies that in general practice all pipe mill production carried out in two shift and each shift typically 12 hour. Please confirm.	Accepted
10	CS. Cl.no. 11.4 3LPE coating specification of tender Doc. No. REPL/MNGL/NGLP/08/21	HANDLING, TRANSPORTATION AND STORAGE 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 remain free from any surface water	Bidder proposes that bare/coated pipes shall be stacked 300 mm above from the ground level.	Accepted
11	CS. Cl.no. 13. 3LPE coating specification of tender Doc. No. REPL/MNGL/NGLP/08/21 & 11.0 of Line pipe	Cl.no. 11.0 of line pipe Stencil marking confirming to API 5L in English shall be done at a distance of 300 mm on the both End of pipe - one inside & one outside at 90 degree. In case pipe size is below 12" outside marking shall be done on both ends of pipes at 90 degree Cl.no. 13.0 of 3LPE coating specification Contractor shall place marking on the outside surface of the coating at one end of the coated pipe, and marking shall indicate, but not limited to the following information:	There is contradictory in line pipe specification & 3LPE coating specification for stencil marking. Bidder shall be carried out stenciling only outsides of 3LPE coated pipe at any one end as per cl.no. 13 marking instruction of 3LPE coating specification.	Accepted subject to clear collation between bare pipe no. and coated pipe
12	CS. Cl.no. 13. 3LPE coating specification of tender Doc. No. REPL/MNGL/NGLP/08/21	Marking: Colour band	Please provide colour code, if any	Red / maroon marking
13	Cl. No. 8.3 of PTS	Centre Slitting of coils shall be avoided because of high segregation zone at centre. If required because of size limitation, then offset slitting in 2 parts or 3 parts shall be preferred, in any avoidable condition line pipe manufacturer can slit coils from centre. Shearing of coil to plate (Cut-to-length) shall be done under monitoring of TPIA as per QCT.	In this regard, we would bring to your kind notice that steel producers prefer to supply coils in higher width to get higher production yield and very few commit to supply below 1000 mm width. In no case, steel producer will supply coils less than 950 mm width, that is, also on higher rates. As such for manufacturing of 10" pipes, a pipe manufacturer requires 860 mm width coils, whereas steel producer will supply 1000 mm width or more. Thus raw material wastage would be 15% or more. Thus wastage of raw material would eventually increase the cost of pipes substantially. Hence you are requested to please allow for center slitting enabling us to quote more competitive rates.	Accepted



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14	Cl. No. 8.13.2 of PTS	Bar code shall be applied from the coil/forming stage to Internal (if applicable) and external coating stage for each and every pipe. Pipes shall not be accepted without bar code.	We wish to bring it your notice that pipe is tracked by pipe serial number throughout the pipe mill and permanent data is recorded in the pipe mill system database. A unique pipe number is allotted to the pipe before cut off at mill and this number is used for traceability purpose at every station. barcode stickers is having Pipe No., Heat No., Coat no., Diameter, Unit Length, Wall thickness, So we understand that that the barcode stickers are applicable on 3LPE coated pipes only. Kindly confirm.	Accepted subject to clear collation between bare pipe no. and coated pipe
15	Cl. No.9.11.3.3 of PTS & Cl. 9.11.1.1 of GTS	All pipes shall be supplied with length between 11.5 m and 12.5 m. Thickness wise average length of pipes shall be 12.0mm. The average length shall be cumulative as measured at pipe mill dispatch note. For mechanical sampling pipes, minimum length of 11.0 m is acceptable. The minimum average length of the entire ordered quantity in any case shall be 12.0m. Pipe length shall be between 10.0 and 14.0 m. Thickness wise average length of pipes supplied shall not be less than 12.5 m. The average length shall be cumulative as measured at Pipe Mill dispatch note.	As per rules and regulations of Road and Transport department (RTO). The pipe length above 12 meter is not allowed. Hence it should be allowed to supply the pipes in the range between 11.0m to 12.0m with average length 11.50 m and for sample pipes maximum 5% of ordered qty shall be 10.0 m to 11.0 m. Kindly confirm.	Accepted
16	Cl. No. 10.2.1 of PTS	The manufacturer shall carry out analysis of two samples per 50 pipes representing each heat of steel used for production of pipes.	Frequency of testing for regular production 2 samples/Heat/50Pipes are very frequent, normally 300 to 400 pipes produced in one heat, so please allowed the sample frequency of pipes for regular production as per TABLE-18 of API SL.	Tender specifications prevail
17	Cl. No. 10.2.6 of PTS Cl. 10.2.6 of GTS	Duly calibrated pressure gauge shall be installed both at the test bay as well as at the control cabin and graphical records with respect to both the pressure gauges shall be maintained for each pipe. The Hydro test testing master gauge shall be calibrated by means of a dead weight tester, or equivalent before the start of the production order at the end of production order and at least once per month during production. The working pressure gauge range and the pressure chart shall be verified against the master gauge at the start of each working shift and at the middle of the shift.	We understand that we will use two pressure gauges (one at test bay and another at the control cabin) and both pressure gauges shall be calibrated at the start of each working shift (12 hours max.) with a dead weight tester and only one graphical record shall be maintained for each pipe with respect to both pressure gauge. Kindly confirm.	Bidder understanding is correct
18	Cl. No. 9.8 of PTS, & Cl. No. 9.8 of GTS	CVN IMPACT TEST: For all Base Material and welds : The CVN Impact test shall be conducted at 0°C. Impact test value (For all base material and weld) shall conform to below requirements. For all base materials and welds: The CVN Impact test shall be conducted at both (-) 20° C & 0° C. Impact test value (For all base material and weld) shall conform to requirement of Table 8 of Cl. No. 9.8 (CVN Impact test for PSL 2 pipe) API 5L 45th Edition	We understand that CVN impact test shall be carried out only at 0°c for Body, Weld & HAZ. Impact Values for Body, weld and HAZ as per Table G of PTS. Shear area for body at 0°C AVG. 90% & INDI. 80% minimum. Kindly confirm.	The CVN Impact test shall be conducted at both (-) 20° C & 0° C.
19	Cl. No.10.2.10 & E.5 of PTS	Ultrasonic testing shall be carried out for 100% area of Coils during manufacturing of pipes.	We shall do the pipe body ultrasonic testing with 100% minimum coverage area as an alternative of Coil UT for lamination after hydrostatic test. Kindly confirm.	Tender Conditions prevail



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20	Cl. No. B 7.1 of PTS	The actual rupture pressure shall be equal to or above the minimum rupture pressure on the basis of minimum specified UTS as per raw material test certificate of that particular heat. Burst test pressure shall be such that hoop stress generated is equivalent to 125% of SMYS (minimum).	Please confirm that minimum rupture pressure shall be equal to specified UTS as per raw material test certificate of that particular heat or equivalent to 125% of minimum SMYS.	Tender Conditions prevail
21	Cl. No.11.2.1 of PTS	The marking of finished line pipe should also contain the Pipe No, Heat No, Coated Pipe No, Inspection mark by TPI, Diameter of pipe and wall thickness (to be marked in white color).	We understand that monogram (Inspection mark) of TPI shall be die stamped on each pipe surface OD at an approximate distance of 50mm from pipe end. <u>Kindly confirm.</u>	Noted
22	Cl. No. E.6 of PTS	Each pipe end up to 300 mm, OD weld seam, ID weld seam & both the bevel end shall be magnetic particle inspected as per QCT. Acceptance limit, Calibration standard & Calibration frequency shall be as per QCT.	We understand that for each pipe ID, OD Weld seam up to 300mm tested by magnetic particle inspection is not applicable for HFW pipes because HFW pipe is fusion welded. So, we consider that this requirement is to be waived of For ERW Pipes although MPI for full circumference of bevel end of each pipe shall be performed as per your QCT.	Confirmed
23	Cl. 10.1.1 of GTS	For X70 & X80 GRADE MATERIAL: Line Pipe manufacturer shall depute this Approved TPIA expert at steel mill to control the mechanical and chemical properties of all coils and plates as per requirement of Annex Q and API 5L PSL 2. Moreover the approved TPIA shall issue the 3.2 certification for all supplied material. Only duly stamped (By TPIA) material (coils / plates), will be shipped to line pipe Manufacturer.	Any Raw material supplier is not agreeing for die stamping on coils. So please waive off this requirement.	Manufacturer test certificate shall suffice when collated with coil description
24	Cl. 11.2.1 of GTS	Pipe individual number shall contain: the first two numbers to indicate the year of the purchase order and maximum five numbers specified in the purchase order and if those are not specified, they must be requested from the Purchaser. If the pipe Manufacturer suspects any problems in meeting this requirement, he shall submit for approval to the Purchaser the <u>proposed sequence of numbers and marking</u> .	Our pipe individual number shall contain: 1E21JXXXX First digit - mill number Second digit – type of pipe (ERW) Third two digit – year of pipe manufacturing Fifth digit – month of pipe manufacturing Last five digits – pipe serial number. <u>Kindly confirm.</u>	Noted
25	Cl. No. E.2.2 of GTS	For angle beam scanning of the weld zone, the maximum number of legs of beam travel shall be 3 (1.5 skips) for detection of imperfections.	As per our experience in AUTO UT inspection skip distance depend upon diameter & thickness of the pipe vary between 1 to 3 skip, generally in smaller dia. Pipe higher skip (up to 3skip) is required because of less area (circumference) to sit the probes. So please allow the skip distance up to 3 skips.	Accepted
26	Table E. 11 of GTS	Table E.11 – Guidance for probe angle- manual UT inspection. ☐ Probe Angle (when T≤12.7 mm) ☐ 70°.	As per our past experience there is a possibility to miss the ID defects by 60° and 70° angle probe. Considering the same all oil and gas companies like IOCL, GAIL, GSPL etc. is recommending the probe angle of 45° to 70° in their technical specifications. Hence it is general practice is followed by all the manufacturer to use 45° angle probe to avoid any kind of missing of defects . <u>So, Kindly amend the range for MUT as 45° for ERW pipes.</u>	Accepted
27	Cl. No. E.1 of PTS	Staff in charge with the NDT shall be duly qualified according to International Standards like, but not limited to: · The American Standard ASN-TC-1A (published by the ASNT) and all Codes it refers to, at least one UT-Level III shall be available with Manufacturer. · European Standard « EN 473 » titled « Non-destructive testing - Qualification and certification of NDT personnel - General principles » and all the Codes it refers to. At least one no. of ASNT Level III inspector shall be made available by the manufacturer on permanent basis <i>(for 24 hrs) during all production at Manufacturer's work</i>	We understand that one level – III required during the manufacturing of pipe and he shall be qualified as per ASNT SNT-TC-1A or equivalent. <u>Kindly confirm.</u>	Confirmed



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28	Cl. No.10.1.1 of PTS	In case of any contradiction between API 5L, GTS and PTS, the following order of priority shall be followed. 1. Quality Control Table (QCT) 2. Particular Technical specification (PTS) 3. General Technical Specification (GTS) 4. API 5L	There is no Quality Control Table (QCT) provided with this tender. So we consider only PTS, GTS & API 5L latest edition.	Bidder understanding is correct
29	REPL/MNGL/NGLP/08/21	Introduction: The present Specification has to be read in conjunction with the API 5L forty-fifth edition, its addendum (December 2012) and the Particular Technical Specification (PTS) attached to the material requisition.	Please provide PTS.	The priority of test application is as under : Clause:
30	REPL/MNGL/NGLP/08/21 Cl. No. 11.2.1	Pipe individual number: Pipe individual number shall contain: the first two numbers to indicate the year of the purchase order and maximum five numbers specified in the purchase order and if those are not specified, they must be requested from the Purchaser.	Pipe no. shall be as per RMTL procedure.	Noted
31	REPL/MNGL/NGLP/08/21 Cl. No. 11.2.1	The Monogram of TPIA: The monogram of the third party inspection agency shall be always manually die stamped in the bevel of the pipe in front of the markings on the pipe wall or after the markings on the bevel.	Stamping on pipe is technically not advisable and it is also not safe on bevel face, hence we propose to waive off the requirement of stamping on pipe.	TPI sampling will be 50 mm away from level end
32	AMENDMENTS TO THE GTS Cl. No. 8.3	Starting Material: Line pipe manufacturer shall depute Approved TPIA expert at steel mill to monitor and control the mechanical and chemical properties of all coils as per requirement of QCT, PTS, GTS and API 5L PSL2.	Please provide QCT for Steel Coil.	Coil monitoring Mill test certificate will suffice, hence No need to depute PPE manufacturer TPI to coil manufacturing Mill.
33	AMENDMENTS TO THE GTS Cl. No. 9.11.3.4 b)	Tolerance for straightness: The local deviation from straight line in the 1.5 m portion at each pipe end shall be ≤ 3.0 mm as shown in fig. 2 of API 5L spec.	This requirement is as per 45th edition of API 5L. It is modified in 46th edition of API 5L. "The local deviation from straight line in 1.5 meter portion at each pipe end shall be ≤ 3.2 mm."	API 5L figure2 shall prevail
34	AMENDMENTS TO THE GTS Cl. No. 10.2.5	Macrographic and Metallographic Test: The specimen shall be visually examined using a minimum 40X magnification to facilitate proof that proper fusion has been achieved for the full thickness and there is proper interpretation of passes, their alignment and texture of welding zone.	This requirement is not applicable to ERW pipe. We shall do micro examination at 100X to check the grain size, heat treatment of weld & HAZ and there is no untempered martensite remains.	Bidder understanding is correct
35	AMENDMENTS TO THE GTS Cl. No. 11.2.1	Pipe Marking: Pipe no. shall be punch by cold die stamping (Low Stress dotted punch) at the distance of 50mm right side of weld seam and 50mm from the pipe end.	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 condition shall prevail
36	AMENDMENTS TO THE GTS Cl. No. 11.2.1	Pipe Marking: In case pipe size is below 12" outside marking shall be done on both ends of pipes at 90 degree.	Stencil marking shall be as per API 5L. Stencil marking shall be done on outside surface at one end only.	Bidder understanding is correct
37	AMENDMENTS TO THE GTS Table B.1	Macro etch of slab: Macro etch of slab / skelp representing head, middle and tail of all stands to be used for production heats. This test has to be performed at steel mill.	Steel mill does not accept this test frequency. Macro etch of slab shall be carried out as per steel mill practice at the frequency of one slab per casting sequence of all stands.	Bidder understanding is correct
38	Cl no. 11.2.9.2 of HFW technical specification, tender doc no. REPL/MNGL/NGLP/08/21 rev.00	Stencil Marking: ON Bare / External 3LPE Coated Pipes Pipe marking (stencil) shall be made from both end of the pipe opposite to the weld line.	This requirement is contradictory with the marking cl. no. 13.0 of 3LPE coating specification "Contractor shall place marking on the outside surface of the coating at one end of the coated pipe" We understand that marking will be done as per 3LPE coating and approved marking map. Please confirm.	Tender condition shall prevail



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39	4.3(a) of technical Specifications: 3LPE external Coating	Epoxy powder properties: Epoxy Powder: i. Density ii. Gel Time iii. Cure time iv. Moisture content v. Thermal Characteristics (Tg1, Tg2, H)	We do not have facility of sieve analysis and infrared scan properties of epoxy powder. We will submit raw material test certificate of both test properties for review.	Bidder understanding is correct
40	Cl no. 7.5.2 (l) of technical Specifications: 3LPE external Coating	Coating resistivity test: The contractor shall submit Coating Resistance test report before start of production. Test shall be performed as per DIN 30670 by the raw material manufacturer in an international lab DVGW Germany/ KTH Germany, Exova UK, Salzitter or Charter Coating Canada.	Mention Salzitter is a typo error and should be read as "Salzgitter". Please confirm.	Noted
41	Cl no. 8.6.5 of technical Specifications: 3LPE external Coating	Pre heat temperature: After the de-ionized water wash, the pipe shall be dried with dry air and preheated to a temperature of 65°C to 85°C.	After de-ionized water wash, the pipe shall be dried with dry air temperature 65°C to 85°C. Please confirm.	Bidder understanding is correct
42	Cl no. 9.2.11 of technical Specifications: 3LPE external Coating	Cutback requirement:	This requirement is a contradictory with annex – 3; cl no. b "cut back of 150 mm +25/ (-) 0 mm on each pipe". Please confirm final cutback requirement.	The cutback size shall be 110 mm +10 mm / (-)0 mm as per Clause no. 9.2.11
43	Cl no. 10.2.4 (b) of technical Specifications: 3LPE external Coating	Test frequency of bond strength test: The frequency of test shall be one pipe in every fifteen (15) pipes coated. On each selected pipe, bond strength shall be performed for each specified temperature. Test shall be performed at each cut back portion and one in the middle of pipe	Provided frequency is too stringent for both cutback and middle pipe test. We proposed frequency shall be every 2 hour at cutback and every 4 hour in middle. Please confirm	Tender condition shall prevail
44	Cl no. 10.2.4 b of technical Specifications: 3LPE external Coating	Peel test location of middle of pipe at both temperature: Test shall be performed at each cut back portion and one in the middle of pipe.	Due to the small pipe size and the safety issue it is not possible to maintain the specified test temperature in the middle of the pipe, hence test shall be carried out at maximum feasible distance from pipe end. However test location shall be finalized during PQT. Please confirm.	Tender condition shall prevail
45	Cl no. 10.2.4 (d) of technical Specifications: 3LPE external Coating	Relaxation frequency: Depending upon the consistency of result, the frequency of bond strength test as per Para 10.2.4 (b) for cut back portion may be reduced to one pipe in every twenty-five (25) instead of every 2 hrs, at the sole discretion of the Owner's Representative	Mention relaxation with cutback frequency is not in line with 10.2.4(b). We proposed relaxation frequency shall be every 4 hour at cutback and middle.	The provision of clause 10.2.4(d) shall be applicable.
46	3 of Technical Specifications: 3LPE External Coating	GTS means "General Technical Specification 740/GTS/404 Rev.0" and all documents it refers to.	Please provide "General Technical Specification 740/GTS/404 Rev.0" if applicable. As of now bidder has consider technical specification provided with tender for evolution of technical requirements.	Already provided as separate file
47	4.1 of Technical Specifications: 3LPE External Coating	The three layer coating system shall comprise of a powder epoxy primer, polymeric adhesive and a medium density polyethylene topcoat. The coating system and materials shall be pre-qualified and approved by Owner in accordance with provisions of Annexure I of this specification. Contractor shall obtain prior approval from Owner for the coating system and coating materials.	Bidder clarifies that material specified in Annexure I of coating specification, HE3450 is a high density polyethylene.	To be checked in annex.I. It should be MDPE



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48	4.2 of Technical Specifications: 3LPE External Coating	<p>The coating materials Manufacturer shall carry out tests for all properties specified in Para 5.3.1 and 5.3.2 for each batch of epoxy, adhesive and polyethylene compound.</p> <p>Copolymer grafted adhesive shall have the following properties: Melt flow rate, Vicat softening point, Specific Gravity, Elongation at break, Tensile Yield strength, Water Content.</p> <p>Properties of Polyethylene Compound: Tensile strength, Melt flow rate, Density, Hardness, Water absorption, Volume Resistivity, Dielectric withstand, Softening point, Elongation at break, Oxidative induction time, Environmental Stress Crack Resistance (ESCR), Carbon Black Content, UV resistance and thermal ageing.</p>	<p>As confirm by adhesive & polyethylene material manufacturer will provide batch test certificate for the measured value and typical value as mentioned below:</p> <p>PE Adhesive: Melt flow rate, Specific Gravity/Density, Water Content test results shall be reported as measured value for each batch. The properties - Elongation at break, Tensile Yield strength and Vicat Softening point will be reported as typical values supported by reputed lab reports.</p> <p>Polyethylene: Melt flow rate, Density, Oxidation Induction Time, Carbon Black Content results shall be reported as measured value for each batch. The properties - Tensile strength, Hardness (Shore D), Water absorption, Volume Resistivity, Dielectric withstand, Softening point, Elongation at break, Environmental Stress Crack Resistance (ESCR), Carbon Black Content, UV resistance and thermal ageing shall be reported as typical value supported by reputed lab reports.</p> <p>Sample MTC of adhesive & polyethylene attached as blow for review and confirmation.</p>	Such detailed approval shall be at the time of ITP approval since these tests shall have to be covered under applicable code
49	4.3 of Technical Specifications: 3LPE External Coating	<p>In addition to Manufacturer's certificate, the Contractor shall draw samples from each batch of epoxy, adhesive and polyethylene in the presence of Owner Representative and test for the following properties</p> <p>a. Epoxy Powder:</p> <p>i. Density ii. Gel Time iii. Cure time iv. Moisture content v. Thermal Characteristics (Tg1, Tg2, H) vi. Particle Size or Sieve Analysis vii. Infrared Scan</p>	Bidder understands that Infrared Scan report to be provided by epoxy powder manufacturer and submit for review.	Manufacturer test data shall be demonstrated as per tender condition
50		<p>b. Adhesive:</p> <p>i. Specific Gravity ii. Melt Flow Rate iii. Vicat Softening Point iv. Moisture content</p>	Bidder understands that Moisture content is to be read as water content test and performed as per ISO 15512.	Moisture content or water content is one of the same and the test should be conducted as per international standard
51		<p>c. Polyethylene:</p> <p>i. Melt Flow Rate ii. Specific Gravity iii. Vicat Softening Point iv. Water Absorption Content v. Oxidative Induction Time</p>	Bidder understands that Water Absorption Content is to be read as water content test and performed as per ISO 15512.	Moisture content or water content is one of the same and the test should be conducted as per international standard
52	5.3.3 (A) of Technical Specifications: 3LPE External Coating	Bond Strength (Peel Strength) Test Method: ISO 21809-1 Annexure C	Bidder proposes to bond strength test shall be carried out by manual peel test machine (Spring loaded test assembly) due to size constraint. Please confirm.	Noted
53	7.3 of Technical Specifications: 3LPE External Coating	At least one pipe at start & end of PQT shall be coated partly with epoxy and partly with both epoxy and adhesive layers.	Bidder understands that partly coated pipe at the end of PQT intended to check epoxy layer thickness & adhesive layer thickness only.	Bidder understanding is correct
54	7.4.3 of Technical Specifications: 3LPE External Coating	The ratio of shot to grit shall be established during procedure qualification testing, such that the resultant surface profile is not dishd and rounded.	Bidder proposes that blast cleaning shall be performed by using steel grits to achieve required angular surface profile for better adhesion strength of coating.	This shall be established during PQT (procedure qualification testing) such that the surface profile conform to SA 2 & 1/2



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55	7.5.2 (a) & 10.2.4 of Technical Specifications: 3LPE External Coating	<p>Cl.7.5.2 (a) Bond Strength Three test pipes shall be selected for bond strength tests. On each of the selected pipes, three bond strength test shall be performed for each specified temperature i.e. one at each end and one in the middle of the pipe and specified requirements shall be complied with, i.e. bond strength as well as mode of separation. Length of peel shall be minimum 65mm. None of these samples shall fail.</p> <p>Cl. 10.2.4 The frequency of test for cut back portions shall be one pipe in every fifteen (15) pipes coated. On each selected pipe, bond strength shall be performed for each specified temperature. Test shall be performed at each cut back portion and one in the middle of pipe.</p>	<p>Bidder proposes to perform bond strength test at maximum feasible distance from one of the 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>	Tender condition shall prevail
56	7.5.2 (L) of Technical Specifications: 3LPE External Coating	<p>Coating Resistance test The contractor shall submit Coating Resistance test report before start of production. Test shall be performed as per DIN30670 by the raw material manufacturer in an international lab DVGW Germany/ KTH Germany, Exova UK, Salzitter or Charter Coating Canada.</p>	Bidder understands that Salzitter is to be read as Salzitter Mannesmann Forschung GmbH.	Bidder understanding is correct
57		<p>Cl. 7.5.3 (a) Surface cleanliness, surface roughness measurements and dust control immediately after second abrasive blast cleaning and salt test</p> <p>Cl. 8.6.5 The salt tests shall be carried out after de-ionised water rinse. One test shall be carried out at one end of each pipe.</p>	<p>Bidder will perform surface preparation inspection and salt contamination test after 2nd abrasive blast cleaning and prior to phosphoric acid wash and high pressure DI water wash as per Clause 8.4 & 8.7 of Specification.</p> <p>If salt contamination exceeds 2µg/cm² then pipe shall be re-blasted and again rechecked for salt contamination.</p> <p>At Bidder's plant the surface pre-treatment (Acid wash followed by deionized water wash and chromate application) and application of coating is a continuous process to avoid any contamination after surface pre-treatment prior to application of coating.</p>	Bidder understanding is OK. Shall be approved at the time of ITP
58	8.14.4 of Technical Specifications: 3LPE External Coating	The Contractor shall check that the concentration of the chemical pre-treatment solution remains within the range recommended by the chemical manufacturer for the pipe coating process. The concentration shall be checked at the make-up of each fresh solution and once per hour, using a method approved by the chemical manufacturer.	Bidder proposes test frequency once per shift.	Tender condition shall prevails
59	9.1.4 of Technical Specifications: 3LPE External Coating	Temperature of the pipe surface shall be continuously monitored & recorded by using suitable instruments such as infrared sensors, contact thermometers, thermocouples etc.	Bidder proposes and considers that the air pressure in epoxy spray guns shall be monitored continuous & recorded at once per hour during the regular production.	Bidder query does not match
60	9.2.6 of Technical Specifications: 3LPE External Coating	Air pressure in the epoxy spray guns shall be controlled, continuously monitored and recorded by using suitable instruments. The air pressure shall be controlled within the limits established during coating procedure qualification. The monitoring system shall be able capable of raising an alarm/activate audio system (hooter) in the event of change in air pressure beyond the set limits. Any deviation from the pre-set limits shall be rectified. If immediate rectification is not feasible, the production shall be stopped until cause of deviation has been removed. Any pipe coated during the duration of air pressure deviation shall be identified by suitable marking and rejected. Such rejected pipes shall be stripped and recoated.		Tender condition prevails



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61	10.2.4 (b) of Technical Specifications: 3LPE External Coating	The system shall disbond/separate cohesively either in adhesive layer or in polyethylene layer as described in ISO 21809-1 Table 7, Note C. Majority of the peeled off area on the pipe shall show presence of adhesive. Disbondment/separation at epoxy to steel interface or epoxy / adhesive interface or adhesive /polyethylene interface shall not be permitted. The failure mode shall be recorded for each test.	As described in ISO 21809-1 Table 7, Note C "Cohesive failure mode is applicable if a non-grafted adhesive is used, no disbonding between steel and epoxy" Bidder going to use Borealis ME0420 adhesive material which is grafted adhesive hence there shall be no failure between steel surface and epoxy layer.	Bidder assurance is Noted.
62	10.2.4 (d) of Technical Specifications: 3LPE External Coating	Depending upon the consistency of result, the frequency of bond strength test as per Para 10.2.4 (b) for cut back portion may be reduced to one pipe in every twenty-five (25) instead of every 2 hrs, at the sole discretion of the Owner's Representative.	Bidders understands that every 2 hrs shall be read as every 15 pipes in accordance with clause 10.2.4 (b) of Technical Specifications: 3LPE External Coating.	Bidder understanding is correct
63	10.2.5 of Technical Specifications: 3LPE External Coating	Impact Strength a) Initially the frequency of test shall be two (2) coated pipes per shift as per approved QAP. c) Impact Strength Test shall be carried out at every change in batch of PE.	Bidders understands that Impact test frequency shall be two (2) coated pipes per shift. Please confirm	Confirmed if the change of PE batch is not undertaken during shift
64	10.2.6 of Technical Specifications: 3LPE External Coating	Indentation Hardness a) The frequency of test shall be initially 2 (two) coated pipes per shift as per approved QAP. b) Indentation Hardness Test shall be carried out at every change in batch of PE.	Bidders understands that Indentation test frequency shall be two (2) coated pipes per shift. Please confirm	Confirmed if the change of PE batch is not undertaken during shift
65	10.2.10 of Technical Specifications: 3LPE External Coating	Cathodic Disbondment Test The frequency of this test shall be once in every two weeks or one test representing each batch of epoxy powder used, whichever is more frequent.	Bidder clarifies that after test ring cutting for destructive testing, the cut back of coated pipe shall be maintained as per requirement, and pipe will be provided without re-beveling and NDT.	Tender condition shall prevail
66	13 of Technical Specifications: 3LPE External Coating	MARKING Colour band	Bidder understand that colour band is not required since there is only one wall thickness.	Tender condition shall prevail
67	Clause No. 1.0	INTRODUCTION The present « Particular Technical Specification » relates to the manufacture of "SEAMLESS Steel Line Pipes" for the service of natural gas.	Bidder understands that the pipes shall be manufactured through HFW process.	Both process is ok
68	Clause No. 8.0	Centre Slitting of coils shall be avoided because of high segregation zone at centre. If required because of size limitation, then offset slitting in 2 parts or 3 parts shall be preferred, in any avoidable condition line pipe manufacturer can slit coils from centre. Shearing of coil to plate (Cut-to-length) shall be done under monitoring of TPIA as per OCT.	Bidder proposes to allow center slitted coil considering the project diameter of 10.75" as for this size no steel mill provide the required width of the coil.	Accepted
69	Clause No.18.13	Traceability data 8.13.2 Bar code shall be applied from the coil/forming stage to internal (if applicable) and external coating stage for each and every pipe. Pipes shall not be accepted without bar code.	Bidder proposes the pipe traceability through our internal SAP system. Bar code on pipes shall be applied after final bench inspection for the accepted pipe.	The traceability correlation with physical pipe is also required
70	Clause No. 9.5 Page 116 of tender PTS, Annexure-III	Reverse bend Test Reverse Bend test for Pipes shall be carried out as per requirements Part –II [sec 3(i)], Annexure III of PNGRB Notification, 2008. The reverse bend test shall be carried out with a mandrel, whose radius (R), width (A), shall be calculated for any combination of Diameter, wall thickness and grade with the formula:	Bidder understands that there is typo error in the formula specified herein. In denominator it should be "(D-2t)" in place of "(D-t)"	PNGRB T4S regulation prevails



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71	Clause No. 10.0	INSPECTION 10.1.1.4 Single TPIA shall be appointed by pipe manufacturer at steel mill & pipe mill for material inspection and certification as per project requirements. The QCT for Steel HR Plates/Coils shall be prepared by the Steel Manufacturer as per actual requirements specified in the bid document, line pipe specification & QCT. The same shall be submitted for Owner/Consultant's approval. Testing of Raw material (Steel HR Plates/Coils) at steel mill shall be witness by TPIA	No QCT for pipe or steel is received with bid document, hence not considered. Please provide the same for our review (if applicable).	The QCT acceptable is as per steel coil manufacturer. The pipe manufacturer need to secure the same from the source of coil
72	Cl. No. 10.2.1	Sampling Frequency The manufacturer shall carry out analysis of two samples per 50 pipes representing each heat of steel used for production of pipes. Product analysis shall be carried out from finished pipe. The specimen shall be taken from finished pipe.	Bidder understands that the frequency specified herein is applicable for Chemical analysis (Product analysis) only, not for mechanical tests.	Bidder understanding is correct
73	Cl. No. 11.2.1	STENCIL Stencil marking confirming to API 5L in English shall be done at a distance of 300 mm on the both ends of pipe - one inside & one outside at 90 degree. In case pipe size is below 12" outside marking shall be done on both ends of pipes at 90 degree.	For OD 273.1 mm, bidder confirms to perform marking at both ends, one at OD & one at ID. However, positioning of marking, one inside and one outside at 90 degree is practically not feasible.	Tender conditions ask for outside marking on both side for 273.1mm OD. Tender conditions shall prevails.
74	Cl. No. 11.2.1	A colour band of 50 mm wide to differentiate thickness of pipes shall be provided at each extremity (150mm from the end) of the pipe after coating of pipe by the coating applicator.	Bidder understands that application of colour band shall not apply as the tender is having single wall thickness of 6.4 mm for 373.1 mm OD size.	Colour band is required as the site may handle pipes of different thickness
75	B.5.4 B.5.4 of GTS	WELDABILITY TEST Weldability test has to be performed for Grade X70 pipes as required in GTS. Previously done weld ability tests are not acceptable. Weldability of PSL2 pipes Manufacturer shall ensure, and demonstrate the weldability of the pipes in accordance with this specification and under normal operational site condition. The test welds will be performed on full length pipes (Min 11 m).	Bidder confirms to perform weldability test as per API 1104 and proposes that weldability shall be carried out on pipe with 2 pup piece of 600 mm length each.	Noted
76	B.7.3.2 E.3.1.1	Radiographic Examination Radiographic examination shall be as per Cl. E.4 of this specification. To ensure the weld quality, the Manufacturers shall cover about 5% of manufactured pipes to "Spot Radiography – (min 200 mm)" at least one on middle of the pipe. This is apart from requirement of pipe end radiography. However, an interruption (Start/Stop point) of SAW shall also be 100 % radiographed, which will not be the part of requirement of 5% additional radiograph. RADIOGRAPHIC INSPECTION OF WELD SEAMS Not applicable for HFW pipes.	Bidder understands that Radiography examination is not applicable for HFW pipes.	Bidder understanding is correct



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77	B.7.4	<p>PHYSICAL TESTING In addition to the following test, other tests specified in QCT /approved QAP shall be carried out :</p> <ul style="list-style-type: none"> •Flattening test (at 0 & 90 deg.) •Chemical Test •Tensile Test for pipe base & weld (Transverse & Longitudinal) •Reverse Bend Test •Impact test •Macro and micro examination, •Hardness test <p>"Drop weight Tear Test (Table B 1 item 5) "</p>	Bidder understands that only transverse tensile test is required to be performed for this size.	The QCT condition shall prevail.
78	E.2.2 of GTS	Angle beam UT transducer frequency and element size shall be selected so that inspection does not occur in the near field. For automatic inspection, maximum element sizes should be 13 mm (0.512 in) for inspection by angle beam transducers. Element size shall always be smaller than wall thickness.	Bidder understands that there is ambiguity in the requirement for element size for angle beam for this project size (one is 13 mm max & other is < project WT). However, Bidder confirms to use (8 X 9) mm element size for AUT system.	Bidder understanding is correct
79	E.2.2 of GTS	Automatic Angle Beam UT Inspection (added) For angle beam scanning of the weld zone, the maximum number of legs of beam travel shall be 3 (1.5 skips) for detection of imperfections.	Due to smaller OD and low thickness and square butt weld geometry in HFW pipes, the probe angle shall be 45° (± 3°) are best suitable for defect detection for weld seam examination by automatic UT system as well as manual UT.	Noted
80	E.3.1.4.2 of GTS E.3.1.4.2 of PTS	Table E.10	With 1.5 Skips, the surface distance becomes very less and misleading for interpretation. We, therefore, propose for maximum of 3 Skips for testing.	Noted
81	E.6	MAGNETIC PARTICLE INSPECTION Each pipe end upto 300 mm, OD weld seam, ID weld seam & both the bevel end shall be magnetic particle inspected as per QCT. Acceptance limit, Calibration standard & Calibration frequency shall be as per QCT.	Bidder confirms to perform MPI for bevel face & 300 mm OD weld seam only	Tender Conditions shall prevail