OIL INDIA LIMITED

PIPELINE REHABILIATION PROJECT-PHASE-II

VOLUME II OF II (TECHNICAL)

BID DOCUMENT FOR PROCUREMENT OF COATING MATERIALS

(BID DOCUMENT NO- 054/LEPL/OIL/01-R0)

DOMESTIC COMPETITIVE BIDDING

OIL INDIA LIMITED

SUPPLY OF COATING MATERIALS

FOR

PIPELINE REHABILIATION PROJECT – PHASE-II

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1.0 INTRODUCTION

Oil India Limited (herein after called as OIL) is a "MAHARATNA" category Public Sector Enterprise under Ministry of petroleum & Natural Gas (MoP&NG), engaged in the business of Exploration, Production & Transportation of Crude Oil, Petroleum Products and Natural Gas and Production of LPG in India with participating interest in E&P sector in various overseas assets.

The Pipeline Sphere of OIL deals with transportation of petroleum to different refineries and thus operates a total of 1900 Km of hydrocarbon pipelines, which comprises of 1246 Km of Crude oil trunk pipeline (NBPL) and 654 KM Product pipeline (NSPL). For this purpose, it owns a 1157 Km long pipeline Right-of-Way (ROW) from Duliajan to Barauni traversing three states of Assam, West Bengal and Bihar. This ROW has multiple hydrocarbon pipelines viz. crude, product & natural Gas, all protected from a common Impressed Current Cathodic Protection (ICCP) system owned and maintained by OIL. Out of above-mentioned pipelines in the ROW, 1415 km of pipelines (mostly 16-inch and 14-inch diameter) are more than 40 years old and were considered under Pipeline Rehabilitation Project primarily involving in-situ coating refurbishment with cold tape systems with an aim to enhance life of pipelines by another 30 years.

In Phase-I of the rehabilitation project, works were carried out during 2017-2022 with in-situ coating refurbishment of 593 km of pipeline along with associated works.

For completion of balance coating refurbishment of approx. 700 km pipeline along with other associated works, OIL plans to refurbish under Phase II external coating of approx. 700 km pipeline in identified sections. The above pipeline passes through OIL owned ROW -1157 km long through states of Assam, West Bengal and terminates at Barauni, Bihar.

OIL has awarded Lyons Engineering Pvt. Ltd. (LEPL) as Project Management Consultant (PMC) for execution of Phase II of the above pipeline rehabilitation project.

Definitions:

Project	Supply of Coating Materials for Pipeline Rehabilitation Project-Phase-II
Owner/Company	OIL India Limited
Project Management Consultant	Lyons Engineering Pvt. Ltd. (LEPL)
Vendor	Vendor shall mean manufacturer or authorised supplier of the material, ordered in accordance with Material Requisition, Technical Specification, QAP etc.

The present document covers the material requisition, technical specifications, QAP and SOR for this procurement enquiry. It forms an integral part and is to be read in conjunction with 'Volume I of II' Commercial.

OIL India limited intend to create an inventory of Coating Materials for Pipeline Rehabilitation Project-Phase-II for 03 (three) years.

Lyon Engineering Pvt. Ltd. (LEPL) is now inviting tenders on open domestic competitive bidding basis for procurement of "Coating Materials" for this project.

2.0 TECHNICAL SPECIFICATIONS

The technical specifications for this present tender enquiry are as listed in material Requisition (No.OIL-054001-PL-MR-001)

OIL INDIA LTD.

MATERIAL REQUISITION (MR)
COATING MATERIALS

A. DESCRIPTION OF GOODS ADD/OR SERVICES

Item	Qty /Unit	Description	Identification Number
		For quantity of COATING MATERIALS refer Table #1	

The scope includes Manufacture, Inspection, Testing, Packing, Supply, Transportation & Unloading of following Coating materials (meeting other technical requirements as specified in bid document) at OIL's store located at Assam, West Bengal & Bihar as per the tender terms & conditions.

TABLE-1

S. No.	Item Description	Unit	Total Qty.
Manufacture, Inspection, Testing, Packing, Supply, Transportation & Unloading of following Coating materials at OIL's store located at Assam, West Bengal & Bihar as specified in bid document.			
1.0	**3 ply / 2 ply COLD APPLIED TAPE SYSTEM**		
1.1	Inner wrap (3 Ply)	Sq. meter	1469517
1.2	Outer wrap (2 Ply)	Sq. meter	1496237
1.3	Primer	Liter	95425
1.4	Filler material	Kg.	12556
1.5	Hand wrapping machine (Inner & Outer)	Set	48

Note:

1. Bidder must quote for full quantity of each line item. Bid submitted for part quantity of any line item shall be considered as non-responsive and liable to be rejected.
2. The quantities mentioned above are indicative and are for evaluation purpose only. OIL reserves the right to change the quantity of any or all line items during execution of order as mentioned below:

Tolerance Limit : Negative tolerance on quantities indicated in the MR is not acceptable. Overall tolerance shall be (+) 5% against each line items mentioned above. Bidder may note that price adjustment clause / LD Clause shall be applicable on the actual quantity supplied, within the tolerance limit, instead of Purchase Order quantity.

All the items are to be procured from same source. Therefore, bidders are requested to quote for all the items, otherwise, offer will be rejected straightway. Evaluation and ordering will be carried out on total evaluation lowest cost basis for the total package inclusive of GST. The total order shall be placed on sole L1 Bidder.

3. Quantity shall be ordered lot or sub-lot wise. Vendor shall supply the 1st sub-lot of materials within 10 weeks from issuance of LOA (Letter of Award). Balance materials shall be supplied as per "Delivery Schedule" Annexure-E attached with MR. The quantities indicated in Annexure-E are indicative only. OIL reserves the right to change the delivery quantity as per site requirement during execution stage by giving three (3) month notice without any financial implications.

B. REMARKS/COMMENTS

1.0 GENERAL NOTES

VENDOR's/SUPPLIER compliance

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

2.0 COMPLIANCE WITH SPECIFICATION

The Vendor shall be completely responsible for the Manufacture, Inspection, Testing, Packing, Supply, Transportation & Unloading of the above materials strictly in accordance with the material requisition, technical specifications and all attachments thereto.

All items shall be provided with relevant certificates as per tender requirement.

3.0 VENDOR's/SUPPLIER SCOPE

Vendor scope of work is included the equipment with all internals and accessories shown on the data sheets, specifications and all unmentioned parts necessary for a satisfactory operation and testing except those which are indicated to be out of the Vendor's supply.

4.0 INSPECTION

Vendor shall appoint a TPIA anyone of the following for inspection purpose without any extra cost to the owner, as set out and specified in the codes and particular documents forming this MR. Vendor has to propose minimum 2 nos. of below listed agencies to be approved by owner/owner's representative.

a) Lloyd Register of Industrial Services
b) Technische Ulierwachungs Verein (TUV) - NORD
c) Det Norske Veritas (DNV) – GL
d) Bureau Veritas
e) SGS
f) STS Integrity Management Pvt. Ltd.
g) American Bureau services
h) APPLUS VELOSI
i) Certification Engineers international Limited (CEIL)

The personal deployed by TPIA shall have min. AMPP/NACE/SSPC level-II or equivalent coating inspector certificate and at least 5 years of relevant experience for such inspections

In addition to the above, owner also reserves the right to inspect and witness any tests during manufacturing at their own or through authorized representative.

5.0 APPLICABLE DOCUMENTS

General prescriptions, requirements and information are listed in annex C of this Material Requisition.

6.0 VENDOR's documents

Vendor shall submit the documents as listed under point D of this material requisition. All documents shall be submitted in English language only.

7.0 DOCUMENTS NUMBERING AND FORMAT

Vendor shall strictly follow the document numbering procedure in their document as instructed by the owner.

C. LIST OF ATTACHMENTS

The table here below lists the documents which are integral part of this material requisition. The applicable revision index of each document is mentioned in the column below the current material requisition revision index. When the material requisition revision index is A" or "I", all listed documents are attached. For other material requisition revision index, only modified or new documents are attached.	Material Requisition revision							
	0	1	2	3				
Documents	Revision of documents							
Technical Specification for Polymeric 3Ply/2Ply Cold Applied System Coating Details Doc. No. OIL-STD-PL-DOC-TS-101	0							
Quality Assurance Plan – 3Ply/2Ply Cold Applied System Coating Details Doc. No. OIL-STD-PL-DOC-QAP-101	0							

D. DOCUMENTS & DATA REQUIREMENTS

The table hereunder specifies the quantities and the nature of the documents to be submitted by the Vendor / Supplier to the Engineer-In-Charge.

The documents required at the inquiry stage and to be included in the bid are listed under column A.

The documents required after award of the Agreement and subject to the written approval of the Engineer are listed under column B.

The final and certified documents are listed under column C.

Any document, even when preliminary, shall be binding and therefore duly identified and signed by the Vendor/Supplier. It shall bear the project reference, the Material Requisition number and the identification number.

The documents are fully part of the supply which shall be complete only if and when the documents complying fully with the material requisition requirements are received by the engineer-in-charge.

Item	Document and Data	A	B		C	
		No. of copies	No. of copies	Required date (After FOI)	No. of copies	Required date
1	Completed data sheet for Coating Materials (CDS)	1	6	1 week	6	with draft final tech. file
2	Drawing / data submittal list / schedule(DLS)	1	6	1 week + weekly	6	with draft final tech. file
3	Progress report (PRT)	-	6	weekly	6	-
4	Outline drawing + material specification + unit weight + Bill of materials (on drawings)(OMS)	-	6	1 week	6	with draft final tech. file
5	Code compliance Certificate (CCC)	-	6	1 week	6	with draft final tech. file
6	QA/QC program* (QAP)	1	6	1 week	6	with draft final tech. file
7	Inspection and test Procedures (ITP)	1	6	1 week	6	with draft final tech. file
8	List of fabrication and control operations (LOF)	-	6	1 week	6	with draft final tech. file
9	Test reports(TRS)		6	Daily	6	with draft final tech. file
10	Packing/shipping list with weights and dimensions (PLD)	-	6	1 week before shipping	6	with draft final tech. file
11	Material certificate (MCT)	1	6	1 week after test	6	with draft final tech. file

12	Painting system Description (PSD)	-	6	1 week	6	-
13	Final technical file, preliminary copy for approval(FTF) (Draft)	-	6	5 days before despatch	6	2 weeks + with final tech. file

Note: This week shall be counted from the date FOI as placed by client.

*QA/QC program shall comprise of in-house testing facilities, resources and quality procedure being followed by the vendor to ensure quality of product in line with tender requirement.

NOTES

1. Durations in column B (required date) are weeks after FOI (Fax Of Intent) or as indicated in table. Duration in column C (Required date) are weeks after document approval or as indicated in Table. Due date of each document may be proposed.

2. Latest submittal time for:

   a. Test procedure : 1 week before test
   b. Test report : 1 day after test

Final technical file shall be applied in hard copy as indicated, and in electronic format (.pdf Acrobat files) on six (6) CD-ROMs.

E. DELIVERY SCHEDULE

S. No.	Item Description	Unit	Total Qty.	LOT-1 (8%) (10 Weeks, 14 Weeks from LOA)		LOT-2(32%) (30 Weeks, 34 Weeks, 38 Weeks, 42 Weeks from LOA				LOT-3(32%) (80 Weeks, 84 Weeks, 88 Weeks, 92 Weeks from LOA)				LOT-4(28%) (132 Weeks, 136 Weeks, 140 Weeks, 144 Weeks from LOA)			
Manufacture, Inspection, Testing, Packing, Supply, Transportation & Unloading of following Coating materials at OIL's store located at Assam, West Bengal & Bihar as specified in bid document.				Sub - Lot - 1	Sub - Lot - 2	Sub - Lot - 3	Sub - Lot - 4	Sub - Lot - 5	Sub - Lot - 6	Sub - Lot - 7	Sub - Lot - 8	Sub - Lot - 9	Sub - Lot - 10	Sub - Lot - 11	Sub - Lot - 12	Sub - Lot - 13	Sub - Lot - 14
1	**Group A - 3 ply / 2 ply COLD APPLIED TAPE SYSTEM**																
1.1	Inner wrap (3 Ply)	Sq. mtr	1469517	4%	4%	8%	8%	8%	8%	8%	8%	8%	8%	7%	7%	7%	7%
1.2	Outer wrap (2 Ply)	Sq. mtr	1496237	4%	4%	8%	8%	8%	8%	8%	8%	8%	8%	7%	7%	7%	7%
1.3	Primer	Ltr	95425	4%	4%	8%	8%	8%	8%	8%	8%	8%	8%	7%	7%	7%	7%
1.4	Filler material	Kg.	12556	4%	4%	8%	8%	8%	8%	8%	8%	8%	8%	7%	7%	7%	7%
1.5	Hand wrapping machine (Inner & Outer)	Set	48	6	6	3	3	3	3	3	3	3	3	3	3	3	3

SI No	Destination (OIL Pump Station)	Qty.Delivery Location for SI NO 1.1,1.2,1.3 & 1.4	Qty against SI NO 1.5	
1	Storage Location-1 (PS-2)	6%	6 Set against each Sub-lot 3 & 4	
2	Storage Location-2 (PS-3)	8%	2 Set against Sub-LOT-1	
3	Storage Location-3 (PS-4)	22%		6 Set against Sub-lot 11 & 12
4	Storage Location-4 (PS-5)	14%	2 Set against LOT-1	12 Set against Sub-lot 7,8,9 and 10
5	Storage Location-5 (PS-6)	12%	2 Set against Sub-LOT-2	
6	Storage Location-6 (PS-7)	4%	2 Set against LOT-1	
7	Storage Location-7 (PS-8)	16%	2 Set against Sub-LOT-2	6 Set against Sub-lot 13 & 14
8	Storage Location-8 (PS-9)	10%	2 Set against Sub-LOT-2	
9	Storage Location-9 (PS-10)	8%	6 Set against Sub-lot 5 & 6	

* Note: The above quantities for each delivery destination are indicative and may be very as per site requirement.

F. DELIVERY LOCATION

Addresses of the rehab stores at different pump station locations as mentioned below. In case materials cannot be accommodated in the listed stores as mentioned below then materials may be stored (provided by OIL) within a 50 km (* Note) range from these locations:

	Destination	Address	Contact person
1	PS-2 Moran Assam	Oil India Limited Pump Station 2, Moran PIN - 785 669 Dist: Sivasagar (Assam), Phone: 03754 – 224017	Ankur Barua 8133909958 Jahnu Bora 9101184647
2	PS-3 Jorhat Assam	Oil India Limited, Pump Station No.3, Jorhat NH-37, Jorhat Bypass, P.O. Changeligaon-785010 Jorhat, Assam Ph. 0376-2350765	Anurag Kashyap 7739156671 Aditya Mohan Singh 9560374519
3	PS-4 Sekoni Assam	Oil India Limited, Pump station 4, Jakhalabandha, Dist. – Nagaon, Assam	Pranab Jyoti Hazarika 9435103943 Prajwal Jain 9401976696
4	PS-5 Guwahati Assam	Oil India Ltd, Pipeline Headquarters, Narengi Patharquary- Satgaon Road PO: Udayan Vihar - 781171, Guwahati , Assam	Nirmal Dutta(9954025650) Sandip Sarma (9854069608)
5	PS-6 Bongaigaon Assam	Oil India Limited Pump Station No.6, BOC Gate P.O. Bongaigaon, PIN- 783380,	Ankur Baishya (9854041386) Langkeswar Rahang(9679066317)

		Bongaigaon, Assam	
6	PS7 Madarihat- West Bengal	Oil India Limited, Pump Station 7, Madarihat, Dist: Alipurduar, West Bengal	Koushik Biswas(9836115006) Wrishiraj Sharma(8638957673)
7	PS8 Sonapur West Bengal	Oil India Limited, Pump Station 8, Sonapur, Near Islampur, Dist: Uttar Dinajpur, West Bengal	Jyotirmoy Das(9508644541) Lakhyajit Saikia(8472046572)
8	PS9 Dumar Bihar	Oil India Limited, Pump Station No.9, DUMAR, P.O – DUMAR VIA GURUBAZAR, DISTRICT KATIHAR, BIHAR	Alakesh Deka(9864642731) Parthajit Shyam((7002794783)
9	PS10 Barauni Bihar	Oil India Limited, Pump Station No. 10 (Barauni) P.O. Barauni Oil Refinery Begusarai , Bihar	Nekibur Rahman(9435090949) Dibakar Ghosh(8486834416)

* Note: If any delivery location(s) exceeds more than 50 Km radius from above mentioned store location(s) then it will be paid on actual pro-rata basis for the additional Km above 50 Km. All necessary transportation bill & documents are to be submitted to M/s OIL / PMC for certification.

OIL INDIA LIMITED

TECHNICAL SPECIFICATION
FOR
POLYMERIC 3PLY/2PLY COLD APPLIED SYSTEM USED FOR EXTERNAL CORROSION PROTECTION OF BURIED HYDROCARBON PIPELINE

DOC. NO. - OIL-STD-PL-DOC-TS-101

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1. SCOPE:

This standard specification defines the minimum performance requirement for cold applied polymeric tape coat system comprising of primer layer, inner corrosion polyethylene layer coated with butyl rubber based adhesive on both the sides (3ply) and outer mechanical layer with polyethylene backing with butyl adhesive layer on one side (2ply) to be used for external corrosion protection of buried steel pipelines in conjunction with cathodic protection.

Coating materials purchased under this specification are to be used for recoating of hydrocarbon pipelines coated with CTE (Coal Tar Enamel).

2. GENERAL REQUIREMENT:

2.1 In order to qualify a coating system as acceptable for this rehabilitation project, the coating manufacturer shall submit a detailed track record of the offered tape system have been used for recoating of hydrocarbon pipelines in India / USA / Europe / ME in the last 10 years. Further, the coating manufacturer shall submit detailed independent test report conforming compliance to all the properties & requirements listed in this specification as per ISO-21809-Part 3 latest edition. The test report shall cover all the properties (vide Table 2 under section 5.3) as listed in this specification and shall be witnessed by International reputed certification agencies like Bureau Veritas, ABS, LRS, RWTUV or issued by independent test laboratories like DVGW Germany, Shell Global Solutions Holland, DNV-GL, Charter Coating Canada. The test report shall not be older than five years from the date of the tender. Production facility from where the coating material is proposed to be produced may be subjected to inspection by the Owner/PMC, prior to finalization of the award.

2.2 The wraparound sleeve shall have the required adhesive properties when applied on various commercial pipe-coating materials. The pre-heat and application temperatures required for the application of the sleeve shall not cause loss of functional properties of the pipe coating.

3. REFERENCES:

The following referenced documents are indispensable for the application of this document'. Only the latest edition of the referenced document (including any amendments) applies.

3.1 ISO 21809-3:2016 Petroleum and natural gas industries -- External coating for buried or submerged pipelines used in pipeline transportation systems Part-3.

3.2 EN 12068:1998 External organic coatings for the corrosion protection of buried or immersed steel pipelines used in conjunction with cathodic protection.

3.3 ISO 8501-1:2007 Preparation of steel substrates before application of paints and related products -- Visual assessment of surface cleanliness -- Part 1: Rust grades and preparation grades of uncoated steel substrates and of steel substrates after overall removal of previous coatings

3.4 ISO 8501-2:1994 Preparation of steel substrates before application of paints and related products -- Visual assessment of surface cleanliness -- Part 2: Preparation grades of previously coated steel substrates after localized removal of previous coatings

3.5 ISO 8501-3:2006 Preparation of steel substrates before application of paints and related products -- Visual assessment of surface cleanliness -- Part 3: Preparation grades of welds, edges and other areas with surface imperfections

3.6 ISO 8502-2:2017 Preparation of steel substrates before application of paints and related

products -- Tests for the assessment of surface cleanliness -- Part 2: Laboratory determination of chloride on cleaned surfaces

3.7 ISO 8502-3:2017 Preparation of steel substrates before application of paints and related products -- Tests for the assessment of surface cleanliness -- Part 3: Assessment of dust on steel surfaces prepared for painting (pressure-sensitive tape method)

3.8 ISO 8502-6 : Preparation of steel substrates before application of paints and related products -Tests for the assessment of surface cleanliness -Part 6: Extraction of soluble contaminants for analysis - Brestle method or equivalent.

3.9 ISO 8502-9 : Preparation of steel substrates before application of paints and related products - Tests for the assessment of surface cleanliness - Part 9: Field method for conductometric determination of water- soluble salts

3.10 ISO 8503-5 2003 Preparation of steel substrates before application of paints and related products -- Surface roughness characteristics of blast-cleaned steel substrates -- Part 5: Replica tape method for the determination of the surface profile.

3.11 ISO/NP 8504-2 Preparation of steel substrates before application of paints and related products -- Surface preparation methods -- Part 2: Abrasive blast-cleaning

4. COATING SYSTEM

4.1 The cold applied polymeric tape shall be applied as a three-layer system consisting of the followings:

a. Primer (liquid adhesive)

b. An inner tape (3ply) for corrosion protection.

c. An outer tape (2ply) for mechanical protection.

4.2 Primer: The primer shall essentially be a mixture of butyl rubber adhesive & synthetic compound, carrying medium (i.e. solvents) that is compatible with the tape adhesive of the inner tape and abrasive blasted / wire brashed steel surface, resulting in a cohesive bond between the pipe surface and the inner-wrap. The primer shall be quick drying type. The primer shall be suitable for brush application. The manufacturer shall confirm the coverage of the primer, the shelf life of the primer shall be atleast 5 years. The manufacturer shall indicate recommended time lag between primer and tape application. The primer shall be free from any health hazard during storage and application. The offered primer shall be compatible with the offered tape and shall be suitable for application at substrate temperatures ranges from +5°C to +70°C.

The primer shall be supplied in steel containers of 10 to 20-liter capacity.

The liquid adhesive (primer) shall meet the performance requirements mentioned in Table- I.

4.3 Inner tape (3ply): The inner-wrap tape shall be three-layer corrosion protection tape consisting of solid film backing of polyethylene with co-extruded pressure sensitive butyl rubber based adhesive bonded to the polymer on either side. The consistency of the adhesive shall be such that under tension it will flow on uneven steel surfaces. A non-sticking separator strip (release film) shall be provided in the rolls (outer side) to eliminate sticking of adhesive when the tape is in the roll form.

The inner tape shall be wrapped spirally with a minimum 50% overlap.

The inner tape shall be supplied in roll form as per the following characteristics:

Width	:	100mm
Roll Length	:	15 or 30 meters
Total thickness of the inner tape	:	≥ 0.75mm or as recommended by the manufacturer
% overlap	:	50%
Application	:	By hand wrapping machine
Ambient temp. range	:	+10 to +50 ^{0}C
Pipeline operating temp. range	:	+10 to +50 ^{0}C

4.4 Outer tape (2ply): The outer layer wrap shall be a two-layer mechanical protection tape consisting of a solid film backing of polyethylene with a laminated pressure sensitive butyl rubber adhesive on one side. The butyl rubber adhesive layer of the outer tape shall be completely compatible with the butyl rubber layer of the inner tape. The primary purpose of outer wrap is to provide mechanical strength and adequate resistance to soil stresses. The outer-layer tape shall conform to the shape of the layer of tape it covers. The outer tape shall be wrapped spirally with a minimum 50% overlap.

The outer tape shall be supplied in roll form as per the following characteristics:

Width	:	100mm
Roll Length	:	15 or 30 meters
Total thickness of the inner tape	:	≥ 0.5mm or as recommended by the manufacturer
% overlap	:	50%
Application	:	By hand wrapping machine
Ambient temp. range	:	+10 to +50 ^{0}C
Pipeline operating temp. range	:	+10 to +50 ^{0}C

Mouldable filler material comprising of butyl rubber-based filler mastic/ putty shall be used for smoothing out uneven surfaces, step downs, irregular shapes, weld seams, or cavities to minimize air voids before the application of cold-applied tape coating systems. Filler material shall be fully compatible with the properties of the primer & coating system. All specified properties of coating system should meet at pipe surfaces treated/applied filler material/filler tape. Application procedure of the offered product in the areas having weld reinforcements, girth welds, clamps/sleeves and heavily corroded areas shall also be submitted. Manufacturer's data sheets & complete technical details for Filler Materials / Tape, required surface preparation shall be submitted.

5. FUNCTIONAL REQUIREMENTS OF THE COATING SYSTEM

5.1 The cold applied polymeric tape system as described above with primer shall be suitable for application on an abrasive blasted/ wire brushed steel surface with surface finish of Sa2 ½ and anchor profile of 50-100µ. The primer shall be applied to a wet film thickness of 75µ - 100µ and applied thickness of the coating shall be minimum 2.5mm.

The functional properties of the applied coating system shall be as specified in Table-2.

5.2 The primer shall meet the following requirement:

Table-1 Physical property of Liquid Adhesive (Primer)	
Base	Butyl Rubber and synthetic resins
Volume solids	≥20% to 40%
Maximum application temperature	70 ℃
Shelf Life	5 years (minimum)
Coverage	Minimum 7 m^2 of pipe surface area / per liter

5.3 The inner anti-corrosion tape and outer mechanical protection tape shall meet the performance requirement listed in Table-2 below:

Table-2 Functional properties of cold applied tape system

Property	**Test temp.**	**Unit**	**Requirement**	**Test method as per ISO-21809 Part 3**
Minimum Thickness	-	mm	2.5mm	ANNEX B
Holiday detection at 5 kV/mm+ 5 kV, max. 25 kV	-		no holiday	ANNEX C
Impact resistance	23 °C	J/mm	≥4	ANNEX D
Indentation resistance, pressure - Residual thickness	23 °C & 50 °C	N/mm^2 mm	10.0 ≥0.6	ANNEX E
Specific electrical insulation resistance -RS100	23 °C	Ω·m2	$\geq 10^8$	ANNEX F
Cathodic disbondment resistance at 28 days	23 °C 50 °C	mm mm	≤ 15 ≤ 15	ANNEX G
Peel strength between tape layers - inner/inner, inner/outer - inner/inner, inner/outer - outer/outer - outer/outer	23 °C 50 °C 23 °C 50 °C	N/mm N/mm N/mm N/mm	≥1.50 ≥0.20 ≥0.20 ≥0.20	ANNEX L

Property	Test temp.	Unit	Requirement	Test method as per ISO-21809 Part 3
Peel strength - to steel surface - to steel surface - to steel surface after 28-day hot-water immersion test at 50 °C	 23 °C 50 °C 23 °C	 N/mm N/mm N/mm	 ≥1.00 ≥0.10 ≥0.40	 ANNEX H ANNEX I
Lap shear strength	50 °C	N/mm^2	≥ 0.05	ANNEX J
Thermal ageing resistance ratio of - elongation at break - peel strength between tape layers - peel strength to pipe surface	-		 1.25 W E_{100}/E_0 ≥0.75 E_{100}/E_{70} ≥ 0.8 P'_{100}/P_0 ≥ 0.75 P'_{100}/P_{70} ≥ 0.8 P_{100}/P_0 ≥ 0.75 P_{100}/P_{70} ≥0.8	ANNEX M

5.4 Filler Material

- Mouldable material comprising of butyl rubber-based filler / putty shall be used for smoothing out uneven surfaces, step downs, irregular shapes, weld seams, or cavities to minimize air voids before the application of cold-applied tape coating systems. Filler material shall be completely compatible with the properties of the primer & coating system(Table-2A)

Table-2A

Property	Test Temp	Unit	Requirement	Test Method
Density	23℃	gm/cm^3	>1.2	DIN 53479
Elongation	23℃	%	>400	ASTM D 1000
Solid content			100%	
Application temperature			+10 to 50℃	
Operating temperature range			+10 to 50℃	

6.0 Coating Manufacturer's Training & Supervision

The coating manufacturer (to whom order will be placed) shall provide assistance for the following:

Demonstrating proper method of application of coating systems to the coating contractor.

a) Conducting Procedure Qualification Trial (PQT) as per ISO 21809 Part 3 2016 Clause 7 "Application procedures and qualification" sub clause 7.3. This is required to ensure correct use of coating material and to train applicators of nominated coating contractor. The PQT will be done on mockup pipes supplied by the Owner. Coating tests as specified shall be conducted in the field / nominated test laboratory under witness of PMC Quality/ Inspection personnel.

b) Conducting Pre-production testing (PPT) as per ISO 21809 Part 3 2016 Clause 7 "Application procedures and qualification" sub clause 7.4 on actual pipes to verify surface condition of the pipe after surface preparation, verifying the application of the filler on uneven surfaces, application/consumption of primer, inner wrap and outer wrap coating application with the required overlap and tension, qualification of coating applicators and PMC inspectors who will be deployed in the field. Coating tests as specified shall be conducted in the field under witness of PMC Quality/ Inspection personnel.

c) The inner and outer hand wrapping machines shall be supplied by the coating manufacturer and shall preferably be manufactured from aluminium and shall be of high quality and ruggedness to ensure consistent tension on the tape roll during application. The hand wrapping machine for the inner tape shall have taken up roller for the release liner. The hand wrapping machine shall be so designed so that angle of the wrapping machine can be set for 50% spiral overlap while ensuring that all the four wheels grasp the pipe surface.

7. STORAGE LIFE, PACKAGE AND MARKING

7.1 Storage Life

7.1.1 The primer& tape material (inner and outer) shall have a shelf life of at least 5 years from the date of delivery when stored in original covered containers at temperatures between 0°C to 50°C.

7.1.2 All material shall be packaged in suitable cardboard containers and in quantities (by weight) which can reasonably handled by the applicators. The packaging shall be such that during transportation and storage at owner's store and subsequent transportation and handling at site, full quantity and performance of the material is retained. The supplier is to make sure that the material shall be supplied in water-proof packaging to prevent moisture ingress

7.1.3 As the material will be transported by ship and by road for long distances and also the multiple handling of items by crane or forklifting equipment will be done during change of containers at port and at site. The packing should be particularly good to endure all the handling and transportation. The tapes will be packed in cardboard boxes of sufficient strength to withstand transportation and handling and will be shrink wrapped. The boxes will then be palletized in wooden crates. The height of the wooden pallet shall not be

more than 1.25 m or it may topple during handling and storage Details of packaging will be highlighted by the coating manufacturer in their technical offer.

7.2 Marking

7.2.1 Following shall be clearly marked (as a minimum) on the cardboard container of the primer in English:

a. Trade name and generic type
b. Reference Batch no.
c. Date of manufacture
d. Quantity (in liters)
e. Shelf life
f. Health hazards and handling instructions
g. Manufacturers name and address
h. Each box will have MSDS in English.
i. Owner's Purchase order number

7.2.2 Inner (3ply) & Outer (2ply) Tapes: Following shall be clearly marked (as a minimum) on the cardboard container of the Inner &outer tapes in English:

a. Trade name and generic type
b. Reference Batch no.
c. Date of manufacture
d. No of Rolls
e. Roll sizes -Width (mm) x Length (m) & core size
f. Manufacturers name and address
g. Shelf life
h. Owner's Purchase order number
i. Number of rolls

7.2.3 Each roll of inner and outer tape shall be marked with the following:

a. Trade name and type
b. Length of roll (in m)
c. Reference batch no

7.2.4 Filler material shall be marked with the following in English:

a. Trade name and type
b. Length of roll (in Kg)
c. Reference batch no

7.2.5 Primer shall be marked with the following in English:

a. Trade name and type
b. Reference Batch no.
c. Date of manufacture
d. Shelf life
e. Owner's Purchase order number
f. Number of drums

7.2.6 Hand Wrapping Machine shall be marked with the following in English:

a. Trade name and type
b. IRN (Inspection Release Note)
c. Catalogue
d. Application Procedure
e. Date of manufacture
f. Shelf life
g. Owner's Purchase order number
h. Health hazards and handling instructions

- All materials noted to be without above identification shall be deemed suspect and shall be rejected by Company. Such materials shall not be used for coating and shall be removed from site/ store and replaced by Bidder at his own expense.

- Bidder shall ensure that all coating materials are properly stored in accordance with the Manufacturer's recommendation at all times, to prevent damage and deterioration in quality prior to use.

- Bidder shall be required to use all materials on a date received rotation basis, i.e. first-in first used basis.

8. INSPECTION AND TESTING

8.1 Sampling

At least one sample from each lot shall be tested for primer, inner tape and outer tape. Coating manufacturer will submit sampling plan along with the offer.

8.2 Inspection and Testing

8.2.1 The Inspection and Testing Plan (ITP) is to be submitted by the Coating manufacturer

for review and approval by Owner / PMC before starting the production. The ITP shall identify all inspection activities and tests, their frequency and the relevant inspection authorities.

8.2.2 All the properties mentioned in this specification shall be tested at manufacturing facility with their in-house test facilities as per the test method indicated under column "Test Methods". These tests shall be inspected by PMC representative and may be witnessed by Owner's representative. The vendor shall provide all necessary assistance to the Inspection Team" Long duration tests - Specific Electrical resistance and Thermal ageing, the Coating manufacturer shall submit independent test report from the above mentioned laboratories and certified by independent certification agencies as per Clause 2 of this specification for review and acceptance. However, OWNER / PMC reserve the right to select any samples from the coating material manufactured and have the material tested for these two properties during the tenure of the contract. The samples will be prepared by the coating manufacturer in accordance with ISO 21809- Part 3 2016 / EN 12068 1998 requirements.

8.2.3 The properties of the primer (volume solids, viscosity @30°C and drying time @30°C) are also to be tested in the laboratory and certified by PMC. These tests shall be inspected by PMC representative and may be witnessed by Owner's representative. The vendor shall provide all necessary assistance to the Inspection Team"

8.2.4 Any material not conforming to specification shall be rejected.

8.2.5 The test certificates prepared by manufacturer duly certified by TPIA and shall be submitted to the Owner/PMC for review. Dispatch of consignment shall be affected only after receiving the clearance from the purchaser.

8.3 RETEST

In case of failure of any of the above tests in a batch, that batch of material shall be tested for all other tests required as per Table 2, Table 9 of this specification including the tests which failed. If all tests pass, the batch shall be accepted for coating. If any of the tests fail, entire batch of material shall be rejected and shall not be used for the coating.

9. COMPLIANCE

The bidder shall be responsible for complying with all applicable requirements of ISO 21809-Part 3 2016 / EN 12068 1998 requirements and this specification. The Company reserves the right to make necessary investigation and, in case of doubt, ask the bidder to conduct additional testing, batch sampling and manufacturing inspection in order to be satisfied of compliance by the bidder. Any materials/coating that does not comply with the requirements shall be rejected.

10. REQUIREMENTS FOR QUALITY

i. The Bidder shall have established within his organization and, shall operate for the contract, a documented Quality System that ensures that the requirements of this specification are met in all respect. The Quality System shall be based upon ISO 9001/2 or equivalent.

ii. The Bidder shall have established a Quality Assurance Group within its organization that shall be responsible for reviewing the Quality System and ensuring that it is implemented.

iii. The Bidder shall submit the procedures that comprise the Quality System to the Company for agreement.

iv. The Bidder's Quality System shall pay particular attention to the control of suppliers and sub-contractors and shall ensure that the requirements of this specification are satisfied by the suppliers and sub-contractors operating Quality system in their organization.

v. The Bidder shall, prior to the commencement of work, prepare and issue a Quality Plan for all of the activities required satisfying the requirements of this specification. The plan shall include any sub-contracted work, for which the sub-contractors Quality Plans shall be submitted. The plan shall be sufficiently detailed to indicate sequentially for each discipline the requisite quality control, inspection, testing and certification activities with reference to the relevant procedures and the acceptance standards.

vi. The Bidder's Quality system and associated procedures may be subject to formal audits. The application of quality control by the Bidder will be monitored by the Company Representatives who will witness and accept the inspection, testing and associated work required by this specification.

11. PRODUCT INFORMATION TO BE FURNISHED BY BIDDER

11.1 Bidder has to produce documentary evidence (laboratory test certificate) for ensuring that the tape material offered by the vendor fully conforms to DIN EN 12068 or ISO 21809-3 standard.

11.2 Product information sheets including procedures for handling, storage, and application of the proposed coating material. All documentation will be in English.

11.3 Material Safety Data Sheets (MSDS). MSDS will be in English and will be in line latest shipping, safety and health / environmental regulations.

11.4 Sourcing of Raw material/finished product.

11.5 Performance test certificates of the offered coating. This shall include all the performance properties including long term tests like cathodic disbondment, hot water immersion, specific electrical insulation, thermal ageing. Certification shall be by an independent laboratory or inspection agency. Certificates older than 5 years from the date of sale of this tender shall not be accepted.

11.6 Sampling plan

11.7 Manufacturing inspection test plan

11.8 Application PQT & PTT formats

12. SUPPLY HISTORY TO BE FURNISHED BY THE BIDDER

12.1 Bidder has to provide the supply record of the offered brand of coating material to hydrocarbon pipeline operator during last 10 years indicating the following:

Table 3: Supply History

S. No.	Coating generic name	Coating brand name	Name of pipeline company	Service fluid	Order quantity	Order value	Contact details of concern person	Year of supply

12.2 Copy of the purchase orders & Inspection Release Note

12.3 Performance certificate from the end users (Pipeline operator/owner)

13. TECHNICAL INFORMATION TO BE FURNISHED BY THE BIDDER

Bidder shall provide detailed technical information along with the technical bid as per requested information as per Table 4 to 9

Table-4 Coating Identification-

S. No.	Property	Bidder to specify
1	Coating trade name	
2	Basic type of coating material	
3	Primer trade name	
4	Structure of coating	
4.1	Number of layers	
4.2	First layer trade name	
4.3	Second layer trade name	
5	ISO / European Standard Designation	
6	Nominal thickness of coating	
7	Compatible factory coatings	

Table-5 Primer technical details

S. No.	Property	Unit	Bidder to specify	
			Typical values	Test Method
1	Primer trade name			
2	Generic type of primer			
3	Solid content	%mass		
4	Saponification value (solids)	mg/g		
5	Type of solvent			
6	Flash point	℃		
7	Density	g/cm3		
8	Drying time	Minutes		
8.1	@ 25° C			
8.2	@ 35 C			
9	Viscosity			
9.1	@25° C			
9.2	@35° C			
10	Recommended dry film thickness	µm		
11	Coverage rate for recommended DFT	m2/1		
12	Storage temperature range	℃		
13	Shelf life at storage temperature range	Months		

Table - 6 Tape (Separate Table for inner and outer wrap)

S. No.	Property	Unit	Bidder to specify	
			Typical Value	Test Method
1	Trade name			
2	Description of coating material			
3	Colour			
4	Minimum total thickness	mm		
5	Polymeric film			
5.1	Generic type of polymeric film			
5.2	Nominal thickness	mm		

6	Adhesive			
6.1	Generic type of adhesive			
6.2	Nominal thickness	mm		
7	Saponification value	mg/g		
8	Mechanical properties			
8.1	Tape strength	N/mm		
8.2	Elongation at break	%		
9	Storage conditions			
9.1	Minimum storage temperature	℃		
9.2	Maximum storage temperature	℃		
9.3	Shelf life at storage temperature	month		

Note: Details of mouldable filler shall also be furnished.

Table-7 Application Instructions

S. No.	Property	Unit	Bidder to specify
1	**Ambient conditions**		
1.1	Minimum / Maximum temperature	℃	
1.2	Relative humidity	%	
2	**Surface preparation- metal surface**		
2.1	Cleanliness		
2.2	Surface profile		
2.3	Chloride contamination		
3	**Application of primer**		
3.1	Method of application		
3.2	Surface temperature - minimum / maximum	℃	
3.3	Pot life		
3.4	Over-coating time - minimum / maximum	min or hours or days	
3.5	Touch dry time	Min	

4	**Application of tape**		
4.1	Method of application		
4.2	Minimum tape temperature before application (outer & inner)	℃	
4.3	Minimum overlap of tape (outer & inner)	%	
5	**General**		
5.1	Minimum overlap on existing CTE coating	Mm	
5.2	Holiday detection voltage	KV	
5.3	Repair procedures		

Note: Application instructions of mouldable filler shall also be furnished.

Table-8A Dimensional measurement of inner Tape (3ply)

S. No.	Property	Test temp	Unit	Minimum	Maximum
1	Width		mm		
2	Total thickness of inner wrap (adhesive+ backing)		mm		
2.1	Thickness of adhesive (inner side)		mm		
2.2	Thickness of carrier film		mm		
2.3	Thickness of adhesive (outer side)		mm		
2.4	Length of tape in the roll		meter		
2.5	Core size		mm		

Table-8B Dimensional measurement of outer tape (2ply)

S. No.	**Property**	**Test temp**	**Unit**	**Minimum**	**Maximum**
1	Width		mm		
2	Total thickness of outer wrap (adhesive + backing)		mm		
2.1	Thickness of adhesive (inner side)		mm		
2.2	Thickness of carrier film		mm		
2.4	Length of tape in the roll		meter		
2.5	Core size		mm		

Table - 9 Functional Coating Properties					
Property	**Test temp.**	**Unit**	**Requirement**	**Minimum**	**Maximum**
Minimum thickness	-	mm	2.5mm		
Holiday detection at 5 kV/mm+ 5 kV, max. 25 kV	-	-	no holiday		
Impact resistance	23 °C	J/mm	≥4		
Indentation resistance, pressure - Residual thickness	23 °C & 50 °C	N/mm^2 mm	10.0 ≥ 0.6		
Specific electrical insulation resistance -*RS*100	23 °C	$\Omega \cdot m^2$	$\geq 10^8$		
Cathodic disbondment resistance at 28 days	23 °C 50 °C	mm mm	≤15 ≤15		
Peel strength between tape layers - inner/inner, inner/outer - inner/inner, inner/outer - outer/outer - outer/outer	23 °C 50 °C 23 °C 50 °C	N/mm N/mm N/mm N/mm	≥1.50 ≥0.20 ≥0.20 ≥0.20		
Peel strength - to steel surface to steel surface - to steel surface after 28-day hot-water immersion test at 50 °C	23 °C 50 °C 23 °C	N/mm N/m m N/m m	≥1.00 ≥0.10 ≥0.40		
Lap shear strength	@50 °C	N/mm^2	≥0.050		
Thermal ageing resistance Ratio of : - elongation at break - peel strength between tape layers - peel strength to pipe surface			1.25 W E_{100}/E_0 ≥0.75 E_{100}/E_{70} ≥0.8 P'_{100}/P'_0 ≥0.75 P'_{100}/P'_{70} ≥0.8 P_{100}/P_0 ≥0.75 P_{100}/P_{70} ≥0.8		

	QUALITY ASSURANCE PLAN (QAP) (3 PLY / 2 PLY COLD APPLIED TAPE COATING SYSTEM)					QAP No. : OIL-STD-PL-DOC-QAP-101 Date : 30.10.2024 Prepared By : AD Checked By : RC Approved By : TR			
Sr. No.	Activity	Test Frequency	Acceptance Criteria	Documentation	Reference Documentation	Test Method	Scope of Inspection		
							Manufacturer	TPIA	PMC/Owner
1	**Prior to Regular Production**								
1.1	Raw material acceptance / Review of raw material test certificates for Butyl rubber, PE, Solvent, etc.	Per Lot	Manufacturer's data	Test Report	Raw material manufacturer's test certificates		P	R	R
2	**Regular Production**								
2.1	**Primer**								
2.1.1	Density	Per Lot	Manufacturer's data	Test Report	Specification	ISO 21809 / DIN EN 12068	P	W	W - 1ST Lot / R - balance
2.1.2	Solid Content	Per Lot	Manufacturer's data	Test Report	Specification	ISO 21809 / DIN EN 12068	P	W	W - 1ST Lot / R - balance
2.1.3	Drying time	Per Lot	Manufacturer's data	Test Report	Specification	ISO 21809 / DIN EN 12068	P	W	W - 1ST Lot / R - balance
2.2	**Inner 3 Ply Tape**								
2.2.1	Thickness adhesive side 1	Per Lot	Manufacturer's data	Test Report	Specification	ISO 21809	P	W	W - 1ST Lot / R - balance
2.2.2	Thickness of backing	Per Lot	Manufacturer's data	Test Report	Specification	ISO 21809	P	W	W - 1ST Lot / R - balance
2.2.3	Thickness adhesive side 2	Per Lot	Manufacturer's data	Test Report	Specification	ISO 21809	P	W	W - 1ST Lot / R - balance
2.2.4	Total thickness	Per Lot	Manufacturer's data	Test Report	Specification	ISO 21809	P	W	W - 1ST Lot / R - balance
2.2.5	Tensile strength	Per Lot	Manufacturer's data	Test Report	Specification	ISO 21809	P	W	W - 1ST Lot / R - balance
2.2.6	Elongation %	Per Lot	Manufacturer's data	Test Report	Specification	ISO 21809	P	W	W - 1ST Lot / R - balance
2.2.7	Width deviation	Per Lot	Manufacturer's data	Test Report	Specification		P	W	W - 1ST Lot / R - balance
2.2.8	Length of the roll	Per Lot	Manufacturer's data	Test Report	Specification		P	W	W - 1ST Lot / R - balance
2.3	**Outer 2 Ply Tape**								
2.3.1	Thickness adhesive side 1	Per Lot	Manufacturer's data	Test Report	Specification	ISO 21809	P	W	W - 1ST Lot / R - balance
2.3.2	Thickness of backing	Per Lot	Manufacturer's data	Test Report	Specification	ISO 21809	P	W	W - 1ST Lot / R - balance
2.3.3	Total thickness	Per Lot	Manufacturer's data	Test Report	Specification	ISO 21809	P	W	W - 1ST Lot / R - balance
2.3.4	Tensile strength	Per Lot	Manufacturer's data	Test Report	Specification	ISO 21809	P	W	W - 1ST Lot / R - balance
2.3.5	Elongation %	Per Lot	Manufacturer's data	Test Report	Specification	ISO 21809	P	W	W - 1ST Lot / R - balance
2.3.6	Width deviation	Per Lot	Manufacturer's data	Test Report	Specification		P	W	W - 1ST Lot / R - balance
2.3.7	Length of the roll	Per Lot	Manufacturer's data	Test Report	Specification		P	W	W - 1ST Lot / R - balance
2.4	**Mastic Filler Tape**								
2.4.1	Thickness	Per Lot	Manufacturer's data	Test Report	Specification		P	W	W - 1ST Lot / R - balance

	QUALITY ASSURANCE PLAN (QAP) (3 PLY / 2 PLY COLD APPLIED TAPE COATING SYSTEM)					QAP No. : OIL-STD-PL-DOC-QAP-101 Date : 30.10.2024 Prepared By : AD Checked By : RC Approved By : TR			
Sr. No.	Activity	Test Frequency	Acceptance Criteria	Documentation	Reference Documentation	Test Method	Scope of Inspection		
							Manufacturer	TPIA	PMC/Owner
2.4.2	Length of the roll	Per Lot	Manufacturer's data	Test Report	Specification		P	W	W - 1ST Lot / R - balance
2.4.3	Average weight of the roll	Per Lot	Manufacturer's data	Test Report	Specification		P	W	W - 1ST Lot / R - balance
2.4.4	Density	Per Lot	Manufacturer's data	Test Report	Specification		P	W	W - 1ST Lot / R - balance
2.4.5	Elongation %	Per Lot	Manufacturer's data	Test Report	Specification		P	W	W - 1ST Lot / R - balance
3	**Functional Acceptance Testing**								
3.1	Width of inner tape	One per shipment	100 mm ± 1.5 mm	Test Report	Specification	ISO 21809	P	W	W
3.2	Width of outer tape	One per shipment	100 mm ± 1.5 mm	Test Report	Specification	ISO 21809	P	W	W
3.3	Total thickness applied	One per shipment	≥ 2.5 mm	Test Report	Specification	ISO 21809	P	W	W
3.4	Impact strength at 23℃	One per shipment	≥ 4 J/mm	Test Report	Specification	ISO 21809 / DIN EN 12068	P	W	W
3.5	Indentation at 23℃	One per shipment	10 N/mm², ≤ 0.6 mm	Test Report	Specification	ISO 21809 / DIN EN 12068	P	W	W
3.6	Indentation at 50℃	One per shipment	10 N/mm²	Test Report	Specification	ISO 21809 / DIN EN 12068	P	W	W
3.7	Cathodic disbondment at 23℃	One per shipment	15 mm max.	Test Report	Specification	ISO 21809 / DIN EN 12068	P	W	W
3.8	Cathodic disbondment at 50℃	One per shipment	15 mm max.	Test Report	Specification	ISO 21809 / DIN EN 12068	P	W	W
3.9	Adhesion strength at 23℃ : - inner layer to primed pipe : - inner to inner : - outer to inner : - outer to outer :	One per shipment	≥ 1 N/mm ≥ 1.5 N/mm ≥ 1.5 N/mm ≥ 0.2 N/mm	Test Report	Specification	ISO 21809 / DIN EN 12068	P	W	W
3.10	Adhesion strength at 50℃ : - inner layer to primed pipe : - inner to inner : - outer to inner : - outer to outer :	One per shipment	≥ 0.10 N/mm ≥ 0.2 N/mm ≥ 0.2 N/mm ≥ 0.2 N/mm	Test Report	Specification	ISO 21809 / DIN EN 12068	P	W	W
3.11	Adhesion strength to primed steel surface after 28 days of hot water immersion at 50℃. Test to be performed at 23℃.	One per shipment	≥ 0.40 N/mm	Test Report	Specification	ISO 21809 / DIN EN 12068	P	W	W
3.12	Specific electrical insulation resistance - RS_{100} at 23℃ Ω.m²	Review of test report issued by DVGW / Equivalent	≥ 10^8	Third Party Test Lab Report	Specification	ISO 21809 - 3 / EN 12068	P	W	R

	QUALITY ASSURANCE PLAN (QAP) (3 PLY / 2 PLY COLD APPLIED TAPE COATING SYSTEM)					QAP No. : OIL-STD-PL-DOC-QAP-101 Date : 30.10.2024 Prepared By : AD Checked By : RC Approved By : TR			
Sr. No.	Activity	Test Frequency	Acceptance Criteria	Documentation	Reference Documentation	Test Method	Scope of Inspection		
							Manufacturer	TPIA	PMC/Owner
3.13	Thermal ageing resistance ratio of : - elongation at break : - peel strength between tape layers : - peel strength to pipe surface :	Review of test report issued by DVGW / Equivalent	1.25 W $E_{100}/E_0 \geq 0.75$ $E_{100}/E_{70} \geq 0.8$ $P_{100}/P_0 \geq 0.75$ $P_{100}/P_{70} \geq 0.8$ $P_{100}/P_0 \geq 0.75$ $P_{100}/P_{70} \geq 0.8$	Third Party Test Lab Report	Specification	ISO 21809 - 3 / EN 12068	P	W	R
3.14	Lap shear strength at 50℃ : - inner to metal	One per shipment	0.05 N/mm2	Test Report	Specification	DIN EN 12068	P	W	W
4	**Hand Wrapping machine**								
4.1	Hand Wrapping machine	One per shipment	Visual / dimensional / operational check as per manufacturer drawing / manual	Test Report	Specification		P	W	W
NOTE :	**Long duration tests (100 days) specified at Sr nos. 3.12 & 3.13 shall have to be performed by the Manufacturer at the discretion of OWNER/ PMC**								
	Legend :								
	M = Manufacturer	W = Witness							
	TPIA = Third Party Inspection Agency	R = Review							
	PMC = Project Management Consultant	P = Perform							
	O = Owner								

SCHEDULE OF RATES (SOR)

Tender Document No. :

OIL (INDIA) LIMITED

Supply of Coating Materials

GeM Tender ref:

NAME OF BIDDER:	
OFFER REFERENCE NO.	
CURRENCY	
HSN No.	

Item S.No.	Description	Unit	Currency (INR)	Total Qty.	Unit Price									Total Unit Price (Including loading at Dispatch Point & Unloading at Destination, Freight charges, Tax & Duties	Total Price	Remark
					Unit price Ex-Works including cost of imported raw material/ components, Merit Rate of Custom Duty thereon, packaging & Forwarding but excluding GST on finished goods	GST on Colum No. 6		Unit price for loading at Dispatch Point & Unloading at Destination	GST on Column No. 9		Freight charges	GST on Column No. 12				
						%age	Amount		%age	Amount		%age	Amount			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15=(6+8+9+11+12+14)	16=(15*5)	
	SUPPLY PORTION															
	Manufacture, Inspection, Testing, Packing, Supply, Transportation & Unloading of following Coating materials at OIL's store located at Assam, West Bengal & Bihar as specified in bid document.															
1	**3 ply / 2 ply COLD APPLIED TAPE SYSTEM**															
1.1	Inner wrap (3 Ply)	Sq. meter		1469517		-	-	-	-	-	-	-	-	-	-	
1.2	Outer wrap (2 Ply)	Sq. meter		1496237		-	-	-	-	-	-	-	-	-	-	
1.3	Primer	Liter		95425		-	-	-	-	-	-	-	-	-	-	
1.4	Filler material	Kg.		12,556		-	-	-	-	-	-	-	-	-	-	
1.5	Hand wrapping machine (Inner & Outer)	Each Set		48		-	-	-	-	-	-	-	-	-	-	
															-	
	GRAND TOTAL =														-	

NAME OF AUTHORISED SIGNATORY	
NAME OF BIDDER	