

**OIL & GAS DEVELOPMENT COMPANY LIMITED**  
**PROCUREMENT DEPARTMENT, ISLAMABAD**  
**FOREIGN SECTION B**

(To be completed, filled in, signed and stamped by the principal)

**ANNEXURE 'A'**

**Material** PIPELINE FOR MULTIPLE FIELDS  
**Tender Enquiry No** PROC-FB/CB/PROD-4828/2020  
**Due Date**  
**Evaluation Criteria** ITEM WISE

**SCHEDULE OF REQUIREMENT**

Sr.No	Description	Unit	Quantity	Unit Price (FOB)	Total Price (FOB)	Unit Price C & F BY SEA	Total Price C & F BY SEA	Deviated From Tender Spec. If Any
1	PIPE,CS,SEAMLESS,4",SCH 80,BE,API 5L,X52,BARE,ANNEXURE H,PSL-2,DOUBLE RANDOM LENGTH	Meter	2000					
2	PIPE,CS,SEAMLESS,4",SCH 40,BE,API 5L,X52,BARE,ANNEXURE H,PSL-2,DOUBLE RANDOM LENGTH	Meter	5000					
3	PIPE,CS,SEAMLESS,6",SCH 160,BE,API 5L,X52,BARE,ANNEXURE H,PSL-2,DOUBLE RANDOM LENGTH	Meter	2000					
4	PIPE,CS,SEAMLESS,6",SCH 120,BE,API 5L,X52,BARE,ANNEXURE H,PSL-2,DOUBLE RANDOM LENGTH	Meter	2000					
5	PIPE,CS,SEAMLESS,6",SCH 40,BE,API 5L,X52,BARE,ANNEXURE H,PSL-2,DOUBLE RANDOM LENGTH	Meter	2000					
6	PIPE,CS,SEAMLESS,8",SCH 40,BE,API 5L,X52,BARE,ANNEXURE H,PSL-2,DOUBLE RANDOM LENGTH	Meter	2000					

**Note:** (1) EVALUATION CRITERIA: EACH ITEM WISE ON CFR BY SEA KARACHI PAKISTAN BASIS (2) DELIVERY PERIOD IS FOUR (04) MONTHS FROM DATE OF ESTABLISHMENT OF LETTER OF CREDIT (3) TENDER DOCUMENTS AVAILABLE ON OGDCL'S WEBSITE UNDER TAB "MASTER SET OF FOREIGN TENDER DOCUMENTS (PRESS-SINGLE STAGE TWO ENVELOP) - UPDATED"

(4) Amount of bid bond(s) to be submitted with technical bid are tabulated below:

Item #	Description	Bid Bond Amount
Item # 1	Line Pipe 4", Sch-80	USD 930/- or equivalent Pak Rupees
Item # 2	Line Pipe 4", Sch-40	USD 2,200/- or equivalent Pak Rupees
Item # 3	Line Pipe 6", Sch-160	USD 3,190/- or equivalent Pak Rupees
Item # 4	Line Pipe 6", Sch-120	USD 2,490/- or equivalent Pak Rupees
Item # 5	Line Pipe 6", Sch-40	USD 1,400/- or equivalent Pak Rupees
Item # 6	Line Pipe 8", Sch-40	USD 1990/- or equivalent Pak Rupees
<b>Total</b>		<b>USD 12,200/- or equivalent Pak Rupees</b>

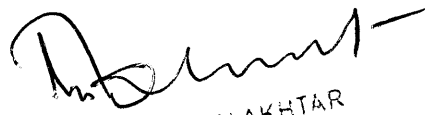
Annexure-1

ELIGIBILITY CRITERIA

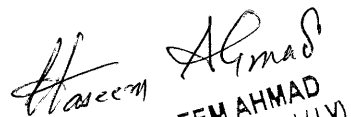
Prior to the detailed technical and financial evaluation, pursuant to below mentioned criteria, the OGDCL will determine the eligibility requirements of manufacturers/bidders and goods.

Eligibility of Manufacturers/Bidders & Goods.

1. The manufacturer must have current valid API 5L Certificate (PSL-2, Annex H).  
Copy of the certificate to be submitted.
2. The manufacturer must have at least last 5 year's API 5L Certificate. Date of tender opening will be considered to calculate Five (05) years requirement of API SL certificate. The Manufacturer/ Bidder shall submit documentary evidence in form of copies of the certificates.
3. Submission of authority letter of the Manufacturer in favor of the bidder and authority letter of the bidder in favor of the local agent.
4. The Bidders are required to adhere to the maximum Delivery Period of Four (04) months on CFR Karachi by Sea basis for Foreign Manufacturers and FOR for local manufacturers, from the date the letter of credit (L/C) is established.
5. The Line Pipe to be supplied under the Contract must be brand new (Certificate to be provided by supplier) and produced in and supplied from the countries maintaining bilateral trade relation with the Islamic Republic of Pakistan.

  
M. FASIH AKHTAR  
GM IPE & FDI  
Ext: 3566

  
SIRAJ AHMAD  
Manager (PE & FD)  
Extn: 3835

  
DR. NASEEM AHMAD  
Executive Director (Prod./J.V)  
Ext: 3765




Annexure-2

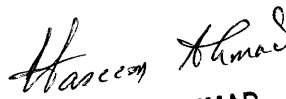
TECHNICAL EVALUATION CRITERIA

Technical Evaluation will be carried out in the light of following criteria:

1. Compliance to SOR, Technical Specifications/Annexures. Bidder to submit signed / stamped copy of the SOR, specifications/ data sheets, as per API-5L 46<sup>th</sup> / (Latest) Edition.
2. The Manufacturer/ Bidder must have supplied Line Pipe in last five (05) years with at least five agreements with Total value greater than or equal to 0.5 MMUSD to International Oil & Gas E&P companies. International E&P companies Should be either an upstream member of International Association of Oil & Gas Producers (IOGP) or Pakistan Petroleum Exploration & Production Companies Association (PPEPCA). The bidder shall submit documentary evidence in form of copies of purchase orders.
3. Submission of Copies of valid ISO (9001 & 14001), API-Q1 and OHSAS 18001 certifications of the manufacturer.
4. Submission of Audited Financial Statements of last 3 consecutive years, of the Manufacturer and the Bidder. In case the reports are not in English Language, then in addition to these printed reports the English translation of the same must also be submitted with the technical bid.
5. Submission of 03 Nos copies of Performance Certificates of material Supplied to International E&P Companies.
6. Submission of Corporate & Financial Information of the manufacturer and the Bidder, as per format of Annex-3
7. Bidders must submit technical literature and brochures of the Manufacturing facility and the quoted material.
8. All above required information should be provided along with the Technical bid, failing which the bid will not be considered for the evaluation.

  
M. FASIH AKHTAR  
GM (PE & FD)  
Ext: 3566

  
SIRAJ AHMAD  
Manager (PE & FD)  
Extn: 3835

  
DR. NASEEM AHMAD  
Executive Director (Prod./J.V)  
Ext: 3765

ANNEXURE-3

**FORMAT OF CORPORATE & FINANCIAL INFORMATION**  
(To be filled by Bidder & Manufacturer Separately)

**PART - I**  
**GENERAL INFORMATION**

1. Name (Full Company Name):

- Postal Address :
- Contact Person Name :
- Contact Person Mobile No. :
- Company Telephone:
- Facsimile:
- Valid e-mail for correspondence:
- Website Address:

1.1 Has the Company operated under any other name? If yes please give name, date of change and reason for change.

2. Type of Entity/Firm:

- Corporation/Stock Company
- Public Limited
- Private Limited
- Partnership
- Proprietorship

3. Shareholders information/pattern with names and addresses of majority shareholders.

4. Place of Incorporation/Registration:

5. Year of Incorporation/Registration:


(Please provide copies of Incorporation/Registration Certificates and Memorandum & Articles of Association)

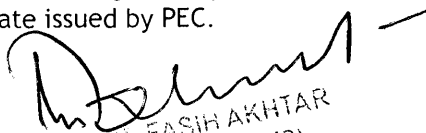
6. Company's National Tax No.

7. Company's Core Business Areas and their annual sales revenue/earnings during last five (5) years.

8. Name & Address of Owners/Directors

9. Registration with Pakistan Engineering Council (PEC) as Contractor. Please provide copy of membership certificate issued by PEC.

  
**DR. NASEEM AHMAD**  
Executive Director (Prod./J.V)  
Ext: 3765

  
M. FASIH AKHTAR  
GM (PE & FD)  
Ext: 3586

  
**SIRAJ AHMAD**  
Manager (PE & FD)  
Extn: 3835

**PART - II**  
**FINANCIAL STRENGTH**

1. Provide details with regard to the financial standing of the applicant including copies of last three (3) years annual audited profit & loss account and balance sheet. Complete postal address, email address and contact numbers of the audited firm should be provided along with the bid. Also, please fill the financial summary as per below table In USD only;

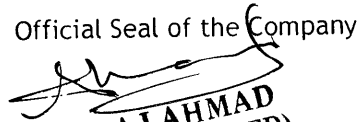
S. No.	Description	Years		
1	Sales Revenue			
2	Paid Up Capital			
3	Profit Before Tax			
4	Profit After Tax			
5	Current Assets			
6	T. Asset			
7	Owner Equity			
8	Long Term Debt			
9	Current Liability			
10	Total Liabilities			

2. Bank(s) credit worthiness certificates (Latest Period) of applicant organization and available credit ceiling/limits with Account Number/Title.
3. Detail record with regard to litigation/arbitration proceedings or any other dispute related to project undertaken/being undertaken by the Bidder their Sub-Contractors and Suppliers (Specially with OGDCL it Joint Venture Partners or other public and private organizations working in the Oil & Gas sector of Pakistan) during past five (05) years.
4. Any information including brochures, references and other documentary evidence of technical qualification, capability and experience of the Applicant to execute the Project.

The undersigned on behalf of \_\_\_\_\_ hereby declare that the statements made and the information provided official herewith is complete, true and correct in every detail

Signature

  
M. FASIH AKHTAR  
GM (PE & FD)  
Ext: 3836

Official Seal of the Company  
  
SIRAJ AHMAD  
Manager (PE & FD)  
Extn: 3835



## DATA SHEET OF CARBON STEEL LINEPIPE

1	Client	Job Number
2	Project	Quantity:
3	Location	Revision
4	<b>PROCESS FLUID AND CONDITIONS</b>	
5	Fluid:	Untreated natural gas
6	Service:	Sour
8	Design Pressure :	Refer SOR
9	Design Temperature :	Refer SOR
10	Installation:	Above Ground
12	<b>SPECIFICATION</b>	
13	<b>COMPLIANCE</b>	
14	Linepipe in accordance with API 5L (Latest Edition, Annex H, ), Doc. No. 4985-PA-2006 (Annexure "B") and the specification given below.	
15	Design Code:	ASME 31.8
16	Pipe Size:	2" to 10" see Note 7
17	Installation:	Aboveground/Underground
18	Pipe wall thickness:	Refer SOR
19	Specification:	API 5L Gr X52 PSL2, NS or QS with Service Annexure H
20	Pipe:	Seam Less
21	Nominal Length:	Double random length
22	Ends:	Bevelled to ASME B16.25 / ASME B31.8
23	Bevel Protectors:	Recessed steel end protectors or Plastic End caps
24	Product Specification Level:	PSL 2 , NS or QS
25	Hydrostatic test pressure:	As per API 5L <b>46 EDITION</b>
26	Charpy Test Temp:	-22° C
27	Charpy Test:	41 Joule (Min. Average)
28		27 Joule (Minimum Individual Value)
29	DWTT temp:	N/A
30	NACE MR 0175 compliance:	Required
31		
32		
33	Marking:	As per API 5L 46th/Latest Edition
34		
35	<b>NOTES</b>	
36	1 The Chemical composition and the Carbon Equivalent shall be in accordance with the doc no. 4985-PA-2006	
37	2 Third party inspection during whole manufacturing process will be arranged by OGDCL and bidder will provide all type of support during manufacturing process.	
38	3 In case of conflict between API 5L Latest Edition and tender specification, most stringent requirement will prevail.	
39	4 At the time of bid submission, deviations if any, not mentioned on a separate sheet will not be considered.	
40	5 Bid should be submitted in the form of Book Binding with page number mentioned on each page.	
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*M. Fasih Akhtar*  
M. FASIH AKHTAR  
GM (PE & PD)  
Ext: 3556

*Siraj Ahmad*  
SIRAJ AHMAD  
Manager (PE & PD)  
Extn: 3835

9

Annexure B	
Spec. No. 4985-PA-2006	
Page 1 of 13	Rev. 0

## SPECIFICATION FOR LINE PIPE, SEAMLESS

Project: **Miscellaneous Field Flow line**

Client: **Oil & Gas Development Company Limited**

Prepared by: AHS  
 Checked by: AB  
 Approved by: SC  
 Revised by: -

*Hasan Ahmad*  
**DR. NASEEM AHMAD**  
 Executive Director (Prod./J.V.)  
 Ext: 3765

*M. Fasih Akhtar*  
**M. FASIH AKHTAR**  
 GM (PE & FD)  
 Ext: 3566

*Siraj Ahmad*  
**SIRAJ AHMAD**  
 Manager (PE & FD)  
 Extn: 3835


Rev.	Description of Revision	Date	Revised Page Nos.
0	ISSUED FOR BIDDING	August 10, 2017	

9

10

**CONTENTS**

<b><u>SECTION NO.</u></b>	<b><u>DESCRIPTION</u></b>	<b><u>SHEET NO.</u></b>
1.0	SCOPE	3
2.0	DESIGN REQUIREMENTS	3
3.0	MATERIAL	4
4.0	MANUFACTURING & FABRICATION REQUIREMENTS	5
5.0	TESTING	6
6.0	INSPECTION	8
7.0	IDENTIFICATION	9
8.0	HANDLING OF PIPE	10
9.0	SHIPPING	11
10.0	RECORDS	13
11.0	REFERENCES	14
12.0	QUALITY PLAN	15

  
M. FASIH AKHTAR  
GM (PE & FD)  
Ext: 3566

  
SIRAJ AHMAD  
Manager (PE & FD)  
Extn: 3835





11

**1.0 SCOPE**

- 1.1 This specification covers the design, materials, manufacture, testing, identification, documentation, and shipping requirements of seamless pipe, that is resistant to hydrogen-related damage, for sour gas transmission service.
- 1.2 The purchase order shall state the grade, outside diameter, wall thickness, weight per linear foot, specified minimum yield strength, the applicable manufacturing specification and the total footage of the required pipe.
- 1.3 The written specification is an integral part of the purchase order on which it appears. Any additional requirements, changes, or addenda to this specification shall be as agreed upon in writing and also become a part of the Purchase Order.
- 1.4 Within this specification the following definitions shall apply: -

“Company” means “Oil and Gas Development Company Limited (OGDCL)”

“Engineering Consultant” shall mean “OGDCL”

“Supplier” means Entity with whom the Company will execute a Contract for supply of equipment/material as per this document

“Project” means “Gas Field Development”

**2.0 DESIGN REQUIREMENTS**

- 2.1 The required length of each joint shall be double random length with no length shorter than thirty (30) feet and no length longer than forty-one (41) feet. The minimum average length shall be thirty-six (36) feet.
- 2.2 No jointers (two pieces of pipe welded together to make a standard length) shall be acceptable.
- 2.3 All tolerances on dimensions and weights shall conform to the requirements of API-5L.
  - 2.3.1 Pipe shall not deviate from a straight line by more than 5/8 inch per joint or a proportional amount in any shorter length.
  - 2.3.2 Each joint of pipe regardless of diameter, shall be checked for out-of roundness in accordance with API-5L. The use of jacks to achieve the above criteria is prohibited.
  - 2.3.3 For pipe with a specified outside diameter greater than 20" the actual outside diameter shall not be more than 3/32" greater than the specified outside diameter not more than 1/32" less than the specified outside diameter as measured with a diameter tape.

*Hassem Ahmed*  
**DR. NASEEM AHMAD**  
Executive Director (Prod.J.J.V)  
Ext: 3765

*M. Farid Akhtar*  
**M. FARID AKHTAR**  
GM (PE & FD)  
Ext: 3886

*Siraj Ahmad*  
**SIRAJ AHMAD**  
Manager (PE & FD)  
Ext: 3835

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3.0 MATERIAL

If steel is supplied by a third party, the source of the steel shall be furnished to the Company/Engineering Consultant and all provisions of this specification shall be followed including all rights of inspection.

3.1 Quality:

All materials used in the manufacture of pipe shall be manufactured in accordance with good industry practice and shall conform with the requirement of API-5L.

3.2 Chemical Properties and Tests:

3.2.1 The Supplier shall furnish the Company/Engineering Consultant the chemistry to be aimed for in the steel to be used for pipe on this order prior to the pipe supplier all pipe shall be manufactured from fully killed, desulfurized steel with inclusion shape control.

- 1. This chemistry, as determined by the ladle analysis and the permissible variations for check analysis shall be as agreed upon between Company/Engineering Consultant and Supplier. The proposed chemical composition, a detailed procedure for inclusion shape control and representative test data from previous production substantiating the resistance of the proposed chemical composition to hydrogen related damage, shall be submitted to the Company/Engineering Consultant with the quotation,
- 2. The carbon equivalent based on the check analysis shall be agreed upon between the Company/Engineering Consultant and Supplier but shall not exceed 0.42% based on the following formula. A chemical analysis of elements in the formula shall be furnished by the Supplier.

CE=C+Mn/6+(Cr+Mo+V)/5+(Ni-t-Cu)/15

- 3. The Supplier shall furnish a ladle analysis and at least on check analysis form each heat of steel used in the production of pipe under this specification.

3.3 Mechanical Properties and Tests:

3.3.1 All mechanical testing shall be performed according to the frequency and orientation required in API Spec. 5L.

3.3.2 For pipe purchases involving 10 or more heats of steel, a yield strength restriction shall apply whereby 80% of the heats shall have maximum yield strength of 15 KSI over the SMYS and the maximum yield strength of -the remaining heats shall not exceed the SMYS by more than 20 KSI.

3.3.3 Each tensile test specimen shall be hardness tested using Rockwell, Brinell, or Vickers test methods. The hardness shall not exceed 22 Rockwell C, or the equivalent based on conversion of other methods in accordance with ASTM E 140.

3.3.4 The Supplier shall conduct charpy impact tests in the body of the mill pipe in accordance with API Spec 5L SR5 at +32 °F. The largest possible transverse specimen size shall be used in accordance with Table SR5.1 except that the largest possible longitudinal specimen size shall be used when Table SR5.1 indicates that the

DR. NASEEM AHMAD  
Executive Director (Prod./J.V.)  
Ext: 3765

*[Handwritten Signature]*

M. FASIH AKHTAR  
GM (PE & PD)  
Ext: 3566

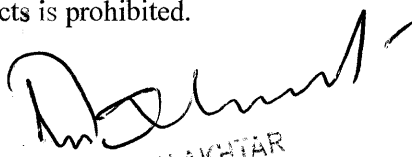


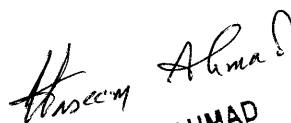
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pipe size is insufficient to obtain 1/2 size transverse specimens. The shear area appearance of these tests must achieve 85% minimum average shear area for all heats. 65% minimum shear area for any single test. The minimum energy value to be achieved in full size specimens shall be 25 ft-lbs. with adjustments for sub-size specimens in accordance with SR5.

**4.0 MANUFACTURING AND FABRICATION REQUIREMENTS**

- 4.1 The manufacturing procedure and quality assurance program shall be provided by the manufacturer with the quotation.
- 4.2 Cold expansion shall not be allowed.
- 4.3 Surface irregularities caused by the straightening machine shall be minimized.
- 4.4 Weld repair of defects is prohibited.

  
M. FASIH AKHTAR  
GM (PE & FD)  
Ext: 3566

  
DR. NASEEM AHMAD  
Executive Director (Prod./J.V)  
Ext: 3765



**5.0 TESTING****5.1 Hydrostatic Testing:**

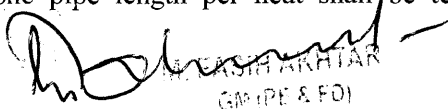
- 5.1.1 The hydrostatic test shall be as specified in API-5L and shall be held for a minimum of ten (10) seconds.
- 5.1.2 The Supplier shall make available to the Company/Engineering Consultant the most recent certifications of calibration of the pressure gauges and recorders.
- 5.1.3 The minimum hydrostatic test pressure shall be as per API 5L latest edition. Each length of pipe shall be inspected for localized yielding after the hydrostatic test and any length of pipe with localized yielding shall be rejected.
- 5.1.4 The Supplier shall maintain a record of each joint being hydrostatically tested. The record shall indicate the joint number, test pressure and duration. This record shall be provided to the Company/Engineering Consultant's representative.

**5.2 Non Destructive Testing:**

- 5.2.1 A copy of all non-destructive testing procedures shall be made available to the Company/Engineering Consultant prior to start of production.
- 5.2.2 All non-destructive testing required by API Spec.5L latest edition and this specification shall be performed by experienced and skilled personnel certified as level-II or III inspectors in accordance with ASNT's recommended practice SNT-TC-1A.
- 5.2.3 The Supplier shall provide a report showing the results of all nondestructive testing to the Company/Engineering Consultant representative at the end of each turn. This report shall indicate the number of joints tested as per non-destructive testing method, including the joint number, discontinuities locating the disposition of each joint and the initials of the individual conducting the test of each joint.
- 5.2.4 All non-destructive testing equipment shall be calibrated a minimum of two (2) times per turn (eight-hour shift) and after any extensive shutdown at the discretion of the Company/Engineering Consultant representative.
- 5.2.5 A magnetic particle or ultrasonic inspection shall be performed one inch back from the bevel on both ends of each length of pipe to examine for mid-wall laminations. Magnetic particle examination shall only be performed on milled bevel surfaces.
- 5.2.6 Full body ultrasonic inspection shall be performed on each length of pipe in accordance with API Spec 5L latest edition.
- 5.2.7 The Supplier shall maintain a record of each joint being ultrasonically tested. The record shall indicate the joint number. This record shall be provided to the Company/Engineering Consultant's representative.

**5.3 Hydrogen-Induced Cracking (HIC) Tests:**

Specimens from one pipe length per heat shall be tested in accordance with NACE

  
M. K. S. ANHAR  
GM (PE & PD)

15

*Specification for Pipe, Seamless*


Standard TM0284 using the test solution specified in NACE Standard TM0177 - Method A. The acceptance criteria shall be as follows:

Maximum Crack Length Ratio (CLR)  $\leq 5\%$   
Maximum Crack Sensitivity Ratio (CSR)  $\leq 1\%$

5.4 Measurement of Residual Magnetism:

If electromagnetic inspection or pipe handling equipment is used. Random measurements for residual magnetism subsequent to inspection and handling shall be conducted, as follows:

- 5.4.1 Measurements shall be made with a calibrated Hall-effect gauss meter or other calibrated instrument approved by the Company/Engineering Consultant.
- 5.4.2 Measurements shall be made on the ends of at least three pipes per turn (8-hour shift). One pipe shall be measured from the beginning, middle, and end of each turn. The results shall be recorded and reported to the Company/Engineering Consultant.
- 5.4.3 As a minimum, four readings shall be taken around the circumference of each end of the pipe. The average of the four readings shall not exceed 15 gauss and no single reading shall exceed 20 gauss.
- 5.4.4 Any pipe exceeding the requirement shall be considered defective. Pipe produced between the defective pipe and the last acceptable pipe shall be measured. If the pipe production sequence is documented, pipe may be measured in reverse sequence until at least three pipes met the requirements, pipe produced after the defective pipe shall be measured until at least three consecutive pipes meet the requirements.
- 5.4.5 All defective pipes shall be demagnetized full length and re-measured or rejected.

  
M. FASIH AKHTAR  
GM (PE & PD)  
Ext: 3566



**6.0 INSPECTION**6.1 Acceptability

6.1.1 The manufacturing, testing, and loading of the pipe shall be inspected by Company/Engineering Consultant. All pipes that do not comply with this specification shall be rejected and replaced with pipe that does comply at the Supplier's expense.

6.1.2 The Supplier shall be liable for any replacement costs of pipe furnished under this specification that fails, as a result of pipe imperfections and mill workmanship/under the initial field hydrostatic testing as per API 5L latest edition. The Company/Engineering Consultant will seek reimbursement for replacement costs when the failure is solely because of mill imperfections. Replacement costs shall be based on the actual cost of the pipe and the supplier's cost of personnel and equipment required to locate, remove and replace the failed segment of pipe.

6.1.3 If a failure occurs, the segment of pipe containing the failure shall be located, removed, and replaced. The segment of the pipe containing the origin of the failure shall be sent to an outside consultant for analysis. The Company/Engineering Consultant will notify the Supplier of the failure and shall give the Supplier sufficient notice of rescheduled commencement of hydrostatic testing to permit the Supplier to have a representative present during the testing if the Supplier so desires.

6.1.4 After the award of contract, the supplier/manufacturer would arrange a five days visit (excluding travel time) of an OGDCL team comprising Two engineers from technical department to manufacturing site. All the expenses for arrangement including Visa Processing Charges, Return Air Ticket, inland foreign country travel, Boarding, lodging, Transportation and Travel & Daily allowance of United States Dollar Three Hundred & Fifty Per day per person; will be borne by bidder/manufacturer. The agenda would comprise Project Kick Off, project QA/QC review, TPI (if applicable) scope finalization and techno/commercial capabilities of manufacturer demonstration/review etc.

6.1.5 Bidder to submit manufacturing schedule with the bid in order arrange third party inspection during manufacturing process. All inspection cost will be borne by OGDCL.

6.2 Notification

The Supplier shall notify the Company/Engineering Consultant five (5) days prior to manufacturing inspection, testing, loading for shipment, and shipment unless otherwise agreed upon at the time of purchase. Inspections, tests or activities identified in the Company/Engineering Consultant's Quality Plan as a Hold Point shall not be conducted without the presence of the Company/Engineering Consultant.

6.3 Plant Accessibility

At any time during the period that work on the contract with a Company/Engineering Consultant & Supplier is being performed, the inspector(s) representing the Company/Engineering Consultant, upon giving the supplier prior notification, shall have access to all parts of the supplier's facilities relevant to the contract. All reasonable requests shall be granted to the inspector (s) to enable verification of compliance with this specification.

6.4 Inspection by the Company/Engineering Consultant

The monitoring and witnessing of inspections and tests by the Company/Engineering



M. FASIH AKHTAR  
 021 095 5 591

Consultant shall be in accordance with the Quality Plan. The Company/Engineering Consultant reserves the right to increase or decrease the level of inspection based on performance during production.

## 7.0 IDENTIFICATION

### 7.1 Type and Location of Identification

7.1.1 Identification markings shall be stenciled with paint on the pipe. Die stamping shall not be used.

7.1.2 The markings shall be located on both ends of each length of pipe on the exterior surface.

### 7.2 Information Required

7.2.1 Identification markings shall be in accordance with API-5L PSL2.

## 8.0 HANDLING OF PIPE

### 8.1 Racking of Externally Uncoated Pipe in manufacturer's Yard.

8.1.1 All equipment for handling pipe shall be free of contaminants which may adversely affect coatings. All handling equipment for coated pipe shall be adequately padded to prevent damage to the pipe or coating. Sling hooks shall be lined with an aluminum or phenolic liner.

8.1.2 All Pipes shall be separated by size, wall thickness, and grade.

8.1.3 Externally uncoated pipe shall be racked in snug rows and tiers with a minimum space between joints, in a manner that will prevent damage to the pipe, and in accordance with the following

1. All welds, longitudinal, double joint, etc. shall be staggered to avoid weld-to-weld and weld-to-pipe contact.
2. The entire bottom row of pipe shall be elevated not less than 4" off the ground on earth berms covered with polyethylene sheeting or on a sufficient number of padded timber skids, properly spaced and leveled to support the pipe without damage.
3. The bottom row of pipe shall be restrained to prevent the pipe joints from rolling.

### 8.2 Racking of Externally coated Pipe in Supplier's Yard.

8.2.1 The externally coated pipe shall not be racked until the coating has cooled to the extent to support the weight of the pipe.

8.2.2 Each joint of externally coated pipe shall be separated from each adjacent joint by not less than three ¾" polypropylene rope collars shall not exceed 20 feet.

8.2.3 The supplier shall furnish all supervision, labor, materials, equipment, and services necessary for the racking of the pipe.

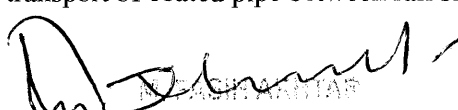


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18

**9.0 SHIPPING**

- 9.1 No Pipe shall be shipped until the respective physical tests have been completed with acceptable results.
- 9.2 All pipes shall be visually inspected and counted by both the Company/Engineering Consultant and Supplier upon receipt, and this record shall be deemed to indicate the amount of pipe delivered to the Supplier by the Company/Engineering Consultant.
- 9.3 All equipment for handling pipe shall be adequately padded to prevent damage to the pipe. The padding must have the Company/Engineering Consultant's approval prior to loading the pipe.
- 9.3.1 Sling hooks shall be lined with an aluminum or phenolic liner.
- 9.3.2 Pipe retainers, if used, must be padded, and tie-down apparatus will be nylon straps only.
- 9.3.3 Trailer wheels of conveyance must be fitted with gravel guards in condition as required by (aw to prevent gravel impact damage and the accumulation of mud and road oil on the pipe.
- 9.4 Flat bed trailers on which pipe are loaded must be of the proper length to prevent overhang. Overhang is not permitted unless approved by the Company/Engineering Consultant, and in no case should overhang exceed 4 feet beyond the end of the trailer for bare pipe or 2 feet beyond the end of the trailer for coated pipe.
- 9.4.1 Prior to loading pipe, four (4) bearing pieces are to be placed on the bed of the trailer. Each bearing piece consists of an 8' long piece of 4" x 4" or 2" x 6" hardwood lumber in good condition with an 8" long, 4" x 4" or 6" x 6" angle block nailed to each end at the appropriate location to accommodate the applicable pipe size, for pipe spacing and stability. Bearing pieces are to be oriented transverse to the pipe and spaced evenly beneath it.
- 9.4.2 Four separators should be used between each row when pipe is not nested. Separators consist of 2"x4" or 2"x6" hardwood lumber in good condition with 4"x4" or 6"x6" angle blocks nailed on top and bottom at each end for pipe spacing and stability. Separators are to be oriented transverse to the pipe and spaced evenly along it.
- 9.4.3 Each length of pipe shall be separated from each adjacent length by not less than three 3/4" polypropylene rope collars, one near each end and one in the middle. In the case of triple random length pipe, a minimum of 5 polypropylene rope collars will be required, spaced evenly along each joint. Collar spacing shall not exceed 20 feet.
- 9.5 Pipe will be loaded in layers and will not be nested in pyramid fashion unless specifically authorized by the Company/Engineering Consultant.
- 9.5.1 Pyramiding of Pipe, while an acceptable industry standard, is not recommended by the Company/Engineering Consultant. Layer loading provides a much more stable loading condition and is therefore the Company/Engineering Consultant standard.
- 9.5.2 Pyramiding of pipe is acceptable however in certain conditions such as the following:
1. The transport of bare pipe over short distances.
  2. The short distance transport of coated pipe between rail sidings or marine ports and job site locations.

  
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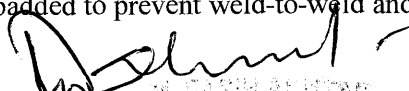




109

*Specification for Pipe, Seamless*

3. The short distance transportation of coated pipe between a pipe coater's location and a rail loading site or marine port.
- 9.5.3 In all cases, coated pipe being loaded in pyramid fashion must be fully protected from contact with adjacent pipe joints through the use of the required number of polypropylene rope collars and secured properly to the transporting conveyance.
- 9.6 The transportation by rail of both coated and bare pipe shall in all cases comply API recommended practice, RP 5L1, "Recommended Practice for Railroad Transportation of Line Pipe."
- 9.7 Marine shipment shall be loaded in accordance with API-RP 5LW, "Recommended Practice for Transportation of Line pipe on Barges and Marine Vessels," and the following:
  - 9.7.1 The pipe is to be stored in a manner and in a location to prevent damage to it and/or its coating. The pipe's location should be such that the pipe shall be undisturbed until it is unloaded. The bottom row of pipe shall be cushioned against the deck prior to placing the pipe.
  - 9.7.2 No cargo of any nature shall be stored on top of the pipe or against the sloping sides of the coated pipe.
  - 9.7.3 Each length of pipe shall be separated from each adjacent length by not less than three 3/4" polypropylene rope collars, one near each end and one in the middle. Collar spacing shall not exceed 20 feet.
- 9.8 In addition to the steel bands used to unitize bundles of small diameter pipe. Nylon straps or equivalent shall be used on all shipments of such pipe bundles, bare or coated, to prevent movement.
  - 9.8.1 The nylon straps shall be brought up over the pipe bundles and fastened down. A combined total width of twenty (20) inches of nylon strapping shall be used on each load. The twenty (20) inches of strapping shall consist of five (5) 4" -wide straps or ten (10) 2" wide straps.
  - 9.8.2 Rubber padding or other suitable padding shall be used to protect the pipe bundles, bare or coated, from the binder chains, when binder chains are approved for use
- 9.9 Any pipe damaged by Supplier shall be repaired in accordance with Company/Engineering Consultant's pipe specifications and applicable API Standards. Pipe damaged beyond permissible repair and any pipe heated in excess of 750°F shall become the property of Supplier and Supplier shall reimburse Company/Engineering Consultant the total value of such Pipe.
- 9.10 Spider grinding shall be an acceptable method of bevel repair at the external coating plant. The bevel repair shall be in accordance with API 5L and as follows:
  - 9.10.1 Pipe ends beveled to an angle of 30° (+5°; -0°).
  - 9.10.2 Bevel shall have a 1/16" root face.
  - 9.10.3 Bevel shall be square cut in accordance with API 5L latest edition.
- 9.11 Pipe shall be adequately padded to prevent weld-to-weld and weld-to-pipe contact. All welds,

  
M. EASIN ANANDAN  
COO (PE & PD)  
Ext: 3560

longitudinal, double joint, etc. shall be staggered so that they do not oppose each other on adjacent pipe.

9.12 The Supplier shall furnish all supervision, labor, materials, equipment and services necessary for the loading of the pipe.

9.13 The Supplier, at the end of each day, shall provide a tally of each conveyance loaded certifying the number of joints loaded, total footage and weight per conveyance.

**10.0 RECORDS**

10.1 Three (3) copies each of the certified mill test reports on all pipe under this specification shall be mailed to the Company/Engineering Consultant. Certified mill test reports shall be meet all requirements shown in API SR-15 or EN-10204-3.1

10.2 Each report shall be identified by the purchase order number, grade, and pipe size and heat number

10.3 The subject reports shall be mailed within ten (10) days after shipment as specified in the purchase order.

**11.0 REFERENCES**

All pipes shall be manufactured in accordance with this specification and the current editions of the following codes, standards, and specifications, as applicable.

11.1 API-RP 5L1 Recommended Practice for Railroad Transportation of Line pipe.

11.2 API-RP 5LW Recommended Practice for Transportation of Line pipe on Barges and Marine Vessels.

11.3 NACE TM-0284 Evaluation of Pipeline Steels for Resistance to Stepwise Cracking.

11.4 NACE TM-0177 Laboratory Testing of Metals for Resistance to Sulfide Stress Cracking in H<sub>2</sub>S Environments.

11.5 ASTM E-140 Standard Hardness conversion Tables for Metals

11.6 ASNT SNT-TC-1A Recommended Practice for Personal Qualification and Certification in Nondestructive Testing

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12.0 QUALITY PLAN

<u>Activity</u>	<u>Company/Engineering-Consultant Inspection</u>	
Pre-production Meeting		H
Pipe Supplier	M	
Nondestructive Inspection (Calibration)	H	(See Note)
Nondestructive Inspection (Production)	H	(See Note)
Flattening Tests	M	
Tensile Tests		H
Impact Tests		H
Hardness Tests	H	
Dimensional Inspection	H	
Visual Inspection		M
Marking & I.D		H
Residual Magnetism Measurement	M	
Loading		M
HIC Testing		R
MTR		R

Note: The inspections/tests are considered "hold points" at the beginning of production and may be changed to Monitor Points based on production performance if notified in writing by the Company/Engineering Consultant.

H - Hold Point, inspection or testing shall not proceed without the presence of Company/Engineering Consultant.

M - Monitor Point, notification to the Company/Engineering Consultant of impending inspection or test activity is required.

R - Review Documentation, presentation of the specified documentation to the Company/Engineering Consultant is required.

*M. Fasih Akhtar*  
 M. FASIH AKHTAR  
 GM (PE & FD)  
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# TOR FOR THIRD PARTY INSPECTION & EXPEDITING

## 1. Introduction:

Inspection of material as per purchased order. Third party presence will be 100% during the manufacturing and coating process.

## 2. Scope of Inspection

2.1 Inspection of Line Pipes during Manufacturing in accordance with Applicable Standards, PO & tender specifications & Expediting services in order ensure timely supply of pipe to OGDCL. Activity or test not mentioned in following scope of work but required as per tender specification will also be witnessed by third party inspector.

### 2.2 Documents Review for Approval.

2.2.1 Review of Manufacturing Procedure Specification

2.2.2 Review of Inspection / Testing Procedures & Plan

2.2.3 Review of Calibration Certificates of NDT & Destructive tests Equipments.

2.2.4 Review of Inspection test plan

2.2.5 Review of Raw Material & verification through MTC'S

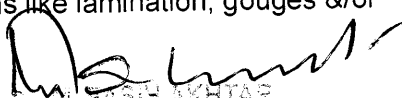
2.2.6 Review of NDT Personnel Certifications & records

2.2.7 Review of Manufacturing schedule ( In order to expedite)

### 2.3 Visual Inspection of billets and Witness of Associated Tests

2.3.1 Visual inspection of billets to evaluate the dimensional features

2.3.2 Visual inspection of billets to detect surface imperfections like lamination, gouges &/or pitting.

  
M. FASHIH AKHTAR  
GM (PE & PD)  
OGDCL

2.3.3 Witnessing of chemical test of billets, to ensure chemical properties of raw material to be used.

2.3.4 Verification of chemical test reports as per applicable code/standard &/or clients specification (if any).

## **2.4 Visual/dimensional inspection during manufacturing**

2.4.1 Witnessing of billet charging in furnace.

2.4.2 Visual inspection of initial shell.

2.4.3 Dimensional check of initial shell.

2.4.4 Witnessing/monitoring of pickling process like temperature/hold time.

2.4.5 Witnessing of cold draw and visual inspection for any surface defects during process.

2.4.6 Witnessing of annealing (stress relieving) to ensure proper temperature and travelling speed (hold time).

## **2.5 Witnessing of Hydrostatic Test of Pipe in accordance with Applicable Standard**

2.5.1 Test pressure shall be designated in accordance with applicable standard

2.5.2 Test duration shall be observed (10) seconds per pipe length.

2.5.3 Ensuring no leakage during test from end seal for constant test pressure.

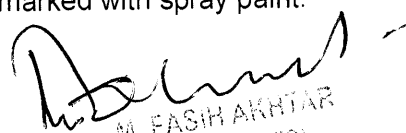
2.5.4 Witness of Hydrostatic test data and pipe data.

## **2.6 Witnessing of Non-Destructive Evaluation in Accordance with Applicable Standard**

2.6.2 Witnessing of complete Length of pipe inspected by NDT (for PSL 2 only or if mentioned in client's specification/purchase order).

2.6.3 All defects detected in NDT process shall be marked with spray paint.

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M. FASIH AKHTAR  
GM (PE & FO)  
Ext. 3556



2.6.4 Verification of NDT test reports.

## 2.7 Destructive Test of Pipe.

2.7.1 Witnessing of destructive tests from finished product.

2.7.2 Verification of destructive test reports according to applicable code/standard & specification

## 2.8 Witnessing of Final Inspection of Pipe:

2.6.1 Final Inspection shall be conducted in order to witness the following Features of Pipe.

- Pipe Length.
- Straightness.
- Pipe end Squariness.
- Pipe Weight.
- Bevel Angle and root.
- Pipe body for any surface defects.
- Pipe bevel Protection Guard.
- Marking on pipe.(Stencilling)
- Magnetic Residuals. (test)

## 3. Inspection of 3 Layer Polyethylene Coating in Accordance with Applicable Standard

### 3.1 Documents Review:

3.1.1 Raw Material Handling Procedure


3.1.2 Surface Preparation Procedure

3.1.3 Raw Material Testing Procedure

3.1.4 Coating Application Procedure

3.1.5 Inspection and Testing Procedure

3.1.6 Inspection and Testing Equipment Calibration

  
DR. NASEEM AHMAD  
Executive Director (Prod.J.J.V)  
Ext: 3765

  
M. FASIM AKHTAR  
CM (PE & PD)  
Ext: 3566



- 3.1.7 Coating Repair Procedures
- 3.1.8 Handling and Stockpiling Procedure
- 3.1.9 Personnel Qualification Record
- 3.1.10 MTC'S of coating raw material.

### 3.2 Visual Inspection of Pipe before Blast Cleaning:

- 3.2.1 Visual inspection of pipe external surface to ensure removal of oil grease and all other foreign substances.
- 3.2.2 Visual inspection of pipe to ensure drying of pipe
- 3.2.3 Visual inspection for quality of Epoxy Primer, Adhesive and PE from each batch.
- 3.2.4 Verification of visual inspection reports

### 3.3 Visual Inspection after Blast Cleaning:

- 3.3.1 Visual inspection of pipe for surface profile according to applicable standard.
- 3.3.2 Visual inspection of blast pipe for surface defects, such as lamination, gouge & other detrimental defects
- 3.3.3 Verification of post blasting data reports.

### 3.4 Inspection of 3 Layer Coating during Application in accordance with Applicable Standard

- 3.4.1 Witnessing of Pre- heating.
- 3.4.2 Witnessing of Chromate application.
- 3.4.3 Witnessing of FBE application
- 3.4.4 Witnessing of PE application

*Naseem Ahmad*  
**DR. NASEEM AHMAD**  
Executive Director (Prod./J.V)  
Ext: 3765

4 *M. Ershin Akhtar*  
**M. ERSHIN AKHTAR**  
GM (PE & FDI)  
Ext: 3765

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### **3.5 Final Visual Inspection of Coated Pipes:**

3.5.1 Visual inspection of coated pipes to ensure that Coating is free from any wrinkles, engravings, deep cuts, swelling, unbounded zones, air inclusions tears and voids etc.

3.5.2 To ensure thickness of coating with in the specified range.

### **3.6 Destructive & Non- destructive Tests in accordance with Applicable Standard:**

3.6.1 Holiday detection Test

3.6.2 Thickness gauging

3.6.3 Adhesion and Peel test

3.6.4 Penetration Test

3.6.5 Impact resistance test

3.6.6 Cathodic disbandment test

3.6.7 Flexibility test

3.6.8 Hot water resistance test

3.6.8 PE tensile test

3.6.9 Transverse electric resistivity test

3.6.10 Resistance to ultraviolet.

3.6.11 Verification of Destructive & non destructive test reports.

### **4.0 Reporting Structure:**

- Verification of Progress reports of all activities prepared by Pipe Manufacturer
- Submit a Non Conformance report to OGDCL signifying the quality concern & remedy.
- Daily Inspection Report will be sent to OGDCL by 3<sup>rd</sup> party inspector.
- Executive Summary of pipe Manufacturing.
- Detailed report at the end of complete inspection (Soft and hard copy).