

OWNER:	<b>CONCEPTUAL, BASIC and DETAIL DESIGN ENGINEERING OF STYRENE PARK OFFSITE</b>						EPCC CONTRACTOR:
MC:	<b>MATERIAL REQUISITION FOR PIPING SPOOLS AND PACKAGE ASSEMBLY</b>						
	<b>Plant Code</b>	<b>Job No.</b>	<b>Unit</b>	<b>Type</b>	<b>Group</b>	<b>Serial</b>	<b>Rev</b>
							00
							<b>Page : 1 of 17</b>

## MATERIAL REQUISITION FOR PIPING SPOOLS AND PACKAGE ASSEMBLY

00	10-Nov-2024	ISSUED FOR INQUIRY	M.O.	F.SH.	A.M.
<b>Rev.</b>	<b>Date</b>	<b>Description</b>	<b>Prepared</b>	<b>Checked</b>	<b>Approved</b>



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							00	

### Table of Contents

1. Scope.....	4
2. Definitions .....	4
2.1 Abbreviations .....	4
3. References.....	4
3.1 General .....	4
3.2 Code and standards.....	4
3.3 Project Documents.....	5
4. Inquired Items .....	6
4.1 Item Name and Tag Number .....	6
5. Scope of Work and Supply.....	6
5.1 Scope of Supply.....	6
5.2 Scope of Work .....	8
6. Design.....	11
6.1 General .....	11
6.2 General Notes.....	12
6.3 Piping .....	12
6.4 Assembly .....	12
7. Documentation.....	12
7.1 General .....	12
7.2 Conflict in purchaser documents.....	13
7.3 Language of documentation .....	13
7.4 Unit of measurement.....	13
7.5 Documents shall be submitted by vendor .....	13
8. Inspection and Tests .....	16
8.1 General .....	16
8.2 Traceability Levels .....	17
8.3 NDE Qualification.....	17
9. Guarantee .....	17

OWNER:	<b>CONCEPTUAL, BASIC and DETAIL DESIGN ENGINEERING OF STYRENE PARK OFFSITE</b>						EPCC CONTRACTOR:
MC:	<b>MATERIAL REQUISITION FOR PIPING SPOOLS AND PACKAGE ASSEMBLY</b>						
	<b>Plant Code</b>	<b>Job No.</b>	<b>Unit</b>	<b>Type</b>	<b>Group</b>	<b>Serial</b>	<b>Rev</b>
							00
							Page : 4 of 17

## 1. Scope

This document covers, material supply, manufacturing, assembling, Inspection, testing, delivery and all other activities that is required for supply of Piping inside the package to successful startup of the package.

This Requisition sets out the minimum requirements and does not relieve the Vendor of his full responsibility for the reliable manufacturing of supplied items. Therefore, the Vendor will be liable for the correct operation of any auxiliary elements involved. In the preparation of his proposal, the Vendor shall fulfill all the provisions of this Requisition even if they differ from vendor standard supply. Whenever the Vendor cannot comply with the present Requisition for technical reasons, he shall state it in detail in the chapter of the deviations.

## 2. Definitions

### 2.1 Abbreviations

<b>Abbreviation</b>	<b>Meaning</b>
NDT	None Destructive Test
QA	Quality assurance
WPS/PQR	Welding Procedure Specification/Procedure Qualification Record
CD	Compact Disc
QCP	Quality Control Plan
MOM	Minuets Of Meeting
PMI	Positive Metal Identification

## 3. References

### 3.1 General

All documents, codes and standards referenced in this requisition, shall form an integral part of this Requisition and shall be followed where applicable. For project documents, latest revision of the documents up to date of kickoff meeting shall be followed.

For codes and standards, latest revision up to date of order shall be followed. Purchaser reserve the right to request the vendor to use and follow an older revision of a code or standard due to his requirements.

### 3.2 Code and standards

<b>No.</b>	<b>Code/Standard Number</b>	<b>Code/Standard Title</b>
1	ASME B31.3 Edition 2022	Process Piping
2	ASME Section V, Edition 2021	Nondestructive Examination
3	ASME Section IX, Edition 2021	Welding and Brazing Qualifications
4	ASTM/ASME Section II, Edition 2021	Materials

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	<b>Plant Code</b>	<b>Job No.</b>	<b>Unit</b>	<b>Type</b>	<b>Group</b>	<b>Serial</b>	<b>Rev</b>
							00
							Page : 5 of 17

5	BS EN 10204 (3.1)	Metallic Products - Types Of Inspection Documents
6	ASME B16.5	Pipe Flanges And Flanged Fittings: Nps 1/2 Through Nps 24 Metric/Inch Standard
7	ASME B16.47 Series B	Large Diameter Steel Flanges Nps 26 Through Nps 60 Metric/Inch Standard
8	ASME B16.9	Factory-Made Wrought Butt welding Fittings
9	ASME B16.20	Metallic Gaskets For Pipe Flanges Ring-Joint, Spiral-Wound, And Jacketed
10	ASME B16.21	Nonmetallic Flat Gaskets For Pipe Flanges
11	ASME B1.1	Unified Inch Screw Threads
12	ASME B18.2.1	Square, Hex, Heavy Hex, And Askew Head Bolts And Hex, Heavy Hex, Hex Flange, Lobed Head, And Lag Screws (Inch Series)
13	ASME B18.2.2	Nuts For General Applications: Machine Screw Nuts, Hex, Square, Hex Flange, And Coupling Nuts (Inch Series)
14	ASME B36.19	Stainless Steel Pipe
15	ASME B36.10	Welded And Seamless Wrought Steel Pipe
16	AWS	American National Standard for Welding

### 3.3 Project Documents

No.	Document Title	Document Number	Revision	Remarks
<b>A</b>	<b>General Documents :</b>			
1	Painting Procedure	EI027-HSE-VD – QC– PRO– 002	00	
2	Final Data Book Preparation Instruction		00	
	Packing, Shipping, Marking Procedure		00	
3	Deviation List			
4	Approved Vendor List		08	NPC, POGC, MOP
<b>B</b>	<b>Technical Documents:</b>			
<b>B-1</b>	<b>Piping:</b>			
1	Isometrical drawings		00	
2	Piping Orthos & Related Supports		00	
3	3D Model	EI027-HSE-VD – PI– MOD– 002	00	
4	Line List		00	
5	Valve List		00	

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	<b>Plant Code</b>	<b>Job No.</b>	<b>Unit</b>	<b>Type</b>	<b>Group</b>	<b>Serial</b>	<b>Rev</b>
							00
							Page : 6 of 17

No.	Document Title	Document Number	Revision	Remarks
6	MTO for Pipe, Fitting, Flange		00	
7	Inspection and Test Plan for Piping		00	
8	Standart U Clamp		00	
9	General Arrangement Drawing	EI027-HSE-VD – PI– DWG– 001	00	
10	Lifting Plan		00	
<b>B-2</b>	<b>Process:</b>			
1	Piping and Instrument Diagram	EI027-HSE-VD-PR-PID-002	02	
<b>B-3</b>	<b>Structure:</b>			
1	Chiller Package Skid	EI027-HSE-VD – ST– DWG– 001	02	
<b>B-4</b>	<b>Instrument:</b>			
1	Instrument List		00	
2	Instrument Cable List		01	
3	ISO for Tubing		00	
4	MTO for Tubing		00	
5	Hook Up		00	
6	Cable Tray		00	
<b>B-5</b>	<b>Assembly:</b>			
1	Inspection and Test Plan For Package Assembly		00	

#### 4. Inquired Items

##### 4.1 Item Name and Tag Number

No.	Item Description	Item Tag Number	Number Required	Type
1	Piping Spool		2 Unit	Piping
2	Chiller Skid Assembly		2 Unit	Assembly

#### 5. Scope of Work and Supply

##### 5.1 Scope of Supply

Vendor proposal shall include, but not be limited to, equipment and materials specified in the following: Items marked with “vendor” in column of " Included in supply scope of:" hereunder shall be within vendor Scope of supply.

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	<b>Plant Code</b>	<b>Job No.</b>	<b>Unit</b>	<b>Type</b>	<b>Group</b>	<b>Serial</b>	<b>Rev</b>	Page : 7 of 17
							00	

No.	Item Description	Included In Supply Scope of:
<b>A</b>	<b>Piping</b>	
1	Supply of All Required Materials as Per Isometric Drawing, including but not limited to: Pipes, Flanges, Fitting, Olets, etc	Vendor
2	Supply of Supports For Piping as per Structure Drawing	Vendor
3	Supply of Cable Trays as per Drawing	Vendor
4	Supply of Supports For Cable Trays as per Structure Drawing	Vendor
5	Teflon (6 mm) Between Pipe and Pipe Support	Vendor
6	U bolt including 2 nuts	Vendor
7	Gasket, Bolts, Nuts and Washers as per Isometric	Vendor
8	Welding Rod for Shop Fabrication	Vendor
9	Welding Rod for site assemblies (if required)	Vendor
10	Cover the open ends with metal blank (Min. 6 mm) for Interconnection Pipes and other connection as battery limit.	Vendor
11	Gasket, Bolt and Nuts and washers for Interconnection Pipes for Transport	Vendor
12	Silica Gel for for Interconnection Pipes for Transport	Vendor
13	External Surface Painting	Vendor
14	Touch-up paint for repair work at site	Vendor
15	Valves	Others
16	Tag plate (Name Plate) for SS Manual Valves	Vendor
17	Instrument	Others
18	Insulation	Others
19	Fire Proofing	Others
20	3.1 Certification for pressure part & 2.2 for Non-Pressure part materials	Vendor
21	All certificates requested in this MR	Vendor
22	Final Data Book	Vendor
<b>B</b>	<b>Instrument</b>	
1	Supply of Cable Trays (SS316L) as per Drawing	Vendor
2	Supply of Supports For Cable Trays as per Structure Drawing	Vendor
3	Supply of Earth bar (2 earth bars per skid)	Vendor
4	Jumper for cable tray earthing	Vendor
5	Earth Boss (2 per skid)	Vendor
6	Instrument Consumable	Vendor
7	Loctite 577	Vendor
8	Teflon	Vendor
9	Tag plate for Instrument Cable	Vendor
10	Bolt, Nuts and Washer for Installation of Junction Boxes	Vendor
11	Tubes	Others
12	Tube Fittings	Others
13	Tube Clamp	Others

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	<b>Plant Code</b>	<b>Job No.</b>	<b>Unit</b>	<b>Type</b>	<b>Group</b>	<b>Serial</b>	<b>Rev</b>
							00
							<b>Page : 8 of 17</b>

14	Instrument Cable	Others
15	Earth Cable	Others
16	Cable Gland	Others
17	All Instruments	Others
18	Needles Valves	Others
19	Slonoid Valves	Others
20	Control Valvers	Others
21	Sight Glass	Others
22	Strainers	Others
23	Junction Boxes	Others
24	Heat Tracing	Others

## 5.2 Scope of Work

No.	Item Description	Included in Work Scope of:
<b>A</b>	<b>Piping</b>	
1	Preparation of Piping Shop Drawings	Vendor
2	Material Procurement	Vendor
3	Fabrication (including all required welding) of Piping Spools at Shop	Vendor
4	Pipe Support Welding to Structure as per Structure Drawing	Vendor
5	Welder Performance Qualification Tests	Vendor
6	Inspection And Tests	Vendor
7	NDE	Vendor
8	Inside Cleaning	Vendor
9	Primer Painting	Vendor
10	Intermediate Painting	Vendor
11	Final Painting / Coating / Color approval	Vendor
12	Touch-up paint for repair work at site	Vendor
13	Chemical Cleaning, Pickling & Passivation For Stainless Steel Parts	Vendor
14	Positive Material Identification (PMI) For Non-Carbon Steel Material	Vendor

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	<b>Plant Code</b>	<b>Job No.</b>	<b>Unit</b>	<b>Type</b>	<b>Group</b>	<b>Serial</b>	<b>Rev</b>
							00
							Page : 9 of 17

15	Hydrotest of Piping Spools	Vendor
16	Air Drying after Hydrotest	Vendor
17	Inland Shipping Marking / Packing	Vendor
18	Preparation For Shipment	Vendor
19	Ex-Work Delivery	Vendor
20	As Built Isometric Drawing	Vendor
21	Fianl Dta Book	Vendor
<b>B</b>	<b>Instrument</b>	
1	Wiring of All Instruments as per Instrument list to Junction Box	Vendor
2	Wiring of Control Valve as per Instrument list to Junction Box	Vendor
3	Wiring of Solenoid Valves as per Instrument list to Junction Box	Vendor
4	Instrument End cable preparation	Vendor
5	Earthing of all Instruments, equipments, Valves, etc	Vendor
6	Earth cable End cable preparation	Vendor
7	Tubing of Oil recovery as per provided ISO and drawings	Vendor
8	Instrument Air Tubing as per provided ISO and drawings	Vendor
9	Junction Boxes Installation	Vendor
10	Termination inside Instruments	Vendor
11	Termination inside Junction Box's	Vendor
12	Function test of Instruments	Vendor
13	Cable Tray routing	Vendor
14	Cable Tray installation	Vendor
15	Connection tubing to Blind Flanges	Vendor
16	Cable Gland Installation	Vendor

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	<b>Plant Code</b>	<b>Job No.</b>	<b>Unit</b>	<b>Type</b>	<b>Group</b>	<b>Serial</b>	<b>Rev</b>
							00
							Page : 10 of 17

17	Chemical Cleaning, Pickling & Passivation For Stainless Steel Parts	Vendor
<b>C</b>	<b>Assembly</b>	
1	Mechanical Assembly including Assembly and installation of Piping as per project documents	Vendor
2	Assembly of all tubing and fitting as per provided ISO and drawings as per project documents	Vendor
3	Installation of U Bolt	Vendor
4	Touch up painting	Vendor
5	Detail study & fabrication	Vendor
6	NDE	Vendor
7	Inside cleaning	Vendor
8	Chemical Cleaning, Pickling & Passivation For Stainless Steel Parts	Vendor
9	Installation of bolts, nuts, washer and gaskets as per ISO and other project documents	Vendor
10	Insulation	Others
11	Fire Proofing	Others
12	Free Issued Material	Others
13	Costum Clearance on Free Issued Materail	Vendor
14	Delivery from Bandar Abbas to Vendor Shop (Client will deliver Free Issued Material in CFR Bandar Abbas Condition)	Vendor
515	Installation of Level Transmitter	Vendor
16	Installation of Level Gauge	Vendor
17	Installation of Control Valve	Vendor
18	Installation of Manual Valves	Vendor
19	Installation of Ejector	Vendor
20	All Wiring Check	Vendor
21	Earthing Check	Vendor
22	Wiring to Bar Check	Vendor

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MC:	<b>MATERIAL REQUISITION FOR PIPING SPOOLS AND PACKAGE ASSEMBLY</b>						
	<b>Plant Code</b>	<b>Job No.</b>	<b>Unit</b>	<b>Type</b>	<b>Group</b>	<b>Serial</b>	<b>Rev</b>
							00
							<b>Page : 11 of 17</b>

23	Documentation	Vendor
24	Inspection and test as per ITP	Vendor
25	Nitrogen Leak Test of the Package (with 22 barg), to be quoted separately	Vendor
26	N2 purging of the Package (with 1 barg)	Vendor
27	NDE report, Painting reports, Hydro test reports, leak test report, other reports	Vendor
28	As Built Drawing	Vendor
29	Packing List	Vendor
30	Package Packing, to be quoted separately for belw options: -Wooden Box - Tarpaulin Packing	Vendor
31	3.1 Certification for pressure part & 2.2 for Non-Pressure part materials	Vendor
32	All certificates requested in this MR	Vendor
33	Inspection release note	Vendor
34	Load skid on Truck	Vendor
35	Final Data Book	Vendor

## 6. Design

### 6.1 General

All of referenced and attached standards or project documents shall be used and followed strictly when applicable including all typical drawing or details.

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	<b>Plant Code</b>	<b>Job No.</b>	<b>Unit</b>	<b>Type</b>	<b>Group</b>	<b>Serial</b>	<b>Rev</b>
							00
							<b>Page : 12 of 17</b>

## 6.2 General Notes

- 6.2.1 All Documents / Drawings Shall Be Written In English.
- 6.2.2 All Vendor Drawings And Documents Should Be Provided In Purchaser Title Block.
- 6.2.3 All E-Files Should Be Provided In Original Format (E.G AutoCAD, Word, Excel, Etc.)

## 6.3 Piping

- 6.3.1 15 % RT (Spot) is considered for pipe spools (Butt Joints) only.
- 6.3.2 All the joints shall be visually inspected and DP testing will be done.
- 6.3.3 3.1 Certification is considered for all piping materials including Gasket, Bolts, Nuts
- 6.3.4 Flanges Face Finishing Shall Be Smooth With 125 Micro Inch Minimum To 250 Micro Inch Maximum, As Per ASME B16.5/B16.47.
- 6.3.5 Flange Bolt Holes Shall Be Straddled North/South C.L. (Or Horizontal C.L.).
- 6.3.6 All material shall be supplied from latest Revision of NPC, POGC and MOP approved vendor list
- 6.3.7 Fabrication Tolerances for piping shall be as per ASME B31.3 and other documents in material requisition.

## 6.4 Assembly

- 6.4.1 Free issued material will be supplied by Clinet with CFR Bandar Abbas condition. Costum clearance and delivery to Vendor shop is in Vendor responsibility
- 6.4.2 Package assembly shall be done as per provided ITP and other project specification and documents. Level
- 6.4.3 All flanges shall be straddled to north south to be match with valves and instruments.
- 6.4.4 Installation of pipe on relevant support shall be done properly to avoid gap between support and skids. Pre assembly between support and skid and pipe to be done before fianl assembly.
- 6.4.5 Required volume of Nitrogen for Leak test of package shall be take into consideration by vendor during proposal stage.
- 6.4.6 Free issued materials are out of vendor scope of supply and will be provided by Client.
- 6.4.7 In case of discrepancy between provided MTO for piping and Isometric, please inform client.

## 7. Documentation

### 7.1 General

During Equipment / Material Service Purchase Order implementation stage:

- Issue of the Job QA plan
- Issue of working procedures for purchaser review within one month after order.
- Implementation of the working procedure during order execution
- Performance of vendor Management Audit Program

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	<b>Plant Code</b>	<b>Job No.</b>	<b>Unit</b>	<b>Type</b>	<b>Group</b>	<b>Serial</b>	<b>Rev</b>
							00
							Page : 13 of 17

- Vendor shall provide the Copy of vendor quality manual / quality plan. Quality Plan shall be subject to presentation, discuss and clarification with purchaser, and Company as necessary, prior to incorporation into contract.

## 7.2 Conflict in purchaser documents

In case of conflict between purchaser documents, Vendor shall inform the Purchaser about the conflict. For important conflicts, vendor shall wait for purchaser clarification before proceeding. For other events, documents priority order as specified hereinafter should be used. When conflict is not clarified between purchaser and vendor before order, the purchaser has the right to select the most stringent requirements without accepting any cost or time impact.

## 7.3 Language of documentation

All documents shall be written in the English. Persian may be used for local letters and minutes of meeting if approved by purchaser. All documents in other languages shall be translated to English before submittal.

## 7.4 Unit of measurement

SI units shall be used as far as possible except for followings:

- Pipe and flange nominal diameter should be represented in inch.

## 7.5 Documents shall be submitted by vendor

<b>LIST OF DOCUMENTS REQUIRED FROM VENDOR</b>								
NO.	DESCRIPTION	AT THE TIME OF BID Q/TYPE	AFTER ORDERING					AT THE FINAL INSP. (Note 4)
			DRAWINGS AND DOCUMENTS (NOTE 10)				FINAL ISSUE (Note 1)	
			Q/TYPE (Note 1)	DEL. TIME (Note 2)	PURPOSE (Note 3)			
<b>A</b>	<b>General:</b>							
1	Manufacturing Schedule Per Equipment (Including Design, Procurement, Fabrication, Test And Packing, Delivery)	4/C	4/C+1/CD	Monthly	R	-	-	
2	Sub-Vendor/Sub-Supplier List (Note 6)	4/C	-	-	R	-	-	
3	Country of Origins of Material	4/C	4/C+1/CD	With Material Certificate	I	-	-	
4	Vendor's Progress Report	-	4/C	Monthly	R	-	-	
5	Material Certificates / Certificate of Origin	-	4/C+1/CD	3 W Before Fabrication	I	10/C+2/CD	X	

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	<b>Plant Code</b>	<b>Job No.</b>	<b>Unit</b>	<b>Type</b>	<b>Group</b>	<b>Serial</b>	<b>Rev</b>
							00
							Page : 14 of 17

<b>LIST OF DOCUMENTS REQUIRED FROM VENDOR</b>								
NO.	DESCRIPTION	AT THE TIME OF BID Q/TYPE	AFTER ORDERING					AT THE FINAL INSP. (Note 4)
			DRAWINGS AND DOCUMENTS (NOTE 10)				FINAL ISSUE (Note 1)	
			Q/TYPE (Note 1)	DEL. TIME (Note 2)	PURPOSE (Note 3)			
				Start				
6	Copy Of Un-priced Sub-Vendor/Sub-Supplier Orders	-	4/C+1/CD	1 W After Sub-Order Placement	-	-	-	
7	Vendor Quality Control Plan	-	4/C+1/CD	4 W	R	10/C+2/CD	X	
8	Inspection and Test Plan	-	4/C+1/CD	4 W	R	10/C+2/CD	X	
9	Welding Procedure Specifications And Procedure Qualification Records (WPS & PQR) Including General Arrangement Drawings And Related Weld Or Welding Map For All Welding	-	4/C+1/CD	6 W Before Welding	-	10/C+2/CD	X	
10	Welders Qualification Certificates	-	4/C+1/CD	3 W Before Welding	-	10/C+2/CD	X	
11	Testing / NDT Procedures	-	4/C+1/CD	6 W Before Test	R	10/C+2/CD	X	
12	Painting Procedure	-	4/C+1/CD	6 W Before Painting	R	10/C+2/CD	X	
13	Pickling And Passivation Procedure	-	4/C+1/CD	6 W Before Pickling	R	10/C+2/CD	X	
14	NDT Personal Qualification Certificate	-	4/C+1/CD	6 W Before Test	R	10/C+2/CD	X	
15	NDT Map	-	4/C+1/CD	6 W Before Test	R	10/C+2/CD	X	
16	Testing / NDT Records	-	4/C+1/CD	2 W After Test	R	10/C+2/CD	X	

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							00
							Page : 15 of 17

<b>LIST OF DOCUMENTS REQUIRED FROM VENDOR</b>							
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			DRAWINGS AND DOCUMENTS (NOTE 10)				
			Q/TYPE (Note 1)	DEL. TIME (Note 2)	PURPOSE (Note 3)	FINAL ISSUE (Note 1)	
17	PMI Procedure	-	4/C+1/CD	6 W Before Test	R	10/C+2/CD	X
18	PMI Record	-	4/C+1/CD	2 W After Test	R	10/C+2/CD	X
19	Hydrotest Procedure	-	4/C+1/CD	6 W Before Test	R	10/C+2/CD	X
20	Package Leak Test Procedure		4/C+1/CD	6 W Before Test	R	10/C+2/CD	X
21	N2 purging procedure		4/C+1/CD	6 W Before Test	R	10/C+2/CD	X
22	Hydrotest Certificates	-	4/C+1/CD	2 W After Treat	R	10/C+2/CD	X
23	Other Shop Test Reports	-	4/C+1/CD	2 W Before Test	R	10/C+2/CD	X
24	Packing Lists and Packing Sketch	-	4/C+1/CD	Upon Shipment	R	10/C+2/CD	X
25	Material + Mill Certificates And Acceptance Certificates	-	10/C+2/CD	1 W Before Delivery	R	10/C+2/CD	X
26	Package Inspection Release Certificates	-	10/C+2/CD	2 W After Delivery	R	10/C+2/CD	X
27	As-Built Drawings	-	10/C+2/CD	2 W Before Delivery	R	10/C+2/CD	X

OWNER:	<b>CONCEPTUAL, BASIC and DETAIL DESIGN ENGINEERING OF STYRENE PARK OFFSITE</b>						EPCC CONTRACTOR:
MC:	<b>MATERIAL REQUISITION FOR PIPING SPOOLS AND PACKAGE ASSEMBLY</b>						
	<b>Plant Code</b>	<b>Job No.</b>	<b>Unit</b>	<b>Type</b>	<b>Group</b>	<b>Serial</b>	<b>Rev</b>
							00
							Page : 16 of 17

<b>LIST OF DOCUMENTS REQUIRED FROM VENDOR</b>								
NO.	DESCRIPTION	AT THE TIME OF BID Q/TYPE	AFTER ORDERING					AT THE FINAL INSP. (Note 4)
			DRAWINGS AND DOCUMENTS (NOTE 10)				FINAL ISSUE (Note 1)	
			Q/TYPE (Note 1)	DEL. TIME (Note 2)	PURPOSE (Note 3)			
28	List of Documents to Be Included in Vendor Data Book	-	4/C+1/CD	2 M Before Delivery	R	-	X	
29	Vendor Data Book	-	-	2 W After Delivery	R	10/C+4/CD	X	

**Notes:**

- (1) Q=QUANTITY, C=COPY, T=TRANSPARENT, P=POLYESTER, CD=COMPACT DISC, E=E-FILE
- (2) W=WEEK AFTER ORDER PLACEMENT, M=MONTH AFTER ORDER PLACEMENT
- (3) R=FOR REVIEW, I=FOR INFORMATION
- (4) X=DOCUMENTS TO BE SUBMITTED AT THE FINAL INSPECTION / DATA BOOK
- (5) PRICED COPY + UNPRICED COPY
- (6) PURCHASER HAS THE RIGHT TO REJECT SUB-VENDORS/SUB-SUPPLIERS IF HIS CAPABILITY IS JUDGED POOR OR NOT PROVEN.
- (7) NO DRAWING / DOCUMENT COULD BE REVIEWED BEFORE RECEIVING VPIS.
- (8) ALL DRAWINGS SHOULD INCLUDE WEIGHTED PART LIST.
- (9) ORIGINAL E\_FILE SHOULD BE PROVIDED FOR FEA
- (10) ORIGINAL E\_FILE SHOULD BE PROVIDED.

## 8. Inspection and Tests

### 8.1 General

Inspection and tests shall be made by Vendor in accordance with requirements specified in this Requisition and/or any Engineering Specification, code or standard referenced in this requisition.

Shop witness test shall be carried out in accordance with the documents approved by Purchaser. Any witness/testing/inspection without the approved document shall be invalid.

No protection, paint or other filling shall be applied to the contract works before they have been inspected, tested and approved.

Manufacturing Data Record for Equipment shall be prepared in accordance with applicable specification and shall be completed at the final stage of inspection/test for Purchaser's inspector's review prior to shipment of items.

OWNER:	<b>CONCEPTUAL, BASIC and DETAIL DESIGN ENGINEERING OF STYRENE PARK OFFSITE</b>						EPCC CONTRACTOR:		
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		Plant Code	Job No.	Unit	Type	Group	Serial	Rev	Page : 17 of 17
								00	

## 8.2 Traceability Levels

The following levels shall apply to the traceability of certification:

Level 1 – EN 10204-3.2 Critical items

Level 2 – EN 10204-3.1 Normal level of assurance

Level 3 – EN 10204-2.2 Non- critical items

## 8.3 NDE Qualification

All personnel performing NDE functions must be adequately qualified. The NDE operators qualifications shall form part of all Vendor quality plans and therefore be approved by the purchaser before manufacture works by the inspector. The foregoing shall also apply to all sub- manufacturers.

## 9. Guarantee

Vendor shall guarantee the operation of the equipment to the specified design conditions. Vendor shall warrant the materials and workmanship of the piping spool for a period of 12 months after successful start-up or eighteen (18) months from the date of certificate of mechanical completion. below items shall be considered by vendor. Under this warranty, Vendor shall replace all materials, parts, and assemblies found to be defective during the guarantee period. Vendor shall also, if required, supply the services of an experienced engineer to supervise the necessary repairs and replacements.