



## TECHNICAL REQUISITION DOCUMENT FOR DRUM FILLING MACHINE HP02-00-ME-TRD-0002

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		T.D.H	D.T.T	N.T.S	V.L.T	



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	<b>HAI PHONG 2 PROJECT</b>	Code:	HP02-00-ME-TRD-0002	
		Rev:	A	
		Dated:	23 <sup>th</sup> Oct, 2023	
		Page:	2 of 10	
	<b>TECHNICAL REQUISITION FOR DRUM FILLING MACHINE</b>			

## TABLE OF CONTENT

<b>1.</b>	<b>GENERAL</b>	<b>3</b>
<b>1.1.</b>	<b>Document Purpose</b>	<b>3</b>
<b>1.2.</b>	<b>Definition and Abbreviation</b>	<b>3</b>
<b>2.</b>	<b>LANGUAGE AND UNIT</b>	<b>3</b>
<b>2.1.</b>	<b>Language</b>	<b>3</b>
<b>2.2.</b>	<b>Unit of Measurement</b>	<b>3</b>
<b>3.</b>	<b>ITEM AND QUANTITIES</b>	<b>4</b>
<b>4.</b>	<b>CONFLICTING REQUIREMENTS</b>	<b>4</b>
<b>5.</b>	<b>DEVIATION</b>	<b>4</b>
<b>6.</b>	<b>SCOPE OF SUPPLY AND WORK</b>	<b>4</b>
<b>7.</b>	<b>GENERAL REQUIREMENTS</b>	<b>6</b>
<b>7.1.</b>	<b>General</b>	<b>6</b>
<b>7.2.</b>	<b>Design Life, Availability and Reliability</b>	<b>7</b>
<b>7.3.</b>	<b>Protective Coating and Painting</b>	<b>7</b>
<b>7.4.</b>	<b>Preparation for Shipment</b>	<b>7</b>
<b>7.5.</b>	<b>Guarantee and Warranty</b>	<b>8</b>
<b>7.6.</b>	<b>Spare Part</b>	<b>8</b>
<b>8.</b>	<b>SPECIAL REQUIREMENTS</b>	<b>9</b>
<b>9.</b>	<b>INSPECTION AND TEST REQUIREMENTS</b>	<b>9</b>
<b>10.</b>	<b>COORDINATION MEETING</b>	<b>9</b>
<b>11.</b>	<b>APPLICABLE DOCUMENTS</b>	<b>10</b>
<b>12.</b>	<b>VENDOR DATA REQUIREMENT LIST</b>	<b>10</b>

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	<b>HAI PHONG 2 PROJECT</b>	Code:	HP02-00-ME-TRD-0002	
		Rev:	A	
		Dated:	23 <sup>th</sup> Oct, 2023	
		Page:	3 of 10	
	<b>TECHNICAL REQUISITION FOR DRUM FILLING MACHINE</b>			

## 1. GENERAL

### 1.1. Document Purpose

The purpose of this Technical Requisition is to define the scope of supply and overall technical requirements for the supply of Drum Filling Machine for Hai Phong 2 Project. This document identifies applicable technical documentation relevant to the design, build, testing, supply, and installation (where identified) and the required documentation to be submitted by the Supplier for the equipment.

### 1.2. Definition and Abbreviation

Definitions used in this document are described below:

PROJECT	Hai Phong 2 Project
OWNER	The Branch of Top Solvent (Vietnam) Limited Liability Company – Hai Phong Terminal
EPC CONTRACTOR	PTSC Thanh Hoa Technical Services Company

## 2. LANGUAGE AND UNIT



### 2.1. Language

All documents and drawings to be submitted shall be lettered in English language

### 2.2. Unit of Measurement

The unit of measurement shall be SI, and in particular:

- Diameter : mm
  - Length/ dimensions : mm
  - Liquid level : mm
  - Thickness : mm
  - Area : m<sup>2</sup>
  - Gauge pressure : kg/cm<sup>2</sup> G
  - Absolute pressure : kg/cm<sup>2</sup> ABS
  - Temperature : °C
  - Stress : kgf/cm<sup>2</sup>
  - Weight, Mass : kg, ton (1,000 kg)
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	<b>HAI PHONG 2 PROJECT</b>	Code:	HP02-00-ME-TRD-0002	
		Rev:	A	
		Dated:	23 <sup>th</sup> Oct, 2023	
		Page:	4 of 10	
	<b>TECHNICAL REQUISITION FOR DRUM FILLING MACHINE</b>			

- Load : kgf
- Moment : kgf.m
- Volume : m<sup>3</sup>
- Density (fluid) : kg/m<sup>3</sup>
- Flexibility of nozzles : kgf.m / °

### 3. ITEM AND QUANTITIES

No.	Item no.	Q'ty	Description	Remark
1	X-203	1	Drum Filling Machine	
	Total	1		

### 4. CONFLICTING REQUIREMENTS



Vendor shall notify Purchaser of any conflicts among this TRD, specifications, the related data sheets, the Codes and Standards and any other specifications noted herein. Resolutions and/or interpretation precedence shall be obtained from Purchaser in writing before proceeding with the design/manufacture.

### 5. DEVIATION

The vendor's quotation shall be in full conformity with the Purchaser's requirements. Unless exceptions, deviations or alternatives are clearly defined and listed on the attached Purchaser's form "Deviation List" and submitted with Vendor's quotation, the requirements and conditions of this requisition shall be deemed to be accepted by the Vendor.



### 6. SCOPE OF SUPPLY AND WORK

Vendor shall furnish completed Drum Filling Machine suitable for continuous duty. If there are any discrepancies, the Vendor shall point out to Purchaser before proceeding.

	<b>HAI PHONG 2 PROJECT</b>	Code:	HP02-00-ME-TRD-0002	
		Rev:	A	
		Dated:	23 <sup>th</sup> Oct, 2023	
		Page:	5 of 10	
	<b>TECHNICAL REQUISITION FOR DRUM FILLING MACHINE</b>			

All items shall be furnished in accordance with the requirements specified in this requisition such as data sheets, project specifications and other documents attached herewith.

- Drum filling machine X-203, including inlet filter F-2103
  - Local panel /junction box common for pneumatic assembly and wiring field
  - The operator control station with push buttons
  - Filling nozzle
  - Batch filling controlled by load cells.
  - Length of filling arm determined by coverage required to cover over platform scales.
  - Containers to be vented to existing exhaust system.
  - Flexible hoses shall be fitted with camlock coupling.
  - Equipment shall be suitable for top filling.
  - Instruments
  - All necessary pressure reducers, filters, etc. for instrument/utility air
  - Structure Support Column
  - Operator keyboard
  - Platform scales with loadcells
  - Roadless Cylinder
  - Capper and cap seal (Pneumatic type, 70 mm capper size )
  - Installation and inspection and commissioning
  - Flexible hoses and quick connections for both end
  - Filling valve with Lance assembly
  - Filling head with air operated filling nozzle and fume hood for gas collection
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	<b>HAI PHONG 2 PROJECT</b>	Code:	HP02-00-ME-TRD-0002	
		Rev:	A	
		Dated:	23 <sup>th</sup> Oct, 2023	
		Page:	6 of 10	
	<b>TECHNICAL REQUISITION FOR DRUM FILLING MACHINE</b>			

- Pipework and valves necessary for connection to Purchaser piping
- Tubing and tube fitting within the equipment package.
- Drip tray
- Instrument and control cables within the equipment package including cabling between the panel and weight scale, cable trays, ladders, etc.
- All necessary accessories for safe operation
- Stainless Steel earthing bosses & lifting lugs.
- Stainless steel nameplates
- Factory acceptance testing.
- Performance test & complete unit test
- Assistance with installation, testing and commissioning
- Surface preparation and painting.
- Export packing, preparation for shipment and preservation for long term storage (suitable for 12-month outdoor storage).
- Performance guarantee and mechanical warranty.
- Recommended two-year normal spares as optional cost.
- Foundation Bolts and nuts according to GA drawing of vendor.
- Vendor documentation as per Vendor Data requirement List.



## **7. GENERAL REQUIREMENTS**

### **7.1. General**

Compliance by the Vendor with the provision of this TRD does not relieve him of his responsibility to furnish the package/ material and accessories to meet the specified duty and / or local codes governing health and safety.

All applicable documents mentioned below are attached with the request for inquiry. However, if the Vendor is not in possession of any of the listed or referenced Purchaser documents, it shall be Vendor's sole responsibility to obtain

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	<b>HAI PHONG 2 PROJECT</b>	Code:	HP02-00-ME-TRD-0002	
		Rev:	A	
		Dated:	23 <sup>th</sup> Oct, 2023	
		Page:	7 of 10	
	<b>TECHNICAL REQUISITION FOR DRUM FILLING MACHINE</b>			

them from the Purchaser. Otherwise, it shall be assumed that the Vendor has received, read and understood the total contents of the documents.

The Package shall be strictly in accordance with datasheets, specifications, codes, and standards specified.

All materials and parts shall be new and unused and free from defects and imperfections that would adversely affect the life or performance of the system.

Vendor data shall include detailed design drawings and updated data sheets of each material and appurtenances. Detail design drawings shall be fully dimensioned and complete with Bill of Materials.

No fabrication would commence until the Purchaser has approved the drawings.

Purchaser's approval of drawings does not relieve Vendor of compliance with applicable codes, specifications, safety design, or meeting the requirements of governmental agencies.

## 7.2. **Design Life, Availability and Reliability**

The design life of the facility and all associated equipment, components and systems is a minimum of 25 years.

All components which for practical, safety or cost-efficiency reasons are unable to meet the required design life shall be identified. Their expected service life shall be informed to Purchaser and provision made in the system design for maintenance to extend component life or routine change-out.

## 7.3. **Protective Coating and Painting**



Surface preparation and coating of all exposed metal parts shall be in accordance with the HP02-00-PI-SPC-0002, Painting Specification.

## 7.4. **Preparation for Shipment**

Equipment shall be prepared for export shipment and shall be created to provide maximum protection during shipment and extended outdoor storage.

Material shall be prepared for export shipment and shall be created to provide maximum protection during shipment and extended outdoor storage.

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	<b>HAI PHONG 2 PROJECT</b>	Code:	HP02-00-ME-TRD-0002	
		Rev:	A	
		Dated:	23 <sup>th</sup> Oct, 2023	
		Page:	8 of 10	
	<b>TECHNICAL REQUISITION FOR DRUM FILLING MACHINE</b>			

Any equipment liable to be damaged during shipment shall be disassembled, packed separately, shipped with the unit and reassembled onsite under the supervision of Vendor 's commissioning/start-up technician.

Each crate shall be clearly identified in accordance with the customer's specification. As a minimum the crate shall be marked with the Purchase Order number, the item number, the shipping mass, and the delivery address.

Flanged process connections shall be protected by cover plates bolted in place with at least 4 bolts then sealed with tape.

The equipment shall be suitably preserved to maintain in good condition throughout the phases of storage until ready to be operated.

All equipment shall be suitably protected for shipment and securely anchored during transit. Separate or loose parts shall be completely boxed with identification tag.

Tools and spare parts shall be packed in metal boxes suitable for long-term storage. The boxes shall be galvanized or coated in accordance with Project requirement.

#### **7.5. Guarantee and Warranty**

The Vendor shall have final and total responsibility for the design and performance of all material supplied under this specification.

The Vendor shall replace and install without cost to the Purchaser any materials, supplies which fails under design conditions due to defects in material or workmanship if the defect is observed and/or such failure occurs within the guarantee/warranty period. Acceptance of this order will signify acceptance of all conditions of this guarantee.

The guarantee period shall be a minimum of 18 months from the delivery date or 12 months from the operating date.



#### **7.6. Spare Part**

Start-up and Commissioning Spares

Two Year Spares (Optional)

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	<b>HAI PHONG 2 PROJECT</b>	Code:	HP02-00-ME-TRD-0002	
		Rev:	A	
		Dated:	23 <sup>th</sup> Oct, 2023	
		Page:	9 of 10	
	<b>TECHNICAL REQUISITION FOR DRUM FILLING MACHINE</b>			

## 8. SPECIAL REQUIREMENTS

Not applicable

## 9. INSPECTION AND TEST REQUIREMENTS

Inspection and tests shall be made by the Vendor in accordance with:

☒ Test & Inspection according with proposed ITP (Refer reference document section)

☒ Maker's standard plan & procedure as approved by PURCHASER.



The Purchaser inspector shall hold the right to be presented at any manufacturing stage of the equipment and/or materials.

The Vendor shall state the inspection method, acceptance criteria and the inspection items with "Witness" or "Not witness" in his inspection and test procedure.

## 10. COORDINATION MEETING

After the purchase order is placed, Vendor shall, upon receipt of purchaser's notice, send a sufficient number of qualified personnel at Vendor's cost to hold the meetings according to the following schedule:

<input checked="" type="checkbox"/> Kick-off meeting	Two (2) week(s) after the order	<input type="checkbox"/> Vendor office	<input type="checkbox"/> Purchaser's office
<input type="checkbox"/> Coordination meeting	month(s) after the order	<input type="checkbox"/> Vendor office	<input type="checkbox"/> Purchaser's office
<input type="checkbox"/> Design review meeting	month(s) after the order	<input type="checkbox"/> Vendor office	<input type="checkbox"/> Purchaser's office
<input type="checkbox"/> Pre-inspection meeting	1 month(s) before Fab. start	<input type="checkbox"/> Vendor office	<input type="checkbox"/> Purchaser's office

	<b>HAI PHONG 2 PROJECT</b>	Code:	HP02-00-ME-TRD-0002	
		Rev:	A	
		Dated:	23 <sup>th</sup> Oct, 2023	
		Page:	10 of 10	
	<b>TECHNICAL REQUISITION FOR DRUM FILLING MACHINE</b>			

## 11. APPLICABLE DOCUMENTS

Documents listed below shall make an integral part of this technical requisition:

Document No.	Rev	Document Title	Remark
HP02-00-ME-DAS-0006	A	Mechanical Datasheet for Drum Filling Machine	
HP02-00-ME-SPC-0004	A	General Specification for Drum Filling Machine	
HP02-00-PR-PID-0013	A	P&ID Filling Area	
HP02-00-PI-SPC-0002	A	Painting Specification	
HP02-00-IN-SPC-0001	A	General Instrument specification	
HP02-00-EL-SPC-0001	A	General Electrical specification	

## 12. VENDOR DATA REQUIREMENT LIST

The Vendor shall submit the completed documents and drawings, in accordance with Appendix 1 for Vendor Document Requirement List.

## HAI PHONG 2 PROJECT - VDRL FOR DRUM FILLING MACHINE

### APPENDIX 1-VENDOR DATA REQUIREMENT LIST

**Legend:**

1 : 3C + E

\*2 : 3C + E

\*3 : 1OR + 5C + E + 2CD

E : Electronic file

OR : Original

C : Copy

CD : CD-ROM

Item no.	VP Code	Data/Document Description	Provide with Bid	For Review	For Approval/ Construction	For Final	Remark
	<b>1</b>	<b>COMMERCIAL/CONTRACTUAL</b>					
1	C01	Vendor Print Index & Schedule	E	*1	*2	*3	
2	C02	Engineering, Procurement, Manufacturing and Test Schedule	E	*1	*2	*3	
3	C03	Sub- Contract Work Proposal					
4	C04	Delivery, Handling and Packing specification & shipping schedule		*1	*2	*3	
5	C05	Clarification, Exception and Deviation	E	*1	*2	*3	
6	C06	Vendor's Sub-Orders (Un-Priced copy)					
7	C07	Warranty/Guarantee Confirmation					
8	C08	Vendor/Sub-Vendor List	E	*1	*2	*3	
9	C09	Project Management Organisation					
10	C10	Progress Reports (Weekly and Monthly)					
11	C11	Proven Design and Manufacturing Experience List	E				
12	C12	Schedule of Pricing					
	<b>2</b>	<b>PROCESS/MECHNICAL/PIPING/STRUCTURAL</b>					
13	M01	Foundation Load and Anchor Bolt Location		*1	*2	*3	
14	M02	Drive Assembly Details					
15	M03	Equipment Design Calculations including Transportation					
16	M04	Structural Design Calculations					
17	M05	Pipe Stress Calculations					
18	M06	Process Flow Diagrams including Heat and Mass Balance					

Item no.	VP Code	Data/Document Description	Provide with Bid	For Review	For Approval/ Construction	For Final	Remark
19	M07	Piping and Instrument Diagrams	E	*1	*2	*3	showing all instrumentation
20	M08	Process Sizing Calculations					
21	M09	Exchanger Thermal Rating Calculations					
22	M10	Hydraulic Calculations					
23	M11	Thermal Growth Calculations					
24	M12	Utility Calculations					
25	M13	Flare/Relief System Calculations					
26	M14	Flare Dispersion Calculations					
27	M15	Reliability/Availability Data and Calculations					
28	M16	Lube and Seal Oil System Sizing Calculations					
29	M17	Anti Surge Valve Sizing Calculations					
30	M18	Line List					
31	M19	Equipment Data Sheet including speciality items	E	*1	*2	*3	
32	M20	Prime Mover Data Sheets (Motor/ Diesel engine/ Gas Engine/ Turbine)					
33	M21	Weight Data Sheet					
34	M22	Noise Level Data Sheets					
35	M23	General Arrangement Drawings	E	*1	*2	*3	
36	M24	Detail / Assembly / Fabrication Drawings		*1	*2	*3	
37	M25	Cross Section Drawing / Exploded View Drawings	E	*1	*2	*3	
38	M26	Internals Drawings / Miscellaneous Drawings					
39	M27	Mechanical Seal Drawings					
40	M28	Shaft Alignment Drawings					
41	M29	Bill of Material					
42	M30	Centre of Gravity Sketch					
43	M31	Installation & Dismantling Drawings / Procedures (As Applicable)					
44	M32	Lifting / transportation Drawings					
45	M33	Name Plate Drawings		*1	*2	*3	
46	M34	HVAC Schematic and Flow Diagrams					
47	M35	Skid/Module GA and Detail Drawings					
48	M36	Lifting Lug Details / Calculations					
49	M37	Allowable Nozzle Load Calculations					
50	M38	Weight and Centre of Gravity Calculations					

Item no.	VP Code	Data/Document Description	Provide with Bid	For Review	For Approval/ Construction	For Final	Remark
51	M39	Lifting Equipment Calculations					
52	M40	Lateral Critical Speed Calculations					
53	M41	Torsional Critical Speed Calculations					
54	M42	Bearing Life Calculations					
55	M43	Thrust Bearing sizing Calculations					
56	M44	Pulsation Dampener Design Calculations					
57	M45	Rotor/Shaft system Unbalanced Response Analysis					
58	M46	Coupling Selection Calculations					
59	M47	Dynamic Characteristics: Lateral & Torsional Analysis					
60	M48	Foundation Load Calculations					
61	M49	HVAC Calculations					
62	M50	Vibration Calculations					
63	M51	Miscellaneous Calculations					
64	M52	Skid Piping GA Drawings					
65	M53	Pipe Work Support Details					
66	M54	Valve List					
67	M55	Piping Isometrics					
68	M56	Non-Actuated Valve Torque Calculations					
69	M57	Tie-in Schedule					
70	M58	Pulsation Analysis					
71	M59	Relief Valves Calculations and Sizing					
72	M60	Lifting Lug / Trunnion Calculations					
73	M61	Structural Skid / Support Calculations					
74	M62	Tank Tress Calculation					
	<b>3</b>	<b>INSTRUMENT/ELECTRICAL</b>					
75	J01	Package Electrical Termination Drawings		*1	*2	*3	
76	J02	Panel Layout and Details		*1	*2	*3	
77	J03	Panel Wiring Diagrams		*1	*2	*3	
78	J04	Instrument / Fire and Gas Location Plans / Cable Layouts					
79	J05	Instrument / Fire and Gas Installation Details / Hook-ups					
80	J06	Loop Diagrams					
81	J07	Cause & Effect Charts					
82	J08	Alarm / Trip Set Point List		*1	*2	*3	
83	J09	Electrical Wiring Diagrams					

Item no.	VP Code	Data/Document Description	Provide with Bid	For Review	For Approval/ Construction	For Final	Remark
84	J10	Electrical Schematic Diagrams					
85	J11	Electrical Single Line Diagrams					
86	J12	Sequence and Logic Diagrams, Cause and Effect Diagrams					
87	J13	Instrument/Electrical [ISA] Data Sheets					
88	J14	Instrument schematics and control diagram					
90	J15	Functional Design Specifications					
91	J16	Cable block diagram, SR Data link Address & Screen Graphics					
92	J17	Instrument Calculations including Safety Valves, Control Valves, FE's, RO's, etc.					
93	J18	Instrument Index					
94	J19	I/O Schedules					
95	J20	VDU Screen Display Graphics					
96	J21	Control and Shutdown Philosophy					
97	J22	Cable Schedule					
98	J23	Junction Box - Specification and Drawings		*1	*2	*3	
99	J24	Electronic Cable detail					
100	J25	Panel Test Procedure					
101	J26	Type Test Procedure					
102	J27	Tie-in Schedule					
	<b>4</b>	<b>GENERAL</b>					
103	G01	Descriptive Literature and Catalogue Information	E				
104	G02	Sub Vendor Data Sheets / Manuals	E	*1	*2	*3	
105	G03	Recommended Spare Parts For 2 Year Operation, Priced	E	*1	*2	*3	
106	G04	Recommended Spare parts for Start-up & Commissioning, Priced	E	*1	*2	*3	
107	G05	List of Special Tools, where applicable	E	*1	*2	*3	
108	G06	Utility Requirements – Power / Air / Water / Other	E	*1	*2	*3	
109	G07	Consumables list including lubrication	E	*1	*2	*3	
110	G08	Loading, Transport and Unloading Details					
111	G09	Preservation and Storage Procedure		*1	*2	*3	
112	G10	Hazardous Area Dossier					
113	G11	Hardware Standard Software Documentation					
114	G12	Material Safety Data Sheet					

Item no.	VP Code	Data/Document Description	Provide with Bid	For Review	For Approval/ Construction	For Final	Remark
115	G13	Packing List		*1	*2	*3	
116	G14	Not used					
117	G15	Preparation for Shipment Procedure		*1	*2	*3	
	<b>5</b>	<b>PERFORMANCE</b>					
118	P01	Performance and Test Procedure		*1	*2	*3	
119	P02	Performance Curves and Data (Pump, Compressor, Gas Turbine, Motor, Engine, Fan, Vessel Internals, etc)					
120	P03	Speed/Torque Curves, Gas Turbine/Gear/Generator vs. Starting Motor					
121	P04	Trial Assembly Report					
122	P05	Performance Test Reports		*1	*2	*3	
123	P06	Noise Reports		*1	*2	*3	
124	P07	FAT Reports		*1	*2	*3	
125	P08	Commissioning and Site Acceptance Test Results					
126	P09	Vibration Reports					
127	P10	Acoustic Analysis					
128	P11	Crane Failure Mode Analysis					
129	P12	Heat Emission Calculations					
130	P13	Battery Charge/Discharge Curves					
131	P14	Electrical Relay Characteristics					
132	P15	Pulsation Study					
	<b>6</b>	<b>QA/CERTIFICATION/REPORT</b>					
133	Q01	QA Accreditation Certification					
134	Q02	Contract Quality Plan					
135	Q03	Welding Procedures & Qualification Test Reports					
136	Q04	Inspection and Test Plan	E	*1	*2	*3	
137	Q05	Inspection and Test Reports		*1	*2	*3	
138	Q06	Calibration Procedures & Results					
139	Q07	Hydro Test / Pneumatic Test Procedures		*1	*2	*3	
140	Q08	Hydro Test/ Pneumatic Test Reports		*1	*2	*3	
141	Q09	Material Mill Test Certification		*1	*2	*3	
142	Q10	Electrical Type Test Certificates					
143	Q11	Approval of Relevant Authorities					
144	Q12	Statement of Code Compliance					
145	Q13	Hazardous Area Certification					

Item no.	VP Code	Data/Document Description	Provide with Bid	For Review	For Approval/ Construction	For Final	Remark
146	Q14	Heat Treatment Records, where applicable					
147	Q15	Charpy Impact Tests, where applicable					
148	Q16	Vendor Concession Request					
149	Q17	Surface Preparation for Painting and Internal Coating Procedure					
150	Q18	NDE Procedure & NDE Location Plan		*1	*2	*3	
151	Q19	Manufacturing Procedures including Heat Treatment					
152	Q20	Pre-Commissioning / Commissioning / Site Acceptance Test Procedure					
153	Q21	Factory Acceptance Test Procedure		*1	*2	*3	
154	Q22	Weighing Procedure					
155	Q23	Post Weld Heat Treatment Procedures					
156	Q24	Non-Conformance Report (NCR) Procedure					
157	Q25	Erection & Installation Procedure					
158	Q26	Weld Location Plans					
159	Q27	Repair Procedures					
160	Q28	Weight Certificate (equipment > 50 kg)					
161	Q29	Lifting Equipment Certification					
162	Q30	Dimensional Control Report					
163	Q31	Welder Performance Qualification Records/Certificates					
164	Q32	NDE Operator Qualifications & Certificates					
165	Q33	Production Test Results (Including welding)					
166	Q34	NDE Reports			*2	*3	
167	Q35	Material Traceability Records (Location Drawing)					
168	Q36	Certificate of Compliance			*2	*3	
169	Q37	Painting/Insulation Inspection Reports					
170	Q38	Inspection Release Certificate					
171	Q39	Photographs/Videos (i.e. Boroscope)					
172	Q40	Weld Overlay/Cladding Procedures, where applicable					
173	Q41	Cleaning and Flushing Procedures					
174	Q42	PMI Procedures and PMI Location Plan		*1	*2	*3	
175	Q43	Pickling and Passivation Procedures		*1	*2	*3	
176	Q44	Tube to Tube sheet Joint Mock-Up Test Procedure					
177	Q45	Tube to Tube sheet Mock-Up Test Results					
178	Q46	Pitting and Crevice Corrosion					



Item no.	VP Code	Data/Document Description	Provide with Bid	For Review	For Approval/ Construction	For Final	Remark
179	Q46	Resistance Test Procedure (ASTM G48)					
180	Q47	Intergranular Corrosion Test Procedure (ASTM 262)					
181	Q48	Coupon Test Procedure					
182	Q49	Continuity Test Procedure and Results required for all internal Coatings					
183	Q50	Weld Repair Report(if applicable)					
184	Q51	P.M.I Test Certificate for WO Cladding					
185	Q52	Hardness Test Procedure					
186	Q53	Hardness Test Certificate					
187	Q54	Impact Test Record					
188	Q55	NPSH / Acceleration head Test Procedure					
189	Q56	NPSH / Acceleration head Test Report					
	<b>7</b>	<b>MANUAL AND INDICES</b>					
190	R01	Installation, Operation and Maintenance Manual (IOM)		*1	*2	*3	
191	R02	Manufacturer's Data Report (MDR)		*1	*2	*3	
192	R03	Training Manuals (Operation and Maintenance)		*1	*2	*3	
193	R04	Installation Operation and Maintenance Manual (IOM) Index		*1	*2	*3	
194	R05	Manufacturer's Data Report (MDR) Index		*1	*2	*3	
	<b>8</b>	<b>MISCELLANEOUS</b>					
195	[TBA]	[TBA]					