



**PETEC TRADING AND INVESTMENT CORPORATION**

**PROJECT**

**EXPANSION OF 40,000M<sup>3</sup> STORAGE CAPACITY  
AT PETEC HAI PHONG**

**PACKAGE**

**ENGINEERING, PROCUREMENT, CONSTRUCTION AND INSTALLATION**

**TECHNICAL REQUISITION DOCUMENT FOR  
MANUAL VALVES**

D	03/01/2026	Issued for Bid	NMH	PAD	PQP	VLT
Rev.	Date	Purpose	Prepared	Checked	Reviewed	Approved



**EPC CONTRACTOR**



**PTSC THANH HÓA THANH HÓA - ĐẠI DŨNG III -  
PHƯƠNG ANH CONSORTIUM**



**Document No.:**

**PETEC-DD-TRD-007**

	<p align="center"><b>EXPANSION OF 40,000M<sup>3</sup> STORAGE CAPACITY AT PETEC HAI PHONG</b></p>	
<p align="center"><b>TECHNICAL REQUISITION DOCUMENT FOR MANUAL VALVES</b></p>		<p><b>Document No.:</b> PETEC-DD-TRD-007</p>
		<p><b>Revision: D</b></p>



## REVISION RECORD SHEET

<b>No</b>	<b>Content of Revision</b>	<b>Rev</b>	<b>Date (dd/mm/yyyy)</b>
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	<p style="text-align: center;"><b>EXPANSION OF 40,000M<sup>3</sup> STORAGE CAPACITY AT PETEC HAI PHONG</b></p>	
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		<p>Revision: D</p>

## TABLE OF CONTENTS

<b>1.</b>	<b>INTRODUCTION.....</b>	<b>4</b>
<b>1.1.</b>	<b>PROJECT BACKGROUND.....</b>	<b>4</b>
<b>1.2.</b>	<b>PURPOSE .....</b>	<b>4</b>
<b>2.</b>	<b>SCOPE OF SUPPLY AND WORK .....</b>	<b>5</b>
<b>2.1.</b>	<b>ITEMS AND QUANTITIES .....</b>	<b>5</b>
<b>2.2.</b>	<b>SCOPE OF SUPPLY AND SERVICE.....</b>	<b>5</b>
<b>2.3.</b>	<b>SCOPE OF WORK.....</b>	<b>5</b>
<b>2.4.</b>	<b>OUT OF SCOPE .....</b>	<b>5</b>
<b>2.5.</b>	<b>DELIVERY TIME .....</b>	<b>5</b>
<b>3.</b>	<b>TECHNICAL REQUIREMENTS.....</b>	<b>5</b>
<b>3.1.</b>	<b>GENERAL.....</b>	<b>5</b>
<b>3.2.</b>	<b>DESIGN LIFE, AVAILABILITY AND RELIABILITY .....</b>	<b>6</b>
<b>3.3.</b>	<b>PROTECTIVE COATING AND PAINTING .....</b>	<b>6</b>
<b>3.4.</b>	<b>PREPARATION FOR SHIPMENT.....</b>	<b>6</b>
<b>3.5.</b>	<b>GUARANTEE AND WARRANTY .....</b>	<b>6</b>
<b>3.6.</b>	<b>SPARE PARTS .....</b>	<b>7</b>
<b>3.6.1.</b>	<b>START-UP AND COMMISSIONING SPARES .....</b>	<b>7</b>
<b>3.6.2.</b>	<b>TWO YEAR SPARES .....</b>	<b>7</b>
<b>3.7.</b>	<b>CONFLICTING REQUIREMENTS .....</b>	<b>7</b>
<b>3.8.</b>	<b>DEVIATION LIST .....</b>	<b>8</b>
<b>4.</b>	<b>INSPECTION AND TESTS.....</b>	<b>8</b>
<b>5.</b>	<b>VENDOR DOCUMENT REQUIREMENT .....</b>	<b>8</b>
<b>6.</b>	<b>ATTACHMENT.....</b>	<b>9</b>

	<b>EXPANSION OF 40,000M<sup>3</sup> STORAGE CAPACITY AT PETEC HAI PHONG</b>	
<b>TECHNICAL REQUISITION DOCUMENT FOR MANUAL VALVES</b>		<b>Document No.:</b> PETEC-DD-TRD-007
		<b>Revision: D</b>

## 1. INTRODUCTION

### 1.1. PROJECT BACKGROUND

Project name: Expansion of 40,000m<sup>3</sup> Storage Capacity at PETEC Hai Phong Petroleum Terminal Project

Client: PETEC TRADING AND INVESTMENT CORPORATION

Contractors: PTSC THANH HOA – DAI DUNG III– PHUONG ANH

The total expanded capacity is 40,000m<sup>3</sup> as follows:

- 01 tank 10,000m<sup>3</sup> tank (with float): containing RON95 – T33
- 03 tanks of 10,000m<sup>3</sup>: containing DO - T34, T35, T36
- 01 tanks of 1500m<sup>3</sup> containing fire water and auxiliary items....



### 1.2. PURPOSE

This document outlines the minimum technical requirements for the manufacture, supply, testing, inspection, packing & transportation, commissioning activities and documentation of Manual Valves.

The BIDDER/ MANUFACTURER shall ensure that all materials, equipment and services supplied meet the requirements of this document, the Data Sheets, Project Specifications and the Codes & Standards and Specifications referenced herein.

### 1.3. DEFINITIONS AND ABBREVIATIONS

<b>PROJECT</b>	EXPANSION OF 40,000M <sup>3</sup> STORAGE CAPACITY AT PETEC HAI PHONG
<b>CLIENT</b>	PETEC TRADING AND INVESTMENT CORPORATION
<b>EPC CONTRACTOR</b>	CONSORTIUM: PTSC THANH HOA – DAI DUNG III – PHUONG
<b>SUPPLIER/ BIDDER</b>	SUPPLIER/BIDDER SHALL CARRY OUT THE WORKS OF SUPPLY, TESTING, INSPECTION, PACKAGING AND TRANSPORTATION OF MANUAL VALVES
<b>SCOPE OF WORKS</b>	SUPPLY, TESTING, INSPECTION, PACKAGING AND TRANSPORTATION OF MANUAL VALVES

	<b>EXPANSION OF 40,000M<sup>3</sup> STORAGE CAPACITY AT PETEC HAI PHONG</b>	
<b>TECHNICAL REQUISITION DOCUMENT FOR MANUAL VALVES</b>		<b>Document No.:</b> PETEC-DD-TRD-007
		<b>Revision: D</b>

## **2. SCOPE OF SUPPLY AND WORK**

### **2.1. ITEMS AND QUANTITIES**

The items and quantities shall be as specified in the Attachment #1 Manual Valves List.

### **2.2. SCOPE OF SUPPLY AND SERVICE**

All items shall be completed in accordance with the requirements specified in this requisition such as material take off, project specifications and other documents attached herewith.

Refer to Attachment #1 Manual Valves List for the detailed.

### **2.3. SCOPE OF WORK**

The BIDDER/ MANUFACTURER will use his current, pre-engineered, or standard designs to meet the requirements specified below, as well as the material take off, project specifications, and any attachments attached to these documents.

Design, manufacturing, testing, painting, supply, packing and delivery all items as specify in the Attachment #1 Manual Valves List.

The BIDDER/ MANUFACTURER shall also provide supervision of complete erection, site testing, start up and commissioning and performance guarantee testing of these items, if required.

### **2.4. OUT OF SCOPE**

Storage items at site.

Installation manual valve at site.

### **2.5. DELIVERY TIME**

The contractor shall carry out the work in accordance with the project schedule.



For more details, please refer to Attachment #5 Project Schedule.

## **3. TECHNICAL REQUIREMENTS**

### **3.1. GENERAL**

The Package shall be strictly in accordance with data sheets, specifications, codes, and standards specified in Attachment #2 Technical Support Document.

Compliance by the BIDDER/ MANUFACTURER with the provision of this specification does not relieve him of his responsibility to furnish the package/ material and accessories of a proper design to meet the specified duty and / or local codes governing health and safety.

	<b>EXPANSION OF 40,000M<sup>3</sup> STORAGE CAPACITY AT PETEC HAI PHONG</b>	
<b>TECHNICAL REQUISITION DOCUMENT FOR MANUAL VALVES</b>		<b>Document No.:</b> PETEC-DD-TRD-007 <b>Revision: D</b>

All applicable documents mentioned below are attached with the request for inquiry. However, if the BIDDER/ MANUFACTURER is not in possession of any of the listed or referenced PURCHASER documents, it shall be BIDDER/ MANUFACTURER's sole responsibility to obtain them from the PURCHASER. Otherwise, it shall be assumed that the BIDDER/ MANUFACTURER has received, read and understood the total contents of the documents.

All materials and parts shall be new and un-used 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.

All documentation related to facilitating design appraisal approvals and inspection from Purchaser appointed Certification Authority (CA) and QA/QC Inspector (ITP) shall also be included in Vendor's scope of supply

### **3.2. DESIGN LIFE, AVAILABILITY AND RELIABILITY**

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

All components which for practical, safety or cost-efficiency reasons are unable to meet the required design life shall be identified as soon as possible. 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.

### **3.3. PROTECTIVE COATING AND PAINTING**

Surface preparation and coating of all exposed metal parts shall be in accordance with the Painting Specification which attached in the Attachment #2 Technical Support Document.



### **3.4. PREPARATION FOR SHIPMENT**

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

Any valve 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 connections shall be protected against damage during transportation and erection.

	<b>EXPANSION OF 40,000M<sup>3</sup> STORAGE CAPACITY AT PETEC HAI PHONG</b>	
<b>TECHNICAL REQUISITION DOCUMENT FOR MANUAL VALVES</b>		<b>Document No.:</b> PETEC-DD-TRD-007 <b>Revision:</b> D

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

The valves shall be protected with an easily removable rust-preventive coating.

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

Tag name of manual valves designed by stainless steel plate, shall be hung on the body valve.

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.

### **3.5. GUARANTEE AND WARRANTY**

The BIDDER/ MANUFACTURER shall have final and total responsibility for the design and performance of all specification for material supplied under this document.

The BIDDER/ MANUFACTURER 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 at least 18 months from the date of delivery or 12 months from the date of operation, whichever comes first.

### **3.6. SPARE PARTS**

#### **3.6.1. START-UP AND COMMISSIONING SPARES**



The BIDDER/ MANUFACTURER shall include, as part of his bid, a detailed, price list of start-up and commissioning spares which shall be supplied as part of the original purchase package.

#### **3.6.2. TWO YEAR SPARES**

The BIDDER/ MANUFACTURER shall include, as part of his bid, a detailed, list of recommended spare parts for two years continuous operation. These spares shall be costed for separate purchase.

### **3.7. CONFLICTING REQUIREMENTS**

BIDDER/ MANUFACTURER shall notify PURCHASER of any conflicts between 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.

	<b>EXPANSION OF 40,000M<sup>3</sup> STORAGE CAPACITY AT PETEC HAI PHONG</b>	
<b>TECHNICAL REQUISITION DOCUMENT FOR MANUAL VALVES</b>		<b>Document No.:</b> PETEC-DD-TRD-007
		<b>Revision: D</b>

### 3.8. DEVIATION LIST

BIDDER/ MANUFACTURER’s quotation shall be in full conformity with PURCHASER’s requirements. Unless exceptions, deviations or alternatives are clearly defined and listed on the attached PURCHASER's form "Deviation List" and submitted with BIDDER/ MANUFACTURER 's quotation, the requirements and conditions of this Requisition shall be deemed to be accepted by the BIDDER/ MANUFACTURER.

### 4. INSPECTION AND TESTS

Inspection and tests shall be made by the BIDDER/ MANUFACTURER in accordance with:

Test & Inspection should be carried out acc. to the applicable codes, specification and standards.

Maker’s standard plan & procedure as approved by PURCHASER.

Local regulation, if any.



The OWNER and/or PURCHASE inspector shall hold a right to be present at any manufacturing stage of the manual valves and/or materials.

Refer to Attachment #4 Vendor Data Document List for the detailed.

### 5. VENDOR DOCUMENT REQUIREMENT



The BIDDER/ MANUFACTURER shall fill in all required technical information for the forms in “Attachment #3 – Technical Documentation Forms”. In particular, the form “Attachment #3.1 – Technical Bid Requirement Forms” is mandatory. Failure to complete this form will render the bid invalid.

The CONTRACTOR must complete the forms, documents, and drawings as listed in “Attachment #4 – Vendor Data Documents List”.

	<p align="center"><b>EXPANSION OF 40,000M<sup>3</sup> STORAGE CAPACITY AT PETEC HAI PHONG</b></p>	
<p align="center"><b>TECHNICAL REQUISITION DOCUMENT FOR MANUAL VALVES</b></p>		<p><b>Document No.:</b> PETEC-DD-TRD-007</p>
		<p><b>Revision:</b> D</p>

## 6. ATTACHMENT

No.	Attachment	Document	Remark
1.	Attachment #1	Manual Valves List	
2.	Attachment #2	Technical Support Document	
3.	Attachment #3	Technical Bid Proposal	
4.	Attachment #4	Vendor Data Documents List	
5.	Attachment #5	Project Schedule	

	<p align="center"><b>EXPANSION OF 40,000M<sup>3</sup> STORAGE CAPACITY AT PETEC HAI PHONG</b></p>	
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		<p><b>Revision: D</b></p>

**ATTACHMENT #1  
MANUAL VALVES LIST**



PROJECT: EXPANSION OF 40,000M<sup>3</sup> STORAGE CAPACITY AT PETEC HAI PHONG  
MANUAL VALVES LIST (PROCESS)





No.	NAME	SPECIFICATION	SIZE 1	SIZE 2	SIZE 3	DESCRIPTION	MATERIAL	UNIT	DES. Q.TY	SPARE	TOTAL	REMARK
1	VALVE	1A1	15	15	0	BALL VALVE #3000 THREAD FEMAILE BY MFR	STAINLESS	Pcs	14	1	15	
2	VALVE	1A1	15	15	0	GLOBE VALVE #800 SW API 602 ASTM A105N	A105N	Pcs	12	1	13	
3	VALVE	1A1	50	50	0	GLOBE VALVE #150 RF ASME B16.10 ASTM A216 WCB	ASTM A216 Gr. WCB	Pcs	4	0	4	
4	VALVE	1A1	100	100	0	GLOBE VALVE #150 RF ASME B16.10 ASTM A216 WCB	ASTM A216 Gr. WCB	Pcs	1	0	1	
5	VALVE	1A1	50	50	0	GATE VALVE #150 RF ASME B16.10 ASTM A216 WCB	ASTM A216 Gr. WCB	Pcs	4	0	4	
6	VALVE	1A1	100	100	0	GATE VALVE #150 RF ASME B16.10 ASTM A216 WCB	ASTM A216 Gr. WCB	Pcs	20	0	20	
7	VALVE	1A1	150	150	0	GATE VALVE #150 RF ASME B16.10 ASTM A216 WCB	ASTM A216 Gr. WCB	Pcs	12	0	12	
8	VALVE	1A1	200	200	0	GATE VALVE #150 RF ASME B16.10 ASTM A216 WCB	ASTM A216 Gr. WCB	Pcs	46	0	46	
9	VALVE	1A1	250	250	0	GATE VALVE #150 RF ASME B16.10 ASTM A216 WCB	ASTM A216 Gr. WCB	Pcs	19	0	19	
10	VALVE	1A1	15	15	0	GATE VALVE #800 SW API 602 ASTM A105N	A105N	Pcs	33	2	35	
11	VALVE	1A1	20	20	0	GATE VALVE #800 SW API 602 ASTM A105N	A105N	Pcs	8	1	9	
12	VALVE	1A1	25	25	0	GATE VALVE #800 SW API 602 ASTM A105N	A105N	Pcs	4	1	5	
13	VALVE	1A1	150	150	0	SWING CHECK VALVE #150 RF ASME B16.10 ASTM A216 WCB	ASTM A216 Gr. WCB	Pcs	4	0	4	
14	VALVE	1A1	200	200	0	SWING CHECK VALVE #150 RF ASME B16.10 ASTM A216 WCB	ASTM A216 Gr. WCB	Pcs	1	0	1	
15	VALVE	1A1	20	20	0	PISTON CHECK VALVE #800 SW API 602 ASTM A105N	A105N	Pcs	8	1	9	
16	VALVE	1A1	150	150	0	BALL VALVE #150 RF ASME B16.10 ASTM A216 WCB	ASTM A216 Gr. WCB	Pcs	1	0	1	
17	VALVE	1A1	300	300	0	GATE VALVE #150 RF ASME B16.10 ASTM A216 WCB	ASTM A216 Gr. WCB	Pcs	4	0	4	



**PROJECT: EXPANSION OF 40,000M<sup>3</sup> STORAGE CAPACITY AT PETEC HAI PHONG  
MANUAL VALVES LIST (FIRE FIGHTING)**



No.	NAME	SPECIFICATION	SIZE 1	SIZE 2	SIZE 3	DESCRIPTION	MATERIAL	UNIT	DES. Q.TY	SPARE	TOTAL	REMARK
1	VALVE	1A2	15	15	0	BALL VALVE #3000 THREAD FEMAILE BY MFR	STAINLESS	Pcs	14	1	15	
2	VALVE	1A2	80	80	0	GATE VALVE #150 RF ASME B16.10 ASTM A216 WCB	ASTM A216 Gr. WCB	Pcs	8	0	8	
3	VALVE	1A2	100	100	0	GATE VALVE #150 RF ASME B16.10 ASTM A216 WCB	ASTM A216 Gr. WCB	Pcs	4	0	4	
4	VALVE	1A2	200	200	0	GATE VALVE #150 RF ASME B16.10 ASTM A216 WCB	ASTM A216 Gr. WCB	Pcs	9	0	9	
5	VALVE	1A2	250	250	0	GATE VALVE #150 RF ASME B16.10 ASTM A216 WCB	ASTM A216 Gr. WCB	Pcs	4	0	4	
6	VALVE	1A2	15	15	0	GATE VALVE #800 SW API 602 ASTM A105N	A105N	Pcs	6	1	7	
7	VALVE	1A2	25	25	0	GATE VALVE #800 SW API 602 ASTM A105N	A105N	Pcs	3	1	4	
8	VALVE	1A2	80	80	0	SWING CHECK VALVE #150 RF ASME B16.10 ASTM A216 WCB	ASTM A216 Gr. WCB	Pcs	1	0	1	
9	VALVE	1A2	100	100	0	SWING CHECK VALVE #150 RF ASME B16.10 ASTM A216 WCB	ASTM A216 Gr. WCB	Pcs	1	0	1	
10	VALVE	1A2	200	200	0	SWING CHECK VALVE #150 RF ASME B16.10 ASTM A216 WCB	ASTM A216 Gr. WCB	Pcs	4	0	4	
11	VALVE	1A2	300	300	0	GATE VALVE #150 RF ASME B16.10 ASTM A216 WCB	ASTM A216 Gr. WCB	Pcs	2	0	2	
12	VALVE	1A2	100	100	0	BUTTERFLY VALVE LUG #150 RF BY MFR	A105N	Pcs	25	0	25	
13	VALVE	1A2	150	150	0	BUTTERFLY VALVE LUG #150 RF BY MFR	A105N	Pcs	1	0	1	
14	VALVE	1A2	150	150	0	FOOT VALVE FLG-RF #150 ASME B16.5 BY MFR	A234 GR.WPB	Pcs	1	0	1	

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		<p><b>Revision:</b> D</p>

**ATTACHMENT #2**

**TECHNICAL SUPPORT DOCUMENT**

- *Att #2.1 Specification*



MỞ RỘNG SỨC CHỨA 40.000M3 KHO XANG DẦU PETEC HAI PHONG  
**ĐẶC TÍNH KỸ THUẬT VẬT LIỆU VAN, ĐƯỜNG ỐNG VÀ PHỤ  
 KIỆN**  
**(PIPING MATERIAL CLASS SPECIFICATION)**



Piping Class	A1
Material	Carbon Steel
ASME Rating	150 Lbs
Corrosion Allowance	2.0 mm

Service	DO, M95, M92, FO, E5
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Max Design Pressure at Temperature						
Temperature (Deg. C)			0	38	50	65
Pressure (Barg)			19.6	19.6	19.2	18.75

Pipes ASME B36.10M	NPS	1/2"	3/4"	1"	1.1/2"	2"	3"	4"	6"	8"	10"	12"	14"
	DN	15	20	25	40	50	80	100	150	200	250	300	350
	SCH	STD											
	WT	2.77	2.87	3.38	3.68	3.91	5.49	6.02	7.11	8.18	9.27	9.53	9.53
	Material	SMLS, PE, API 5L Gr.B/ASTM A106 Gr. B						SMLS, BE, API 5L Gr.B/ASTM A106 Gr. B					
Fittings: 45° or 90° LR elbows, tees, reducing tees, caps, couplings, plug, reducing couplings, conc. and ecc. reducers	ASME B16.11	3000 Lbs SW/threaded, A105N											
	ASME B16.9							LR, WT as per pipe schedule, BW, A234 Gr. WPB					
Olets	MSS SP-97	Socketlet and Threadolet, 3000 Lbs, A105N						Welolet, WT as per pipe schedule,					
Bushings, caps & Plugs	ASME B16.11	3000 Lbs, threaded, A105N											
Nipolet Flanges	MSS/ B16.5	150 Lbs, WT as per pipe schedule, A105N											
Conc. and Ecc. Swages	MSS SP-95	PE, WT as per pipe schedule, A105N											
Pipe Nipple	ASME B36.10M	100 mm length PE / NPT, SCH 80, A106 Gr.B											
Flanges	ASME B16.5	150 Lbs, RF, S.O, A105N						S.O, 150 Lbs, RF, WT as per pipe schedule, A105N					
Orifice Flanges	ASME B16.36							S.O, 150 Lbs, RF, WT as per pipe schedule, A105N					
Blind Flanges	ASME B16.5							150 Lbs, RF, A105N					
Spect.	ASME B16.48							Spectacle blind 150 Lbs, RF, A105N					
Gaskets	ASME B16.20							Spiral wound, 150Lbs, graphite filler, 4.5 mm thickness 316 SS winding, SS inner ring and CS outer ring					
Bolting	ASME B16.5/ B1.1/ B18.2.2							Stud bolt fully threaded with two heavy hex. nuts A193 Gr. B7/ A194 Gr. 2H, Hotdip Galvanized					
Ball valves	RB or FB	Kiểu Slit body, full bore, Trunnion ball valve, disk bolt type, Tiêu chuẩn thiết kế ASME/ANSI/ API, áp suất 10 bar, Nhiệt độ hoạt động <100°C, Kết nối Nối ren NPT (<2", #800 THRD/PUP LEVER OP) hoặc nối bích RF (≥2", #150 FLGD-RF BB), Thân van ASTM A 216 WCB, Insert ASTM A 105, Balls.S. A – 351 CF8M/Type 316L,											
Gate Valves	SW OR RF	size ≥2 inch : ASME/ANSI B16.34, Kiểu van OS & Y Gate valve (van cửa ty nổi), Tiêu chuẩn API 600 (size≥2 inch), thân van ASTM A 216 WCB, Seat (Body Ring) ASTM A105+STL6, Kết nối 150# RF Flange (mặt bích), Áp lực: 10 bar., Nhiệt độ: <100°C; size < 2 inch : Kiểu van OS & Y Gate valve (van cửa ty nổi), Tiêu chuẩn API 602 (size<2 inch), thân van ASTM A 105N, Seat (Body Ring) ASTM A105N+STL6, Kết nối #800SW, Áp lực: 10 bar, Nhiệt độ: <100°C;											
Globe valves	SW OR RF	Thân van ASTM A 216 WCB, Seats STL6, Kết nối 150# RF Flange (mặt bích), Tiêu chuẩn: ANSI, Áp lực: 10 bar, Nhiệt độ: <100°C;											
Butterfly Valves	FF	Kiểu van Lug type, Tiêu chuẩn API 609, Thân van A216-WCB, Đĩa van và trục van thép hợp kim Stainless steel, nhiệt độ làm việc <100°C, Mặt bích #150 FLGD RF, phù hợp ASME/ANSI B16.5											
Check valves	SW OR RF	≥2 inch: Tiêu chuẩn BS 1868, Thân van ASTM A 216 WCB, Kết nối 150# RF Flange (mặt bích) tiêu chuẩn ANSI B16.5, Áp suất 10 bar, Nhiệt độ <100°C; < 2 inch: Tiêu chuẩn API 602, Thân van A105N + STL6, Kết nối #800 SW, Áp suất 10 bar, Nhiệt độ <100°C;											
Safety valve	RF	Tiêu chuẩn ASME VIII, API 520 (Part I and II), API RP- 527, API 821-00016, Kiểu van Conventional with Cap Over Adjusting Bolt, Vật liệu thân A216-WCB, Bích : 150# SO RF ASME/ANSI B16.5, nhiệt độ hoạt động <100°C; áp suất và dung sai được cài đặt theo yêu cầu thiết kế											



**MỞ RỘNG SỨC CHỨA 40.000M3 KHO XANG DẦU PETEC HAI PHONG**  
**ĐẶC TÍNH KỸ THUẬT VẬT LIỆU VAN, ĐƯỜNG ỐNG VÀ PHỤ**  
**KIỆN**  
**(PIPING MATERIAL CLASS SPECIFICATION)**



Piping Class	<b>A1</b>
Material	Carbon Steel
ASME Rating	150 Lbs
Corrosion Allowance	2.0 mm

Service	DO, M95, M92, FO, E5
---------	----------------------

Max Design Pressure at Temperature							
Temperature (Deg. C)				0	38	50	65
Pressure (Barg)				19.6	19.6	19.2	18.75

Pipes ASME B36.10M	NPS	1/2"	3/4"	1"	1.1/2"	2"	3"	4"	6"	8"	10"	12"	14"
	DN	15	20	25	40	50	80	100	150	200	250	300	350
	SCH	STD											
	WT	2.77	2.87	3.38	3.68	3.91	5.49	6.02	7.11	8.18	9.27	9.53	9.53
Material	SMLS, PE, API 5L Gr.B/ASTM A106 Gr. B						SMLS, BE, API 5L Gr.B/ASTM A106 Gr. B						
Fittings: 45° or 90° LR elbows, tees, reducing tees, caps, couplings, plug, reducing couplings, conc. and ecc. reducers	ASME B16.11	3000 Lbs SW/threaded, A105N											
	ASME B16.9	LR, WT as per pipe schedule, BW, A234 Gr. WPB											
Olets	MSS SP-97	Sockolet and Threadolet, 3000 Lbs, A105N					Weldolet, WT as per pipe schedule,						
Bushings, caps & Plugs	ASME B16.11	3000 Lbs, threaded, A105N											
Nipolet Flanges	MSS/ B16.5	150 Lbs, WT as per pipe schedule, A105N											
Conc. and Ecc. Swages	MSS SP-95	PE, WT as per pipe schedule, A105N											
Pipe Nipple	ASME B36.10M	100 mm length PE / NPT, SCH 80, A106 Gr.B											
Flanges	ASME B16.5	150 Lbs, RF, S.O, A105N											
Orifice Flanges	ASME B16.36	S.O, 150 Lbs, RF, WT as per pipe schedule, A105N											
Blind Flanges	ASME B16.5	150 Lbs, RF, A105N											
Spect.	ASME B16.48	Spectacle blind 150 Lbs, RF, A105N											
Gaskets	ASME B16.20	Spiral wound, 150Lbs, graphite filler, 4.5 mm thickness 316 SS winding, SS inner ring and CS outer ring											
Bolting	ASME B16.5/ B1.1/ B18.2.2	Stud bolt fully threaded with two heavy hex. nuts A193 Gr. B7/ A194 Gr. 2H, Hotdip Galvanized											

**Branch 90 Deg. Connection**

HEADER SIZE	15	ETW												
	20	RTW	ETW											
	25	RTW	RTW	ETW										
	40	RTW	RTW	RTW	ETW									
	50	TO/ SO	TO/ SO	RT	RT	ET								
	80	TO/ SO	TO/ SO	TO/ SO	RT	RT	ET							
	100	TO/ SO	TO/ SO	TO/ SO	TO/SO/NF	RT	RT	ET						
	150	TO/ SO	TO/ SO	TO/ SO	TO/SO/NF	WO	RT	RT	ET					
	200	TO/ SO	TO/ SO	TO/ SO	TO/SO/NF	WO	WO	RT	RT	ET				
	250	TO/ SO	TO/ SO	TO/ SO	TO/SO/NF	WO	WO	WO	RT	RT	ET			
	300	TO/ SO	TO/ SO	TO/ SO	TO/SO/NF	WO	WO	WO	RT	RT	RT	ET		
	350	TO/ SO	TO/ SO	TO/ SO	TO/SO/NF	WO	WO	WO	RT	RT	RT	RT	ET	
	DN	15	20	25	40	50	80	100	150	200	250	300	350	
	BRANCH SIZE													

- ET:** Equal Tee BW                      **TO:** Threadolet
- ETW:** Equal Tee SW                   **SO:** Sockolet
- RT:** Reducing Tee BW                **WO:** Weldolet
- RTW:** Reducing Tee SW              **NF:** Nipolet Flanges

**Notes:**

- (1) Buttweld fittings and weldneck flange to match wall thickness of pipe it is attached to
- (2) Stud bolts and nuts shall be Hot-dip galvanize
- (3) The use of reduced bore ball valves is preferred; use full bore ball valves only when necessary for process/ operating requirements
- (4) All threaded joints shall be NPT to ASME B1.20.1



MỞ RỘNG SỨC CHỨA 40.000M3 KHO XANG DẦU PETEC HAI PHONG  
**ĐẶC TÍNH KỸ THUẬT VẬT LIỆU VAN, ĐƯỜNG ỐNG VÀ PHỤ  
 KIỆN**  
**(PIPING MATERIAL CLASS SPECIFICATION)**



Piping Class	A2
Material	Carbon Steel
ASME Rating	150 Lbs
Corrosion Allowance	2.0 mm

Service	FF,FW
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Max Design Pressure at Temperature						
Temperature (Deg. C)			0	38	50	65
Pressure (Barg)			19.6	19.6	19.2	18.75

Pipes ASME B36.10M	NPS	1/2"	3/4"	1"	1.1/2"	2"	3"	4"	6"	8"	10"	12"	14"
	DN	15	20	25	40	50	80	100	150	200	250	300	350
SCH		STD											
WT		2.77	2.87	3.38	3.68	3.91	5.49	6.02	7.11	8.18	9.27	9.53	9.53
Material		SMLS, PE, ASTM A53 Gr. B						SMLS, BE, ASTM A53 Gr. B					
Fittings: 45° or 90° LR elbows, tees, reducing tees, caps, couplings, plug, reducing couplings, conc. and ecc. reducers	ASME B16.11	3000 Lbs SW/threaded, A105N											
	ASME B16.9	LR, WT as per pipe schedule, BW, A234 Gr. WPB GALV.											
Olets	MSS SP-97	Sockolet and Thredolet, 3000 Lbs, A105N					Welolet, WT as per pipe schedule, BW, A105N						
Bushings, caps & Plugs	ASME B16.11	3000 Lbs, threaded, A105N											
Nipolet Flanges	MSS/ B16.5	150 Lbs, WT as per pipe schedule, A105N .											
Conc. and Ecc. Swages	MSS SP-95	PE, WT as per pipe schedule, A105N.											
Pipe Nipple	ASME B36.10M	100 mm length PE / NPT, SCH 80, A53 Gr.B GALV.											
Flanges	ASME B16.5	150 Lbs, RF, S.O, A105N						S.O, 150 Lbs, RF, WT as per pipe schedule, A105N					
Orifice Flanges	ASME B16.36	S.O, 150 Lbs, RF, WT as per pipe schedule, A105N											
Blind Flanges	ASME B16.5	150 Lbs, RF, A105N											
Spect.	ASME B16.48	Spectacle blind 150 Lbs, RF, A105N											
Gaskets	ASME B16.20	Spiral wound, 150Lbs, graphite filler, 4.5 mm thickness 316 SS winding, SS inner ring and CS outer ring											
Bolting	ASME B16.5/ B1.1/ B18.2.2	Stud bolt fully threaded with two heavy hex. nuts A193 Gr. B7/ A194 Gr. 2H, Hotdip Galvanized											
Ball valves	RB or FB	Kiểu Sliit body, full bore, Trunnion ball valve, disk bolt type, Tiêu chuẩn thiết kế ASME/ANSI/ API, áp suất 10 bar, Nhiệt độ hoạt động <100°C, Kết nối Nối ren NPT (<2", #800 THRD/PUP LEVER OP) hoặc nối bích RF (≥2", #150 FLGD-RF BB), Thân van ASTM A 216 WCB, Insert ASTM A 105, Balls.S. A – 351 CF8M/Type 316L,											
Gate Valves	SW OR RF	size ≥2 inch : ASME/ANSI B16.34, Kiểu van OS & Y Gate valve (van cửa ty nổi), Tiêu chuẩn API 600 (size≥2 inch), thân van ASTM A 216 WCB, Seat (Body Ring) ASTM A105+STL6, Kết nối 150# RF Flange (mặt bích), Áp lực: 10 bar. , Nhiệt độ: <100°C; size < 2 inch : Kiểu van OS & Y Gate valve (van cửa ty nổi), Tiêu chuẩn API 602 (size<2 inch), thân van ASTM A 105N, Seat (Body Ring) ASTM A105N+STL6, Kết nối #800SW, Áp lực: 10 bar , Nhiệt độ: <100°C;											
Globe valves	SW OR RF	Thân van ASTM A 216 WCB, Seats STL6, Kết nối 150# RF Flange (mặt bích), Tiêu chuẩn: ANSI, Áp lực: 10 bar, Nhiệt độ: <100°C;											
Butterfly Valves	FF	Kiểu van Lug type, Tiêu chuẩn API 609, Thân van A216-WCB, Đĩa van và trục van thép hợp kim Stainless steel, nhiệt độ làm việc <100°C, Mặt bích #150 FLGD RF, phù hợp ASME/ANSI B16.5											
Check valves	SW OR RF	≥2 inch: Tiêu chuẩn BS 1868, Thân van ASTM A 216 WCB, Kết nối 150# RF Flange (mặt bích) tiêu chuẩn ANSI B16.5 , Áp suất 10 bar, Nhiệt độ <100°C; < 2 inch: Tiêu chuẩn API 602, Thân van A105N + STL6, Kết nối #800 SW, Áp suất 10 bar, Nhiệt độ <100°C;											
Safety valve	RF	Tiêu chuẩn ASME VIII, API 520 (Part I and II), API RP- 527, API 821-00016, Kiểu van Conventional with Cap Over Adjusting Bolt, Vật liệu thân A216-WCB, Bích : 150# SO RF ASME/ANSI B16.5, nhiệt độ hoạt động <100°C; áp suất và dung sai được cài đặt theo yêu cầu thiết kế											



**MỞ RỘNG SỨC CHỨA 40.000M3 KHO XANG DẦU PETEC HAI PHONG**  
**ĐẶC TÍNH KỸ THUẬT VẬT LIỆU VAN, ĐƯỜNG ỐNG VÀ PHỤ**  
**KIỆN**  
**(PIPING MATERIAL CLASS SPECIFICATION)**



Piping Class	A2
Material	Carbon Steel
ASME Rating	150 Lbs
Corrosion Allowance	2.0 mm

Service	FF,FW
---------	-------

Max Design Pressure at Temperature							
Temperature (Deg. C)				0	38	50	65
Pressure (Barg)				19.6	19.6	19.2	18.75

Pipes ASME B36.10M	NPS	1/2"	3/4"	1"	1.1/2"	2"	3"	4"	6"	8"	10"	12"	14"	
	DN	15	20	25	40	50	80	100	150	200	250	300	350	
	SCH	STD												
	WT	2.77	2.87	3.38	3.68	3.91	5.49	6.02	7.11	8.18	9.27	9.53	9.53	
Material	SMLS, PE, ASTM A53 Gr. B						SMLS, BE, ASTM A53 Gr. B							
Fittings: 45° or 90° LR elbows, tees, reducing tees, caps, couplings, plug, reducing couplings, conc. and ecc. reducers	ASME B16.11	3000 Lbs SW/threaded, A105N												
	ASME B16.9	LR, WT as per pipe schedule, BW, A234 Gr. WPB GALV.												
Olets	MSS SP-97	Sockolet and Threadolet, 3000 Lbs, A105N					Welolet, WT as per pipe schedule, BW, A105N							
Bushings, caps & Plugs	ASME B16.11	3000 Lbs, threaded, A105N												
Nipolet Flanges	MSS/ B16.5	150 Lbs, WT as per pipe schedule, A105N .												
Conc. and Ecc. Swages	MSS SP-95	PE, WT as per pipe schedule, A105N.												
Pipe Nipple	ASME B36.10M	100 mm length PE / NPT, SCH 80, A53 Gr.B GALV.												
Flanges	ASME B16.5	150 Lbs, RF, S.O, A105N					S.O, 150 Lbs, RF, WT as per pipe schedule, A105N							
Orifice Flanges	ASME B16.36	S.O, 150 Lbs, RF, WT as per pipe schedule, A105N												
Blind Flanges	ASME B16.5	150 Lbs, RF, A105N												
Spect.	ASME B16.48	Spectacle blind 150 Lbs, RF, A105N												
Gaskets	ASME B16.20	Spiral wound, 150Lbs, graphite filler, 4.5 mm thickness 316 SS winding, SS inner ring and CS outer ring												
Bolting	ASME B16.5/ B1.1/ B18.2.2	Stud bolt fully threaded with two heavy hex. nuts A193 Gr. B7/ A194 Gr. 2H, Hotdip Galvanized												

**Branch 90 Deg. Connection**



HEADER SIZE	15	ETW												
	20	RTW	ETW											
	25	RTW	RTW	ETW										
	40	RTW	RTW	RTW	ETW									
	50	TO/ SO	TO/ SO	RT	RT	ET								
	80	TO/ SO	TO/ SO	TO/ SO	RT	RT	ET							
	100	TO/ SO	TO/ SO	TO/ SO	TO/SO/NF	RT	RT	ET						
	150	TO/ SO	TO/ SO	TO/ SO	TO/SO/NF	WO	RT	RT	ET					
	200	TO/ SO	TO/ SO	TO/ SO	TO/SO/NF	WO	WO	RT	RT	ET				
	250	TO/ SO	TO/ SO	TO/ SO	TO/SO/NF	WO	WO	WO	RT	RT	ET			
	300	TO/ SO	TO/ SO	TO/ SO	TO/SO/NF	WO	WO	WO	RT	RT	RT	ET		
	350	TO/ SO	TO/ SO	TO/ SO	TO/SO/NF	WO	WO	WO	RT	RT	RT	RT	ET	
	DN	15	20	25	40	50	80	100	150	200	250	300	350	

BRANCH SIZE

- |                             |                            |
|-----------------------------|----------------------------|
| <b>ET:</b> Equal Tee BW     | <b>TO:</b> Threadolet      |
| <b>ETW:</b> Equal Tee SW    | <b>SO:</b> Sockolet        |
| <b>RT:</b> Reducing Tee BW  | <b>WO:</b> Weldolet        |
| <b>RTW:</b> Reducing Tee SW | <b>NF:</b> Nipolet Flanges |

Notes:

- (1) Butt weld fittings and weldneck flange to match wall thickness of pipe it is attached to
- (2) Stud bolts and nuts shall be Hot-dip galvanize
- (3) The use of reduced bore ball valves is preferred; use full bore ball valves only when necessary for process/ operating requirements
- (4) All threaded joints shall be NPT to ASME B1.20.1

	<p align="center"><b>EXPANSION OF 40,000M<sup>3</sup> STORAGE CAPACITY AT PETEC HAI PHONG</b></p>	
<p align="center"><b>TECHNICAL REQUISITION DOCUMENT FOR MANUAL VALVES</b></p>		<p><b>Document No.:</b> PETEC-DD-TRD-007</p>
		<p><b>Revision:</b> D</p>

**ATTACHMENT #3  
TECHNICAL BID PROPOSAL**

- *Att #3.1 Technical Bid Requirement forms*
- *Att #3.2 Technical forms*
- *Att #3.3 Technical Bid Clarification form*



**TECHNICAL BID EVALUATION  
FOR  
TRD - 007 MANUAL VALVES**

Client:	PETEC TRADING AND INVESTMENT CORPORATION	TRD No.:	TRD-007
Contract No.:		Rev.:	A
Document No.:		Material/Service:	
Revision:		Date:	13/10/2025

Item	Description	Specification requirements	Qty	Unit	[Bidder 1 name]		[Bidder 2 name]	
					Bidder Offer	TBE	Bidder Offer	TBE
<b>I. QUOTATION DETAILS</b>								
1	Quotation Ref No	Informative						
2	Quotation date	Informative						
3	Office location	Informative						
<b>II. GENERAL REQUIREMENT</b>								
1	Company profiles	For information						
2	Experience List	Experienced on offshore pipeline design and similar works						
<b>III. TECHNICAL REQUIREMENT</b>								
<b>Process System</b>								
<b>A. Gate valve (size ≥ 2")</b>								
1	<b>Origin</b>	VTA						
2	<b>Trademark</b>	VTA						
3	<b>Model</b>	VTA						
4	<b>Standard Fabrication</b>							
4.1	Type							
4.2	Working temperature							
4.3	Pressure design							
4.4	Flange connection							
4.5	Dimension							
4.6	Operation							
4.7	Design standards							
4.8	Test and inspection							
4.9	Certification							
4.10	Testing							
4.11	Painting							
5	<b>Datassheet</b>							
5.1	Cover							
5.2	Bonnet							
5.3	Stem Retainer							
5.4	Disc							
5.5	Stem							
5.6	Handwheel							
5.7	Back seat							
5.8	Body seat ring							
5.9	Bolts							
5.10	Gasket							
6	<b>Delivery time</b>	VTA						



**TECHNICAL BID EVALUATION  
FOR  
TRD - 007 MANUAL VALVES**

Client:	PETEC TRADING AND INVESTMENT CORPORATION	TRD No.:	TRD-007
Contract No.:		Rev.:	A
Document No.:		Material/Service:	
Revision:		Date:	13/10/2025

Item	Description	Specification requirements	Qty	Unit	[Bidder 1 name]		[Bidder 2 name]	
					Bidder Offer	TBE	Bidder Offer	TBE
<b>B</b>	<b>Gate valve (size &lt; 2")</b>							
1	Origin	VTA						
2	Trademark	VTA						
3	Model	VTA						
4	Standard Fabrication							
4.1	Type							
4.2	Working temperature							
4.3	Pressure design							
4.4	Flange connection							
4.5	Dimension							
4.6	Operation							
4.7	Design standard							
4.8	Test and inspection							
4.9	Certification							
4.10	Testing							
4.11	Painting							
5	Datassheet							
5.1	Cover							
5.2	Bonnet							
5.3	Stem Retainer							
5.4	Disc							
5.5	Stem							
5.6	Handwheel							
5.7	Back seat							
5.8	Body seat ring							
5.9	Bolts							
5.10	Gasket							
6	Delivery time	VTA						



**TECHNICAL BID EVALUATION  
FOR  
TRD - 007 MANUAL VALVES**

Client:	PETEC TRADING AND INVESTMENT CORPORATION	TRD No.:	TRD-007
Contract No.:		Rev.:	A
Document No.:		Material/Service:	
Revision:		Date:	13/10/2025

Item	Description	Specification requirements	Qty	Unit	[Bidder 1 name]		[Bidder 2 name]	
					Bidder Offer	TBE	Bidder Offer	TBE
<b>C Check valve (size ≥ 2")</b>								
1	Origin	VTA						
2	Trademark	VTA						
3	Model	VTA						
4	Standard Fabrication							
4.1	Type							
4.2	Working temperature							
4.3	Pressure design							
4.4	Flange connection							
4.5	Dimension							
4.7	Design standards							
4.8	Test and inspection							
4.9	Certification							
4.10	Testing							
4.11	Painting							
5	Datassheet							
5.1	Valve body							
5.2	Cover plate							
5.3	Disc							
5.4	Body seat ring							
5.5	Hinge pin							
5.6	Bolts							
5.7	Nuts							
5.8	Gasket							
6	Delivery time	VTA						
<b>D Check valve (size &lt; 2")</b>								
1	Origin	VTA						
2	Trademark	VTA						
3	Model	VTA						
4	Standard Fabrication							
4.1	Type							
4.2	Working temperature							
4.3	Pressure design							
4.4	Flange connection							
4.5	Dimension							
4.7	Design standard							
4.8	Test and inspection							
4.9	Certification							
4.10	Testing							
4.11	Painting							



**TECHNICAL BID EVALUATION  
FOR  
TRD - 007 MANUAL VALVES**

Client:	PETEC TRADING AND INVESTMENT CORPORATION	TRD No.:	TRD-007
Contract No.:		Rev.:	A
Document No.:		Material/Service	
Revision:		Date:	13/10/2025

Item	Description	Specification requirements	Qty	Unit	[Bidder 1 name]		[Bidder 2 name]	
					Bidder Offer	TBE	Bidder Offer	TBE
5	<b>Datassheet</b>							
5.1	Valve body							
5.2	Cover plate							
5.3	Disc							
5.4	Body seat ring							
5.5	Hinge pin							
5.6	Bolts							
5.7	Nuts							
5.8	Gasket							
6	<b>Delivery time</b>	VTA						
<b>E Ball valve</b>								
1	<b>Origin</b>	VTA						
2	<b>Trademark</b>	VTA						
3	<b>Model</b>	VTA						
4	<b>Standard Fabrication</b>							
4.1	Type							
4.2	Working temperature							
4.3	Pressure design							
4.4	Connection							
4.5	Design standards							
4.6	Test and inspection							
4.7	Certification							
4.8	Body valve							
4.9	Ball seat							
4.10	Ball							
5	<b>Delivery time</b>	VTA						
<b>F Plug valve</b>								
1	<b>Origin</b>	VTA						
2	<b>Trademark</b>	VTA						
3	<b>Model</b>	VTA						
4	<b>Standard Fabrication</b>							
4.1	Type							
4.2	Design standards							
4.3	Pressure design							
4.4	Working temperature							



**TECHNICAL BID EVALUATION  
FOR  
TRD - 007 MANUAL VALVES**

Client:	PETEC TRADING AND INVESTMENT CORPORATION	TRD No.:	TRD-007
Contract No.:		Rev.:	A
Document No.:		Material/Service:	
Revision:		Date:	13/10/2025

Item	Description	Specification requirements	Qty	Unit	[Bidder 1 name]		[Bidder 2 name]	
					Bidder Offer	TBE	Bidder Offer	TBE
4.5	Flange connection							
4.6	Operation							
4.7	Body							
4.8	Bonnet							
4.9	Plug							
4.10	Stem							
4.11	Plate							
4.12	Gland flange							
4.13	Antistatic device							
4.14	Body seat ring							
4.15	Bolts (≥ 2")							
4.16	Gasket (≥ 2")							

**Fire Fighting System**

A Gate valve								
1	Origin	VTA						
2	Trademark	VTA						
3	Model	VTA						
4	Standard Fabrication							
4.1	Design standards							
4.2	Working temperature							
4.3	Pressure rating							
4.4	Connection							
4.5	Coating							
4.6	Material							
5	Delivery time	VTA						
B Check valve								
1	Origin	VTA						
2	Trademark	VTA						
3	Model	VTA						
4	Standard Fabrication							
4.1	Design standards							
4.2	Working temperature							
4.3	Pressure rating							
4.4	Connection							
4.5	Coating							
4.6	Material							
5	Delivery time	VTA						



**TECHNICAL BID EVALUATION  
FOR  
TRD - 007 MANUAL VALVES**

Client:	PETEC TRADING AND INVESTMENT CORPORATION	TRD No.:	TRD-007
Contract No.:		Rev.:	A
Document No.:		Material/Service:	
Revision:		Date:	13/10/2025

Item	Description	Specification requirements	Qty	Unit	[Bidder 1 name]		[Bidder 2 name]	
					Bidder Offer	TBE	Bidder Offer	TBE
<b>C Ball valve</b>								
1	Origin	VTA						
2	Trademark	VTA						
3	Model	VTA						
4	Standard Fabrication							
4.1	Type							
4.2	Design standards							
4.3	Pressure design							
4.4	Working temperature							
4.5	Connection							
4.6	Body material							
4.7	Seat type							
4.8	Ball material							
5	Delivery time	VTA						
<b>D Globe valve</b>								
1	Origin	VTA						
2	Trademark	VTA						
3	Model	VTA						
4	Standard Fabrication							
4.1	Type							
4.2	Design standards							
4.3	Pressure design							
4.4	Working temperature							
4.5	Connection							
4.6	Operation							
4.7	Body material							
4.8	Disc							
4.9	Stem							
4.10	Seat ring							
4.11	Bolts							
4.12	Gasket							
5	Delivery time	VTA						
<b>E Butterfly valve</b>								
1	Origin	VTA						
2	Trademark	VTA						
3	Model	VTA						



**TECHNICAL BID EVALUATION  
FOR  
TRD - 007 MANUAL VALVES**

Client:	PETEC TRADING AND INVESTMENT CORPORATION	TRD No.:	TRD-007
Contract No.:		Rev.:	A
Document No.:		Material/Service:	
Revision:		Date:	13/10/2025

Item	Description	Specification requirements	Qty	Unit	[Bidder 1 name]		[Bidder 2 name]	
					Bidder Offer	TBE	Bidder Offer	TBE
4	Standard Fabrication							
4.1	Type							
4.2	Design standards							
4.3	Pressue design							
4.4	Working temperature							
4.5	Connection							
4.6	Operation							
4.7	Body/ Bonnet							
4.8	Disc							
4.9	Stem							
4.10	Seat ring							
4.11	Bolts							
4.12	Gasket							
5	Delivery time	VTA						
VI	EVALUATION CONCLUSION				TECHNICALLY PASSED (PARTIAL)(*)		TECHNICALLY PASSED	

**Abbreviations:**

- 1 C : Comply
- 2 NC : Not Complied
- 3 NCA : Not Complied but Acceptable
- 4 I : Information/
- 5 H : Hold/ to be finalized before Contract Award

**Note:**

(\*)

Prepared by

NMH

Checked by



PAD

Reviewed by

PQP

Approved by

VLT

	<p align="center"><b>EXPANSION OF 40,000M<sup>3</sup> STORAGE CAPACITY AT PETEC HAI PHONG</b></p>	
<p align="center"><b>TECHNICAL REQUISITION DOCUMENT FOR MANUAL VALVES</b></p>		<p><b>Document No.:</b> PETEC-DD-TRD-007</p>
		<p><b>Revision:</b> D</p>



**ATTACHMENT #4**

**VENDOR DATA DOCUMENTS LIST**

- *Att #4.1 Vendor Data Documents List*

## VENDOR DATA DOCUMENTS LIST (VDRL)

No.	Description	With Bid	Final	Remark
1	Company Profile Brochure		x	
2	Vendor Data Index & Schedule		x	
3	Valve Data Sheet		x	
4	Fabrication Drawings		x	
5	Performance & Test Procedure		x	
6	FAT Reports		x	
7	Inspection & Test Plan		x	
8	Material Mill Test Certificate		x	follow EN10204, Type 3.1
9	Installation, Operation & Maintenance Manual		x	
10	Packing List		x	
11	Certificate of Original (CO)		x	
12	Certificate of Quality (CQ)		x	
13	Insurance Certificate		x	
14	Bill of Lading		x	

	<p align="center"><b>EXPANSION OF 40,000M<sup>3</sup> STORAGE CAPACITY AT PETEC HAI PHONG</b></p>	
<p align="center"><b>TECHNICAL REQUISITION DOCUMENT FOR MANUAL VALVES</b></p>		<p><b>Document No.:</b> PETEC-DD-TRD-007</p>
		<p><b>Revision:</b> D</p>

**ATTACHMENT #5  
PROJECT SCHEDULE**