

03. SCOPE OF SUPPLY AND TECHNICAL SPECIFICATIONS

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3.1. GENERAL

- 3.1.1. Supplier shall quote in strict accordance with the, technical specifications and all other enclosures to the requisitions. Deviations to the specifications and other enclosures of the requisitions, if any, shall be sought by the supplier as explained in clause 3.4.1.1.
- 3.1.2. Country of origin of carbon steel gate valves shall be Europe, Japan, Canada, South Korea or USA.
- 3.1.3. All codes and standards for manufacture, testing, inspection etc. shall be of latest editions.
- 3.1.4. This specification establishes the technical requirements for Carbon steel gate valves to be used for handling refined petroleum liquid hydrocarbon products (Petrol, Diesel, Kerosene, Jet A-1, Naphtha and Fuel Oil).
- 3.1.5. This specification covers the minimum requirements for the design, manufacture, assembly, inspection, testing, certification & delivery of manual operated Carbon steel gate valves complete with all accessories.

3.2. SCOPE OF SUPPLY

- 3.2.1. Quantities of Carbon steel gate valves shall be supplied as follows.

#	Valve Type	Valve Size	Quantity
1.	Carbon Steel Gate Valve	3 inch Diameter.	30
2.	Carbon Steel Gate Valve	10 inch Diameter.	25
3.	Carbon Steel Gate Valve	12 inch Diameter.	12

- 3.2.2. All relevant testing reports certified by the reputed third-party inspection company.
- 3.2.3. Manufacturer's warranty for all the equipment supplied.
- 3.2.4. Any special tools required for the installation, maintenance shall be supplied.

3.2.5. Operation, workshop, maintenance & service and spare parts manuals in English language. This shall include a set of reproducible and two sets of hard copies and soft copies.

3.3. DOCUMENTATION

3.3.1. All documents shall be in English language and units shall be in SI system.

3.3.2. Vendor shall arrange to retain documents in his works as stipulated in API-6D.

3.3.3. In addition, Vendor shall arrange to submit following documents with the offer

- i. Manufacturer's complete descriptive and illustrative catalogue/ literature.
- ii. Detailed dimensioned, cross section drawing with each size of valve being offered with parts/material list, weight etc. as manufacturer's /API/other relevant applicable standard.
- iii. Drawings for valves, giving major salient dimensions.
- iv. Valve data sheets, Installation, operation and maintenance instructions/manuals Materials of construction, Pressure and other tests to be carried out.
- v. Past supply records of similar type valves to major projects during past ten (10) years period shall be submitted with reference details. Failure to submit with the offer will be a cause to reject the bid.
- vi. The supplier should forward the copy of certificate of Authority to use official monogram of API.

3.3.4. Following supplementary documentation certified by the reputed third-party inspection company approved by CPSTL is required to provide as given below,

- i. NDE records;
- ii. Pressure test / leak test (Valve seat and Fugitive) & other test reports, (including pressure, test duration, test medium and Acceptance Criteria);
- iii. Coating/Plating certification;
- iv. Material test certification;

3.4. TECHNICAL SPECIFICATIONS

3.4.1. Design and Construction

3.4.1.1. Valves shall be designed, manufactured, tested inspected and marked as per the manufacturing standard, design code and standards (latest edition) indicated in the respective valve technical specifications. Any conflict between the requisition, enclosure, specification sheets and referred standard codes shall be brought to the notice of CPSTL for clarification, but generally spec sheets and enclosures of the requisition including subject notes shall govern. No deviation to specification/Standards shall be permitted through supplier drawing approval. Approval of drawing shall be valid only for design features.

3.4.1.2. The valves should be of outside screw and York type with rising stem non rising hand wheel, bolted bonnet and with solid or flexible wedge type plain gate and should conform to followings.

3.4.1.3. Valve Design

Standards	: API 600, API 6 D.
Face to Face Dimensions	: API 6D & ASME B 16.10
Pressure Class	: ASME B16.34 Class 150LB
Flow Direction	: Both Directions
End Connection	: Flanges of valves shall be integral (except forged valves) with the valve body. Flange shall be serrated finish Raised Face as per ASME B16.5.
Body / Bonnet Connection	: Bolted Bonnet
Stem	: Rising Stem
Stem Position	: Vertical
Lifting Eyes	: Required only for 10" and 12" valves. The valve manufacturer shall verify the suitability of the lifting points for the complete valve and operator assembly.
Locking Facility	: Lock in the open and/or closed position only for 10" and 12" valves.
Operation	: Non rising hand wheel
No of turns of the hand wheel for open/close	: Shall be user friendly, ergonomically designed, Manufacture to decide

3.4.1.4. Valve materials and workmanship.

Body	: ASTM A216 WCB
Cover/Bonnet	: ASTM A216 WCB
Seat and Wedge facing	: 13% Chromium Steel
Gaskets	: Fluoroelastomer/Graphite
Trim	: Trim material should be specified and should conform to API 600 normal trim material (supplier should forward manufacturer's

certificate conforming the same).

Gland Packing	: Graphite packing
Fasteners	: ASTM A193 Gr. B7 & ASTM A194 Gr. 2H or Equivalent
External Coating	: UV and weather resistant corrosion protection coating

3.4.1.5. Body of the valve shall be as good workmanship.

3.4.1.6. Valve markings, symbols, abbreviations etc. shall be in accordance with API 6D, ANSI/MSS-SP-25 or the standard referred in specification sheet as applicable. Manufacturers name, valve rating, material designation, nominal size, direction of flow, (if any) etc. shall be integral on the body.

3.4.1.7. The valve shall be maintainable on line, without having a need to remove the valve body from the piping system.

3.4.2. Inspection and testing

3.4.2.1. Valves components shall be subjected by the manufacturer/supplier to all the mandatory tests and checks called for in the respective codes/ specifications (to be submitted by the manufacturer after award of PO).

3.4.2.2. The list of such tests shall include the following as a minimum:

- i. Visual inspection of all the valves
- ii. Dimensional check on all valves.
- iii. Hydrostatic test – Shell Test, Backseat Test, High pressure closure Test

3.4.2.3. All valves shall be tested in accordance with API 598 and as per data sheet.

3.4.2.4. Third party inspection of material test certificates of valves and Hydrostatic testing as per API 598 shall be carried out by the by reputed third party inspection company for randomly selected samples as follows.

Item	Description	No of valves to be tested
1.	3 inch Diameter	Randomly selected five valves
2.	10 inch Diameter	Randomly selected Half of quantity
3.	12 inch Diameter	Randomly selected Half of quantity

- 3.4.2.5. Third Party Pre-shipment Inspection shall be arranged by the supplier by one of the following third-party inspection institutions.
- i. SGS
 - ii. BV
 - iii. Lloyds
 - iv. ABS
 - v. TUV
 - vi. DNV

3.4.2.6. Please refer COC clause 2.4 for addition information

3.4.3. Dispatch/Packing/Preparation for Shipment

- 3.4.3.1. Supplier shall arrange most suitable arrangements including followings for safe transportation to protect the valve internals and gasket surfaces during shipment. Valves shall be protected from rust, corrosion and any mechanical damage during Transportation, handling shipment and storage. The packages shall be sea-worthy.
- 3.4.3.2. Valves shall be dry, clean and free from moisture, dirt and loose foreign materials of any kind.
- 3.4.3.3. Machined or threaded surface should be coated with easy removable rust preventive coating.
- 3.4.3.4. Valves should be shipped with gate closed and each end of flange face of valves shall be protected with wood, metal or plastic cover (end caps). End protectors to be used on flange faces shall be attached by at least three bolts or wiring through bolt holes and shall not be smaller than the outside diameter of the flange.

3.4.4. After Sales Service/ warranty

- 3.4.4.1. Supplier shall give a manufacturer's warranty for all the equipment supplied by him for a minimum period of **twelve (12) months** from the date of delivery (from the date of received to CPSTL).
- 3.4.4.2. Warranty conditions shall be clearly indicated in the bid. Any defect found during this warranty period shall be attended to by the supplier at his own cost (labour & spare parts) and any defective parts shall be replaced with new parts free of Charge.

Signature of the Bidder: **Date:**.....

(Common Company Seal)

3.5. COMPLIANCE / DEVIATIONS SHEET FOR TECHNICAL SPECIFICATIONS

The bidder shall indicate whether the required specifications are met by them by marking **(Yes)** if it meets the requirements/comply and **(No)** if it is not, in front of each requirement/specification in the relevant cell. Variations and/or deviations from specification, if any, shall be illustrated clearly in detail. Complete technical specification details shall provide together with following format. The bidder shall number his whole document of offer sequentially and corresponded page number shall be written down in the relevant row of the details requested.

Description - CPSTL Requirement		Complied	Deviation	Ref. Page no of the bidding doc.
General	Valve Type	Outside screw and York gate valve a) 3 inch b)10 inch c)12 inch		
	Valve Service	Refined Petroleum Products		
	Operating Temperature	15°C to 40°C		
	Pipeline Orientation	Horizontal / Vertical		
	Installation	Above ground open atmosphere		
	Maximum Working Pressure	150 psi		
	Special tool requirement	Mention		
	Country of origin	Europe, Japan, Canada, South Korea or USA		
	Country of manufacture	Mention		
Design	Standards	API 600, API 6 D		
	Face to Face Dimensions	API 6D & ASME B 16.10		
	Pressure Class	ASME B16.34 Class 150LB		
	Flow Direction	Both Directions		
	End Connection	Raised Face Flange ASME B16.5 (Serrated)		
	Body / Bonnet Connection	Bolted Bonnet		
	Stem	Rising Stem		
	Stem Position	Vertical		
	Lifting Eyes	Required only for 10" and 12" valves		
	Locking Facility	Required only for 10" and 12" valves		
	Operation	Non rising hand wheel		
	No of turns of the hand wheel for open/close	Mention the value		

Materials	Body	ASTM A216 WCB			
	Cover/Bonnet	ASTM A216 WCB			
	Seat and Wedge facing	13% Chromium Steel			
	Gaskets	Fluoroelastomer/Graphite			
	Trim	Trim material should be specified and should conform to API 600 normal trim material (supplier should forward manufacturer's certificate conforming the same).			
	Gland Packing	Graphite packing			
	Fasteners	ASTM A193 Gr. B7 & ASTM A194 Gr. 2H or Equivalent			
	External Coating	UV and weather resistant corrosion protection coating			
Inspection Testing	Standard	API 598			
	Third party inspection company	SGS, BV, Lloyds, ABS, TUV, DNV			
	Sample Hydrostatic testing	Mention the agreement			
	Reports	NDE records, Pressure test / leak test (Valve seat and Fugitive) & other test reports, (including pressure, test duration, test medium and Acceptance Criteria), Coating/Plating certification, Material test certification			

Signature of the Bidder:

Date:.....(Common Company Seal)