

- C. Pipes and fittings shall be sized as shown on the drawings.
- D. Pipes and fittings shall be flanged to BSEN1092
- E. All SS pipes and fittings shall be locally passivated under the Engineers supervision. All stainless steels are to be suitably cleaned with approved pickeling solution or paste and treated with approved passivating fluid according to ASTM A380 procedures before installation.
- F. Fixing nuts and bolts supplied by the manufacturer shall be in accordance with this Specification.
- G. Stainless steel shall conform to ASTM A167 and ASTM A276 and the alloy types shall be as follows: Grade 316 shall be used for machined items whereas 316L shall be used for welded items.
- H. Electrodes and techniques shall be as per AWS 5.0 series specifications or as approved by the Engineer.

1.2.8 Valves and other Pipe Accessories

1.2.8.1 General

- A. The Contractor/Manufacturer shall submit material test certificates for valve major components in accordance with ISO 10474 3.1B certificate.
- B. The Contractor shall prepare and submit for approval a complete valve schedule, showing for each individual valve the identification number, service, type & manufacturer, size, pipe identification number, location, mode of operation (normally closed [NC] or open [NO], drain, etc.).
- C. Valves shall be designed for a nominal pressure of 16 bars unless otherwise specified.
- D. Manually operated valves with a size \geq DN 350 shall be provided with a gearbox for easier operation unless otherwise specified.
- E. For motorized valve actuators the closing/opening time shall not exceed 0.25 sec/mm hub. Indication with flickering lamp during closing / open operation shall be provided at MCC. Additionally, position switch and torque switch with indicators on MCC shall be provided to indicate position and overload of valve, respectively.
- F. Valves (except pen stock valves), with a size $>$ DN 150 shall be equipped with a drain/vent valve DN 25 at the upstream port unless otherwise specified.
- G. Valve spindle shall be of the rising type unless otherwise specified.