



## PLUTO LNG TRAIN 2

SR Number:

26221-100-MRA-PB01-00001

Title: Pipe Fittings, Flanges and Valves

<p>Scope of Work:</p>	<p>The package includes 1-4 as shown below. The principal reserves the right to award each Part as a separate package to various suppliers, or as one package, pending the assessment of submissions</p> <p>Part 1-Pipes: Furnish all labor, materials, and services for the fabrication &amp; preparation for shipment of the CS, LTCS &amp; SS seamless and welded pipes as per Project requirement. Color coding in addition to markings required by the Material Standard to which the products are manufactured. Unless specified otherwise, DN 50 through DN 600 pipe shall be furnished in double random lengths and single random lengths for pipe size smaller than DN 50. Galvanized pipe shall be furnished in 6000mm lengths maximum. Circumferential weld joints (jointers) are not permitted for DN 50 through DN 600 pipe. Pipe sizes smaller than DN 50 shall be furnished with plain ends. Pipe sizes DN 50 and larger shall be furnished with beveled ends in accordance with ASME B16.25. Beveled end pipe shall be furnished with metal end protectors. Plain end and threaded end (T&amp;C) pipe shall be furnished with polyethylene end caps.</p> <p>Part 2- Fittings: Furnish all labor, materials, and services for the fabrication &amp; preparation for shipment of the Steel, CS, LTCS or SS type pipe fittings including but not limited to weldolet, tee, reducing tee, swag nipple (concentric/ eccentric), sockolet, reducers (concentric/ eccentric), elbows, caps, plugs &amp; spacers. Welding tees specified to be manufactured to the requirements of ASME B16.9, shall be furnished with radius and thickness limits in accordance with the requirements of ASME B31.3, Appendix D. End connections of fittings shall be furnished in accordance with the following:</p> <ul style="list-style-type: none"><li>a) Butt weld – ASME B16.25</li><li>b) Socket weld - ASME B16.11</li><li>c) Threaded – taper thread per ASME B1.20.1</li></ul> <p>Bevel protectors shall be provided for all bevel end fittings. Threaded and socket-weld fittings shall be furnished with polyethylene plugs. Wrought fittings made from block forgings and machined to the required dimensions shall not be used without prior Buyer's approval. All fittings shall be color coded in addition to markings required by the Material Standard</p> <p>Part 3- Flanges: Furnish all labor, materials, and services for the fabrication &amp; preparation for shipment of the Steel, CS, LTCS &amp; SS type flanges including but not limited to Blank, Blind, Socket Weld, Weld Necks &amp; Orifice.</p> <p>Orifice flanges shall be furnished in accordance with the requirements of the following:</p> <ul style="list-style-type: none"><li>a) ASME B16.36</li><li>b) in pairs (one set)</li></ul> <p>Outer ends of pressure taps shall be furnished with solid forged plugs in accordance with the requirements of ASME B16.11 and be manufactured of the same basic metallurgy as the flange.</p>
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Part 4- Valves: Furnish all labor, materials, and services for the design, fabrication & preparation for shipment of the following,

- Valves, Gate, Globe, Check: DN15 to DN 600 150/300/600/800 LB Flanged/ SW, Stainless Steel Gate, Globe and Check Valves

- Butterfly Valves: DN 200-DN1200 150/300/600 LB Dbl. Flanged Carb. Steel, Low Temp. Carbon Steel (LTCS) and SS.

- Cryogenic Ball Valves: DN15 to DN 200 150/300/600 LB Flanged SS Ball Valves for cryogenic service. Cryogenic testing of valves required by Seller. Impact testing required for stainless steel castings.

- Cryogenic Gate, Globe & Check Valves: DN15 to DN 600 150/300/600/800 LB Flanged/ SW, Stainless Steel Gate, Globe and Check Valves for cryogenic service. Cryogenic testing of valves required by Seller. Impact testing required for stainless steel castings.

- Ball Valve Metal Seated: DN 50 to DN 600 150/300/600/800 LB Flanged Carbon Steel and Stainless-Steel metal seated ball valves.

- Soft Seated Ball Valves: DN 20 to DN 600 150/300/600 LB Flanged carbon steel/ stainless steel/ low temp carbon steel (LTCS)

- Butterfly Valves: DN 200 to DN 1200 150/300/600 LB DBL Flanged Carbon Steel, low temp carbon steel (LTCS) and Stainless Steel butterfly valves.

- Rising Stem Ball Valves: 150/300/600/900 Carbon Steel raised face, ends per ASME B16.5, top entry, trunnion mounted ball, design per ASME B16.34 high temperature service to 427c (800f), fire- tested to API 607, gear or handwheel operated Material Test Reports (MTRs) Required Color Coding of material required for material identification

Export packing for transport by Supplier Quality verification documentation provided with each shipment by supplier Valve General Arrangement Drawings to be submitted by Seller Quality System Questionnaire to be submitted by Seller

All equipment provided must meet local codes for Western Australia, Project Specifications, as well as any other Australian/local regulations, statutory requirements, and Australian codes and standards as applicable