

APPENDIX F

PIPE FLANGES, SPECTACLE BLINDS, SPADES & SPACERS

1. GENERAL

All flanges size 24" and smaller shall be in accordance with ASME B16.5 and B16.47 series A.

Long Welding Neck, Spectacle and Spacer and Blinds, and Drip Rings shall be supplied in accordance with Piping Standard 000-PA-E-10004.

Where the flange facing is specified as RF 125 Ra the gasket contact face of flanges, shall have a finish between 125 to 250 microinches (3.2 and 6.3 Ra micrometer). Finishes shall be judged visually in accordance with ASME B46.1.

Where the flange facing is specified as FF or STOCK FINISH, the gasket contact face of flanges shall have a spiral or concentrically grooved finish in accordance with ASME B16.5/B16.47 except that the roughness shall be between Ra 250 to 500 microinches (6.3 and 12.5 micrometer). Finishes shall be judged visually in accordance with ASME B46.1.

Where the flange facing is specified as Ring Joint, the gasket contact face of flanges shall have max 63 microinches in accordance with ASME B46.1.

Threaded Galvanised Flanges shall be supplied with threads free of galvanising. Galvanised flanges shall be in accordance with ASTM A153.

Spectacle blinds/spades & spacers shall be in accordance with API 590. When the required thickness is greater than "t" specified in API 590 then the stock code description shall indicate the greater thickness required, e.g. "t+2mm". Ring joint spectacle blinds/spades & spacers shall be female ring type

2. MATERIALS

The carbon content of all carbon steel and impact tested carbon steel shall be limited to a maximum of 0.25 %.

Stainless Steel ASTM A182 F347/321 shall be supplied in Stabilized Heat Treatment conditions.

The stabilization treatment shall consist of holding the items at 815 to 880°C for a minimum of 2 hours for thk. up to 25 mm., for a larger thickness add 4 or 5 minutes/mm and then cooling in the furnace or in air.

Alloy Steel grades WC6 or F11 shall be supplied in Normalized and tempered conditions.

The heat number shall be traceable to the relevant material certificate.

For Alloy steel grad 11/4 Cr-1/2 Mo (P11/WP11/F11 etc.) the maximum room temperature Tensile Strenght of all pressure retaining components and welds shall be 100,000 psi (7030 kg/cm²).

Nickel alloy flanges to UNS N06625 shall be in annealed condition and in accordance with material requisition description.

3. IDENTIFICATION MARKING

In addition to the markings required by the relevant specification, purchase order number and purchase order item number vibro etched or low stress stamped on the rim of the component.

Long Welding Neck, Spectacle and Spacer and Blinds, and Drip Rings shall be marked as follows: Material, Class rating and Project Standard number.

The heat number shall be traceable to the relevant material certificate

4. CERTIFICATION

Material Certificates shall be in accordance with EN 10204 3.1.B and as a minimum shall include:

- a) Chemical analysis of product
- b) Mechanical Properties
- c) Heat Treatment Statement
- d) Non-Destructive Test Results
- e) Heat Melt Number

All certificates shall state the original Manufacturers name and location, and shall include the Purchase Order Number and Purchase Order Item Number.

5. PRESERVATION AND PACKING

The contact surface shall be supplied with protective coating (Tectil or similar product). Flange bevel ends shall be supplied with protective plastic caps.

Items shall be packed in a manner which allows easy handling and prevents damage, Supplier shall submit his standard packing procedure for approval in his BID.