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1.0 GENERAL
The Ducts and Ductwork components shall be as per the detailed specifications and drawings prepared by the Contractor & Approved by GNFC. This specification indicates minimum requirements in order to ensure satisfactory performance for the fluid service under the operating pressure and temperatures. In general, the raw materials used should be of good quality and proven for the intended use.

2.0 MATERIAL
The material used in the manufacturing of the Ducts & Ducting Components including Dampers, etc. shall be procured from the reputed manufacturers.

All the raw material procured shall be with the Mill Test Certificates, which can be co-related with the heat marks on the Material Delivered.

GNFC / Third Party Inspection Agency shall have right to the inspection of the raw material used for the fabrication / manufacture of ducting. If required, Contractor shall arrange for the Check Testing of this material at a reputed Laboratory. Charges shall be inclusive of lab testing charges.

2.1 Following Material shall be used:

Carbon steel: IS 2062 / ASTM A 515 / A 285 / is 2002..
Stainless Steel: ASTM A 240
Structures for Support: Confirming to IS

3.0 FABRICATION

A. All welding, welding equipment and personnel shall be in with the following accepted standards and procedures.

1. Code of Petroleum Refinery Piping ANSI B 31.3
2. Welding qualifications as per ASME Sec IX.

B. The contractor shall use necessary Welding Electrodes and Filler Material of reputed makes viz. Advani Oerlikon / D & H with relevant Test Certificates.

C. The Electrodes shall be suitable for the welding process recommended and the Base Metal used. The Contractor shall submit detail specifications for welding process, Electrodes, Filler material to the Engineer-In-Charge for approval.

D. The Contractor may fabricate round ducts of 8 inch nom. size and above and the Rectangular Ducts at the shop to accelerate progress.
E. Reinforcement rings should be provided for ducts of rectangular cross section and round ducts of large sizes wherever negative operating pressures are indicated.

F. Contractor shall provide fastening cleats on ducts which are to be insulated. On C.S. ducts, cleats should be of C.S. and on S.S. ducts, S.S. pads shall be welded to duct and C.S. cleats on pads. Alternatively, the entire cleat may be provided of S.S. material for S.S. duct. C.S. washers shall be provided for cleats.

G. Sand blasting with one coat of primer on carbon steel ducting shall be provided.

H. All support material shall be of carbon steel.

I. Valve construction including trim material shall be guaranteed for the medium and design conditions.

J. For material certification, the vendor should submit six sets of material certificates.

4.0 INSPECTION

A. Inspection shall be carried out by Third Party Inspection Agency appointed by GNFC / by GNFC.

B. All welded joints and prefabricated components shall be offered for visual inspection.

C. Pressure testing of the items is generally not required. However, TPIA / GNFC may use their discretion and direct the vendor to test some of the items, as and where considered necessary.

Test pressure (pneumatic) shall be as under:

1.5 kg/cm² for shop fabricated items.
1.0 kg/cm² for erected items.