shall be done by Contractor/ Manufacturer and shall be approved by Engineer prior to installation of the material.

19.2.2 Wall, Floor, Slab and Roof Penetrations

A. Pipe work passing through concrete walls, floors, slabs and roofs shall have integrally cast puddle flanges as shown on the drawings and shall provide a watertight installation. The coating to the puddle flange shall be same as the pipe/fitting coating.

B. Thrust/anchor flanges shall be used were pipework or fittings are cast into walls etc and shall be designed to restrain the installed equipment. Thrust/anchor flanges shall be integrally cast or factory welded onto the pipe piece as approved by the Engineer. Bolted or screwed on flanges are not acceptable. The coating to the thrust/anchor flange shall same as the pipe/fitting coating.

19.2.3 Internal Protective Coatings

A. Pipes shall be protected internally with factory applied alumina cement mortar, fusion bonded epoxy or polyurethane. This shall not preclude special coating arrangements if required. Selection of the coating shall be based on the detail investigation including fluid temperature, storm water and subsoil water properties, percentage of hydrocarbons etc. Coating selection shall be done by Contractor/ Manufacturer and shall be approved by Engineer prior to installation of the material.

B. Thickness of the alumina cement mortar shall comply with BS EN 598 requirements as a minimum.

C. Epoxy coatings shall comply with BS EN 14901 requirements.

D. The minimum dry film thickness of the fusion bonded epoxy coating shall be 300µm.

E. Polyurethane coatings shall comply with BS EN 15655.

F. The minimum dry film thickness of the polyurethane shall not be more than 10% below the nominal coating thickness. Nominal thickness of the polyurethane application is given in the Table 19-1