



DETAILED SPECIFICATION

Spiwrap[®] jacket with Standard "U.I.P.[®]" System

1) General

The pipe shall be insulated using the unique two-fill U.I.P.[®] factory insulation process, as supplied by Urecon Ltd., complete with integral conduit for electric heat trace cable (*if required*). Insulation of associated joints, fittings and accessories shall be as per Urecon's recommendations, depending on the size and type of pipe involved. The product shall be manufactured in accordance to ISO 9001-2000 Standards, or approved equal.

2) Pipe preparation

Pipe and the spiral metal jacket shall be cleaned of surface dust or dirt, if necessary, to insure adhesion of the foam to the pipe and inner jacket surface. The pipe and/or jacket may be treated by sand blasting, application of a chemical foam-bonding compound, or by steam cleaning to enhance adhesion, as deemed necessary by Urecon and project requirements.

3) Heat tracing conduit(s)

Heat tracing conduits shall consist of an extruded molding and shall be applied to the pipe prior to application of the insulation. The conduit will be securely fastened to the pipe to prevent the ingress of foam therein during the insulation process. Each conduit shall be checked after insulating to insure they are not plugged. The ends shall be sealed prior to shipping to prevent any foreign material from entering the conduit while in transit or during installation.

4) Insulation

- a) Material: rigid polyurethane foam, factory applied.
- b) Thickness: 50 mm (2 in.) or as required.
- c) Density: (ASTM D 1622) 35 to 46 kg/m³ (2.2 to 3.0 lbs/ft³).
- d) Closed cell content: (ASTM D 6226) 90%, minimum.
- e) Water absorption: (ASTM C272) 4.0% by volume.
- f) Thermal conductivity: (ASTM C518) 0,020 to 0,026 W/m °C (0.14 to 0.17 Btu • in/ft² • hr • °F).

5) System Properties

- a) System compressive strength: (modified ASTM D 1621) approximately 1379 kPa (200 lbs/in²), varies with gauge and type of jacket material and pipe diameter.
- b) Core pipe service temperature range: from cryogenic to 93°C (200°F); the overall factory insulated system limitations are dependant on core pipe type and application. Call your Urecon representative for details.



6) Outer Jacket for the "U.I.P." Spiwrap® System*

a.) Galvanized steel:*

Jacket OD <or = 450mm (18") @ 22 ga
Jacket OD >450mm (18") @ 18 ga

b.) Aluminum:*

Jacket OD <or = 300mm (12") @ 20 ga
Jacket OD >300mm (12") @ 18 ga

c.) Stainless Steel:*

Jacket OD <or = 300 (12"**) @ 24 ga
Jacket OD >300mm (12") @ 22 ga

*other gauges are available upon request, and may vary dependant on the application and weight.....

7) Insulated pipe joints; "U.I.P." Spiwrap® system

Insulated pipe joints shall be completed using prefabricated polyisocyanurate or urethane foam half shells and metal consistent with that on the factory insulated pipe. All metal overlaps at the joints and fittings shall be 50 mm (2 in) minimum and shall be field positioned in such a way as to shed water.

8) Insulation kits for fittings*

Insulation kits for fittings shall consist of rigid polyisocyanurate or urethane foam insulation complete with a thin elastomeric coating on the outside surfaces for strength during transit and installation, and fabricated galvanized steel or aluminum outer protective jacket consistent with that on the factory insulated pipe. All kits to be supplied complete with stainless steel bands, band-it clips, and screws to suit.

Rigid Polyisocyanurate or Urethane Foam Insulation

- .1 Density (ASTM D1622) 27 to 32 kg/m³ (1.7 to 2.0 lbs/ft³).
- .2 Compressive strength (ASTM D1621) 131 to 158 kPa (19 to 23 lbs/in²).
- .3 Closed cell content 90%, minimum.
- .4 Water absorption: (ASTM D2842) 4.0% by volume.
- .5 K factor: (ASTM C 518) 0,027 W/m °C, (0.19 Btu • in/ft² • hr • °F).
- .6 Thickness, to match pipe insulation thickness.

* Factory Insulated Fittings are available with a full range of outer protective jackets.

9) Electric Tracing System

The electric tracing system and associated controls shall be as per the manufacturer's recommendations with particular attention being paid to the watt densities applied through conduits on plastic pipes. All tracing cables and related accessories to be CSA approved and comply with CSA heat-tracing standard C22.2 No. 130.2-93. Standard of acceptance is Urecon's Thermocable or approved equal. Please contact your Urecon representative for further details and design assistance.

Note:-Physical characteristics are nominal and may vary depending on pipe type and diameter. (Revised June 2011)