



**DETAILED SPECIFICATION**  
**Spiwrap® jacket**  
**For above grade Hi Temp system to 149°C (300°F)**

**1) General**

This product is recommended for long term above ground installations where the properties of a locked seam metal jacket are desired for hydronic heating or industrial applications.

It is critical that all field-installed components of a Hi-Temp polyurethane foam piping system be installed with special care and attention, ensuring that the system is not only insulated properly, but *completely waterproof* as well. Should moisture enter or be trapped in the system by any means after commissioning, the moisture will flash off as steam, permanently damaging the insulation and jacketing.

All pipe system layouts shall be reviewed by Urecon's engineers during the quoting stage to address expansion/contraction consideration, as well as system limitations. The pipe shall be insulated using the unique UIP® factory insulation process, as supplied by Urecon, complete with integral conduit for heat trace cable (*if required*). The insulation of associated joints, fittings and accessories shall be as per Urecon's recommendations, dependant 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 jacket shall be cleaned of surface dust or dirt, if necessary, to insure adhesion of the foam to the pipe and casing surface. The pipe and/or spiral metal 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) Insulation**

- a) Material: rigid polyurethane foam, factory applied.
- b) Thickness: 50 mm (2 in) or as required.
- c) Density: (ASTM D 1622) 38,4 to 56 kg/m<sup>3</sup> (2.4 to 3.5 lbs/ft<sup>3</sup>).
- d) Closed cell content: (ASTM D 6226) 90%, minimum.
- e) Water absorption: (ASTM C 272) 4.0% by volume.
- f) Thermal conductivity: (ASTM C518) 0,020 to 0,026 W/m °C (0.14 to 0.17 Btu • in/ft<sup>2</sup> •hr °F).

**4) System properties**

- a) System compressive strength: (modified ASTM D 1621) approximately 1379 kPa (200 lbs/in<sup>2</sup>), varies with gauge and type of jacket material and pipe diameter.
- b) Service temperature range: from -45° to 149°C (-49° to 300°F) for the UIP® polyisocyanurate foam only; the overall factory insulated system limitations are dependant on core pipe type and application. Call your Urecon representative for details.



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**5) Outer Jacket for the UIP® 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 jacket gauges are available upon request, and may vary dependant on the application and weight.....

**6) Insulated Pipe Joints**

Insulated pipe joints shall be completed using prefabricated polyisocyanurate 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, caulked with silicone and shall be field positioned in such a way as to shed water.

**7) Insulation kits for fittings\***

Insulation kits for fittings shall consist of rigid polyisocyanurate or field 'foam in place' Hi- Temp polyurethane foam insulation and custom fabricated galvanized steel or aluminum outer protective jacket consistent with that on the factory insulated pipe. All kits to be supplied complete caulking for all seams, and stainless steel bands, Band-it® clips, and screws to suit.

**a) Rigid polyisocyanurate insulation**

- .1 Density (ASTM D1622) 27 to 32 kg/m<sup>3</sup> (1.7 to 2.0 lbs/ft<sup>3</sup>).
- .2 Compressive strength (ASTM D1621) 131 to 158 kPa (19 to 23 lbs/in<sup>2</sup>).
- .3 Closed cell content (ASTM D 6226) 90%, minimum.
- .4 Water absorption: (ASTM C 272) 4.0% by volume.
- .5 Thermal conductivity: (ASTM C 518) 0,027 W/m °C, (0.19 Btu • in/ft<sup>2</sup> • hr • °F).
- .6 Thickness, to match pipe insulation thickness.

\* Factory insulated fittings are available with a full range of metal outer protective jackets.

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



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*Local Representative*

A large, empty rounded rectangular box with a thin black border, intended for the name and contact information of a local representative.