



## DETAILED SPECIFICATION

### UreconBlue® for below grade chilled water systems

#### 1) General

The pipe shall be insulated using the U.I.P.® factory insulation process, as supplied by Urecon Ltd. with blue UV inhibited polyethylene jacket. Insulation of associated joints, fittings and accessories shall be as per Urecon's recommendations based on the size and type of pipe involved. The product shall be manufactured in accordance to ISO 9001-2000 Standards.

#### 2) Pipe Preparation

Pipe shall be cleaned of surface dust or dirt and treated, if necessary, to insure adhesion of the foam to the pipe surface.

#### 3) Insulation

- a) Material: rigid polyurethane foam, factory applied.
- b) Thickness: nominal 25 to 37mm (*1 to 1.5 in.*) depending on diameter (other thicknesses available upon request)
- c) Density: (ASTM D 1622) 35 to 46 kg/m<sup>3</sup> (*2.2 to 3.0 lbs/ft<sup>3</sup>*).
- 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/ft<sup>2</sup> • hr • °F*).

#### 4) System Properties

- a) System compressive strength: (modified ASTM D 1621 with 0,42mm (*15 mil*) blue polyethylene jacket, approximately 414 to 552 kPa (*60-80 lbs/in<sup>2</sup>*) system compressive strength, varies with pipe diameter; other jacket thicknesses are available upon request.
- b) Temperature limitations: -in service to 93°C (*200°F*)

#### 5) Outer jacket characteristics

- a) Jacket material: UV stable blue polyethylene specially formulated and applied waterproof for below grade applications; may be used above grade in UV protected conditions.
- b) Sealant: butyl rubber and resin.
- c) Jacket thickness: insulation diameter -up to 380mm (*14.95 in*) @ 0,42mm (*15 mils*)  
-381mm (*15.0 in*) to 583mm (*22.95 in*) @ 0,51mm (*20 mils*)  
-584 mm (*23.0 in*) and over @ 1,02mm (*40 mils*)
- d) Minimum elongation: (ASTM D 1000) 300%, 6 month test.
- e) Service temperature range: in service to 85° C (*to +185°F*)
- f) Tensile strength: (ASTM D-1000) 6, 83 kg/cm wide (*38 lbs/in wide*).

## 6) Insulated pipe joints

### a) Butt-fused and welded joints (plain end pipe)

Insulated pipe joints shall be completed using pre-fabricated rigid polyisocyanurate or urethane half shells and sealed with the application of 0,30mm (12 mil) X 50mm (2 in) wide blue polyethylene hand roll tape, as supplied by Urecon. Tape shall be applied in such a manner as to yield a minimum of 75 mm (3 in) overlap on either side of the joint.

### b) Bell x spigot joints

Insulated pipe joints shall be sealed with the application of either 0,30mm (12 mil) X 50mm (2 in) wide blue polyethylene hand roll tape, as supplied by Urecon. Tape shall be applied in such a manner as to yield a minimum of 75 mm (3 in) overlap on either side of the joint.

## 7) Insulation kits for fittings.

Insulation kits for fittings shall consist of rigid polyisocyanurate or urethane foam insulation supplied with 0,30mm (12 mil) X 50mm (2 in) wide blue polyethylene hand roll tape as supplied by Urecon. Tape shall be applied in such a manner as to yield a minimum of 75 mm (3 in) overlap on either side of the joint, and shall be consistent with what is used at the joints.

### a) Rigid Polyisocyanurate or polyurethane foam 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 C272) 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.

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