



**DETAILED SPECIFICATION**  
**U.I.P.® System with BSP/PVC pipe**  
**(for wood furnace boiler applications)**

## 1) General

The PVC BSP (building sewer pipe) shall be insulated using the U.I.P.® factory insulation process, as supplied by Urecon Ltd., complete with a 0,63 mm (*25 mils*) minimum black polyethylene jacket with UV inhibitors. The insulation shall extend flush to the end of the solvent weld bell end, and be cut back the pipe insertion depth on the spigot end. The result is that when the pipe are solvent welded in the field, the insulation shall mate from pipe to pipe or fitting. Insulation of associated joints, fittings and accessories shall be as per Urecon's recommendations. The product shall be manufactured in accordance to ISO 9001-2000 Standards, or approved equal.

## 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: 37 mm (*1 1/2 in.*) or as required.
- c) Density: (ASTM D1622) 35 to 46 kg/m<sup>3</sup> (*2.2 to 3.0 lbs/ft<sup>3</sup>*).
- d) Closed cell content: (ASTM D6226) 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 D1621 with 0.63mm (*25 mil*) jacket) approximately 414 to 552 kPa (*60-80 lbs/in<sup>2</sup>*), varies with pipe diameter.
- b) Temperature limitations: -in service, -45° to 93°C (*-49° to 200°F*)  
-installation, -34° C (*-30°F*)

## 5) Outer jacket with enhanced cold climate handling properties

The outer protective jacket shall consist of a custom blended black polyethylene applied hot to ensure a shrink tightened waterproof bond throughout its entire length-

- a) Jacket material: polyethylene UV inhibited, specially formulated for superior cold environment properties, Scapa Tape #366.
- b) Sealant: butyl rubber and resin.
- c) Jacket thickness: 0,63mm (*25 mils.*)
- d) Minimum elongation: (ASTM D 1000) 300%, 6 month test.
- e) Service temperature range: -installation @ -34° to 71°C (*-30° to + 180°F*)  
- in service @ -45° to 85° C (*-49° to + 185° F*)
- f) Tensile strength: (ASTM D-1000) 6,83 kg/cm wide (*38 lbs/in wide*).



### **7) Insulated Bell X spigot pipe joints**

Insulated PVC BSP pipe and fitting joints shall be solvent welded in the field then sealed with a 150 mm (6 in.) wide butyl mastic tape with removeable backing, such as Renwrap #330, or approved equal.

### **8) Insulation for fittings**

Insulation for fittings shall consist of factory applied urethane foam insulation with poly jacket similar in nature to the system on the pipe.

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