



INSUWRAP **PVC 1600 UV S**

Single ply waterproofing membrane for Exposed Roofing System

Product Description

Insuwrap PVC 1600 UV S is a calendered extruded high polymer waterproofing membrane, (thickness 1.60 mm), ultraviolet resistant not compatible with bitumen, manufactured following highest International standards offering high physical properties and long term durability. Insuwrap 1600 UV S is manufactured using the best raw materials produced by SABIC.

Uses

- Roofing (Exposed roofs)
- Re-roofing

Advantages

- Safe application tools (No torch needed).
- INSUWRAP PVC is easy to apply using hot air welding for joints. The joints are homogeneously welded (PVC to PVC). No sealant or chemicals are required for joints (overlaps).
- No adhesives or Primers are required for installation of INSUWRAP PVC.
- Self Extinguishing material (Safe in case of fire).
- INSUWRAP PVC is resistant to high temperature fluctuations.
- INSUWRAP PVC remains flexible throughout its life span and could be easily joined to new materials after installation, in case of extension or any mechanical damage.
- As a National product, produced in Kingdom of Saudi Arabia, future maintenance services and availability of materials are much faster and more reliable.
- Minimum slope is sufficient.

Application Instructions

1. Surface Preparation

Clean the top of metal surface, remove all the loose particles and sharp edges to be ready to receive the roofing system. Using proper types of washers & screws, a working flat surface should be mechanically fixed to the metal deck. The working surface can be either 50mm thick extruded thermal insulation or 9mm thick plywood. Apply minimum 150 micron thick polyethylene sheet with 100mm overlap of the joints.

2. Horizontal Surface

Apply one layer of Insuwrap PVC waterproofing membrane, 1.60mm thick ultra violet resistant (1600 UV S). This membrane will be fixed by means of mechanical fixation using aluminum or GI metal strips (30mm wide). These strips will be fixed by mechanical fasteners at 40cm spacing on top of the overlapping joints. Then these joints are welded by hot air welding machine and the overlapping will be 50mm minimum. Special metal screws and washers with spacing 300mm of the overlaps can be used instead of holding metal screws.

3. Vertical Surface

Apply Insuwrap PVC 1600 UV S (1.60 mm thickness) membrane Ultra violet resistant. This membrane will be fully adhered by Insurbond-106 or equivalent to parapet wall up to 30cm height and the bottom portion of this membrane will be properly dressed up to the gutter drains. PVC coated metal angles will be fixed on the

junctions of horizontal membrane and gutter. A double layer of the membrane will be welded by hot air welding on that angle. Install Aluminum flashing at the top edge of the PVC membranes. The flashing will be fixed with fasteners, then the upper bend is filled with sealant.

Technical Data

Test	Typical values
<i>Tensile strength at break, min, MP a (psi):</i>	
Machine direction	>13.0 (1875)
Cross-machine direction	>13.0 (1875)
<i>Elongation at break, min, %:</i>	
Machine direction	>360
Cross-machine direction	>360
Seam strength, min, % of tensile or breaking strength	>82
<i>Retention of properties after heat aging:</i>	
Tensile strength, min, % of original	>90%
Elongation, min, % of original	>90%
Tear resistance, min, N (bf)	>90
Low temperature bend	pass
<i>Accelerated weathering test:</i>	
Cracking (7 x magnification)	none
Crazing (7 x magnification)	none
Linear dimensional change, max, %	< 0.05
Change in weight after immersion in water, max, %	< ±1.0
Static Puncture Resistance	pass
Dynamic Puncture Resistance	pass
Fire Class	pass (Class B)
Accelerated weathering test	5000 hrs

Standards Compliance

- ASTM D 4434 standard requirements
- ASTM E108 for fire class
- ASTM G26 for weathering test
- DIN 16735 standard requirements

Roll Size

Properties	Values
Roll Length	20 m
Roll Width	2.10 m
Weight/Roll (Approx.)	88 kg

Hot Air Welding Techniques

- The most common technique used to join PVC waterproofing sheets.
- The sheets should overlap by at least 50 mm.
- The hand welder is used for Hot Air welding of INSUWRAP PVC membranes.
- The hand welder is supplied with a 20 mm, 40 mm wide welding nozzles and 40 mm wide rubber roller.

- Temperature of welding varies from 400 – 600°C depending on the ambience temperature, weather conditions, site conditions, speed of welding etc.

Testing

After installation of water proofing membranes the following tests can be conducted:

- 1. Flood Test**
- 2. Needle Test**
- 3. Vacuum Test**
- 4. Pressure Gauge Test**

In case of any leakage the source of leakage will be determined, water will be drained and repair works will be carried out in the affected area. As per requirements test will be repeated.

Health & Safety

Environment factors can cause deposits formation as well as blockage of water outlets. Maintenance works, cleaning the related structures can cause stress on waterproofing. This can also be caused by uncontrolled access. Any work, which has to be done in relation to the liner, should always be carried out with specialized firms. In case of any damage inflicted on the waterproofing, the following guidelines should be noted:

- a. Any moisture which has penetrated through the damaged area should be drawn off; the area below should be as dry as possible.
- b. A reasonable area surrounding the damaged part should be thoroughly cleaned using rag & clean water (THF if needed).
- c. A new piece of Insuwrap PVC Liner is hot air welded 50mm beyond the damaged spot of the waterproofing.
- d. Removal of all dirt and debris.
- e. Rubber shoes are worn by people on the site.
- f. If ladders, steps etc; have to be used, it should not be placed directly on the liner and planks of wood should be placed underneath the feet to distribute the load. These load spreaders should not have sharp edges and, of course, there should be no protruding nails to avoid a direct contact of metal with the liner.
- g. Do not permit passage of any vehicle directly on membrane at any time.
- h. Clean residues of water and dust which form on the bottom by rubber wiper.
- i. PVC liner should be rubbed using a sponge or a cloth with clean water only.
- j. Water which was used for cleaning should be disposed.
- k. Avoid metal tools in cleaning process.