



# INSUWRAP **PVC 1500 WM**

Single ply waterproofing membrane for Covered Roofing System

## Product Description

Insuwrap PVC 1500 WM is a calendered extruded high polymer waterproofing membrane, (thickness 1.50 mm), manufactured following highest International standards offering high physical properties and long term durability. Insuwrap 1500 WM is manufactured using the best raw materials produced by SABIC.

## Uses

- Roofing (Coverd 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 local 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

Sloping screed will be installed over concrete deck. The screed can be sand cement or lightweight concrete. Separation layer of Polyethylene (minimum 150 micron) will be installed over the sloping screed if the concrete surface is not smooth enough to receive the waterproofing membrane over it. Another similar separation layer can be installed over the waterproofing membrane before installation of thermal insulation according to its type.

### 2. Horizontal Surface

The overlaps of PVC membranes (1500 WM) should be a minimum of 50 mm welded with hot air guns. As much as practically possible the joints will not be against the direction of flow. It will be loose laid on the horizontal surface, extended and bonded to vertical up-stands with Insurbond-106 contact adhesive up to minimum of 30mm and fixed with aluminum holding metal strip or washers on the vertical upstands.

### 3. Vertical Surface

Ultra violet resistant reinforced membrane 1500 WMR-UV (1.50mm thick) will be bonded to up-stands using Insurbond-106 contact adhesive and terminated with aluminum flashing and sealant.

## Technical Data

Test	Typical Values
Overall thickness of PVC sheet (mm) ASTM D 638	1.5
Breaking strength (N) ASTM D 751	≥ 260
Elongation at break, min, %: Machine direction	
Cross-machine direction ASTM D 638	≥ 270 ≥ 250
Seam strength, min, % of tensile or breaking strength ASTM D 638	≥ 80
Retention of properties after heat aging: Tensile strength, min, % of original	
Elongation, min, % of original ASTM D 638	≥ 92% ≥ 92%
Tear resistance, min, N (bf) ASTM 1004	60
Low temperature bend ASTM D 2136	Pass
Accelerated weathering test: Cracking (7 x magnification) Crazing (7 x magnification) ASTM G151 @5000 Hrs	none none
Linear dimensional change, max, % ASTM D 1204	≤ 0.09
Change in weight after immersion in water, max, % ASTM D 1204	±2%
Static puncture resistance ASTM D 5602	Pass
Dynamic puncture resistance ASTM D 5635	Pass
Fire Class ASTM E108	Pass (Class B)

## Standards Compliance

- ASTM D 4434 - Type 2 standard requirements

## Roll Size

Properties	Values
Roll Length	20 m
Roll Width	2.10 m
Weight/Roll (Approx.)	83 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:

- Flood Test**
- Needle Test**
- Vacuum Test**
- 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:

- Any moisture which has penetrated through the damaged area should be drawn off; the area below should be as dry as possible.
- A reasonable area surrounding the damaged part should be thoroughly cleaned using rag & clean water (THF if needed).
- A new piece of Insuwrap PVC Liner is hot air welded 50mm beyond the damaged spot of the waterproofing.
- Removal of all dirt and debris.
- Rubber shoes are worn by people on the site.
- 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.
- Do not permit passage of any vehicle directly on membrane at any time.
- Clean residues of water and dust which form on the bottom by rubber wiper.
- PVC liner should be rubbed using a sponge or a cloth with clean water only.
- Water which was used for cleaning should be disposed.
- Avoid metal tools in cleaning process.