



INSUWRAP **PVC 1500 LNTR**

Single ply waterproofing membrane for Water Tanks lining system

Product Description

Insuwrap PVC water tank internal liner 1500 LNTR is a calendered extruded high polymer waterproofing membrane, (thickness 1.50 mm) reinforced with polyester mesh, not compatible with bitumen, manufactured following highest International standards offering high physical properties and long term durability. Insuwrap 1500 LNTR is manufactured using the best raw materials produced by SABIC.

Uses

- Lining of Drinking Water Tanks.

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.

1. Surface Preparation

Internal concrete surface should be smooth, clean and free from sharp projections otherwise a protection layer (non-woven polyester 140 g/m²) must be used to receive PVC membranes.

2. Horizontal Surface

Apply INSUWRAP PVC liner non-toxic & reinforced 1500 LNTR (1.5 mm thick) lining membrane loose laid for horizontal areas with 50 mm overlaps by using hot air welding technique. Horizontal PVC membranes must be installed to 300 mm height on the vertical walls to enable the welder to join the horizontal membranes at the corners. The membranes will be mechanically fixed with PVC coated angles or strips properly and it will be welded to the vertical PVC membranes.

3. Vertical Surface

Apply PVC 1500 LNTR lining membrane vertically by mechanical fixation using aluminum strips or PVC coated metal strips (30 mm width with smooth edges) fixed by fasteners at the end of the lining membranes or each roll. Overlaps (50 mm) will be welded homogeneously using hot air welding technique. PVC coated galvanized metal strips or Aluminum flashing (50 mm width) with one

Application Instructions

When **quality** matters.

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bend (10 mm) shall be provided on the termination of the lining membranes. Non-toxic sealant will be filled on the top of the flashing. All inlet and outlet pipes, corner, flanges, ladder etc., passing through junctions must be completely watertight using preformed collars fully bonded/sealed to the mentioned fittings. Dressings can be made at the site using the same PVC liner.

Technical Data

Test	Typical values
<i>Tensile strength at break, min, MP a (psi):</i>	
Machine direction	>14.3 (2070)
Cross-machine direction	>15.7 (2260)
<i>Elongation at break, min, %:</i>	
Machine direction	>300
Cross-machine direction	>300
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)	>65 (14.5)
Low temperature bend	pass
Tensile Modulus (psi)	1210.60
Specific Gravity	1.28
Hardness, Shore A	80 ± 1
Linear dimensional change, max, %	< 0.07
Change in weight after immersion in water, max, %	< ±1.0
Static Puncture Resistance	pass
Dynamic Puncture Resistance	pass
Fire Class	pass (Class B)

Standards Compliance

- ASTM D 4434 standard requirements
- ASTM E108 for fire class
- DIN 16735 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:

1. Vacuum Test

2. Needle Test

3. 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.

