

## Ultra High Performance Tensile Strength, UV Resistance & Fire Flame Resistance Waterproofing Sheet Membrane for Reinforced Concrete Roof Slab System, Hot-Air Weld-able Seamless Membrane

### Products

**Roof Seal PVC** (thickness: 1.5, 1.8 & 2.0 mm) is a Polyester reinforced, multi layer's, synthetic roof waterproofing sheet membrane based on premium-quality flexible **Polyvinyl chloride** containing ultraviolet light stabilizers, flame retardant and an inlay of polyester fiber woven according to EN 13956.

**Roof Seal PVC** is a hot air weld able roof membrane formulated for direct exposure and designed to use in all global climatic conditions. **Roof Seal PVC** is produced with an inlay of polyester fiber woven for dimensional stability and a polyester reinforcement for high strength. **Roof Seal PVC** is provided for mechanically attached roof systems.

**Roof Seal PVC** has no built-in stress at the time of production and has a fully encapsulated carrier with no risk to delimitation or water-wicking. The dimensional stability of **Roof Seal PVC** is excellent.

### What's the PVC Membrane

Polyvinyl chloride (**PVC**) is a multi & single-ply UV reflective **roofing membrane** made from ethylene-propylene and rubber polymerized together with addition anti aging. It is typically installed in a fully adhered or mechanically attached system, allowing the white **membrane** to remain exposed throughout the life of the **roof**.

### How Long Does PVC Last

**PVC** compounds have changed in recent years, so it is impossible to say **how long** current roofs will **last**, but a general estimate puts a **PVC** roof between 10 years. This is due in part to the fact that the thickness or top layer of the material is laminated.

### Is PVC Good for Roofing

**PVC** eases cooling costs due to UV resistance and reduces carbon emissions as well. The amazing thing about environmental impact with **PVC**, though, is the fact that it not only meets but far exceeds the EPA Energy Star requirements and is highly rated by the Cool Roof Rating Council.



Roof Seal PVC 18P, 1.80mm thick for Expose Roof Slab

### Ultraviolet Resistance:

Not reflection to eye and no yellowing after 2500 hours.

- ❖ Adhesion is always good on substrates concrete surfacing.
- ❖ Excellent of chemical resistance, Good on hygienic roof slab surfacing.
- ❖ Adhesion promoting primers between old with new concrete.
- ❖ Non-toxic, the **Roof Seal PVC** waterproofing sheet membrane on health, All reinforced concrete roof surfaces

The **Roof Seal PVC [Model Type: P]** thickness & Polyester Fiber Mesh Reinforced, multi layers, Synthetic roof waterproofing sheet membrane

Model Type	Reinforced Structural	Thickness	Width	Roll Length	Color
Roof Seal PVC 15P	PVC + Polyester Fiber	1.5mm [±0.1]	2.05/m	15 or 20/m	White or Gray
Roof Seal PVC 18P	PVC + Polyester Fiber	1.8mm [±0.1]	2.05/m	15 or 20/m	White or Gray
Roof Seal PVC 20P	PVC + Polyester Fiber	2.0mm [±0.1]	2.05/m	15 or 20/m	White or Gray

The **Roof Seal PVC [Model Type: H]** thickness & single layer roof waterproofing sheet membrane

Model Type	Reinforced Structural	Thickness	Width	Roll Length	Color
Roof Seal PVC 15H	PVC Homogeneous	1.5mm [±0.1]	2.05/m	15 or 20/m	White or Gray
Roof Seal PVC 18H	PVC Homogeneous	1.8mm [±0.1]	2.05/m	15 or 20/m	White or Gray
Roof Seal PVC 20H	PVC Homogeneous	2.0mm [±0.1]	2.05/m	15 or 20/m	White or Gray

The **Roof Seal PVC [Model Type: L]** thickness & Fabric Backing, single layers, Synthetic roof waterproofing sheet membrane

Model Type	Reinforced Structural	Thickness	Width	Roll Length	Color
Roof Seal PVC 15L	PVC + Fabric Backing	1.5mm [±0.1]	2.05/m	15 or 20/m	White or Gray
Roof Seal PVC 18L	PVC + Fabric Backing	1.8mm [±0.1]	2.05/m	15 or 20/m	White or Gray
Roof Seal PVC 20L	PVC + Fabric Backing	2.0mm [±0.1]	2.05/m	15 or 20/m	White or Gray

**Packaging:** All 3 ranges type of Roof Seal PVC is standard rolls are wrap individually in foil



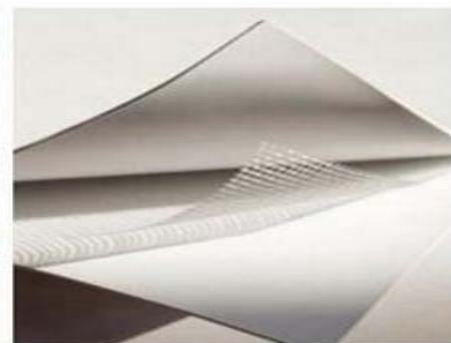
**PVC L**  
fabric backing



**PVC H**  
homogeneous



**PVC P**  
polyester fiber mesh reinforced

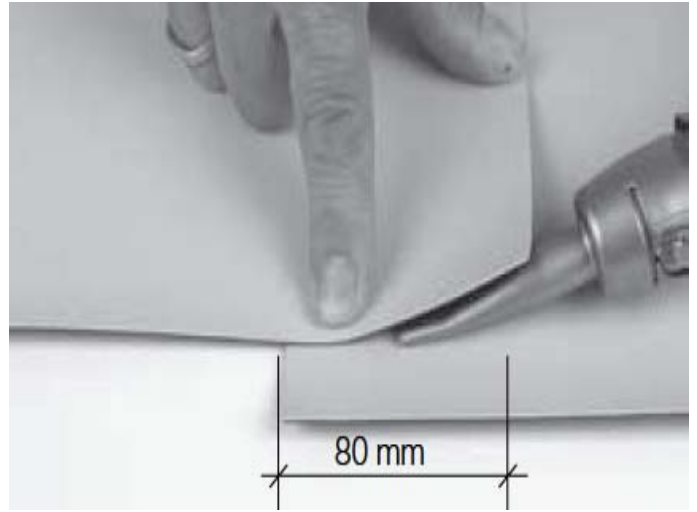


**3 Ranges of Roof Seal PVC, [Model: L – Fabric Backing], [Model: H – Homogenous] & [Model: P – Multi Layer with Polyester Fiber Mesh Reinforced]**

**Photos of Method & Installation**



**Applied of Epoxy Primer and Adhesive**



**Method of Overlap for Roof Seal PVC**



**Welded Machine Laying Installation Overlap**



**Method of Installation for Downpipe Hole**



**Method of Installation for Side Skirting**



**Method of Installation for Side Skirting**



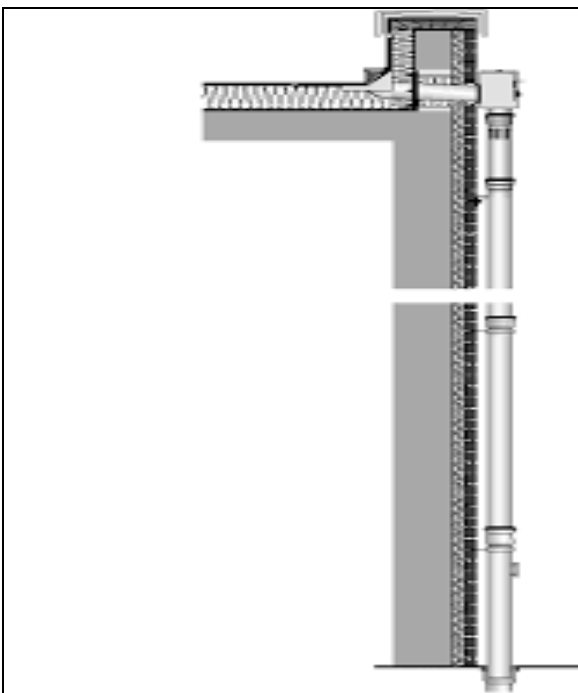
If Require of Roof Slab Expansion Joint Installation, the Recommended of Profile System



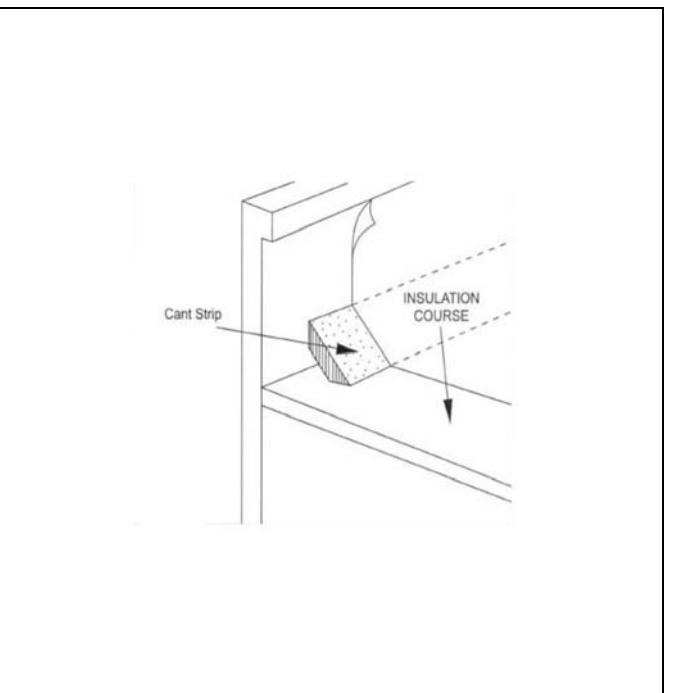
Install of Roof Seal PVC for Roof Downpipe



PVC Downpipe Profiles



Scupper Drain Details



Angel Filler Installation

**Mechanical Performance of Properties**
**Roof Seal PVC 15 or 18 or 20**

Product Declaration	EN 13956	
Effective Thickness	1.50 mm ( $\pm 0.10$ ) <b>Roof Seal PVC 15</b> 1.80 mm ( $\pm 0.10$ ) <b>Roof Seal PVC 18</b> 2.00 mm ( $\pm 0.10$ ) <b>Roof Seal PVC 20</b>	EN 1849-2
Weight Mass Per Unit Area	1.90 kg/m <sup>2</sup> ( $\pm 0.20$ ) <b>Roof Seal PVC 15</b> 2.28 kg/m <sup>2</sup> ( $\pm 0.20$ ) <b>Roof Seal PVC 18</b> 2.53 kg/m <sup>2</sup> ( $\pm 0.20$ ) <b>Roof Seal PVC 20</b>	EN 1849-2
Visible Defects	Pass	EN 1850-2
Length	20 m (-0%/+5%)	EN 1848-2
Width	2 m (-0.5%/+1%)	EN 1848-2
Straightness	$\leq 30$ mm	EN 1848-2
Flatness	$\leq 10$ mm	EN 1848-2
Water Tightness	Pass	EN 1928
External Fire Performance Part 1-4	$B_{ROOF}(t_1) < 20^\circ$	ENV 1187 EN 13501-5
Reaction to Fire	Class E	EN ISO 11925-2, classification to EN 13501-1
Joint Peel Resistance	$\geq 300$ N/50 mm	EN 12316-2
Joint Shear Resistance	$\geq 550$ N/50 mm	EN 12317-2
Water Vapour Transmission Properties	$\mu = 150'000$	EN 1931
Tensile Strength Longitudinal (md) <sup>1)</sup> Transversal (cmd) <sup>2)</sup>	$\geq 1000$ N/50 mm $\geq 900$ N/50 mm	EN 12311-2
Elongation		EN12311-2
Longitudinal (md) <sup>1)</sup> Transversal (cmd) <sup>2)</sup>	$\geq 15\%$ $\geq 15\%$	[Roof Seal PVC 15, 18 & 20 Model: P] [Roof Seal PVC 15, 18 & 20 Model: P]
Longitudinal (md) <sup>1)</sup> Transversal (cmd) <sup>2)</sup>	$\geq 200\%$ $\geq 180$	[Roof Seal PVC 15, 18 & 20 Model: H & L] [Roof Seal PVC 15, 18 & 20 Model: H & L]
Resistance to Impact Hard Substrate Soft Substrate	$\geq 700$ mm $\geq 900$ mm	EN 12691
Tear Strength Longitudinal (md) <sup>1)</sup> Transversal (cmd) <sup>2)</sup>	$\geq 300$ N $\geq 300$ N	EN 12310-2
Dimension Stability Longitudinal (md) <sup>1)</sup> Transversal (cmd) <sup>2)</sup>	$\leq  0.2  \%$ $\leq  0.1  \%$	EN 1107-2
Foldability at Low Temperature	$\leq -35^\circ\text{C}$	EN 495-5
UV Exposure	Pass (> 5000h / grade 0)	EN 1297

<sup>1)</sup>md = machine direction

<sup>2)</sup>cmd = cross machine direction

**Method of Preparation  
& Application**

- Step 01      **New Concrete Roof Slab & Existing Concrete Roof Slab** must cured at least 28 days and have with minimum Compressive Strength of 5,000 psi [35 Mpa]. Those cement slurry, plaster droppings, etc. must be remove, the surface of concrete free of oil, grease, and other loose particles and contamination's. Vacuum all dust and clean with water.
- Step 02      Apply layer of **Epo Bond Primer** by roller or spray, usually varies from 0.30-0.50/kg/m2 and allow drying for 12 hours.
- Note:          Mix **Epo Bond Primer** with low speed drill and paddle for approximately 2 minutes. Insure a thorough mix. Never mix the material more than thirty (30) minutes. Do not apply Epoxy when ambient or temperatures are below 50 °F
- Step 03      If the roof floor slab surfaces is un-even or void or holes, using the epoxy patch mortar, made it even and flat.

**Method Installation  
Procedure:**

According to the valid installation instructions of manufacturer for **Roof Seal PVC** types system for mechanically fastened roofs.

Fixing Method, linear fastening PVC Rod Bars:

Unroll the **Roof Seal PVC** membrane, overlap by 80 mm, weld immediately and fix to the substructure by means of PVC Rod Bar. The type of fastening will be advised by **LaMaCo** Company.

The spacing of the fasteners is in accordance with the project specific calculations made by **LaMaCo** Company. The perimeter piece ends must be secured with the **Roof Seal PVC** Load Distribution Plate.

For protection fasten a piece of **Roof Seal PVC** under bar end and plate. Leave a 10 mm clearance between bar ends. Do not fasten in hole nearest bar end. Cover the bar ends with a piece of **Roof Seal PVC** and weld.

After installation the TPO Rod Bar must immediately be made watertight with a **Roof Seal PVC** cover strip. At up stands and at all penetrations, the **Roof Seal PVC** membrane must be secured with a PVC Rod Bar.

The TPO T Welding Cord protects the **Roof Seal PVC** roof covering against tearing and peeling off by wind uplift.

Fixing Method, spot fastening (Epo Patch or Epo Putty): **Roof Seal PVC** must always be installed at right angles to the deck direction.

**Roof Seal PVC** is fixed by means of the Epo Patch or Epo Putty with fasteners and barbed washers along the marked line, 35 mm from the edge of the membrane. **Roof Seal PVC** is overlapped by 120 mm.

**Welding Method:**

Before welding the seams are prepared with **Roof Seal PVC**. Overlap seams are welded by electric hot air welding equipment, such as manual hot air welding machines and pressure rollers or automatic hot air welding machines with controlled hot air temperature.

**Recommended of  
Equipment:**

Leister Triac PID for manual welding plus for automatic welding parameters including temperature, machine speed, air flow, pressure and machine settings must be evaluated, adapted and checked on site according to the type of equipment and the climatic situation prior to welding. The effective width of welded overlaps by hot air should be minimum 50 mm. The seams must be mechanically tested with screw driver to ensure the integrity /completion of the weld. Any imperfections must be rectified by hot air welding.

**Notes on  
Installation Limits**

Installation works to be carried out only by **Roof Seal PVC**  
Registered Contractors for roofing.

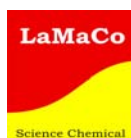
Temperature limits for the installation of the membrane:  
Substrate temperature: -30 °C min. / +60 °C max.  
Ambient temperature: -20 °C min. / +60 °C max.

Installation of some ancillary products, e.g. contact adhesives / cleaners is limited to temperatures above +5 °C. Please observe information given by Product Data Sheets. Special measures may be compulsory for installation below +5 °C ambient temperature due to safety requirements in accordance with national regulations.

**The General Term & Conditions**

All recommendations for use of our product, whether given by us in writing, verbally, or to be implied from the results of tests carried out by us are based on the current state of our knowledge. Notwithstanding any such recommendations the Buyer shall remain responsible for satisfying himself that the products as supplied by us are suitable for this intended process or purpose. Since we cannot control the application, use or processing of the products, we cannot accept responsibility therefore. The Buyer shall ensure that the intended use of the products will not infringe any third party's intellectual property rights. We warrant that our products are free from defects in accordance with and subject to our general conditions of supply.

The above mentioned details Specified key data are individually checked throughout, guarantee, and included in the certificates of Analysis (CoAs). & Typical key data are spot checked, the value are typical for the product and are indicated for information only. The values are not guaranteed or included in the CoAs.

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