

# ShaliUrethane<sup>®</sup> LHM Plus



Moisture Cured High Tensile Elastomeric PU Liquid Membrane

STP Limited

## Description

**ShaliUrethane<sup>®</sup> LHM Plus** is single component, solvent based, high tensile, moisture cured, modified Polyurethane elastomeric, hydrophobic, liquid membrane for waterproofing with high elongation. When applied, it forms a seamless monolithic membrane by reaction with atmospheric moisture.

## Approval/Standards

Conforms to ASTM C-836 and ASTM C-898.

## Product Information

<b>Form, Colour, Composition</b>	Black /Grey Polyurethane liquid
<b>Handling &amp; Storage</b>	Store in a cool dry clean place, at 5°C - 38°C in original sealed container. In the unlikely event of formation of an easily removable protective skin of <b>ShaliUrethane<sup>®</sup> LHM Plus</b> on top during storage, remove the film before applying the material.
<b>Packaging</b>	Available in 25 Kg drum
<b>Shelf Life</b>	9 Months from the date of manufacture when maintain in protected storage in original unopened sealed condition at 5 - 38°C.
<b>Handling Precautions</b>	As with all chemical products, care should be taken during use and storage to avoid contact with eyes mouth, skin and foodstuffs. Treat splashes to eyes and skin immediately. If accidentally ingested, seek immediate medical attention. Keep away from children and animals. Reseal containers after use.

## Physical Characteristics

Application	Brush / Roller / Airless Spray	Colour	Black/Grey
Tack free time, hrs. *	10-14	Final cure time, hrs.	36 - 48
Solid content, % by weight	90 ± 2	VOC Content, gm / L	115 ± 5
Swelling in water	Nil	Theoretical Coverage **, kg / m <sup>2</sup> / mm in 2 coats	1.60-1.65
Service temp, range, °C • Intermittent • Continuous	Upto +150 - 40 to +70	Chemical Stability	Resistant to most mild acids / alkalis

\* Varies with application thickness, substrate and ambient temperature

\*\* This coverage is based on application by roller onto a smooth surface in optimum conditions. Factors like surface porosity, temperature and application method can alter consumption.

## Technical Characteristics @ 27 °C, 55% RH

Elongation, %, 28 days	ASTM D 412	>400
Hardness, Shore A scale, 28 days	ASTM D 2240	60
Crack bridging, mm, thickness > 2mm	ASTM C 836	Upto 2
Adhesion in peel test (N)	ASTM C 836	>50 N
Adhesion to Concrete, N/mm <sup>2</sup> , 28 days	ASTM D 903	>2 (Concrete failure)
Tensile strength, MPa, 28 days Without Reinforcement	ASTM D 412	2.50 ± 0.20
Tensile strength, MPa, 28 days With Reinforcement	ASTM D 412	5.0 ± 1
Extension after heat aging, mm	ASTM C 836	6.4 with no cracking
Tear Resistance, KN/m	ASTM D 624	15
Recovery @300% Elongation, %	ASTM D 412	90±2
Water Vapour Transmission (1.0 mm thickness), g/m <sup>2</sup> /hr	ASTM E 96	0.65
Fire Resistance		Euroclass F
Water Permeability @ 5 bar Water Head Pressure, mm	BS EN 12390	NIL

## Field of Application

- Roof / Terraces / Podium
- Terrace garden

## Advantages

- Excellent Waterproofing Characteristics.
- High Crack Bridging.
- Monolithic and Seamless Membrane.
- Excellent adhesion to concrete.
- Resistant to Root Growth.
- High Durability & High Elongation Property.
- Easy Application and User Friendly.

## Application Methodology

### ➤ Surface Preparation

- Remove all loose gravel, dirt, oil, grease and foreign matter by jet of dry air and clean the surface mechanically or by grinding to make it smooth before application.
- Repair all cracks by cutting "V" groove and fill with PMC mortar prepared in the ratio of **ShaliCrete** : Cement : Sand (1 : 2 : 5).
- Correct honeycomb / other minor surface defects with PMC mortar using **ShaliSBR Latex** as the bond coat.
- Ensure provision of slope in the gradient of 1:100 towards drain by laying PCC admixed with integral waterproofing compound, **ShaliPlast IW** @ 200 ml / bag of cement preferably with galvanized chicken wire mesh.
- Provide fillet 75 mm x 75 mm coving made from PMC mortar as above, using **ShaliSBR Latex** as bond coat.
- Ensure that the moisture content in the prepared surface does not exceed 5% immediately before application of **ShaliUrethane<sup>®</sup> LHM Plus**.

### ➤ Material Preparation

- Skin formation may happen on the top of material during humid condition. In that event, cut skin from the periphery of the container and remove it.
- Stir **ShaliUrethane<sup>®</sup> LHM Plus** by a slow speed mixture fitted with a suitable mixing paddle to ensure a homogenous mix.
- After stirring, wait for the product to settle to let entrapped air escape.
- Use the entire material within 4 hours of opening the container.

### ➤ Waterproofing Application

- Prime the surface with
  - Single component PolyUrethane primer, **ShaliPrime PUM** @ 200 ml/ m<sup>2</sup> / **ShaliPrime WB** @ 200-250 gm/m<sup>2</sup>.
- Allow the primer to dry and check its moisture content (less than 5%) before applying **ShaliUrethane LHM Plus**.
- Apply 1<sup>st</sup> coat of **ShaliUrethane<sup>®</sup> LHM Plus** @ 800 gm / m<sup>2</sup> by brush / roller / airless spray while the primed surface is tacky. For faster and smoother application, apply with airless gun.
- Spread non-woven geo-textile or Glass Fiber Tissue of 45 GSM with overlaps of 50 mm in both directions when the surface is still tacky; this is optional, to be assessed as per site requirements to achieve higher mechanical properties.
- Allow 1<sup>st</sup> coat to dry for 10 - 12 hr. Check the surface moisture content again (should be less than 5%).
- Apply 2<sup>nd</sup> coat of **ShaliUrethane<sup>®</sup> LHM Plus** @ 800 gm / m<sup>2</sup> by brush / roller / airless spray.
- Ensure final curing time of 36 hrs before allowing / carrying out any further work.
- Extend waterproofing treatment up to 200 mm and terminate into groove on the parapet wall. Fill the groove with PMC mortar.
- In case of vertical application, protect the applied liquid membrane
  - By sprinkling sand @ 200 gm / m<sup>2</sup> over the final coating when the surface is still tacky to facilitate plastering, and 25 mm plaster admixed with **ShaliPlast IW** @ 200 ml / bag of cement.
- In case of horizontal **Trafficable** surface, protect the applied liquid membrane
  - Preferably with **ShaliProtek 2 AC PU TC** high abrasion resistance liquid coating which

- can take foot traffic, or
- Spread separation layer of 200 GSM geo-textile, **ShaliGeoText 200**, with overlap of 50 mm in both directions on fully cured waterproofed surface before laying protection screed, and then lay 50 mm plaster admixed with **ShaliPlast IW** @ 200 ml / bag of cement.
- In case of horizontal **non-trafficable** surface, protect the applied **ShaliUrethane<sup>®</sup> LHM Plus** with top coat of 500 microns aliphatic **ShaliUrethane LM** for better aesthetics. In that event, the base coat of **ShaliUrethane<sup>®</sup> LHM Plus** may be restricted to 1000 microns in two coats of 500 micron each.
- In case plastering is desired, sprinkle sand @ 200 gm / m<sup>2</sup> over the final **vertical** coating when the surface is still tacky to facilitate screeding. In other cases of vertical application, use ShaliTA 10 @ 900 gm per 25 kg bucket; in case of addition of ShaliTA 10, stir the compound thoroughly for 5 minutes to obtain homogenous mix.
- Conduct ponding test after 7 days of curing at ambient temperature.

#### ➤ **Precautions**

- Do not allow any movement over waterproofed area unless ponding is done and waterproofed area is protected as below.
- Do not open the containers until ready to use.
- It should be noted that **ShaliUrethane LHM** is aromatic polyurethane; therefore, as with all aromatics, over a period, colour change will occur if exposed to UV rays. This will not cause any negative effect on the physical properties of the product.

#### **Value base of product data**

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control and different test methods.

#### **Health and Safety information**

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent **Material Safety Data Sheet**.

- **This product contains Isocyanate.** Avoid contact with eyes and skin.
- Wear suitable protective clothing such as overalls, goggles, dust mask and gloves. Ensure that there is adequate ventilation in the area where the product is being applied.
- Do not breathe in vapour or spray mist.
- This product is flammable.
- Keep away from sources of ignition.
- In case of fire, blanket flames with foam, carbon dioxide or dry chemicals.
- Eye protection during application is recommended.
- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- In case of skin contact, wash with soap and plenty of water. Get medical attention if irritation develops or persists.

#### **Cleaning & Maintenance**

Clean all tools immediately after use with STP Thinner only. Do not allow the material to harden.



**STP Limited**  
*Enhancing Structures' Life*

### Product Range

- Waterproofing and Insulation ■ Road Surfacing
- Sealants and Additives ■ Pipeline Coating
- Protective / Anti-Corrosive Coating ■ Epoxy Flooring
- Grouts / Admixtures ■ RestoFix- Repair / Rehabilitation
- Other Construction Chemicals



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