

LEAKSEAL® Polyurethane 250 FR

Water based fire retardant polyurethane liquid applied elastomeric waterproofing membrane

LEAKSEAL® Polyurethane 250 FR is a one component, water-based hybrid polyurethane specially developed to produce a thick, seamless, fully adhered, durable, elastic waterproof coating applied for flat roof systems.

It is resistant to UV, weathering, chemical and mechanical stresses and reinforced provides excellent puncture resistance – this product meets the requirements of ETAG 005.

Intended Uses:

Designed as a liquid applied waterproofing membrane applied by roller, brush, or spray for waterproofing in both new construction and refurbishment projects preventing and stopping leaks.

Used for full surface waterproofing, small and large detailing, repairs, and flashings. LEAKSEAL® Polyurethane 250 FR is elastic from -20°C to +90°C making the system suitable for many application conditions.

To meet the requirements of ETAG 005 this coating is applied in combination with LEAKSEAL® PES Fleece Reinforcing Membrane with a defined system build up. For non-regulated requirements LEAKSEAL® Polyurethane 250 FR can be applied in thinner film thicknesses depending on requirements.

Used in many waterproofing applications:

- Specialty
 - Under tile waterproofing in wet areas, balconies & terraces
 - Polyurethane foam roofs
 - Gutters
- Rooftop
 - General waterproofing of flat or pitched roofs
 - Highly detailed and complex roofs with limited access
 - Refurbishment & of failing roof membranes (bituminous, metal or synthetic (TPO or PVC))
 - Maintenance of existing bituminous roofs
 - Suitable for both horizontal and vertical surfaces

Suitable substrates include concrete, cement screeds or rendering, exterior plywood, synthetic membranes such as PVC / TPO, bituminous membranes (mineral, silver/aluminium, sand/talc), metal roofs, pre-painted surfaces).

Properties:

- One component – ready to use.
- Highly Elastic and crack bridging.
- Easily re-coatable.
- Water based with no use of solvent, low odour health concerns.
- Solar reflective.
- High tensile strength and elongation >20°C.
- Low water swelling, no blistering on concrete or bitumen.
- Resistant to impact damage and foot traffic.
- Flame retardant.
- Excellent tensile strength and flexibility in cold and hot conditions.
- Very good flexibility retention after weathering.
- Outstanding exterior durability and UV resistance.
- Very good water resistance.
- Very good adhesive to various roofing substrates.
- High resistance to dirt pick-up thanks to high hardness.

Technical Data:

Composition	Water based polyurethane hybrid
Colour	White, cool grey & cool ivory
Pack Size	5 & 20 Lt
Density Comp. A kg / Lt	1.30
Volume Solids	52%
Drying time – min overcoating @ 25°C	Approx. 6 hours without reinforcing Approx. 24 hours with reinforcing
Rain resistant @ 25°C	Approx. 8 hours
Full Cure	Approx. 3 days
Method of Application	Brush, roller, or airless Spray
Application Temperature range min – max Relative Humidity Dew Point Substrate Moisture	15 - 30 °C Max 70% RH Min 3°C above dew point Max 5%
Storage	Store out of direct sunlight in dry conditions between 15°C and 25 °C
Shelf Life	12 months when stored as recommended in original un-opened containers
Clean Up Solvent	Water

Technical Performance Data:

Tensile Strength Initial (N/mm ²)	3.4
Tensile strength after thermal aging, 14d 80°C (N/mm ²)	4.5
Elongation Initial (%)	272
Elongation after thermal aging, 14d 80°C (%)	245
Water Swelling 14d (%)	8.9
Water Tightness 2d, 2.5 bar	Pass
Dynamic Indentation, 5.9J, 1000h QUV, -20°C	Pass
Ignitability (EN ISO 11925-2**, 15s)	Pass, no burning droplets
Service Temperature	-5°C to +80°C

** surface test with 3 parallel points deviating from standard

Further test reports available for:

- Water vapour permeability, water tightness,
- Resistance to: Wind Loads, Dynamic Indentation, Static indentations, Fatigue Movement, low and high temperature, heat aging, UV Aging, water ageing, wind loads.
- Tensile properties
- Effect of day joints

System – ETAG 005:

In all cases/project a written specification should be provided. Below is a typical guideline for LEAKSEAL® Polyurethane 250 FR system.

Roof waterproofing on concrete / mineral surfaces in new construction and refurbishment projects

- Build up:** LEAKSEAL® Polyurethane 250 FR applied in 2 coats and reinforced with LEAKSEAL® PES Fleece Reinforcing and sealed with one or two additional coats of LEAKSEAL® Polyurethane 250 FR
- Substrates:** Concrete, metal, wood, tiles
- Primers:** Refer to primer table below
- Reinforcing:** LEAKSEAL® PES Fleece Reinforcing is a polyester reinforcing fabric with needle punched holes for enhanced penetration and wetting of the fabric. Typically applied at areas of movement, irregular substrates, joints, cracks, seams, penetrations, and irregular details.

ETAG 005 System

Layer	Product	Thickness	Yield m ² / Lt	Yield Lt / m ²
Primer for mineral, cementitious substrates	Deep Penetrating Primer WB	50 µm	8.00	0.13
Primer for metal substrates	SpecNox Anti-Corrosive Primer	50 µm	10.00	0.10
1 st	LEAKSEAL® Polyurethane 250 FR	500 µm	1.00	1.00
2 nd	LEAKSEAL® Polyurethane 250 FR	400 µm	1.30	0.77
Reinforcing	LEAKSEAL® PES Fleece Reinforcing			
3 rd & 4 th	LEAKSEAL® Polyurethane 250 FR	500 µm	1.00	1.00

*Can be applied in 2 layers to achieve more uniform appearance. Fleece must be covered

Surface Preparation:

All products must be applied on pre-primed surfaces.

In general, the following guidelines for preparation should be adhered to

- The areas to be coated should be dry, firm, solid and free from dust, oil, fats and other contaminants.
- Laitance and loose particles must be removed thoroughly i.e. grinding / abrasive blast cleaning.
- Oils and fats, humidity can be removed by flame treating
- Substrate's moisture should not be higher than 5%

Mixing:

Prior to application container contents should be mixed well for 1 minute in order to achieve a homogeneous mixture. Take care not to entrain air during mixing.

Application:

LEAKSEAL® Polyurethane 250 FR can be applied by airless spray or roller. If using airless spray, a roller should still be used to “work” the coating into the reinforcing fabric.

1. Apply 1st coat of LEAKSEAL® Polyurethane 250 FR, allow to dry.
2. Apply 2nd coat of LEAKSEAL® Polyurethane 250 FR, while wet roll in the LEAKSEAL® PES Fleece Reinforcing and ensure that there are no bubbles or creases. Overlap the fleece minimum 5cm.
3. Apply 3rd thin coat right into the wet fleece to achieve required thickness, the entire application should happen while still wet. Repeat steps 2 and 3 until entire area is covered.
4. Allow to dry and apply 4th coat to cover entire area.

Caution:

- NOT suitable for substrate with rising moisture.
- Ensure temperature does not drop below the recommendation application conditions before fully cured.
- Do not allow temporary ponding between coats. Mop off any ponding water.
- Not suitable for pedestrian traffic.
- Surface should always be 3°C above the dew point.
- Application always requires a suitable primer.
- Always consult with technical department if unsure.
- Refer to product MSDS for health & safety prior to using products.
- Always wear safety clothing / protection. Respirators, eye protection and skin protection.

Systems:

Consult with Specialized Coating System for application specific recommendations.