OWL WATERPROOFING SOLUTIONS

LAVA 20 VERTICAL

Date: 01. 12. 2022 - V. 22
TECHNICAL DATA SHEET

Liquid Polyurethane Waterproofing Membrane

Product Description

Lava 20 Vertical is a high-quality, semi-viscous, liquid-applied polyurethane membrane offering highly durable elasticity. It is cold-applied and cures at ambient temperatures, providing long-lasting waterproofing.

Product Information

Chemical Base	Single component. Applied and hardened at room temperature. Solvent-containing composition. Cures through ground and air moisture Aromatic polyurethane.
Packaging	6 kg, 15 kg Metal pails
Colour	White/ Light Grey
Shelf Life	12 months from the date of production

Main Uses

Used for flashing in:

- → Roofs, terraces, verandas, and balconies.
- → Wet areas (under tiles) in spaces like bathrooms, kitchens, balconies, and utility rooms.
- → Pedestrian walkways and vehicle traffic decks.
- → Green roofs, planter boxes, and flowerbeds.
- → Existing bitumen felts, asphalt felts, TPO, and EPDM membranes.
- → PVC membranes and older acrylic coatings.
- → Protection for polyurethane foam insulation.

Waterproofing for:

- → Sloped roofs.

Advantages

- → Easy to apply using either a roller or airless spray.
- → Semi-viscous consistency ideal for sloped surfaces.
- → Formulated from pure elastomeric hydrophobic polyurethane resins, offering superior resistance to mechanical stress, chemicals, thermal changes, and environmental elements.
- → Creates a seamless, joint-free membrane when applied.
- → Resistant to standing water.
- → Withstands both freezing and high temperatures, maintaining mechanical properties from -30°C to +90°C.
- → Bridges cracks up to 3 mm, even at temperatures as low as -20°C.
- → Allows water vapor permeability, enabling the surface to breathe.
- → Delivers excellent resistance to weather and UV exposure.
- → Waterproofs old bitumen and asphalt felts by covering them, eliminating the need for removal before application.
- → Reflects sunlight effectively, contributing to thermal insulation.
- → Resistant to detergents, oils, seawater, and household chemicals.
- → Easily repairable in minutes if the membrane suffers mechanical damage.

OWL WATERPROOFING SOLUTIONS

Consumption

1.4-2.5 kg/m² applied over two or three layers.
This coverage is estimated for roller application on a smooth surface under ideal conditions. Factors such as surface porosity, temperature, and the application technique may affect the actual consumption.
When using polyester or matting reinforcement, the consumption will increase.

Certifications

European Technical Approval: ETA05/0197 DIBt
Usage categories as per ETAG005 for liquid-applied polyurethane waterproofing systems:

Working Life Expected	W3 (4.1 kg/m²)	25 Years
Climate Zone	M and S	All
Imposed Loads	P1 to P4	Very High (maximum load)
Roof Slopes	S1 to S4	<5° to >30°
Lowest Surface Temperature	TL4	-30° C
Highest Surface Temperature	TH4	+90° C
Reaction to Fire	Class E, Brooft4, DIN 4102-1, DIN 4102-7	EU Norm
Resistance to Wind Loads	≥ 50 kPa	EU Norm

Working Life Expected	W2 (2.4 kg/m²)	25 Years
Climate Zone	M and S	All
Imposed Loads	P1 to P3	High
Roof Slopes	S1 to S4	<5° to >30°
Lowest Surface Temperature	TL3	-20° C
Highest Surface Temperature	TH4	+90° C
Reaction to Fire	Class E, Brooft4, DIN 4102-1, DIN 4102-7	EU Norm
Resistance to Wind Loads	≥ 50 kPa	EU Norm

EN 1504-2: Products and systems for protecting and repairing concrete structures. Includes definitions, requirements, quality control, and conformity assessment. Part 2: Surface protection system for concrete (1.4 kg/m²).

EPD® CE
ENVIRONMENTAL PRODUCT DECLARATION

EN 14891: Liquid-applied waterproof products for use under ceramic tiles affixed with adhesives. Covers requirements, testing methods, conformity evaluation, classification, and designation (1.4 kg/m²).

EPD Certified.

OWL WATERPROOFING SOLUTIONS

Technical Data*

PROPERTY	RESULTS	TEST METHOD
Elongation at Break	600 %	ASTM D 412
Tensile Strength	> 4 N/ mm^2	ASTM D 412
Water Vapor Permeability (1.4 kg/m^2)	12.5 gr/ m^2/day	EN ISO 7783
Carbon Dioxide Permeability (1.4 kg/ m^2)	1.8 gr/ m^2/day	EN 1062-6
Water Permeability (1.4 kg/ m^2)	0.015 kg/ $m^2/h^{0.5}$	EN 1062-3
Resistance to Water Pressure	No Leak (1m water column, 24h)	DIN EN 1928
Adhesion to concrete	1.8 N/mm^2	EN 1542
Crack Bridging Ability (23°C)	4.3 mm	EN 14891
Crack Bridging Ability (-5°C)	3.5 mm	EN 14891
Crack Bridging Ability (-20°C)	3.3 mm	EN 14891
Hardness (Shore A Scale)	>65	ASTM D 2240 (15")
Thermal resistance (80 °C for 100 days)	Passed- No significant changes	EOTA TR-011
UV accelerated ageing, in the presence of moisture	Passed- No significant changes	EOTA TR-010
Resistance after water aging	Passed	EOTA TR-012
Hydrolysis (5% KOH, 7 days cycle)	No significant elastomeric change	Inhouse Lab
Service Temperature	-30° C to +90 ° C	Inhouse Lab
Shock Temperature (20 min)	200 ° C	Inhouse Lab
Rain Stability Time	3-4 hours	Conditions: 20 °C, 50% RH
Light Pedestrian Traffic Time	18-24 hours	Conditions: 20 °C, 50% RH
Final Curing Time	7 days	Conditions: 20 °C, 50% RH
Chemical Properties	Good resistance against acidic and alkali solutions (5%), detergents, seawater and oils.	

Application

Surface Preparation

Proper surface preparation is crucial for achieving the best finish and durability. Ensure the surface is clean, dry, and free from any contaminants that might impair the membrane's adhesion.

Moisture and Strength Requirements: Maximum surface moisture content should not exceed 5%. The substrate should have a compressive strength of at least 25 MPa and a cohesive bond strength of at least 1.5 MPa.

New Concrete Structures: Allow newly poured concrete to dry for a minimum of 28 days before application. Loose coatings, dirt, grease, oils, organic materials, and dust should be removed using a grinding machine. Smooth out any surface irregularities. Clear away all loose particles and dust completely.

Caution: Do not clean the surface with water.

Crack and Joint Repair

1. Properly sealing existing cracks and joints is essential for achieving long-lasting waterproofing. Clean the cracks of dust and other contaminants.
2. Prime the area with Lava 20 Fast Primer and allow 2-3 hours for it to dry.
3. Fill the cracks with Owl PU Mastic sealant.
4. Apply Lava 20 Vertical (200mm wide) over the cracks, cover it with a correctly cut piece of Polyester/

Matting and press it into place.

5. Saturate the fabric with enough Lava 20 Vertical until fully covered and allow 12 hours for curing.

Expansion and Control Joints

Ensure the proper sealing of expansion and control joints for an effective waterproofing result.

1. Clean the joints of dust, debris, or contaminants. If needed, cut the joints wider and deeper. The joint should have a depth of 10-15 mm, with a width-to-depth ratio of approximately 2:1.
2. Apply Owl PU Mastic at the base of the joint. Brush a 200mm wide stripe of Lava 20 Vertical inside and over the joint.
3. Insert Polyester/matting into the wet coating, pressing it deep into the joint. Saturate the fabric with more Lava 20 Vertical to cover it fully. Place a polyethylene cord into the joint, pressing it down onto the saturated fabric.
4. Fill the remaining space with Owl PU Mastic and leave the joint uncovered. Allow the joint to cure for 12-18 hours.

Priming

Different Surfaces:

→ Highly absorbent surfaces such as concrete, cement screed, or wood should be primed with Lava 20 Fast Primer or Owl Universal 2 Part Epoxy Primer.

→ Surfaces like bitumen or asphalt felts should be treated with Owl Universal 2 Part Epoxy Primer.

→ Non-absorbent surfaces such as metal, ceramic tiles, or old coatings should be primed using Lava 20 Fast Primer.

→ Bitumen asphalt felts and acrylic coatings should be primed with Owl Universal 2 Part Epoxy Primer.

→ For TPO, PP, and EPDM surfaces, use Lava 20 EPDM & TPO Primer.

→ PVC surfaces should be activated with Lava 20 Cleaner & PVC Primer.

Allow the primer to cure following the specific technical instructions.

Waterproofing Membrane Application

Stir Lava 20 Vertical thoroughly before application. Pour the product onto the primed surface and spread it evenly using a roller, brush, or squeegee. An airless spray can be used to reduce labour effort.

Reinforcement:

1. Always reinforce critical areas like wall-floor junctions, 90^{o} angles, chimneys, pipes, and waterspouts.
2. To do this, apply a cut-to-size piece of polyester/ matting on the still-wet Lava 20 Vertical, press it into the membrane, and then saturate it with another layer of Lava 20 Vertical.
3. For specific reinforcement instructions, contact our technical team. It is recommended to reinforce the entire surface using polyester/matting with 5-10 cm overlapping strips.

Additional Layers: After 12-18 hours (but no later than 48 hours), apply another coat of Lava 20 Vertical. For more demanding projects, a third coat may be necessary.

IMPORTANT: The ideal application and curing temperature are between 5°C and 35°C. Lower temperatures will slow curing, while higher temperatures will accelerate it.
High humidity may impact the final finish.

For demanding applications
In cases where thicker layers or enhanced aesthetic results are required, it is recommended to add up to 3% Lava 20 Catalyst, depending on temperature and humidity conditions. For applications exceeding 0.900 kg/m² in thickness, the addition of Lava 20 Catalyst is strongly recommended.

Finishing

- → If a color-stable and non-chalking surface is desired, apply one or two layers of Lava 20 Coloured Top Coat over Lava 20 Vertical. This top-coat is particularly necessary when a dark final color (e.g., red, grey, green) is preferred.
- → For heavy-duty, abrasion-resistant surfaces (e.g., public pedestrian decks, parking lots), apply two layers of Lava 20 Clear Top Coat with quartz. For specific top-coat application procedures, please refer to their technical instructions or contact our technical department.

IMPORTANT: Lava 20 Vertical and/or Lava 20 System can become slippery when wet. To prevent slipperiness on rainy days, sprinkle appropriate aggregates onto the wet coating to create an anti-slip surface. For more details, contact our technical department.

Safety Measures
Lava 20 Vertical contains isocyanates. Please refer to the manufacturer's supplied information and review the Safety Data Sheet. For professional use only.