Maris Polymers
POLYURETHANE SYSTEMS

TECHNICAL DATA SHEET
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MARISEAL® 250

Liquid-applied polyurethane waterproofing membrane

Product description

MARISEAL® 250 is a liquid-applied, highly permanent elastic, cold applied and cold curing, one component polyurethane membrane used for long-lasting waterproofing.
Cures by reaction with ground and air moisture.

Advantages

- Simple application (roller or airless spray).
- When applied forms seamless membrane without joints.
- Resistant to water.
- Resistant to frost.
- Maintains its mechanical properties over a temperature span of -30°C to +90°C.
- Crack-bridging up to 2mm, even at -10°C.
- Provides water vapor permeability.
- Full surface adherence without any additional anchoring.
- The waterproofed surface can be walked on.
- Even if the membrane gets damaged, it can be easily repaired locally within minutes.
- Low cost

Uses

- Waterproofing of Rooftops
- Waterproofing of Balconies and Terraces
- Waterproofing of Wet Areas (under-tile) in Bathrooms, Balconies, Kitchens, etc
- Protection of Polyurethane Foam Insulation
- Waterproofing of Flowerbeds and Planter Boxes
- Waterproofing and protection of Concrete constructions like Bridge-decks, Tunnels, etc.

Consumption

1,5 – 2,5 kg/m^2 applied in two or three layers.
We recommend applying the MARISEAL® 250, reinforced with the MARISEAL® Fabric.
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.

Colors

The MARISEAL® 250 is supplied in white, grey, red, black and green.

Certifications

The MARISEAL® 250 was tested by the German state testing institute for construction materials MPA-Braunschweig according the European Union Directive for liquid-applied roof waterproofing kits ETAG 005 and was found conforming.
The MARISEAL® 250 was certified by the German state Institute for construction techniques DIBt–Berlin with the European Technical Approval (ETA) and with the CE-mark and certification.

The MARISEAL® 250 was also tested and approved by various laboratories in different countries around the world.

Levels of use categories according to ETAG 005, for liquid applied PUR waterproofing kits.	
Working life :	W2
Climate Zone:	M
Imposed loads:	P1 to P4
Roof slopes:	S1 to S4
Lowest surface temperature:	TL3
Highest surface temperature:	TH3
Reaction to fire:	Class E
Resistance to wind loads	≥ 50 kPa

CE
ETA 05/0197
DIBt

Technical data

PROPERTY	RESULTS	TEST METHOD
Elongation at Break	900 ± 80 %	ASTM D 412
Tensile Strength	7,45 ± 0,30 N/ mm^2	ASTM D 412
Water Vapor Permeability	25,8 ± 4,4 gr/m^2/day	ISO 9932:91
Resistance to Water Pressure	No Leak (1m water column, 24h)	DIN EN 1928
Adhesion to concrete	>2,0 N/mm^2 (concrete surface failure)	ASTM D 903
Hardness (Shore A Scale)	65 ± 5	ASTM D 2240 (15")
Construction Material Fire class	B2	DIN 4102-1
Resistance to Sparks and Radiating Heat	Passed	DIN 4102-7
Rain Stability Time	4 hours	Conditions: 20°C, 50% RH
Light Pedestrian Traffic Time	12 hours	
Final Curing time	7 days	
Chemical Properties	Good resistance against acidic and alkali solutions (10%), detergents, seawater and oils.	

Application

Surface Preparation

Careful surface preparation is essential for optimum finish and durability.
The surface needs to be clean, dry and sound, free of any contamination, which may harmfully affect the adhesion of the membrane. Maximum moisture content should not exceed 5%. New concrete structures need to dry for at least 28 days. Old, loose coatings, dirt, fats, oils, organic substances and dust need to be removed by a grinding machine. Possible surface irregularities need to be smoothened. Any loose surface pieces and grinding dust need to be thoroughly removed.
WARNING: Do not wash surface with water!

Repair of cracks and joints:

The careful sealing of existing cracks and joints before the application is extremely important for long lasting waterproofing results.

- Clean concrete cracks and hairline cracks, of dust, residue or other contamination. Prime locally with the MARISEAL® 710 Primer and allow 2-3 hours to dry. Fill all prepared cracks with MARIFLEX® PU 30 sealant. Then apply a layer of MARISEAL® 250, 200mm wide centered over all cracks and while wet, cover with a correct cut stripe of the MARISEAL® Fabric. Press it to soak. Then saturate the MARISEAL® Fabric with enough MARISEAL® 250, until it is fully covered. Allow 12 hours to cure.
- Clean concrete expansion joints and control joints of dust, residue or other contamination. Widen and deepen joints (cut open) if necessary. The prepared movement joint should have a depth of 10-15 mm. The width:depth ratio of the movement joint should be at a rate of approx. 2:1.
  Apply some MARIFLEX® PU 30 Joint-Sealant on the bottom of the joint only. Then with a brush, apply a stripe layer of MARISEAL® 250, 200mm wide centered over and inside the joint. Place the MARISEAL® Fabric over the wet coating and with a suitable tool, press it deep inside the joint, until it is soaked and the joint is fully covered from the inside. Then fully saturate the fabric with enough MARISEAL® 250. Then place a polyethylene cord of the correct dimensions inside the joint and press it deep inside onto the saturated fabric. Fill the remaining free space of the joint with MARIFLEX® PU 30 sealant. Do not cover. Allow 12 hours to cure.

Priming

Prime absorbent surfaces like concrete, cement screed or wood with MARISEAL® 710 or with MARISEAL® AQUA COAT primer.
Prime surfaces like bitumen- and asphalt- felts with MARISEAL® 720 primer.
Prime non-absorbent surfaces like metal, ceramic tiles and old coatings with MARISEAL® AQUA COAT primer.
Allow the primer to cure according its technical instruction.

Waterproofing membrane

Stir well before using. Poor the MARISEAL® 250 onto the primed surface and lay it out by roller or brush, until all surface is covered. You can use airless spray allowing a considerable saving of manpower.
Reinforce always with the MARISEAL® Fabric at problem areas, like wall-floor connections, chimneys, pipes, waterspouts (siphon), etc. In order to do that, apply on the still wet MARISEAL® 250 a correct cut piece of MARISEAL® Fabric, press it to soak, and saturate again with enough MARISEAL® 250. For detailed application instructions with the MARISEAL® Fabric, contact our R+D department.
After 12 hours (not later than 36 hours) apply another layer of the MARISEAL®250. If desired apply a third layer of the MARISEAL®250.
RECOMMENDATION: We recommend reinforcement of the entire surface, with the MARISEAL® Fabric. Use 5-10cm stripe overlapping.
RECOMMENDATION: If the MARISEAL® 250 is applied without the Fabric reinforcement we recommend a three-layer application.
ATTENTION: Do not apply the MARISEAL® 250 over 0.6 mm thickness (dry film) per layer. For best results, the temperature during application and cure should be between 5°C and 35°C. Low temperatures retard cure while high temperature speed up curing. High humidity may affect the final finish.

Finishing

If a color stable and chalking-free surface is desired, apply one or two layers of the MARISEAL® 400 Top-Coat over the MARISEAL® 250. The application of the MARISEAL® 400 Top-Coat, is especially required, if a dark final color, is desired. (e.g. red, grey, green, etc.)
If a medium duty, wear resistant surface is desired (e.g. Balconies, Terraces), apply two layers of the MARISEAL® 410 Top-Coat.
If a heavy duty, abrasion resistant surface is desired (e.g. Car Parking), apply two layers of the MARISEAL® 420 Top-Coat.
For the several Top-Coats application procedures, please consult their technical instructions or contact our R+D Department.
WARNING: The MARISEAL® system is slippery when wet. In order to avoid slipperiness during wet days, sprinkle suitable aggregates onto the still wet coating to create an anti-slip surface. Please contact our R+D Dept. for more details.

Packaging

MARISEAL® 250 is supplied in 25 kg, 15 kg, 6 kg, 1kg metal pails and 250 kg Barrels. Pails should be stored in dry and cool rooms for up to 9 months. Protect the material against moisture and direct sunlight. Storage temperature: 5°-30°C. Products should remain in their original, unopened containers, bearing the manufacturers name, product designation, batch number and application precaution labels.

Safety measures

MARISEAL® 250 contains isocyanates. See information supplied by the manufacturer. Please study the Safety Data sheet.