

## MARISEAL® 250 AQUA

TECHNICAL DATA SHEET

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### Liquid-applied, polyurethane waterproofing membrane Water-Based

#### Product description

The MARISEAL® 250 AQUA is a liquid-applied, highly permanent elastic, cold applied and cold curing, water based, one component, polyurethane-based membrane used for long-lasting waterproofing.

The MARISEAL® 250 AQUA consists of flexible, water-based polyurethane resins (dispersion).

When the MARISEAL® 250 AQUA is applied, it forms a hydrophobic, 100% waterproofing, seamless, polyurethane membrane without joints or leak possibilities, that protect old and new structures efficient and on a long-term basis.

The MARISEAL® 250 AQUA is based on the innovative **PUD-Technology™** of MARIS POLYMERS SA.

#### 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 and protection of Concrete constructions like Bridge-decks, Tunnels, etc.

#### Advantages

- Simple application (roller or airless spray).
- Water Based.
- When applied forms seamless membrane without joints.
- Provides high levels of crack bridging.
- Maintains its mechanical properties over a temperature span of -40°C to +90°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 VOC content < 100g/l
- Low cost

#### Consumption

1,4 – 2 kg/m<sup>2</sup> applied in two or three layers.

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.

In case of MARISEAL FABRIC reinforcement, consumption increases.

#### Colors

The MARISEAL® 250 AQUA is supplied in white, grey, brown-red.

#### PUD Technology™: The Green revolution in Polyurethane



The MARISEAL® 250 AQUA is based on the innovative **PUD Technology™** of MARIS POLYMERS SA, which enables, long-chain polyurethane macromolecules to be incorporated in a water medium, forming stable dispersions.

The **PUD Technology™** based products, have the advantage that they offer the high level properties of solvent based products, in an ecological, consumer and environmentally friendly, water-based, low VOC, no ADR transport product.

The **PUD Technology™** is the entry to the Green revolution in Polyurethane based products.

#### Technical data\*

PROPERTY	RESULTS	TEST METHOD
Tensile Strength at 20°C	5 N/ mm <sup>2</sup>	ASTM D 412
E-Modulus at 20°C	1,5 N/mm <sup>2</sup>	ASTM D 412
Tensile Strength at -25°C	4,2 N/ mm <sup>2</sup>	ASTM D 412
E-Modulus at -25°C	1,3 N/mm <sup>2</sup>	ASTM D 412
Elongation at Break at 20°C	300 %	ASTM D 412
Tear Resistance	29,3 N/mm	ASTM D 412
Water Vapor Permeability	>15 gr/m <sup>2</sup> /day	ISO 9932:91
Resistance to Water Pressure	No Leak (1m water column, 24h)	DIN EN 1928
Adhesion to primed concrete	>1,5 N/mm <sup>2</sup> (concrete surface failure)	ASTM D 903
Hardness (Shore A Scale)	60	ASTM D 2240 (15")
Light Pedestrian Traffic Time	18-24 hours	Conditions: 20°C, 50% RH
Final Curing time (ponding test)	10 days	

### 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 8%. 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.

Make sure that the surface on which the waterproofing membrane will be applied has min 2% slope, as per European Construction Codes. If this is not the case, use cementitious mortar, resin mortar or other, to create the correct slope, before the application of the waterproofing coating.

#### 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® AQUA PRIMER and allow 2-3 hours to dry. Fill all prepared cracks with MARIFLEX® PU 30 sealant. Then apply a layer of MARISEAL® 250 AQUA, 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 AQUA, until it is fully covered. Allow 18 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 AQUA, 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 AQUA. 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 18 hours to cure.

#### Priming

Prime highly absorbent and brittle surfaces like concrete, cement screed, mortar, plaster, wood and non-absorbent surfaces like metal and ceramic tiles with MARISEAL® AQUA PRIMER. Allow the primer to cure according its technical instruction.

#### Waterproofing membrane

Stir well before using. Pour the MARISEAL® 250 AQUA onto the prepared and primed surface and lay it out by roller, brush or squeegee, until all surface is covered. You can use airless spray allowing a considerable saving of manpower.

ATTENTION: Reinforce always with the MARISEAL® FABRIC at problem areas, like wall-floor connections, pipes, chimneys, waterspouts (siphon), light domes, etc.

In order to do that, apply on the still wet MARISEAL® 250 AQUA a correct cut piece of MARISEAL® FABRIC, press it to soak, and saturate again with enough MARISEAL® 250 AQUA. For detailed application instructions with the MARISEAL® FABRIC, contact our R+D department. We recommend reinforcement of the entire surface, with the MARISEAL® Fabric. Use 5-10cm stripe overlapping.

After 18-36 hours apply another layer of the MARISEAL® 250 AQUA.

For better waterproofing results apply a third layer of the MARISEAL® 250 AQUA.

ATTENTION: Do not apply the MARISEAL® 250 AQUA in temperatures below 5°C or when dew, rain or frost is imminent in the next 48 hours. For best results, the temperature during application and cure should be between 5°C and 35°C. Low temperatures retard cure while high temperature speeds up curing. High humidity (fog or dew conditions) retard cure and affect the curing times and curing properties. Do not apply the MARISEAL® 250 AQUA over 0.6 mm thickness (dry film) per layer.

WARNING: The MARISEAL® 250 AQUA and/or 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 Department for more details.

#### Finishing

If a color stable, chalking-free and heavy duty, more abrasion resistant surface is desired, apply one or two layers of the MARISEAL® 400 AQUA Top-Coat over the MARISEAL® 250 AQUA. The application of the MARISEAL® 400 AQUA Top-Coat, is especially required, if a dark final color, is desired. (e.g. red, grey, green)

#### Packaging

MARISEAL® 250 AQUA pails should be stored in dry and cool rooms for up to 12 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. PROTECT FROM FROST.

#### Safety measures

Keep away from children. Do not use empty containers for food storage. See information supplied by the manufacturer. Please study the Safety Data sheet. PROFESSIONAL USE ONLY

Our technical advice for use, whether verbal, written or in tests, is given in good faith and reflect the current level of knowledge and experience with our products. When using our products, a detailed object-related and qualified inspection is required in each individual case in order to determine whether the product and /or application technology in question meets the specific requirements and purposes. We may guarantee only that our products are compliant with their technical specification; correct application of our products therefore falls entirely within your scope of liability and Users are responsible, in any case, for complying with local legislation and for obtaining any required approvals or authorizations, when necessary, either for their purchase and/or for their use. Values in this technical data sheet are given as examples and may not be regarded as specifications. For product specifications contact our R+D department. The new edition of the technical data sheet supersedes the previous technical information and renders it invalid. It is therefore necessary that you always have to hand the current code of practice.

\* All values represent typical values and are not part of the product specification. The applied coating might yellow and/or fade upon UV exposure.