

Method Statement MARISEAL® SYSTEM

Wet Areas Waterproofing

Scope:

Method statement for the application of the **MARISEAL® SYSTEM**, the liquid-applied polyurethane waterproofing system, for use on wet area surfaces (concealed under tiling).

The information contained herein and any other advice are given in good faith based on Maris Polymers SA current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Maris Polymers SA recommendations. The information only applies to the application(s) and product(s) expressly referred to herein. In case of changes in the parameters of the application, such as changes in substrates etc., or in case of a different application, consult Maris Polymers SA Technical Service prior to using Maris Polymers products. The information contained herein does not relieve the user of the products from testing them for the intended application and purpose. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the Product Data Sheet for the product concerned, copies of which will be supplied on request.

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1. Products and Description

1.1 Primers

MARISEAL 710:

MARISEAL® 710 is a transparent, rigid, deep penetrating, one component, quick drying polyurethane primer. Solvent-based.

Used as a primer in waterproofing and sealing applications on absorbent surfaces like Concrete, Mortar, Plaster, Wood, etc. Cures by reaction with ground and air moisture.

MARISEAL AQUA PRIMER:

MARISEAL® AQUA PRIMER is a transparent, rigid, two component epoxy primer. Water-based.

Used as a universal primer in waterproofing, sealing and floor coating applications on absorbent and non-absorbent surfaces like Concrete, various Metals, Asphalt, Ceramic Tiles, Stone, old coatings. Cures by reaction (cross linking) of the two components.

MARISEAL 750:

MARISEAL® 750 is a transparent, rigid, two component epoxy primer. Solvent free.

Used as a special primer in waterproofing, sealing and floor coating applications on absorbent and non-absorbent surfaces like Concrete, various Metals, Asphalt, Ceramic Tiles, Stone, old coatings. Cures by reaction (cross linking) of the two components.

Additional advantage is that it can be used in combination with Silica Sand or Silica Powder to produce resin mortar or resin slurry for levelling or filling applications as a scratch coat.

1.2 Liquid Waterproofing Membrane

MARISEAL 270:

MARISEAL® 270 is a premium, liquid-applied, highly permanent elastic, cold applied and cold curing, one component polyurethane membrane used for long-lasting waterproofing.

The MARISEAL® 270 is based on pure elastomeric hydrophobic polyurethane resins without the addition of bitumen/asphalt, which result in excellent mechanical, chemical, thermal and natural element resistance properties. Cures by reaction with ground and air moisture.

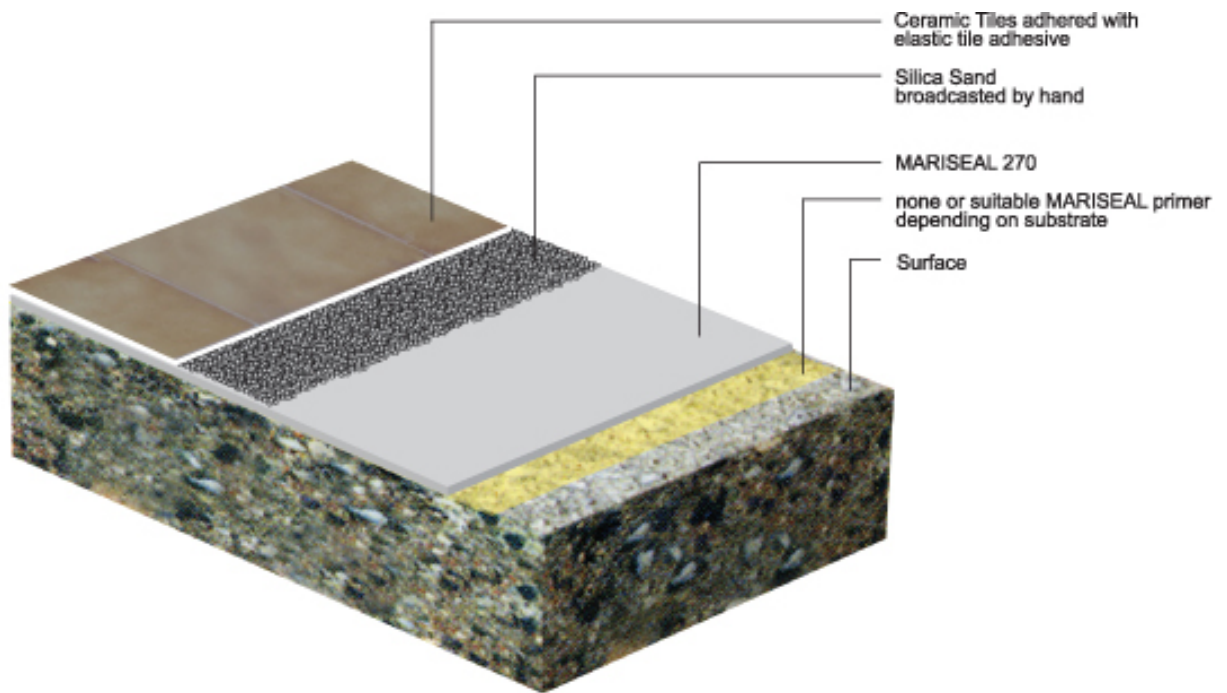
1.3 Silica Sand

The cornsize of the oven-dried Silica Sand to be used as an adhesion bridge between the MARISEAL 270 and the tile adhesive is recommended to be 0,8-1,2 mm.

2. System Build-Up

MARISEAL SYSTEM

Liquid polyurethane waterproofing system, for use in wet areas (under tile application)



Coating Stage	Product	Consumption
Primer	none or MARISEAL 710 or MARISEAL AQUA-PRIMER or MARISEAL 750	none or 0,2 - 0,4 kg/m ² depending on surface porosity and/or surface irregularities
Waterproofing Membrane	MARISEAL 270 reinforced locally with the MARISEAL FABRIC on details like flashings, wall-floor connections, pipe outlets, waterspouts, etc.	1,2 - 1,5 kg/m ²
Silica Sand	Silica Sand	1,0 - 2,0 kg/m ² (full saturation)

3. Substrate Requirements

3.1 Pull off and compressive strength

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.

If in doubt, apply a test area first.

3.2 Moisture content

Prior to application, confirm substrate moisture content, relative humidity and dew point. Use Tramex moisture meter.

There must be no rising moisture according to ASTM D 4263 (Polyethylene sheet test)

3.3 Ambient and surface temperature

Ambient and Surface temperature:

- Min. +5°C
- Max. +40°C

Beware of condensation! The substrate must be at least 3°C above dew point.



4. Substrate 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.

Old coatings, construction residues, dirt, fats, oils, organic substances and dust need to be removed using abrasive cleaning (grinding or blast cleaning). Possible surface irregularities and/or high spots need to be smoothed. Any loose surface pieces and grinding dust need to be thoroughly removed, preferably by brush and/or vacuum.

Substrates, especially concrete substrates must be prepared mechanically using abrasive equipment to remove cement laitance and achieve a profiled open-pores surface.

Substrate defects, such as cracks, blow holes and voids must be repaired prior to application using suitable products.

5. Primer:

No primer is necessary on concrete substrates with compressive strength of at least 25MPa and cohesive bond strength of at least 1.5MPa.

For brittle and absorbent substrates use the MARISEAL 710 or MARISEAL AQUA PRIMER. Make sure that a continuous, pore free coat covers the substrate. If necessary (for very brittle and/or absorbent substrates, apply two priming coats.

If the surface is full of cracks, blow holes, voids that need to be filled prior to application, and/or if the surface needs to be leveled prior to application we recommend to apply a scratch coat by using the MARISEAL 750 primer with the addition of silica sand or silica powder.

5.1. Mixing of primer:

The MARISEAL 710 as it is a one component product, does not need mixing.

The MARISEAL® AQUA-PRIMER Component A and Component B should be mixed by low speed mechanical stirrer, according to the stipulated mixing ratio, for about 3-5 min. Leave mixed product for 10 minutes to rest. Then dilute mixture with 15-25% of clean water, to regulate viscosity.

The MARISEAL® 750 Component A and Component B should be mixed by low speed mechanical stirrer, according to the stipulated mixing ratio, for about 3-5 min. Leave mixed product for another 5 minutes to rest before application.

ATTENTION: The mixing of the components in two component products has to be effected very thoroughly, especially on the walls and bottom of the pail until the mixture becomes fully homogeneous.

5.2. Application of primer:

Make sure, that all substrate requirements are met, such as temperature, moisture content of the prepared substrate etc.

Apply the MARISEAL 710, MARISEAL AQUA-PRIMER or MARISEAL 750 by roller, taking care to ensure good wetting of the substrate but avoiding puddles on the surface.

Clean all tools and application equipment with MARISOLV 9000 immediately after use. Hardened and / or cured material can only be removed mechanically.

5.3. Application of scratch coat (optional and in specific cases only):

The product to be used as a scratch coat is the the MARISEAL 750 mixed with silica sand (cornsize 0,1-0,3mm) or silica powder (cornsize 150-200µm) at a mixing ratio of 1:1 to 1:3 pbw, depending on the substrate to be filled / leveled.

Pour the mixture onto the floor and then spread it evenly using a flat blade trowel or a rubber squeegee.

Clean all tools and application equipment with MARISOLV 9000 immediately after use. Hardened and / or cured material can only be removed mechanically.

The total consumption of the scratch coat depends on the substrate to be filled / leveled.

6. 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® 270, 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® 270, until it is fully covered. Allow 12-18 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® 270, 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® 270. 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 12-18 hours to cure.

7. Waterproofing of Details:

At difficult details and problem areas, like wall-floor connections, wall-wall connections, 90° angles, pipes, faucets, waterspouts (siphon), etc reinforce the MARISEAL® 270 always with the MARISEAL® Fabric.

In order to do that, apply on the still wet MARISEAL® 270 a correct cut piece of MARISEAL® Fabric, press it to soak, and saturate again with enough MARISEAL® 270. For detailed application instructions with the MARISEAL® Fabric, contact our R+D department.

8. Application of Liquid Waterproofing Membrane:

Stir the MARISEAL® 270 well before application.

- Poor the MARISEAL® 270 onto the primed surface and lay it out by roller or brush, at a consumption of 0,6 - 0,7 kg/m².
- After 12-18 hours (not later than 48 hours) apply a second layer of the MARISEAL® 270, by roller or brush, at a consumption of 0,6 - 0,7 kg/m².
- Only if judged necessary, after 12-18 hours (not later than 48 hours) apply a third layer of the MARISEAL® 270, by roller or brush, at a consumption of 0,6 - 0,7 kg/m².

On the last layer and while still wet, broadcast enough oven-dry Silica Sand (cornsize 0,8-1,2mm) until full saturation.

RECOMMENDATION: For surfaces with lots of cracks we recommend reinforcement of the entire surface, with the MARISEAL® Fabric. Use 5-10cm stripe overlapping.

ATTENTION: Do not apply the MARISEAL® 270 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.

9. Application of Tile Adhesive on the waterproofed surface:

For best results of the placement of the ceramic tiles use an elastic, cementitious, two component tile adhesive.

10. Maintenance

If covered with ceramic tiles, no maintenance is possible und thus necessary.

11. Additional Recommendation

Read the Products Technical Data Sheets(TDS) carefully.

12. Health and Safety Recommendations

Ensure sufficient ventilation during application. Wear proper safety equipment (gloves, eye goggles, safety boots and protective clothes) during application.

For more details, refer to Material Safety Data Sheets (available upon request).

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