Technical Data Sheet AR 100 X
Ver. 5.0 May 2021

# SiMP Coat AR 100 X

## One-part SiMP Aria Polymer waterproofing topcoat membrane. Breathable, provides water and air barrier. Free of bitumen, solvent and isocyanates

## DESCRIPTION

SiMP Coat AR 100 X is a premium, liquid and cold applied, one-part, SiMP – Silyl Modified Polymer topcoat membrane. It cures by reaction with ambient moisture to form a strong protective and self-leveling base coat. SiMP Coat AR 100 X provides water vapor permeability, allowing the surface to breathe.

**Certified according to:**
EN 1504-2:2005
ASTM E1980-11

**Compliant to:**
LEED iEQc 4.1; SCAQMD Rule 1168; BAAQMD Reg 8 Rule 51

## AREAS OF APPLICATION

Traditional inclined roofs: shingles, tiles, stones. Industrial metal roofs curved or flexible surface metal and plastic roofs and coverings, flat concrete roofs and terraces. Protection from CO2 and life cycle extension of concrete structures according to EN 1062-6. Cost efficient life cycle extension of failing roofs in general from rust, degradation. Protection of polyurethane foam, insulation panels. Waterproofing of wet areas (under-tile) in bathrooms, kitchens, balconies, auxiliary rooms. Gutters and downspout repair, protection of masonry and vertical surfaces according to EN 1542, waterproofing in new or existing concrete floor slabs and roofs. Cool roof applications according to ASTM E1980-11 with high Solar Reflection Index – SRI.
Not suitable for: tanks, contact with drinking water, areas under constant immersion, asphalted bituminous surfaces (recently applied).

## FEATURES

- One component, ready to use: cure starts from adhesion surface and external surface
- Environmentally friendly – free of bitumen, isocyanates and solvents: no smell.
- SiMP aliphatic hybrid polymer: totally bubble-free in the surface and the body
- Does not dissolve in water after curing like water-based membranes
- Neutral curing, does not stain, corrode or affect sensible materials like metal, concrete etc.
- Liquid: easy to apply with professional or simple tools, like spatula, brush or roller
- Cold applied: in any situation and any climate
- Full surface adhesion and seamless covering, even on curved surfaces
- In combination with non-woven fabric is suitable to cover details, corners, edges
- Bonds and cures in humid weather and on damp substrates



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- Short rain stability time: skin forms after 4 hours and self-protect from rain showers.
- Short curing time for short-time application
- Same day application: does not need after- application finishing or reprise
- Provides water vapor permeability, allowing the surface to breathe
- Compatible with most building materials
- Easy to repair in case of damage
- Paintable

## TECHNICAL DATA

| | |
|---|---|
| **Appearance** | Semi-liquid paste |
| **Color** | Grey, white |
| **Chemical nature** | SiMP - Silyl Modified Polymer |
| **Curing Mechanism** | Moisture-curing |
| **Hardness Shore A** (DIN 53505) | ca. 60 |
| **Density** [g/cm³] (NPT method 06) (23°C and 50% RH) | ca. 1.19 |
| **Skin time** [min] (NPT Method 17) (23°C and 50% RH) | ca. 60 |
| **Elastic modulus at 100%** [N/mm²] (ISO 37 DIN 53504) | ca. 5.5 |
| **Tensile strength** [N/mm²] (ISO 37 DIN 53504) | ca. 6.0 |
| **Elongation at break** [%] (ISO 37 DIN 53504) | ca. 110 |
| **Tear propagation resistance** [N/mm] (ISO 34-1) | ca. 4.8 |
| **Water vapour permeability WVT** [g/hm²] (DIN 52615) | < 0.31 |
| **Solar direct reflectance*** (ASTM E1980-11) | 0.818 |
| **Thermal emissivity*** (ASTM E1980-11) | 0.941 |
| **Solar Reflection Index (SRI)*** (ASTM E1980-11) | 101.3 |
| **Application temperature** [°C] | From +5 to +40 |
| **Temperature Resistance** [°C] | From -40 to +100 |



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## APPLICATION

While preparing the application, please always make sure that the substrate is sufficiently clean. If present, joints and voids need filling and sealing with SiMP-Seal sealant. If present, critical surface parts like cracks, expansion joints, and parts that undergo severe stress need the use of a non-woven fabric.

Necessary tools:

- Cleaning equipment (broom, vacuum cleaner)
- Scraper with rubber handle
- Painter ‘s masking tape, gloves, wipes, tool solvent
- Applicator for cartridge
- Spatula, wide or narrow, with teeth
- Quartz sand in a mix of 0,06 – 0,45 mm grain size

Weather and temperatures: use product stored from +15°C to +25°C with processing temperature between +5°C and +35°C. Please consider that at substrate and processing temperatures of about 35°C the product may flow away from vertical surfaces. While planning the job always check weather forecast so during application and curing no rain precipitation may occur for at least 4 hours. Nevertheless, if rain occurs after 4 hours from coat application, skin has safely formed and the product will not be washed away.

Surface appearance and preparation: surfaces must be clean, dry, free of water, oil, grease, mould releasing agents or rust and of sound quality. As a rule, the substrates must be prepared in accordance with NPT guidelines; guidance regarding adhesion on specific surfaces may be obtained by submitting substrate samples for analysis to our Laboratories. Remove all loose particles or residues with a jet of compressed air, sandpaper or hard brush. Do not apply on edgy or sharp points. Possible surface irregularities need to be smoothened. A good cleaning is essential for a good adhesion. Always pre-test substrates. On many clean substrates a good adhesion can be achieved without adhesion promoter. However, it should always be tested.

Mineral and porous substrates such as concrete, asbestos cement, brick: the substrate must be sound, not crumbling. Dust, dirt and loose particles must be thoroughly removed (broom, vacuum cleaner, shot blasting, grinding, etc.). If necessary, the surface should be wiped wet. Permanently wet surfaces must be dried before application. Maximum moisture content should not exceed 5%. New concrete structures need to dry for at least 28 days.

Joints, details and cracks preparation: the careful sealing of existing cracks and movement and connection joints before the application is extremely important for long lasting waterproofing results. Fill all cracks with a sealant from our SiMP-Seal range. If necessary, protect the sealed cracks with non-woven fabric saturated with SiMP Coat AR 100 X, applied even wet on wet on the sealed joint. To avoid three-sided adhesion and to achieve a suitable dimensioning the joints must be backfilled using closed cell backer rod. Smoothen SiMP-Seal within its skin time using a spatula. Do not use smoothing agent, this may affect the adhesion between SiMP-Seal and SiMP Coat AR 100 X negatively. In particularly crack-prone or other problem areas, like wall-floor connections, 90° angles, chimneys, pipes and waterspouts (siphon) the insertion of a non-woven fabric



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soaked and saturated in SiMP Coat AR 100 X to be gently pressed in the first wet layer immediately after its application is recommended. After at least 4h and no later than 48h the second layer can be applied.

Application on the surface: SiMP Coat AR 100 X is ready for use and can be applied by roller, brush or trowel directly from a pail. In this case make sure that no dirt is brought into the container. Mask off the area or details using painter's masking tape. Finish the coat by removing the masking tape. After waiting at least 4 hours and no more than 48 hours the second layer can be applied in the same manner as the first coat. If using the non-woven fabric insert, use enough product to cover the fabric that should no longer be visible at the surface.

## TOPCOAT APPLICATION

UV and abrasion resistance for exposed surfaces can be reached by combining SiMP Coat 25 basecoat with SiMP Coat AR 100 X topcoat or other equivalent and compatible systems. A multilayer waterproofing design grants maximum UV resistance and medium to heavy pedestrian traffic. Compatibility test must be carried on before application.

Topping off the wet layer is possible by sprinkling on approx. 2-3 kg per square meter of quartz sand in a mix of 0.06 – 0,45 mm grain size, creating a hard covering shell. Quartz sand topping is strongly recommended in demanding applications when long lasting service life is expected (more than 2 years) or when high UV resistance and sun reflectivity is required, like in tropical climates.

SiMP Coat AR 100 X may be over-painted, however due to the large number of paints and varnishes available, a compatibility test must be carried on before application. The drying time of alkyd resin-based paint may increase. SiMP Coat AR 100 X may be also colored with paint additives mixing it in a pail just before application. Stirring is necessary and maximum precaution should be taken for not include air in the body, creating bubbles and discontinuity problems. A compatibility test must be carried on before application.

## CONSUMPTION GUIDE

These are the minimum recommended consumes, to reach the thickness for the material to be effective:

Without fabric insert:

- Basecoat 1st Layer: ca. 1 to 1,5 kg/m$^2$ SiMP Coat 25 gives a film thickness of approx. 1mm.
- Topcoat 2nd Layer: ca. 0,5 to 0,7 kg/m$^2$ SiMP Coat AR 100 X

With fabric insert:

- Basecoat 1st Layer: ca. 2,5 kg/m$^2$ SiMP Coat 25 so that the fabric is completely soaked.
- Topcoat 2nd Layer: ca. 0,5 to 0,7 kg/m$^2$ SiMP Coat AR 100 X

Surface finishing with quartz sand topping may require an extra layer of 0,3 to 0,5 kg/m$^2$



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## CLEANING OF EQUIPMENT AND PERSONAL PROTECTIVE MEASURES

Clean the tools used with acetone or solvent. When the adhesive has not yet hardened, it can be removed using paper or a cloth. Once hardened, the product can only be removed mechanically. Avoid skin contact by using latex, rubber or polyethylene gloves. If it comes in contact with the skin, remove immediately and wash with soap and water.

## PACKAGING

Alu bags – 2x5 kg in a pail

## STORAGE AND SHELF LIFE

SiMP Coat AR 100 X can be stored for 12 months in its original packaging (unopened container) between 10°C and 25°C in a cool, dry place. The storage temperature should not exceed 25°C for extended periods of time. Keep away from wet areas, direct sunlight and heat sources.

## GENERAL INFORMATION

The information contained in this technical data sheet is to the best of our knowledge correct, being based on our knowledge and experience to date and cannot be used as a guarantee, due to the various different materials present on the market and the fact that the application conditions are not under our direct control and supervision. NPT srl, however, guarantees constant product quality. NPT srl, has the right to modify or up-date this technical data sheet according to requirements. Customers are kindly requested to verify that they are in possession of the latest version.

ALWAYS CONSULT THE MATERIAL SAFETY DATA SHEET BEFORE USING THE PRODUCT



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