



# Sopro ZR 618

Rapid-drying, reactive, two-component, bitumen-free waterproof membrane



Flexible, high-coverage, rapid-drying, reactive, two-component, cementitious waterproof membrane. For waterproofing normal, recessed and access balconies to DIN 18531 Part 5, for waterproofing elements in contact with soil to DIN 18533 Part 3 and for waterproofing tanks and basins to DIN 18533 Part 3.

- For walls and floors, indoors and outdoors
- Rainproof after only approx. 3 hours
- Highly flexible, crack-bridging after only approx. 6 hours
- Withstands 2.5 bar water pressure after only approx. 6 hours
- Backfilling possible after only approx. 6 hours
- Also suitable for application to cold and slightly damp substrates
- Certified low-temperature flexibility down to -20°C: Class CM02P to DIN EN 14891
- For installation of stepped and L-shaped damp-proof courses in cavity walls
- Water-vapour-permeable, UV-resistant, overcoatable and suitable as plastering/rendering background
- Visual drying control through colour change
- For brush, roller, trowel and spray application
- Low-chromate to Regulation (EC) No 1907/2006, Annex XVII

## Use

For waterproofing elements in contact with ground to DIN 18533 for water action classes W1-E "Ground moisture and water without hydrostatic pressure" and W4-E "Splash water acting on plinths and capillary water in and below buried walls" (crack class R1-E and space use classes RN1-E to RN2-E, crack class R2-E substrates as so-called "special", i.e. non-standardized, construction). Water action classes W2.1-E "Moderate water pressure action" and W3-E "Water without hydrostatic pressure acting on buried suspended slabs" based on DIN 18533. Also for application to existing bitumen waterproofings and tar coatings, for bonding insulation, drainage and protective boards, for bonding and sealing at light well junctions.

For installation of waterproof membranes in tanks and pools (e.g. swimming pools, underground water reservoirs) to DIN 18535 Part 3 for water action classes W1-B and W2-B "Up to 10 m water head" (equivalent to Moisture Exposure Class B to Construction Products List). For waterproofing process water tanks, fountains and planters, and in landscape architecture. For waterproofing normal, recessed and access balconies to DIN 18531 Part 5.

## Suitable substrates

Concrete, lightweight concrete; foundations; existing bitumen waterproofings; ground slabs; cement and lime/cement renders, renders made from masonry cement, plane, flush-jointed masonry built from clay units, calcium silicate units, slag blocks and cellular blocks; aerated concrete; composite masonry; smooth off-form concrete surfaces.

## Mixing ratio

10 kg powder Component A : 10 kg liquid Component B

**Coat thickness/  
consumption rate**

Coat thicknesses after 2-coat application in accordance with good practice:

| Water action classes                      | Min. dry coat thickness | Min. wet coat thickness | Consumption rate per mm dry coat thickness |
|---|-------------------------|-------------------------|--|
| W1-E, W2.1-E, W3-E, W4-E                  | 2 mm                    | 2.2 mm                  | 1.2 kg/m <sup>2</sup>                      |
| W1-B to W2-B                              | 2 mm                    | 2.2 mm                  | 1.2 kg/m <sup>2</sup>                      |
| DIN 18531 Part 5                          | 2 mm                    | 2.2 mm                  | 1.2 kg/m <sup>2</sup>                      |
| Skim coat                                 | –                       | –                       | 1–2 kg/m <sup>2</sup>                      |
| Bonding of insulation and drainage boards | –                       | –                       | 1–2 kg/m <sup>2</sup>                      |

In compliance with good practice, mineral sealing slurry shall be applied in at least two coats (Sopro recommends 3rd waterproofing coat for underwater applications).

Stated consumption rates are minimum values. Separate, good-practice evening out of substrate, e.g. through application of a skim coat, is a prerequisite. Under DIN standards, an extra coat thickness of 25% is required for wet coat thickness.

**Rain resistance**

Approx. 3 hours per coat

**Backfilling**

After approx. 6 hours

**Resistance to water pressure**

2.5 bar after approx. 6 hours

**Working life**

Approx. 40 min

**Application temperature**

From +5 °C to approx. +25 °C (substrate, air, material)

**Shelf life**

12 months, subject to storage on pallet in dry, frost-free conditions in original unopened containers. Do not store liquid component at temperatures above +30 °C.

**Packaging**

20 kg combi pack, 9 kg combi pack

**Substrate preparation**

Substrate preparation shall comply with good practice.

Any laitance shall be mechanically removed. This specifically applies to supporting concrete base and end surfaces, e.g. for facing masonry assemblies.

Substrate shall be strong, dimensionally stable and free from wide cracks and adhesion-impairing substances. Where no primer is used, adequately pre-wet cementitious substrates to ensure that they are slightly damp when coating is applied. High-suction substrates should be pretreated with Sopro GD 749 primer. All relevant guidelines, recommendations and good-practice codes shall apply.

As structural waterproofing/tanking membrane: Open end joints and joints/hollows (e.g. in masonry, cellular brickwork/blockwork) up to 5 mm may be levelled out by means of Sopro ZR 618 skim coat.

Fill joints  $\geq$  5 mm using Sopro RAM 3 454 renovation and levelling mortar. Substrate shall be free from any adhesion-impairing substances, e.g. oil, grease, dust or release agent residue. Masonry surfaces shall be flush-jointed. Arrises and internal angles shall be rounded (4–6 cm radius).

Hack away projecting mortar residue and even out any fins or sharp irregularities.

When repairing existing waterproof bitumen coatings, start by applying Sopro ZR 618 skim coat.

When this has fully dried, apply membrane in at least two coats of Sopro ZR 618.

## Application

Waterproofing workmanship shall comply with DIN standards.

Place liquid Component B in container, add powder Component A and mix with stirrer to homogeneous, workable, lump-free consistency. Liquid and powder components are supplied in correct proportions. Briefly restir after 3–5 minutes maturing time.

Brush, roller, trowel or spray apply membrane in at least two coats to slightly damp or primed substrate. Apply second coat after first coat has properly set. In case of critical substrates (e.g. masonry), Sopro AR 562 scrim may be incorporated in membrane to increase crack-bridging performance.

Where bridging structural joints in building fabric, embed Sopro KDB 756 waterproofing strip for basements in first membrane coat and overcoat with second coat to a width of 5 cm on either side. At internal angles, please note that it is necessary to install Sopro sealing tape (e.g. Sopro DBF 638 pre-folded sealing tape), Sopro angle seals (e.g. Sopro DE 014/015 sealing tape for internal/external angles) and other fittings.

Sopro ZR 618 is also suitable for roller and spray application and may be applied using industry-standard bitumen spray equipment. Use of e.g. Desoi SP-Y screw pump, Inomat M8 feed pump, b & m BMP 6 screw pump and High Tech HighPumpM8 or HighPumpSmall pump is recommended. If necessary, add approx. 2 % water for roller and approx. 4 % water for spray application.

Sopro ZR 618 is overcoatable and suitable as plastering/rendering background. To overcoat larger areas (> 1 m<sup>2</sup>), first comb on skim coat to fully dried waterproof membrane with a Sopro flexible tile adhesive (e.g. Sopro's No.1 400). When crests of coat have set, surface can be overcoated with Sopro RAP 2 434 renovation and levelling render or renders of mortar groups P II or P III to DIN 18550 (depending on application and manufacturer's specifications). Smaller areas (< 1 m<sup>2</sup>) can also be overcoated without prior application of a skim coat.

Three-coat application is recommended by Sopro for underwater applications. Upon completion of waterproofing works, trial filling of pool is required. With Sopro ZR 618 membranes, this may be performed after 2 days. Upon completion of trial filling, a 24-hour waiting time is required after pool is emptied. Dried waterproof membrane shall then be visually inspected and thoroughly cleaned to remove dust and adhesion-impairing deposits or incrustations. After this, tiling may be performed.

Apply for normal temperature range of +23°C and 50 % relative humidity; higher temperatures shorten and lower temperatures lengthen these times.

## Specified times

Finishing trowel, roller, block brush, suitable spray equipment.

## Tools

## Test certificates and test reports

### PG-AIV-F

National test certificate (abP) for composite waterproofing systems with membrane and tile finish, for structural waterproofing in conjunction with:

Sealing tape: Sopro AEB 641, AEB 148, DB 438, DBF 638

Sealing tape for angles: Sopro AEB 642, AEB 643, DE 014, DE 015

Sealing collars: Sopro AEB 129, AEB 130, AEB 112, AEB 133, AEB 131, AEB 132, AEB 645, DMB 091

Bonding at joints between sheets: ZR 618

Tile adhesives: Sopro's No.1 rapid-set (order no. 404), FKM XL 444, FKM 600, VF HF 420, MEG 665, MEG 666, MEG 667

### PG-MDS

National test certificate (abP) for use as mineral sealing slurry for structural waterproofing in combination with:

Sealing tape: Sopro AEB 641, AEB 148, DB 438, DBF 638

Sealing tape for angles: Sopro AEB 642, AEB 643, DE 014, DE 015

Sealing collars: Sopro AEB 129, AEB 130, AEB 112, AEB 133, AEB 131, AEB 132, AEB 645, DMB 091

Primer: Sopro GD 749

### PG-ÜBB

National test certificate (abP) for junctions between structural waterproofing membranes and concrete elements offering high water penetration resistance.

DIN EN 14 891:

In conjunction with suitable Sopro tile adhesives and Sopro GD 749 primer – Class CM02P (crack-bridging ability at very low temperatures (-20°C) and resistant to contact with chlorinated water).

### DIN EN 15812

Test for crack-bridging properties to DIN EN 15812 "Polymer-modified bituminous thick coatings for waterproofing – Determination of crack-bridging ability" for coat thickness  $\geq$  4 mm, at 4 °C and with maximum crack opening of 2 mm in conjunction with Sopro KDA 662.

### Test report on radon-tightness (test certificate in preparation):

Determination of radon diffusion coefficient and radon diffusion length

### EMICODE (system of GEV)

EC1<sup>PLUS</sup> R ("very-low-emission-plus") rating

### UV resistance

Meets PG-AIV-B (Criteria for Award of National Test Certificates for Waterproof Sheet Membranes Used in Conjunction with Tile Coverings) requirements for behaviour after accelerated weathering.

## Disposal

Waste treatment methods Component A: Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force. 91/156/EEC, 91/689/EEC, 94/62/EC and subsequent amendments. Disposal of hardened product (EC waste code) : 17 01 01

Disposal of not hardened product (EC waste code) : 17 01 01

The suggested European waste code is just based on the composition of the product.

According to the specific process or application field a different waste code may be necessary.

Waste treatment methods Component B: Recover if possible. In so doing, comply with the local and national regulations currently in force. 91/156/EEC, 91/689/EEC, 94/62/EC and subsequent amendments.

## Safety precautions

**Component A (powder):** Labelling in accordance with Regulation (EC) No 1272/2008 (CLP)

GHS05

**Signal word:** Danger

Contains Portland cement. Exhibits strong alkaline reaction upon contact with moisture/water; protection required for skin and eyes. All standard precautions for the handling of construction materials/chemicals shall be taken.

**Hazard statements:** **H315** Causes skin irritation. **H318** Causes serious eye damage.

**Precautionary statements:** **P102** Keep out of reach of children. **P261** Avoid breathing dust. **P280** Wear protective gloves/protective clothing/eye protection/face protection. **P302+P352** IF ON SKIN: Wash with plenty of water and soap. **P305+P351+P338** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. **P310** Immediately call a POISON CENTER or doctor. **P332+P313** If skin irritation occurs: Get medical advice/attention.

**GISCODE (German hazardous substances classification):** **ZP 1** · Low-chromate to Regulation (EC) No 1907/2006, Annex XVII.


**Component B (liquid):** Not classified as dangerous under Regulation (EC) No 1272/2008 (CLP). All standard precautions for the handling of construction materials/chemicals shall be taken.

**Contains special biocidal products:** 1,2-benzisothiazol-3(2H)-one; mixture of: 5-chloro-2-methyl-2H-isothiazol-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1). May produce an allergic reaction.

**Precautionary statements:** **EUH210** Safety data sheet available on request. **P102** Keep out of reach of children.

**GISCODE (German hazardous substances classification):** **M-GP01**

## CE marking

|   |  |
|---|--|
| <br><b>1119</b>  | <br><b>Sopro</b><br>Sopro Bauchemie GmbH<br>Biebricher Straße 74 – 65203 Wiesbaden (Germany)<br>www.sopro.com |
| 18<br>CPR-DE3/0618.1.eng<br>EN 14891<br>Sopro ZR Turbo XXL 618  |  |
| Liquid applied water impermeable product, based on polymer modified cementitious mortar (CM) beneath ceramic tiling for external use on walls and floors and swimming pools (bonded with C2 adhesive in accordance with EN 12004) |  |
| Initial tensile adhesion strength   | ≥ 0,5 N/mm <sup>2</sup>  |
| Tensile adhesion strength after water contact   | ≥ 0,5 N/mm <sup>2</sup>  |
| Tensile adhesion strength after heat aging  | ≥ 0,5 N/mm <sup>2</sup>  |
| Tensile adhesion strength after contact with lime water   | ≥ 0,5 N/mm <sup>2</sup>  |
| Tensile adhesion strength after freeze-thaw cycles  | ≥ 0,5 N/mm <sup>2</sup>  |
| Water tightness   | no penetration   |
| Crack bridging ability under standard conditions  | ≥ 0,75 mm  |
| Release of dangerous substances   | see SDS  |

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# smet

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