Technical Datasheet

AQUAMAT-ELASTIC

Two-component, highly flexible, waterproofing cement-based slurry

Description

AQUAMAT-ELASTIC is a two-component, highly flexible, brushable waterproofing slurry consisting of a cement-based powder mortar (component A) and an emulsion resin (component B). After hardening, it forms a seamless, jointless membrane, with the following advantages:

- Crack-bridging ability.
- Total waterproofing against positive hydrostatic pressure up to 5 atm according to EN 12390-8. It can also withstand negative pressure.
- Vapor permeability.
- Suitability for potable water tanks, as well as food contact surface according to W-347.
- Resistance to UV radiation.
- Protection of concrete from carbonation.
- No corrosive effect on the reinforcing steel in concrete.
- Resistance to sewage water (sewage water treatment plants, sewers, etc.).
- Resistance to aging.
- Bonding to slightly wet surfaces without priming.
- Simple and low-cost application.
- Suitable for green roofs, flower beds, etc., as it is root-resistant.
- Also works as a radon barrier.

Certified according to EN 1504-2 and classified as coating for surface protection of concrete. Certificate No.: 2032-CPR-10.11.
Also certified according to EN 14891 and classified as liquid-applied, two-component, water-impermeable product CM O2P for waterproofing under tiles, in external installations (walls and floors) and swimming pools. Certificate No.: 18/18172-2980 & 20/22565-1686, APPLUS Laboratories. CE marked.
AQUAMAT-ELASTIC has been tested by the accredited German Institute MFPA Leipzig and complies with the wet duty classifications A0 and B0 in accordance with the ZDB technical directive 2010 “Verbundabdichtungen” for waterproofing under plates and tiles in household wet areas, balconies and flat roofs. Certification No.: P-SAC 02/5.4/24-012-1 as waterproofing system under plates and tiles, P-SAC 02/5.1/26-049-1 as waterproofing systems for buildings.
Complies also with the requirements of the German building regulation DIN 18195-2 Tab. 7 & 8 (crack bridging, bonding, waterproofing, resistance to alkalis, etc.) for waterproofing under plates and tiles, as well as waterproofing of building structures.
AQUAMAT-ELASTIC has been also tested and approved by the German Institute TÜV Rheinland LGA Bautechnik GmbH for being resistant when in contact with sewage water.
It has also been tested and approved as a radon barrier by the Federal Budgetary Scientific Institution, Saint Petersburg Professor P.V. Ramzaev, Scientific Research Institute for Radiation Hygiene.
AQUAMAT-ELASTIC has been successfully tested by a third-party laboratory for resistance to root penetration, according to CEN/TS 14416:2014.
AQUAMAT-ELASTIC has received an Environmental Product Declaration (EPD) following an assessment of its life-cycle environmental impacts. Registration No: EPD-IES-0006177, The International EPD® System.

Fields of application

It is used for waterproofing surfaces made of concrete, plaster, bricks, cement blocks, terrazzo, gypsum boards, wood, etc. Ideal in cases where high flexibility and strong adhesion of the waterproofing layer are required.
Suitable for waterproofing substrates subject to expansion-contraction or vibration and show or are expected to show hairline cracks, such as flat roofs, balconies, above ground water tanks, swimming pools, inverted roofs, etc.
It can also be used for waterproofing basements, internally or externally, against moisture or water under pressure.

Technical data

	Component A	Component B
Base:	cementitious powder	acrylic polymer dispersion
Colors:	grey, white	white
Mixing ratio:	2.5 parts by weight	1 part by weight

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Wet mix:

Mixing time:	3 min
Pot life:	60 min (+20°C)
Bulk density of dry mortar:	1.40 ± 0.05 kg/l
Bulk density of fresh mortar:	1.70 ± 0.1 kg/l

Final properties acc. to EN 14891

Initial tensile adhesion strength: (requirement: ≥ 0.5 N/mm²)	≥ 0.7 N/mm²
Tensile adhesion strength after water contact: (requirement: ≥ 0.5 N/mm²)	≥ 0.6 N/mm²
Tensile adhesion strength after heat aging: (requirement: ≥ 0.5 N/mm²)	≥ 0.8 N/mm²
Tensile adhesion strength after freeze thaw cycles: (requirement: ≥ 0.5 N/mm²)	≥ 0.6 N/mm²
Tensile adhesion strength after contact with lime water: (requirement: ≥ 0.5 N/mm²)	≥ 0.5 N/mm²
Tensile adhesion strength after contact with chlorinated water: (requirement: ≥ 0.5 N/mm²)	≥ 0.6 N/mm²
Crack-bridging ability at +23°C: (requirement: ≥ 0.75 mm)	≥ 1.13 mm
Crack-bridging ability at -20°C: (requirement: ≥ 0.75 mm)	≥ 0.90 mm
Elongation at break: (DIN 53504, DIN EN ISO 527-1 & -2)	≥ 40%
Waterproofing (7 days at 1.5 bar, requirement: impermeable to water and ≤ 20 g mass increase):	no penetration

Final properties acc. to EN 13687-1 & EN 13687-2

Adhesion strength after thermal compatibility

For outside application with de-icing salt influence:

Freeze-thaw cycling with de-icing salt immersion (50 cycles) and Thunder-shower cycling (thermal shock) (10 cycles): (Requirement: ≥ 0.8 N/mm²)	1.2 N/mm²

AQUAMAT-ELASTIC Grey

Permeability to CO_2: (EN 1062-6 Method A, requirement: S_d > 50m)	140 m
Capillary absorption and permeability to water: (EN 1062-3, requirement of EN 1504-2: w < 0.1)	0.00594 kg/m²·h$^{0.5}$
Water vapor permeability: (EN ISO 7783-2, Class I: S_d < 5 m)	S_d = 0.61 m
Compressive strength after 28 days: (EN 12190)	10.00 ± 2.00 N/mm²
Flexural strength after 28 days: (EN 12190)	6.00 ±1.00 N/mm²
Adhesion strength: (EN 1542)	≥ 1.0 N/mm²
Crack-bridging ability: (DIN 18195-2)	0.4 mm
Crack-bridging ability at +23°C: (EN 1062-7, Method A)	Class A4 – crack width > 1.25 mm
Water penetration under positive hydrostatic pressure: (EN 12390-8, 3 days at 5 bar)	no penetration
Water penetration under negative hydrostatic pressure: (at 1.5 bar)	no penetration

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AQUAMAT-ELASTIC White

Permeability to CO_2: (EN 1062-6 Method A, requirement: S_d > 50 m)	129 m
Capillary absorption and permeability to water: (EN 1062-3, requirement of EN 1504-2: w < 0.1)	0.009 kg/m^2·h$^{0.5}$
Water vapor permeability: (S_d < 5 m)	S_d = 0.21 m (EN ISO 7783-2, Class I:
Compressive strength after 28 days: (EN 12190)	10.00 ± 2.00 N/mm^2
Flexural strength after 28 days: (EN 12190)	6.00 ±1.00 N/mm^2
Adhesion strength (EN 1542):	≥ 1.0 N/mm^2
Crack-bridging ability: (DIN 18195-2)	0.4 mm
Crack-bridging ability at +23°C: (EN 1062-7, Method A)	Class A4 – crack width > 1.25 mm
Water penetration under positive hydrostatic pressure: (EN 12390-8, 3 days at 5 bar)	no penetration
Water penetration under negative hydrostatic pressure: (at 1.5 bar)	no penetration

Durability against:

• Rain:	after approx. 4 hours
• Walking:	after approx. 1 day
• Tile fixing:	after approx. 1 day
• Water under pressure:	after approx. 7 days
• Backfill:	after approx. 3 days

Directions for use

1. Substrate preparation

- The substrate must be clean, free of oil or grease, loose material, dust, etc.
- Water leaks should be plugged with AQUAFIX ultra rapid-setting, cementitious leak-plugging mortar.
- Any cavities on concrete surface should be filled and smoothed out with DUROCRET, RAPICRET or a cement mortar improved with ADIPLAST, after all loose aggregate has been removed and the surface has been well dampened.
- Starter bars and spacers should be cut to a depth of about 3 cm into concrete and holes should be filled, as described above.
- Existing construction joints are opened longwise in a V shape to a depth of about 3 cm and are subsequently filled, as above.
- Corners, like wall-floor junctions, should be filled and smoothly rounded with DUROCRET or a cement mortar improved with ADIPLAST (formation of a fillet, triangular in cross section, with sides of 5-6 cm).
- In case of masonry walls, joints should be first filled carefully, otherwise it is recommended to apply a cement mortar layer first improved with ADIPLAST.
- For waterproofing basements in old buildings, the existing plaster should be removed to a height of at least 50 cm above water level, before proceeding as above.
- Wherever flat surface formation is required (smoothing, slope creation, etc.) the use of DUROCRET, RAPICRET or a mortar improved with ADIPLAST is recommended.

2. Application

The 25 kg bag of component A is added to the 10 kg of the liquid component B under continuous stirring, until a uniform, viscous mixture is formed, suitable for brush application.

The substrate must be pre-wetted to a saturated surface dry condition before application. The surface to be covered with AQUAMAT-ELASTIC must be free of standing water.

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The material is applied by brush in two or more layers, depending on the water load. Layers thicker than 1 mm should be avoided, because the material may crack. Each new coating is applied after the previous one has dried.
The freshly coated surface should be protected from high temperatures, rain and frost.
In case AQUAMAT-ELASTIC needs to be locally reinforced (inside corners where forming fillets is not necessary, at junctions, etc.), the use of a 10 cm wide fiberglass mesh strip (65 g/m^2) or the 12 cm wide JOINT SEALING TAPE AR is recommended.

Consumption

Depending on the water load, minimum consumption and relevant thickness should be as follows:

Water load	Minimum consumption	Minimum thickness
Moisture	2.0 kg/m^2	~ 1.5 mm
Water without pressure	3.0 kg/m^2	~ 2.0 mm
Water under pressure	3.5-4.0 kg/m^2	~ 2.5 mm

Packaging

- 35 kg packaging (25 kg cement-based powder mortar + 10 kg emulsion resin), in grey and white.
- 7 kg packaging (5 kg cement-based powder mortar + 2 kg emulsion resin), in white.

Shelf life – Storage

Component A:
12 months from production date if stored in original, unopened packaging in a frost-free and dry place.

Component B:
12 months from production date if stored in original, unopened packaging, at temperatures between +5°C and +35°C. Protect from direct sunlight and frost.

Remarks

- In case of water under pressure, care should be taken so that pumping, which keeps the water level low, does not stop before AQUAMAT-ELASTIC has sufficiently hardened. About 7 days are needed.
- In case of water under pressure, the structure bearing the waterproofing layer (wall, floor, etc.) should be properly designed in order to be sufficiently static to withstand hydrostatic pressure.
- In case of operational walkable floors, the floor surface waterproofed with AQUAMAT-ELASTIC should be protected with a cement mortar layer.
- Temperature during application should be between +5°C and +35°C.
- Due to cement content, the component A of AQUAMAT-ELASTIC reacts with water forming alkaline solutions, thus is classified as irritant.
- Consult the directions for safe use and precautions written on the packaging before use.

Volatile Organic Compounds (VOCs)

According to Directive 2004/42/CE (Annex II, table A), the maximum allowed VOC content for the product subcategory j, type WB is 140 g/l (2010) for the ready-to-use product. The ready-to-use product AQUAMAT-ELASTIC contains a maximum of 140 g/l VOC.

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