Technical Datasheet

AQUAMAT-PENETRATE

Crystalline waterproofing cement-based slurry

Description

AQUAMAT-PENETRATE is a one-component, cement-based, brushable waterproofing slurry. It consists of special active chemicals which react with water and calcium hydroxide contained in the concrete to form insoluble bonds (crystals). These crystals fill the capillary pores and shrinkage cracks of the concrete, preventing any further water ingress.
AQUAMAT-PENETRATE offers the following advantages:

- Remains permanently active, therefore it continuously protects construction from water.
- Offers total waterproofing against positive hydrostatic pressure up to 5 atm, according to EN 12390-8. It can also withstand negative pressure.
- Bonds perfectly to concrete, under both positive and negative hydrostatic pressure.
- Capable of waterproofing hairline cracks up to 0.4 mm wide even if they appear afterwards.
- In case of damaging the concrete surface or the waterproofing layer, it does not affect the water tightness of the construction.
- Suitable for potable water tanks, as well as food contact surfaces, according to W-347.
- Protects concrete from carbonation.
- Does not corrode the reinforcing steel in concrete.
- Does not affect the “breathability” of the concrete element.
- Has a simple and low cost application.

Certified according to EN 1504-2 and classified as a coating for surface protection of concrete. CE marked. Certificate No.: 2032-CPR-10.11.

AQUAMAT-PENETRATE has also been tested and approved by the National University of Water Management and Natural Resources (Rivne Ukraine) - Laboratory of Testing Building Materials, for the following properties:

- Increased watertightness of concrete against hydrostatic pressure and reduced capillary absorption.
- Increased frost resistance.
- No effect on the strength of concrete.
- Increased chemical resistance of concrete.

Fields of application

It is used for waterproofing of concrete elements, in cases ranging from simple moisture to water under pressure. Suitable for waterproofing of basements, foundations, manholes, water tanks, sewage tanks.

Technical data

Form:	cementitious powder
Color:	grey
Water demand:	6.40-6.60 l/ 20 kg bag
Bulk density of dry mortar:	1.06 ± 0.05 kg/l
Bulk density of fresh mortar:	2.00 ± 0.05 kg/l
Compressive strength after 28 days: (EN 12190)	23.00 ± 3.00 N/mm^2
Flexural strength after 28 days: (EN 12190)	6.00 ± 1.00 N/mm^2
Bond strength: (EN 1542)	≥ 1.0 N/mm^2
CO_2 permeability: (EN 1062-6 Method A, requirement: Sd > 50 m)	181 m
Capillary absorption and permeability to water: (EN 1062-3, requirement of EN 1504-2: w < 0.1)	0.095 kg/m^2·h$^{0.5}$
Water vapor permeability: (EN ISO 7783-2, Class I < 5m)	S_d = 1.40 m
Pot life:	30-60 min at +20ºC
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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Durability against:

- Rain: after approx. 1 day
- Walking: after approx. 1 day
- Water under pressure: after approx. 3 days
- Backfill: after approx. 3 days

Directions for use

1. Substrate preparation

- The substrate must be porous, free of oil or grease, loose material, dust, etc. Very smooth surfaces should be treated with mild sandblasting or water blasting.
- Water leaks should be plugged with AQUAFIX rapid-setting cement.
- Any cavities in concrete surface should be filled and smoothed out using DUROCRET-PENETRATE, after all loose aggregate has been removed and the surface has been well dampened.
- Starter bars and wooden molds should be cut to a depth of about 3 cm into the concrete and the holes should be sealed as above.
- Existing construction joints – 0.4 mm wide – are opened lengthwise in a V shape to a depth of about 3 cm and are then filled as above.
- Corners, like wall-floor junctions, should be filled and smoothly rounded with DUROCRET-PENETRATE (formation of a fillet, triangular in cross section, with side lengths of 5-6 cm).

2. Application

AQUAMAT-PENETRATE is added to the water under continuous stirring, until a uniform, viscous mixture is formed, suitable for brushing or spraying. The application surface must be well dampened but without ponding. The product is applied by brush or spray in two layers. Layers thicker than 1 mm should be avoided because the material may crack. The second layer is applied while the previous one has reached an initial set, but is still “green”. In case the first layer has fully dried, dampening of the surface is necessary prior to application of the second one.

After the application is completed, the surface must be dampened for the next 2-3 days to so that the material remains slightly wet and hardens properly.

This should take place when AQUAMAT-PENETRATE has started to harden to avoid the risk of damage. Spraying with water 2-3 times per day is usually enough.

The freshly coated surface should be protected from rain and frost.

Consumption

Approximately 0.75 kg/m^2/layer.

Packaging

20 kg bags.

Shelf life - Storage

12 months from production date if stored in original, sealed packaging in dry, frost-free places.

Remarks

- 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 AQUAMAT-PENETRATE is used in potable water tanks, after the product is applied, the surface should be carefully washed out with plain water, before the final filling of the tank.
- AQUAMAT-PENETRATE can also be dusted on the clean concrete and the steel reinforcements. This process will protect not only the reinforcement itself but also the foundation slab from rising damp. The lean concrete should be dampened until saturation is reached. Then, AQUAMAT-PENETRATE is dusted using 1.5-2.5 kg/m^2. The concrete of the foundation slab can be poured after one hour, once AQUAMAT-PENETRATE has hardened and adhered to the clean concrete, in order not to damage the previous application.
- Temperature during application should be at least +5ºC.
- Due to cement content, AQUAMAT-PENETRATE reacts with water forming alkaline solutions, thus is classified as irritant.
- Please consult the safety instructions written on the packaging before use. In case AQUAMAT-PENETRATE is to be covered with mortar, plaster or tiles, please consult ISOMAT’s Technical Support Department.

The technical information and instructions supplied in this datasheet are based on the knowledge and experience of the Research and Development Department of our company and on results from long-term applications of the product in practice. The recommendations and suggestions referring to the use of the product are provided without guarantee, since site conditions during the applications are beyond the control of our company. Therefore the user is responsible for confirming that the chosen product is suitable for the envisaged application. The present edition of this technical datasheet automatically cancels any previous one concerning the same product. | Edition: 21.05.2025

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CE

2032

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DoP No.: AQUAMAT-PENETRATE 1621-02

EN 1504-2

Surface protection products
Coating

CO_2 permeability: Sd > 50 m

Water vapor permeability: Class I (permeable)

Capillary absorption: $w < 0.1\ kg/m^2 \cdot h^{0.5}$

Adhesion: ≥ 1.0 N/mm^2

Reaction to fire: Euroclass A1

Dangerous substances comply with 5.3

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