MSS 400 Crystallization coating

MSS 400 Crystallization coating protects concrete from water and chlorides in a unique way. Product is developed from cement, special quartz and multifunction chemicals, which protect concrete effectively from water and chlorides.

Properties

Unique protection from water and chlorides is achieved when different chemicals of MSS 400 are in touch with concrete. MSS 400 penetrates deep into concrete by capillary force and osmosis pressure. It generates crystals to block all pores and cracks and gets rid of the moisture. Process works together with the pressure of water or against it. When there is no moisture MSS 400 stays passive. If moisture appears moreover, chemical reaction goes over automatically and penetrates deeper into concrete. The chemicals of MSS 400 waterproofs over and over again, which is a result from their structure and features. Crystal formations have been measured as deep as 1 meter from point of application. MSS 400 is 100% compatible with concrete, brick, mortar and stone.

Use

Used in all kinds of concrete either to prevent concrete from water or to keep water in. It can also be used to protect concrete from different chemicals. MSS 400 Crystallization coating can be spread either to the pressure side or to the negative side, and still we gain leak proof protection against water and chlorides.

Advantages

- blends with concrete and becomes part of it
- penetrates deep and seals every pore or crack
- can be applied either to pressure or negative side
- water and chemical protection remains even if concrete is damaged
- very effective against hydrostatic pressure
- increases pressure-proofness of concrete
- waterproofs cracks of 0,4mm wide or smaller
- concrete can breathe, which eliminates vapour risk
- chemical resistance pH 3-11 in continuous contact, pH 2-12 in temporary contact
- gives protection against chlorides, contaminated water, salt water sulfates and nitrates
- can be applied into damp concrete
- protects concrete reinforcement
- drinking water approved
- easy-to-use
- protects from freezing and corrosion damages
- no extra curing time (except if temperature is high and humidity low)

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Preparations

Concrete has to be clean from dust, oil, grease and earlier paints or coatings has to be removed. And a profile has to be worked on to the surface. This can be done by pressure cleaning, grinding or blasting.

- Very smooth concrete has to be cleaned with pressure water, sand blasting or etch with acid to ensure that the surface of concrete opens and the penetration of crystallization is possible.
- Cracks over 0,4mm has to be opened up to 20-25 mm and they has to be repaired with MSS 420 before applying MSS 400.
- Dry surfaces has to be wet very properly before application of MSS 400. The surface hast to be humid in order to the penetration of crystallization.

Spreading with brush	0,8 kg/m2	5 parts MSS 400 to 2 parts of water
	1.1 kg/m2	3 parts MSS 400 to 2 parts of water

Thickness can be adjusted with water. Anyhow the coating hardness can not be over 1,2 millimeter.

Spreading

MSS 400 can be spread with brush or suitable sprayer. If cracks, gaps or joints are repaired, prepare them with MSS 420 mortar before coating. Surface has to be humid always. Second layer is spread when the first layer is surface dry. Sometimes you have to moist between the layers if conditions are hot / dry. You can do horizontal spread in one layer with stiff brush. Temperature has to be over 0°C always.

Spreading with sprayer

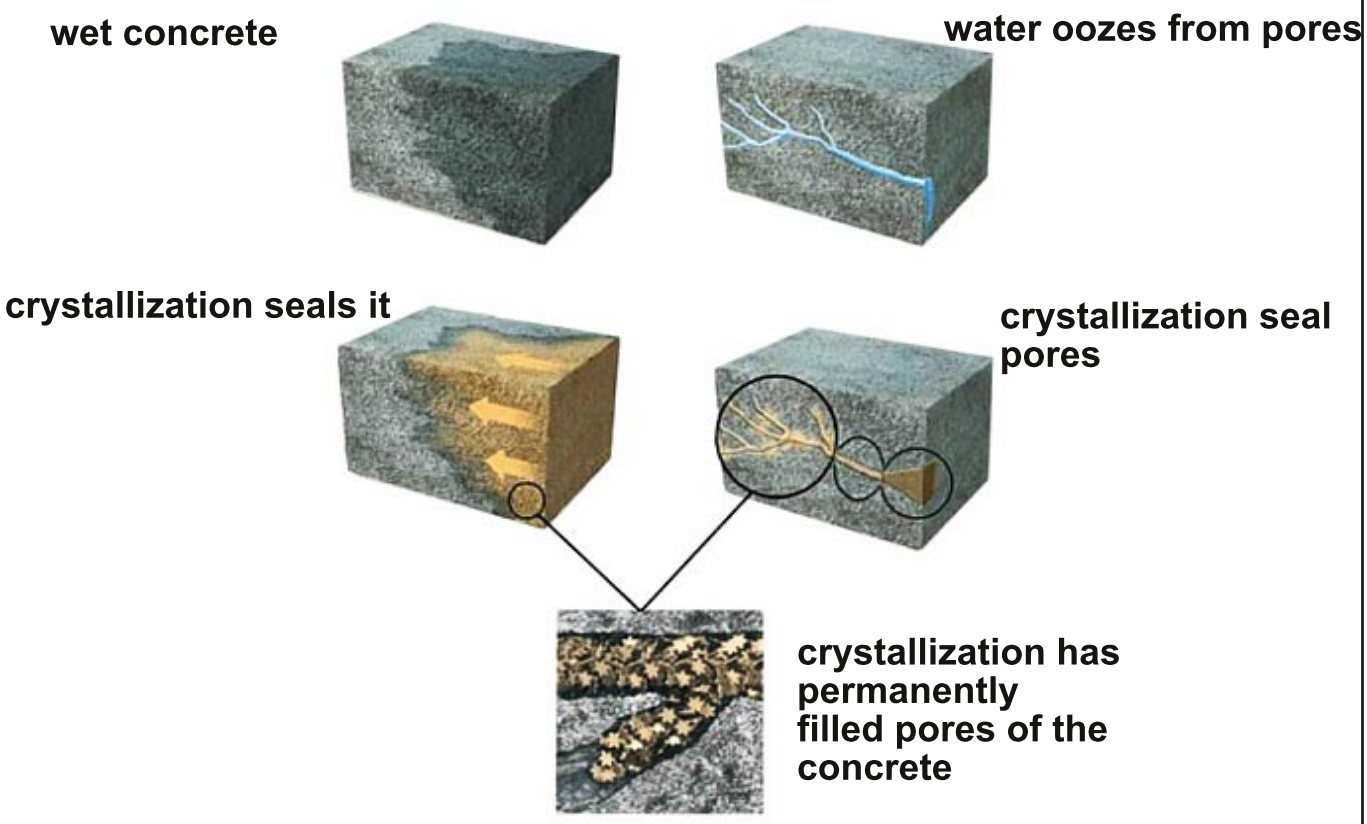
0,8 kg/m2 5 parts MSS 400 to 2,75-3,25 parts of water
Mix composition continuously during the spraying and mix only that amount you need.

Sufficiency

Horizontal surfaces	1.4-1.6 kg/m2. Spread with one layer
Vertical surfaces	1,4-1,6 kg/m2. Spread with 2 layers (0,8 kg/layer)

Curing

MSS 400 don't need long curing time, except if temperature is extremely high and humidity is very low. Usually it is enough to wet the surfaces three times within day after the application.



Technical data

concrete coated with MSS 400

water penetration ability	CRD-C-48-73	after 28 days <1.9x10-14 cm/s before coating 1.8x10-11 cm/s
Water penetration ability	CRD-C-48-73	Sustains 156,7m hydrostatic pressure (16Bar) without noticeable leak
Pressure proofness	ASTM C39	after 28 days >6% improvement
Freezingtest, meltingtest	ASTM C-672-76	50 cycle, reduced erosion compared with uncoated concrete
Radiation resistance	ASTM N69-1967	Gammaradiation did not affect >5.76x104

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This document is also online at
www.teke.fi/crystallization.pdf

Managing director
Esa Moilanen
+358 40 730 2862
esa.moilanen@teke.fi

Sales manager
Jouni Silventoinen
+358 40 828 5749
jouni.silventoinen@teke.fi

TEKE
ASSURED QUALITY

TEKE
Kivistönkuja 5, 45370 Valkeala, Finland
fax +358 5 379 4286
www.teke.fi

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