

S&P ARMO-crete w

04/10

High resistant mortar with reactive component for structural concrete repair (1-component mortar)

S&P ARMO-system

The S&P ARMO-system is a combination of S&P ARMO-crete and S&P ARMO-mesh. The system is used for static retrofitting (flexural, axial, shear) of RC structures. Different approvals for the system carried out at different independent Technical Universities and laboratories are available. The static dimensioning of the S&P ARMO-system is carried out with the software ARMO-flexion.

Application

S&P ARMO-crete w can be used in combination with all standard wet spraying machines (w = wet spray method). The product is used for overhead, vertical and horizontal applications. It is suitable for indoor and outdoor applications. S&P ARMO-crete w has a minimum rebound. The product is developed for static retrofitting of RC structures in combination with the S&P ARMO-mesh.

Product description

S&P ARMO-crete w is a one-component product based on inorganic binders, fibers, selected aggregates, admixtures, polymer. A special reactive component is added for the excellent bond behaviour with the S&P ARMO-mesh. It involves the latest technological developments of the S&P ARMO-system for structural concrete repair and in the chemistry of hydraulic nature mortars.

Its high mechanical resistance, resistance to sulphates and carbonation, high module and compensated shrinkage make it suitable for high-scale structural industrial rehabilitation, construction and civil works.

Performance

- Applicable both to outdoor and indoor surfaces.
- Chloride free.
- Very high resistencies.
- High adhesion to most of the conventional substrates.
- Excellent workability.
- Sulfates resistant.
- High thixotropy.
- Fiber reinforced.
- Highly waterproof.
- Meets the requirements of UNE-EN 1504, part 3, class R4.
- Can be pumped and projected.

Technical data

Type	Enhanced cement mortar
Aspect	Powder
Colour	Grey
pH	12
Density fresh	~2.05 kg/dm ³
Grain size max	2 mm
Water/product relation	17%
Application temperature	5 - 30 °C
Workability time (20 °C)	30 min
Mechanical strength (EN 12190)	Compressive str. at 24h: > 18 N/mm ² Compressive str. at 7d: > 40 N/mm ² Compressive str. at 28d: > 60 N/mm ² Flexural strength at 28 d: > 50 N/mm ²
Bond strength to concrete (EN 1542)	At 28 d: > 2 N/mm ²
Bond str. to concrete after frost-defrost cycle with immersion (EN 13687-1)	> 2 N/mm ²
Bond strength to concrete after thermal shock (EN 13687-2)	> 2 N/mm ²
Bond str. to concrete after dry thermal cycles (EN 13687-4)	> 2 N/mm ²
Capillary absorption (EN 13057)	<0.5 kg m ⁻² h ^{-0.5}
Thickness of application	5 - 50 mm

Substrate

The substrate shall be sandblasted or hydromechanical prepared. The substrate must be clean and free from loose parts, dust and contaminants (e.g. mould oil). Pre-wet the substrate for at least 6 hours before application of the spray mortar to obtain saturation of the capillary pores. Dry the substrate until a moist surface is obtained. Remove standing water with a sponge, by vacuum-cleaning or with (oil-free!) compressed air. Clean exposed rebars and pretreat with a corrosion protective system.

Product preparation

Pour 4 to 4.5 liters of water in a clean container, according to the desired consistency. Add slowly the content of the bag, mixing by a mechanical mixer to obtain a homogeneous, lump free mixture. Leave the mixture to rest for 1-2 minutes for the concrete to moisture and mix a little again. Do not add more water and do not mix if the material loses its consistency

Product application

The ambient and the substrate temperature should be between +5°C and +30 °C, taking care to maintain it throughout 12 hours following the application. If a binding adhesive has been used, this will be still superficially sticky. If not, a new coat has to be applied before the mortar placement. If the mortar is placed straight over concrete, the substrate has to be wet, with no water residuals.

S&P ARMO-crete w can be applied with a wet spraying pump or by hand, using a trowel. The thickness of the material applied should be uniform. An initial levelling coat is recommended in case of highly uneven substrates. The S&P ARMO-mesh is layed wet in wet into the levelling coat. Afterwards, a second layer of S&P ARMO-crete w is applied (wet in wet). S&P ARMO-crete w does not need a special curing when applied over low-porous concrete and mortar. If the surface is highly porous, it is recommended to protect S&P ARMO-crete w by a plastic or a wet burlap to avoid fast water evaporation. Curing is also highly necessary in singular conditions, such as dry ambient, strong wind, etc.

Tools cleaning

Tools and application equipments are washed immediately after use. If the product hardens, it can be removed by mechanical means only.

Special precautions

This product contains cement. Avoid its contact with the eyes and the skin. Avoid inhaling the product. Use rubber gloves and goggles. Keep out of children's reach. Do not apply the product at emperatures lower than 5 °C. Empty packaging must be disposed of according to the local legal environmental regulations.

Consumption

S&P ARMO-crete w yields 1.80 kg/m²/mm thickness. This can vary according to the substrate texture.

Packaging

The product is supplied in 25 kg bags.

Storage

S&P ARMO-crete w must be stored in a dry place, protected from frost and direct sunlight, in its original, unopened packaging. Its shelf life is 12 month from the date of production, provided it is well kept.