



Very fine spread coating for repairs of concrete surface

1. Product characteristics

One-component dry spread coating containing re-dispersible polymers. Meets the requirements of class R3 according to EN 1504-3.

- designed for concrete repair (principle 3, method 3.1 according to EN 1504-3)
- mixed with water only
- good workability
- perfect adhesion to base
- permanently water-resistant
- good mechanical properties
- frost-resistant
- compensated in volume

2. Use

DENSOFIX SF is one-component polymer-cement dry mortar mix intended especially for repairs of new monolithic reinforced concrete constructions. It can be also used for sealing of surface damage of concrete constructions or unification and sealing of repaired concrete and reinforced concrete constructions. Spread coating **DENSOFIX SF** can be coated with any type of secondary protection in dependence on exposure of the repaired structure.

3. Physical and mechanical parameters

Requirements / results according to EN 1504-3 class R3

	Testing method	R3 Requirements	Results
Compressive strength (MPa)	EN 12190	>25	> 25
Chloride Ion Content	EN 1015-7	< 0.05 %	< 0.01 %
Adhesive Bond (MPa)	EN 1542	>1.5	> 1.5
Carbonation Resistance	EN 13295	$d_k \leq$ control concrete	complies
Restrained shrinkage/expansion (MPa)	EN 12617-4	Adhesion after test ≥ 1.5	> 1.5

Physical and mechanical parameters

Color	Non-standard light gray	
Bulk density of fresh spread coating (kg/m ³)	2 050 ± 50	
Tensile bending strength (MPa)	7 days	> 3,0
	28 days	> 5.5
Compressive strength (MPa)	7 days	> 16
	28 days	> 25
Dynamic E-modulus (GPa)	< 25	
Thermal expansion coefficient (K ⁻¹)	12.5 ± 0.4.10 ⁻⁶	
Frost resistance	> T150	
Adhesion to base (MPa)	> 1.5	

4. Test certificates

Meets the requirements of EN 1504-3, TP ŘSD Sec. 31 and TP SSBK III.

The product is certified according to Act No. 22/1997 Coll. and Regulation (EU) No 305/2011 of the European Parliament and of the Council (CPR). Continuous independent production quality control is provided by AZL 1687 LABBET®. Supervision of quality management, environmental and OSH systems is performed by Certification Body No. 3029.

5. Instruction for preparation and application

During the processing of dry mortar mixes **DENSOFIX SF** it is generally necessary to comply with the principles contained in the relevant technological process **BETOSAN** for repair of reinforced concrete structures (TP No.1/06).

Base. Any incoherent, loose or weatherworn particles and dust shall be completely removed from the surface of the repaired base. The concrete surface cannot be contaminated by substances negatively affecting adhesion to

the base (fats, greases, oils, etc.). Rinsing with pressure water is the best method for necessary complete removal of any dust from the entire repaired surface before application.

Preparation of spread coating. The spread coating is prepared by simple mixing with water. It is necessary to use a slow-running mixer with forced circulation for mixing. The recommended mixing ratio is as follows:

	Dry component (kg)	Water (liters)	Thickness of applied layer (mm)	
DENSOFIX SF	25	4.50 ÷ 5.00	min. 1	max. 3

Workability of the product is 50 - 60 minutes under 20 °C.

Neither **temperature of base** nor temperature of ambient air shall be below + 5 °C and above + 30 °C.

DENSOFIX SF spread coating is applied either mechanically or manually. Manual application means finning off. The spread coating is applied in one layer whose thickness should not exceed value specified in the above table. Surfaces coated with the spread coating shall be efficiently protected against direct sunshine and wind.

Surface finalization. After initial setting of the spread coating smoothing by a dry polyurethane or polystyrene finisher is used for surfacing.

Surface treatment. Repaired surfaces must be properly treated immediately after completion to avoid especially direct exposure to sun, wind effect and other factors accelerating undesirable evaporation of the batch water. Use of the following treatment agents **DENSOCURE W** and **DENSOCURE R** proved well. It is desirable to properly moisten the repaired places several times a day for min. 7 days following the repair.

6. Specific consumption

Specific consumption of dry mortar is 1.6 to 1.7 kg/m² at 1 mm of layer thickness.

7. Packing and storage

The product is packed into 25 kg PE-lined paper bags or PE buckets of 5 kg weight. **DENSOFIX SF** must be efficiently protected during transportation and storage against moisture. Shelf life in undamaged packing is 6 months. After the expiration of min. shelf life, which is stated on the packaging, ingredients are not fully effective at reducing chromium VI below 2 ppm.

8. Health protection at work

Handling the **DENSOFIX SF** dry rehabilitation mortar does not require any extraordinary hygienic precautions. The product contains alkalis and therefore any contamination of mainly eyes or mucous membrane must be prevented. Health and labor safety rules applicable to work with cement or lime mortars are to be adhered to.

Issued MSDS meets the requirements of EC-Regulation 1907/2006, Article 31.

Because the product meets the criteria for classification as hazardous, it is necessary to provide the recipient or carriers with MSDS.

In countries where regulation REACH (par. 33.1): EU regulation on chemicals and their safe use (REACH: EC 1907/2006) is valid, professional users and distributors must be provided with following information automatically and without request:

This product is subject to Regulation (EC) No. 1907/2006 (REACH). It does not contain any substances that could be released from product under normal or reasonably foreseeable conditions of use. Therefore, there are no registration requirements for substances in articles within the meaning of Article 7.1 of the Regulation.

Based on our current knowledge, this product does not contain SVHC (substances of very high concern) from candidate list published by the European Chemicals Agency in concentrations above 0.1% (w / w).

9. Waste disposal

During disposal of contaminated packages or clearing debris from product, it is necessary to follow the Act No. 185/2001 Coll. on waste, as amended.

10. Important notice

All information mentioned above, especially advice for processing and application of our products is based on our knowledge from the development of chemical products and on years of experience with applications in practice at standard conditions, and proper storage and use. Due to the differing conditions during processing, high count of products, varying nature and modifications of base and other external influences, the procedure based on the information provided or on other written or oral recommendations, may not always ensure satisfactory working results. BETOSAN s.r.o. assumes no liability for provided advice or recommendation. The applicator must prove, that he submitted complete information on time and in writing which is necessary for a proper detailed assessment by BETOSAN s.r.o. The applicator must test the suitability of the products for the intended application. Proprietary rights of third parties, above all, must be taken into account. All received are orders subject to our current "General sales and delivery conditions". Please always make sure that you follow the most recent issue of the Technical Data Sheet. It is available, along with other information, at our Technical Department or at www.betosan.cz.



11. CE marking

 1301	
BETOSAN s.r.o. Na Dolinách 28, 147 00 Prague 4	
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2-27/072013	
EN 1504-3:2005	
DENSOFIX SF Product designed for structural concrete repair	
Compressive strength	> 25 MPa
Chloride Ion Content	< 0.01%
Adhesive Bond	> 1.5 MPa
Carbonation Resistance	complies
Restrained shrinkage/expansion	> 1.5 MPa
Dangerous substances	meets 5.4
Reaction to fire	European class A1

Technical Data Sheet No. 2-27
Issued 28.7.2020
7 763 227 410

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CONCRETE REPAIR

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