

Reprofiling mortar for repairing concrete structures by wet spraying method

1. Product characteristics

Single component dry mortar mixture. Meets the requirements of class R4 according to EN 1504-3.

- designed for concrete repair (principle 3, 4 and 7 method 3.1, 3.2, 3.3, 4.4, 7.1 and 7.2 according to EN 1504-3)
- mixed with water only
- perfect workability, it is thixotropic (doesn't flow down)
- perfect adhesion to concrete base and reinforcement
- permanently water-resistant and highly frost-resistant
- very good mechanical properties
- compensated in volume

2. Use

MONOMIX WSC TH is a single-component dry mortar mix intended especially for all over repairs of damaged concrete and reinforced concrete vertical and overhead surfaces using a wet spraying method. **MONOMIX WSC TH** can be coated either with directly applicable type of secondary protection in dependence on exposure of the repaired structure or can be further surfaced by application of the **DENSOFIX** spread coating.

3. Physical and mechanical parameters

Requirements / results according to EN 1504-3 class R4

	Testing method	Requirements	Results
Compressive strength (MPa)	EN 12190	≥ 45	> 45
Chloride Ion Content	EN 1015-7	< 0.05 %	< 0.01 %
Adhesive Bond (MPa)	EN 1542	≥ 2.0	> 2.0
Carbonation Resistance	EN 13295	$d_k \leq$ control concrete	complies
Thermal Compatibility, Part 1 Freeze-thaw (MPa)	EN 13687-1	Adhesion after test ≥ 2.0	> 2.0
Elastic Modulus (GPa)	EN 13412	≥ 20	> 20

Physical and mechanical parameters

MONOMIX WSC TH		f	r	c
Color		Non-standard grey		
Bulk density of fresh mortar (kg/m ³)		2 100 ± 50		
Tensile bending strength (MPa)	7 days	> 5.8	> 6.0	> 6.2
	28 days	> 8.0	> 8.4	> 8.8
Compressive strength (MPa)	7 days	> 30	> 32	> 35
	28 days	> 45	> 48	> 50
Combustibility		class A1		

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 Systems, Environmental Relations and OSH is carried out by Certification Body No. 3029

5. Instruction for preparation and application

During the processing of dry mortar mixes **MONOMIX WSC TH** it is generally necessary to comply with the principles contained in the relevant technological process **BETOSAN** for repair of reinforced concrete structures (TP n.1/06).

Base. Any incoherent, loose, weatherworn or otherwise visibly damaged concrete shall be completely removed from the surface of the repaired base. Corroded reinforcement shall be carefully released and cleaned of any corrosive products. Before application of repair material, humidification of the base surface must be properly and

continually performed for at least 120 minutes. The properly humidified concrete shall be dully dump, and not covered with dump shining water film.

Preparation of repair mortar. The mortar is prepared by simple mixing with water. During stirring it is necessary to use a low-speed mixer with forced circulation. The recommended mixing ratio is specified in the following table:

Indication/type of mortar	Max. size of fillers	Recommended mixing ratio		Thickness of applied layer in single working area	
		Dry component (kg)	Water (liters)	min. (mm) max. (mm)	
MONOMIX WSC TH f fine	1 mm	25	3.40 ÷ 3.55	5	35
MONOMIX WSC TH r medium	4 mm	25	3.25 ÷ 3.40	35	50
MONOMIX WSC TH c coarse	8 mm	25	3.00 ÷ 3.25	50	70

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.

Mortar application is done either manually or by wet spraying. The mortar can be manually applied either by rendering or fining off. First layer (connecting) needs to be applied in such a way to ensure that no unfilled spaces are created (behind reinforcement, in caverns etc.). If applied on adhesion bridge **DENSOCRETE 111**, the mortar must be applied, on a freshly spread bridge (fresh-in-fresh method). After initial application it is recommended to spread the mortar into pores and uneven spaces. This can be done well with flat paint brush with short hair, or by a toothed trowel. Proper adhesion of the material to substrate in application stage is basic condition for good quality adhesion in the final state. In localized repairs it is necessary to pay appropriate attention to edge regions or repaired area, where the edge needs to be properly compacted, without entrapped air pockets or other non-homogeneities. The repair is always done from place of deepest degradation, in such a way that the final layer it to be continuous over entire area, if possible.

Surface finalization. After initial setting of the last layer smoothing by a dry polyurethane finisher is used for surfacing. Wet surfacing is not allowed. If the surface is to be smoothed with fine spread coating (e.g. **DENSOFIX**), ruling off by a wooden tamper is sufficient.

Surface treatment. Repaired surfaces shall 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 treatment agents **DENSOCURE W** and **DENSOCURE R** proved well.

6. Specific consumption

Specific consumption of dry mortar is 1.8 kg/m² at 1 mm of layer thickness.

7. Packing and storage

The product is packed into 25 kg PE-lined paper bags. **MONOMIX WSC TH** 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 **MONOMIX WSC TH** 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 assess-



ment 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

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BETOSAN s.r.o. Na Dolinách 28, 147 00 Prague 4	
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3-8/072013	
EN 1504-3:2005	
MONOMIX WSC TH Product designed for structural repair of concrete	
Compressive strength	class R4
Chloride Ion Content	< 0.05%
Adhesive Bond	> 2.0 MPa
Carbonation Resistance	complies
Thermal Compatibility, Part 1 Freeze-thaw	> 2.0 MPa
Elastic Modulus	> 20 GPa
Dangerous substances	meets 5.4
Reaction to fire	European class A1

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BETOSAN s.r.o., Na Dolinách 28, 147 00 Praha, Czech Republic
Bussiness and technical office Nová cesta 291/40, 140 00 Prague 4, Czech Republic
 Tel./fax.:+420 241 431 212, tel.:+420 241 431 215
 E-mail: paha@betosan.cz, www.betosan.cz