

# MONOCRETE TH rapid



8

SPECIAL MORTAR MATERIALS

BETOSAN

## Rapid-setting prefabricated repair mortar

### 1. Product characteristics

Single component thixotropic non-slump fine grain repair mixture. Meets the requirements of class R3 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)
- extremely rapid strength growth
- doesn't contain chlorides, it is fully compatible with reinforced concrete
- frost resistant
- perfect adhesion to concrete base
- suitable for thicknesses from 15 mm

### 2. Use

**MONOCRETE THrapid** is a rapid-setting prefabricated mixture intended primarily for local and surface repairs of concrete and walled structures, where rapid hardening is required. The mixture features a very short hardening time and extremely rapid strength growth. The mixture can be exposed to a light load after 6 hours, a full load can be applied to repaired surfaces after 24 hours.

### 3. Physical and mechanical parameters

#### Requirements / results according to EN 1504-3 class R3

	Testing method	Requirements	Results
Compressive strength (MPa)	EN 12190	>25	≥ 55
Chloride Ion Content	EN 1015-7	< 0.05 %	≤ 0.05 %
Adhesive Bond (MPa)	EN 1542	>1.5	≥ 1.5
Carbonation Resistance	EN 13295	$d_k \leq$ control concrete	complies
Thermal compatibility, part 1: Freeze-thaw (MPa)	EN 13687-1	Adhesion after test $\geq 1.5$	≥ 1.5
Elastic Modulus (GPa)	EN 13415	> 15	≥ 15

#### Physical and mechanical parameters

Color	Non-standard grey	
Tensile bending strength (MPa)	6 hours	> 2.50
	24 hours	> 5.00
	28 days	> 9.00
Compressive strength (MPa)	6 hours	> 10.0
	24 hours	> 25.0
	28 days	> 55.0
Elastic modulus (GPa)	< 28	
Thermal expansion coefficient (K <sup>-1</sup> )	11.0 ± 0.5x10 <sup>-6</sup>	
Frost resistance	> T150	
Resistance to de-icing chemicals according to ČSN 73 1326 method A	> 75	

### 4. Test certificates

Meets the requirements of EN 1504-3. 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 **MONOCRETE TH rapid** 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 re-leased and cleaned of any corrosive products. Tensile strength of concrete surface layers shall be 1.5 MPa at least. Humidification of the base surface shall 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.

**Mix preparation.** The mixture is single-component mixed with water only. For stirring it is necessary to use a low-speed mixer with forced circulation. In case of preparation of small amount, the mix can be mixed with a propeller mixer driven by an appropriate electric drilling machine. Add 2.1 ÷ 2.4 l of water to 15 kg of mix (1 container).

**Because of short hardening time a classic gravity mixer can't be used for mix preparation. In case of preparation of larger volume of the material, keep in mind that the workability of the prepared mix is 10 – 15 minutes at 20°C.**

**Workability** of the mix is 10 - 15 minutes under 20 °C. With rising temperatures the workability time shortens equally.

Neither **temperature of concrete base** nor temperature of ambient air shall be below + 1 °C and above + 35 °C. The mix has a decreased hardening ability also at temperatures below zero.

**Mortar application** is done either manually or by dry 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.). 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** is performed after initial setting by standard processes. Smoothing by a wooden or steel trowel or polystyrene finisher) are used for surfacing. No additional water shall be worked up into the surface during finalization.

**Surface treatment.** Concrete surface shall be protected against direct sunshine and wind immediately after completion. Intensive treatment shall be carried for at least 3 to 6 hours after the casting. Optimal treatment means to cover the surface with permanently moistened geotextiles.

## 6. Specific consumption

Specific consumption of the dry mortar amounts to 1.8 kg/m<sup>2</sup> at 1 mm of layer thickness.

## 7. Packing and storage

The product is packed into PE containers of 15 kg. The product must be efficiently protected during transportation and storage against moisture, especially against rain. Shelf life in original undamaged packing is 3 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 **MONOCRETE TH rapid** 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. Pro-



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](http://www.betosan.cz)

## 11. CE marking

 1301	
<b>BETOSAN s.r.o.</b> Na Dolinách 28, 147 00 Prague 4	
07	
8-9/072013	
EN 1504-3:2005	
<b>MONOCRETE TH rapid</b> Product designed to repair concrete with static function	
Compressive strength	≥ 55 MPa
Chloride Ion Content	≤ 0.05%
Adhesive Bond	≥ 1.5 MPa
Carbonation Resistance	complies
Thermal compatibility, part 1: Freeze-thaw	≥ 1.5 MPa
Elastic modulus	≥ 15 GPa
Dangerous substances	meets 5.4
Reaction to fire	European class A1

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