

# ZINKBOLT

Cementitious mortar for anchoring galvanized rock bolts



## WHERE TO USE

**Zinkbolt** is an expanding mortar for rock support and can be used for anchoring all types of rock reinforcement; ordinary reinforcement bolts, CT-bolt, D-bolt, cable dowels, etc. and works excellent on galvanized steel.

## TECHNICAL CHARACTERISTICS

**Zinkbolt** is a pre-blended, cement based, shrink-free mortar which expands 1 - 3 % before setting.

**Zinkbolt** is based on Portland cement, selection of graded aggregates with a  $D_{max}$  0.5 mm, and special additives developed in MAPEI's own R&D laboratory.

When **Zinkbolt** is mixed with water turns into a thixotropic grout without segregation that is able to fill all holes in all positions. The expansion in early phase will ensure proper filling around the reinforcing rock bolt. The mortar must be placed within 40 minutes. The expansion inflicts no pressure on the structure after the mortar have set.

**Zinkbolt** complies with the principles of NS-EN 1504-9 "Products and systems for the protection and repair of concrete structures. Definitions, requirements, quality control and evaluation of conformity. General rules for the use of products and systems", and the requirements of NS-EN 1504-6 "Anchoring of reinforcement rods".

## EPD DECLARATION

Herewith Mapei GmbH as a statutory Member of DBC and IVK confirms the compliance of **Zinkbolt** with EPD Mortar Group 1 for Modified Mineral Mortars.

## MIXING AND APPLICATION

### TECHNICAL INFORMATION FOR THE APPLICATION

Composition of the mix:	100 kg of <b>Zinkbolt</b> 23 - 25 kg of water
Application temperature range:	surrounding temperature and substrate temperature from +5°C to +35°C
Pot life of mix:	approx. 40 min. (at +20°C)

**Zinkbolt** is mixed in a batch concrete mixer, for smaller works drill end whisk can be used. Add 5.7 - 6.3 litres of water per bag into the mixer and add **Zinkbolt** continuously. Mix for 3 - 5 minutes until a homogeneous and lump free grout is obtained. Do not use more water than necessary to place the mortar in a safe way. The consistence shall be creamy.

The instructions for the preparation of the mortar to be used for samples preparation for laboratory tests are reported in the "TECHNICAL DATA" table.

**Remember:** The more water the lower strength and risk for segregation and lowered quality which can lead to bad quality on the rock reinforcement. To be used at temperatures higher than +5°C.

For rock bolting use sufficient pump equipment (piston- or monopump), the hose is put to the bottom of the borehole and pulled slowly out while pumping in the mortar. The bolt is placed immediately into the fresh mortar. Volume filled is adjusted so some mortar is pressed out when the bolt is in correct position. Or follow the instruction manual for the specific bolt used.

## CLEANING

Fresh mortar can be removed from tools and equipment with water, hardened material must be removed mechanically.

## CONSUMPTION

Approx. 1.6 kg powder per liter grout.

## PACKAGING

25 kg bag, 1200 kg per pallet. 1000 kg big-bag and bulk.

## STORAGE

12 month in dry conditions and in original unopened packaging.

## SAFETY INSTRUCTIONS FOR PREPARATION AND INSTALLATION

Instructions for the safe use of our products can be found on the latest version of the SDS available from our website [www.mapei.no](http://www.mapei.no)

PRODUCT FOR PROFESSIONAL USE.

## TECHNICAL DATA (typical values)

### PRODUCT IDENTIFICATION DATA

Type according to EN 1504-1:	CC
Consistency:	powder
Colour:	grey
Maximum size of aggregate:	0.5 mm
Chloride ions content – minimum requirements ≤ 0,05 % - according to EN 1015-17:	≤ 0.05 %

### TECHNICAL INFORMATION FOR PRODUCT PREPARATION

Composition of the mix:	100 parts in weight of <b>Zinkbolt</b> with 25 % of water
Preparation of the mix:	according to EN 196-1
Curing condition:	CC (according to Annex A – EN 12190)

### CHARACTERISTICS OF THE FRESH MIX (at +20°C and 50 % R.H.)

Colour of mix:	grey
Consistency of mix:	fluid
Density of mix:	2040 kg/m <sup>3</sup>
Expansion according to EN 445:	1 - 3 %
Bleeding according to EN 445:	≤ 0.5 %

## FINAL PERFORMANCE

Performance characteristic	Test method	Requirements according to EN 1504-6	Product performance	
<b>Compressive strength:</b>	EN 12190	not required	<b>+22°C</b>	<b>+5°C</b>
- after 1 day			20 MPa	3 MPa
- after 2 days			35 MPa	15 MPa
- after 7 days			35 MPa	30 MPa
- after 28 days			45 MPa	45 MPa
<b>Flexural strength:</b>	EN 196-1	not required	<b>+22°C</b>	<b>+5°C</b>
- after 1 day			3 MPa	1 MPa
- after 2 days			5 MPa	2 MPa
- after 7 days			7 MPa	5 MPa
- after 28 days			8 MPa	6 MPa
<b>Pull-out strength of steel rebar – movement with a load of 75 kN:</b>	EN 1881	≤ 0.6 mm	< 0.1 mm	
<b>Reaction to fire:</b>	EN 13501-1	Euroclass	A1	

NOTES: Preparation of test samples in one layer, compact according to EN 196-1.

## WARNING

Although the technical details and recommendations contained in this product data sheet correspond to the best of our knowledge and experience, all the above information must, in any case, be taken as merely indicative and subject to confirmation after long-term practical application. For this reason, anyone who intends to use this product must ensure beforehand that it is suitable for its envisaged application. Anyway the user alone is fully responsible for any consequences deriving from the use of the product. The values declared in the TECHNICAL DATA table (typical values) were obtained in compliance with test methods and curing cycles defined in the technical standards referenced therein. Therefore please note that the use of test procedures or methods other than those indicated in the table could lead to different values and that, in such cases, any liability of our company is excluded.

Please refer to the current version of the technical data sheet, available from our web site [www.mapei.no](http://www.mapei.no)

## LEGAL NOTICE

The contents of this Technical Data Sheet ("TDS") may be copied into another project-related document, but the resulting document shall not supplement or replace requirements per the TDS in effect at the time of the MAPEI product installation. For the most up-to-date TDS and warranty information, please visit our website at [www.mapei.no](http://www.mapei.no)

ANY ALTERATIONS TO THE WORDING OR REQUIREMENTS CONTAINED IN OR DERIVED FROM THIS TDS SHALL VOID ALL RELATED MAPEI WARRANTIES.

**Mapei AS**

Vallsetvegen 6, 2120 Sagstua, Norge



+47 62 97 20 00



[www.mapei.no](http://www.mapei.no)



[post@mapei.no](mailto:post@mapei.no)

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