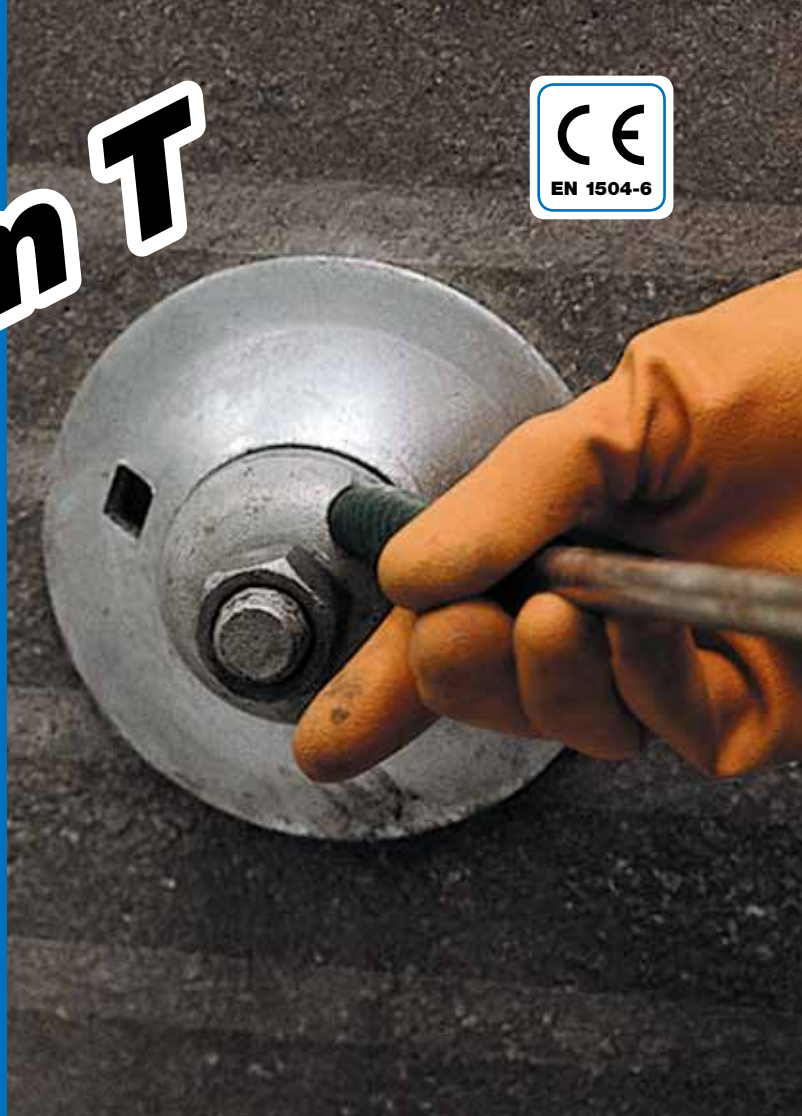




Stabilcem T

**One-component
pre-blended shrinkage-
compensated thixotropic
mortar for anchoring
tie rods and bolts in
all types of substrates
by injection**



WHERE TO USE

- Anchoring tie rods and bolts in tunnels.
- Filling cavities.
- Rigid sealing of structural joints.

Some application examples

- Casting iron in riveted joints of any length in tunnels, also in the presence of water and/or fractured and unstable rock masses.
- Anchoring reinforcement steel rods in tunnels.
- Anchoring structural bars in concrete elements.
- Filling cavities between rock and concrete coverings.
- Filling and sealing rigid structural joints in prefabricated structures.

TECHNICAL CHARACTERISTICS

Stabilcem T is a one-component pre-blended chloride-free injection mortar composed of high strength cements, micro-silica fume, expansive agents, fine graded aggregates in granulometric curve and special additives formulated by MAPEI Research & Development laboratories.

After mixing with water **Stabilcem T** acquires a thixotropic consistency and can be easily applied

by injection on horizontal, inclined or overhead sections without slumping or bleeding.

Because of its rheological properties and the absence of bleeding, **Stabilcem T** can penetrate through morphologically difficult grounds, completely filling very limited spaces.

Stabilcem T remains workable for approximately 1.5 h at +20°C (+68°F), therefore users can easily manage sudden interruptions that can occur on a building site.

Stabilcem T hardens without shrinkage and because of its remarkable bonding to rock, concrete and steel, it represents an effective solution for anchoring bolts and tie rods during consolidation, even if they undergo considerable stress.

Stabilcem T meets all the main criteria for the EN 1504-9 Standards (*"Products and systems for the protection and repair of concrete structures: definitions, requirements, quality control and conformity assessment. General principles for the use of products and systems"*) and the minimum requirements for EN 1504-6 (*"Anchoring of reinforcing steel bar"*).

RECOMMENDATIONS

- Do not add cement or additives to **Stabilcem T** mortar.
- Do not use more than the recommended amount of water for the preparation of **Stabilcem T** mortar because the mechanical characteristics could be modified, the expansion values may diminish and bleeding can occur.
- Do not use **Stabilcem T** as a hydraulic binder to prepare concrete, use instead **Stabilcem**.

APPLICATION PROCEDURE

Preparation of the substrate

Before injecting the product, carefully clean the cavity with water or compressed air. This will remove any loose material left in the cavity during drilling. If the substrate is particularly unstable, cleaning could cause subsidence, therefore use compressed air with limited pressure for the cleaning.

Preparation of the product

Usually the mixing and placing is carried out with a worm screw pump under continual mixing. In this specific case, in order to ensure that the recommended amount of water is used for the mixture, is to adjust the machine manometer until the water capacity is between 19% and 21% by weight of **Stabilcem T**.

If other pumps are used (for example hand pumps, render sprayers, etc.), the mixture must be prepared with a drill fitted with a whip. Pour 5 litres (1.32 U.S. gal) of water into a clean bucket and while mixing slowly add 25 kg (55.1 lb) of **Stabilcem T**.

Mix for 2-3 minutes until a lump free and homogeneous paste is obtained. Scrap any unmixed powder off the sides of the bucket and remix for another 2 minutes.

The consistency obtained is usually enough so that the mortar can be pumped. If it is necessary to have a slightly more fluid mixture for the type of equipment used, at this last phase add another 0.5 litre (0.13 U.S. gal) of water.

Following the same procedure, if desired, the mixture can also be prepared with a vertical axis mixer for mortar.

After mixing, **Stabilcem T** remains workable for approximately 1.5 h at +20°C (+68°F) without needing to add more water.

Applying the product

After having placed the tie rods, pump the

mortar applying a pressure relative to the depth and size of the cavity.

In order to direct the mortar correctly into the injection cavity, it is recommended to use flexible rubber tubes that are resistant to high pressure and have a diameter between 25 mm and 50 mm (1-2 inches).

After 24 hours, in normal temperature conditions, the anchoring can be tensioned (tighten the bolt completely).

CONSUMPTION

Approximately 1.75 kg (3.86 lb) of **Stabilcem T** per litre of cavity to be filled 1750 kg/m³ (109 lb/ft³).

PACKAGING

Stabilcem T is available in 25 kg (55 lb) plastic bags and in 1000kg big bags.

STORAGE

Stabilcem T can be stored for 12 months, in original sealed packaging in a sheltered and dry place.

The product complies with the conditions of Annex XVII to Regulation (EC) N° 1907/2006 (REACH), item 47.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Stabilcem T contains cement that when in contact with sweat or other body fluids causes irritant alkaline reactions and allergic reactions to those predisposed. It can cause damages to eyes.

It is recommended to wear protective gloves and goggles and to take the usual precautions for handling chemicals. If the product comes in contact with the eyes or skin, wash immediately with plenty of water and seek medical attention.

For further and complete information about the safe use of our product please refer to the latest version of our Safety Data Sheet.

PRODUCT FOR PROFESSIONAL USE.

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 every case, be taken as merely indicative and subject to confirmation after long-term practical application; for this reason, anyone who intends to use the product must ensure beforehand that it is suitable for the envisaged application. In every case, the user alone is fully responsible for any consequences deriving from the use of the product.

TECHNICAL DATA (typical values)

PRODUCT IDENTITY

Type:	CC
Consistency:	powder
Colour:	grey
Maximum diameter of aggregate (mm):	0.4 (0.016 in)
Dry solid content (%):	100
Chloride ions content – minimum requirements $\leq 0.05\%$ according to EN 1015-17 (%):	≤ 0.05

APPLICATION DATA

Colour of mix:	grey
Mixing water (%):	19-21
Mix consistency:	thixotropic
Density of the fresh mortar (kg/m ³):	2150 (134 lb/ft ³)
Application temperature:	from +5°C (+41°F) to +40°C (+104°F)
Workability time of mix:	1.5 h at +20°C (+68°F)
Setting time at +20°C (+68°F) EN 196/3 (h):	beginning > 3 / final < 7
Setting time at +5°C (+41°F) EN 196/3 (h):	beginning > 8 / final < 16
Expansion in plastic phase at 24 h UNI 8996 (%):	1.5-3
Expansion in plastic phase at 24 h ASTM C940 mod. (%):	1.5-3

FINAL PERFORMANCE (20% mixing water)

Performance characteristic	Test method	Requirements according to EN 1504-6	Product performance
Compressive strength (MPa):	EN 12190	> 80% of the value declared by the manufacturer	50 (after 28 days)
Mechanical characteristics at +20°C (+68°F): – compressive strength 24 h (MPa): – compressive strength 7 days (MPa): – compressive strength 28 days (MPa):	EN 196/1 ASTM C942	Not required	20 (≥ 2900 psi) 40 (≥ 5800 psi) 50 (≥ 7250 psi)
Mechanical characteristics at +5°C (+41°F): – compressive strength 24 h (MPa): – compressive strength 7 days (MPa): – compressive strength 28 days (MPa):	EN 196/1 ASTM C942	Not required	5 (≥ 725 psi) 35 (≥ 5080 psi) 45 (≥ 6530 psi)
Drawing resistance of the steel rods - movement under a 75 kN load (mm):	EN 1881	≤ 0.6	< 0.6
Reaction to fire	EN 13501-1	Euroclass	A1

Pull-out strength with a mixture with 21% of mixing water:

Test were carried out in a newly constructed motorway tunnel, built on steel bars type Fe B 44 K with improved bonding, with a 24 mm (0.945 in) diameter and the applied pulling force was equal to 20 m-ton for 7 minutes. The 20 m-ton were achieved progressively in four 5 m-ton phases, increased every 5 minutes. The loss of load at the end of 7 minutes, for the test to be considered valid, must not be more than 3 m-ton.

1 day on a 4.5 m (14,8 ft) bar with improved bonding at +20°C (+68°F):	10 m-ton	pull out of bars during the III phase of increase
3 days on a 4.5 m (14,8 ft) bar with improved bonding at +20°C (+68°F):	30 m-ton	breaking of the treaded bolt head
7 days on a 4.5 m (14,8 ft) bar with improved bonding at +20°C (+68°F):	30 m-ton	breaking of the treaded bolt head
28 days on a 4.5 m (14,8 ft) bar with improved bonding at +20°C (+68°F):	30 m-ton	breaking of the treaded bolt head

Stabilcem T



Please refer to the current version of the Technical Data Sheet, available from our website www.mapei.com

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be downloaded from our website www.mapei.com.

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All relevant references for the product are available upon request and from www.mapei.com



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