



Stabilcem

Very fluid expanding cementitious binder for the preparation of injection slurries, mortars, and concrete



WHERE TO USE

Preparation of high-strength shrinkage-compensated consolidation slurries, mortars and pumpable concrete.

Some application examples

- Filling cavities and cracks within internally porous concrete, rocks stone and brickwork by pouring or injection.
- Preparing shrinkage-compensated concrete for under pinning.
- Preparing shrinkage-compensated non-segregating concrete for filling rigid joints.

TECHNICAL CHARACTERISTICS

Stabilcem is a powdered cement based binder with special additives to replace cement, to manufacture high quality slurries, mortars and concrete.

Stabilcem is ideal for preparing:

- non-segregating fluid mortars and concrete with a low water-cement ratio.
- concrete that develops high compressive strength at early ages.
- shrinkage-compensated concrete and mortars, provided they are carefully cured under moist conditions for the first 2-3 days.
- slurries that will not separate or shrink.

Stabilcem does not contain metal aggregates.

RECOMMENDATIONS

- Do not use **Stabilcem** for precision anchors (use **Mapecfill**).
- Do not use **Stabilcem** if packaging is damaged.

APPLICATION PROCEDURE

Preparing the substrate

The substrate must be completely clean and solid. Sections that are unsound or detached, together with dust, cement laitance, and traces of form-release oil must be removed by scrubbing and/or washing with high pressure water-jetting.

Before casting, the substrate must be saturated with water.

It is essential that the cavities be thoroughly washed out with water. Beginning from the uppermost injectors and working down, ensure all dirt and loose particles are washed out from lower holes.

This cleaning process must be repeated until all of the internal surfaces are completely clean.

Preparing the mix

• Injection slurries:

Pour into a mechanical mixer 6 to 6.4 litres of water and add a 20 kg bag of **Stabilcem**.

Mix for a few minutes until a fluid slurry without lumps is obtained.

• Mortar and concrete:

In a concrete mixer add enough water, **Stabilcem** and aggregates to obtain the desired consistency. Mix until a homogeneous mixture is obtained.

Applying the mix

• Injection slurries:

Check that the wall is structurally stable to resist the injection pressure (if not, a static up-grade of the masonry is required). Inject the slurry at a pressure of 1-2 atmospheres through the injectors installed, starting from the lowest hole and working up until the cavities are filled.

TABLE 1 - Indicative proportions for the composition of mixes with Stabilcem

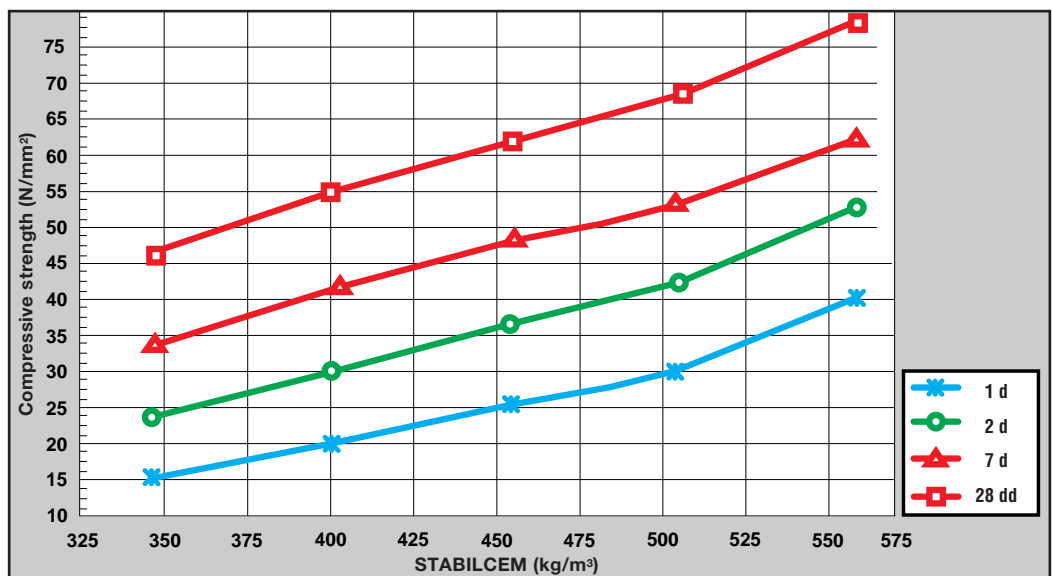
| Max. diameter of aggregate (mm) | 5 | 5 | 15 | 15 | 25 | 25 | 30 | 30 |
|---------------------------------------|---------|-------|---------|-------|---------|-------|---------|-------|
| Consistency | plastic | fluid | plastic | fluid | plastic | fluid | plastic | fluid |
| Stabilcem (kg/m ³) | 500 | 500 | 400 | 400 | 350 | 350 | 300 | 300 |
| Sand (kg/m ³) | 1596 | 1557 | 1032 | 1008 | 831 | 813 | 862 | 845 |
| Fine gravel (kg/m ³) | - | - | 687 | 672 | 635 | 632 | 670 | 657 |
| Gravel (kg/m ³) | - | - | - | - | 369 | 361 | 383 | 374 |
| Water (kg/m ³) | 205 | 220 | 190 | 205 | 170 | 185 | 160 | 175 |

Performance of concrete prepared with Stabilcem in various dosages (350-550 kg/m³)

| BINDER | | H ₂ O (kg/m ³) | w/ Stabilcem (kg/m ³) | M.V. (kg/m ³) | Slump (cm) | COMPRESSIVE STRENGTH at +20°C (N/mm ²) | | | |
|------------------|-----------------------------|---------------------------------------|-----------------------------------|---------------------------|------------|--|------|------|------|
| Type | Dosage (kg/m ³) | | | | | 1 d | 2 d | 7 d | 28 d |
| Stabilcem | 550 | 213 | 0.38 | 2424 | 21.5 | 39.9 | 51.6 | 61.2 | 78.7 |
| Stabilcem | 500 | 213 | 0.42 | 2417 | 20.5 | 30.1 | 42.2 | 53.3 | 68.4 |
| Stabilcem | 450 | 213 | 0.47 | 2409 | 22.5 | 25.7 | 36.8 | 48.3 | 61.6 |
| Stabilcem | 400 | 211 | 0.53 | 2385 | 21.5 | 20.6 | 30.1 | 42.0 | 54.5 |
| Stabilcem | 350 | 209 | 0.60 | 2357 | 21.5 | 15.3 | 24.0 | 34.2 | 45.7 |

Max. diameter of aggregate: 8 mm

CONCRETE COMPRESSIVE STRENGTH VS STABILCEM DOSAGE



Max. diameter of aggregate: 8 mm

TECHNICAL DATA (typical values)

PRODUCT IDENTIFICATION

| | |
|---|--|
| Consistency: | powder |
| Colour: | grey |
| Specific gravity (kg/l): | 0.97 |
| Dry solid content (%): | 100 |
| Storage: | 12 months in original, unopened packing, in a dry place |
| Hazard classification according to EC 99/45: | irritant. The product's cement content can irritate eyes and skin, consult the material safety sheet |
| Customs class: | 3824 50 90 |

APPLICATION DATA

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|---|--|
| Mix ratio: – for injection slurries: – for mortars and concrete: | 100 parts Stabilcem by weight with 30÷32 parts water see Table 1 |
| Setting time for slurry prepared with 32% water: | < 5 hours begins to set < 7 hours end of setting |

FINAL PERFORMANCES

| | |
|--|---|
| Mechanical characteristics of mortar prepared with Stabilcem (EN 196/1) Composition of the mix: | water 225 g Stabilcem 450 g standardised sand 1350 g |
| Flow-table (UNI 7044/72) (%): | 160-180 |
| Specific gravity (kg/l): | 2.23 |
| Separation (bleeding): | none |
| Compressive strength (N/mm²) at: | 1 day > 18 7 days > 42 28 days > 62 |
| Flexural strength (N/mm²) at: | 1 day > 5 7 days > 7 28 days > 9 |
| Mechanical characteristics of slurry prepared with Stabilcem Mix ratio: | Stabilcem 2000 g water 620 g |
| Flow-cone (EN 445): | 20-30 sec |
| Specific gravity (kg/l): | 2-2.1 |
| Compressive strength (N/mm²) at: | 1 day > 30 7 days > 65 28 days > 80 |
| Flexural strength (N/mm²) at: | 1 day > 5 7 days > 6 28 days > 8 |
| Expansion in plastic phase according to UNI 8996/89 (%): | ≥ 0.3 |

- Mortar and concrete:**
 According to the type of work and the consistency chosen, placing on a substrate saturated with water can be carried out either traditionally (by pouring or with a trowel etc.), or using a concrete pump. In order to achieve the best results from the expansive action of **Stabilcem**, the mixture should be placed as quickly as possible. Surfaces that remain exposed after casting must be protected from rapid water evaporation to avoid the formation of superficial microcracks. Cover surface with damp cloth or spray water during the first days of curing.

Cleaning

Tools used for the preparation and placing of slurries, mortars and concrete made with **Stabilcem**, can be cleaned with water before setting occurs. After setting has occurred, cleaning can only be done mechanically.

CONSUMPTION

- Slurries for injection: 1.6 kg per litre of cavity to be filled.
- Mortars and screeds: 350-550 kg/m³.
- Concrete: 300-400 kg/m³.

PACKAGING

Stabilcem is available in 20 kg paper bags.

STORAGE

Stored in a dry place in unopened packaging

Stabilcem is stable for at least 12 months.

SAFETY INSTRUCTIONS FOR THE PREPARATION AND APPLICATION

Contains cement that when in contact with sweat or other body fluids produces an irritant alkaline reaction and allergic reactions to those predisposed. Use gloves and protective goggles. For further information refer to the safety data sheet.

FOR PROFESSIONALS.

WARNING

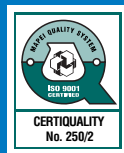
N.B. Although the technical details and recommendations contained in this product report correspond to the best of our knowledge and experience, all the above information must, in every case, be taken as merely indicative and subject to confirmation after long-term practical applications; for this reason, 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.

All relevant references of the product are available upon request

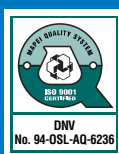
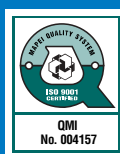


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