



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

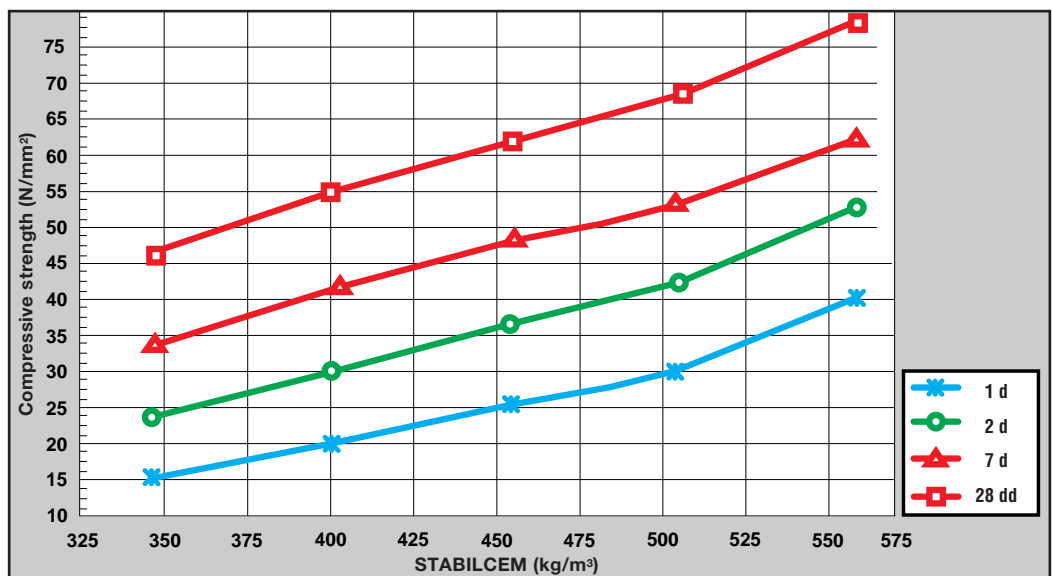
Max. diameter of aggregate (mm)	5	5	15	15	25	25	30	30
Consistency	plastic	fluid	plastic	fluid	plastic	fluid	plastic	fluid
Stabilcem (kg/m ³)	500	500	400	400	350	350	300	300
Sand (kg/m ³)	1596	1557	1032	1008	831	813	862	845
Fine gravel (kg/m ³)	-	-	687	672	635	632	670	657
Gravel (kg/m ³)	-	-	-	-	369	361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

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

