

SPECIAL WALL B 550 M

DATA SHEET

One-component thixotropic, fibre-reinforced cement spray mortar with controlled shrinkage, containing sulphate-resistant cement, for repairing and reinforcing concrete and mixed masonry structures, walls in historic buildings and filling



Interior/Exterior



Sack



By hand



Spray



Plastic trowel

Composition

SPECIAL WALL B 550 M is a mortar containing special sulphate-resistant cement, graded sand, synthetic fibres and additives to improve workability and adhesion.

Supply

- Special bags with moisture protection from approx. 25kg

Use

SPECIAL WALL B 550 M is indicated for the consolidation or structural reinforcement with welded metal mesh of masonry and concrete structures. It is also used to repair the edges of beams and of pillars, to repair deteriorated cornices and balconies and to reconstruct the cover layers on reinforced concrete when medium mechanical strength is required.

SPECIAL WALL B 550 M is applied in thicknesses exceeding 10mm. Do not use on gypsum or painted surfaces, nor on mechanically weak and carbonated substrates in general.

Substrate preparation

Concrete substrate

The substrate must be free from dust, dirt etc.. Any traces of oil, grease, wax, anti-evaporation agents etc. must be removed beforehand. Deteriorated concrete that is becoming detached should be removed until reaching a solid and strong substrate (concrete tensile strength of 1.5 MPa can be considered sufficient). In any case, the substrate must be rough with parts protruding at least 5 mm.

After having removed the deteriorated concrete, all exposed metal reinforcing must be carefully cleaned and treated using FASSAFER MONO one-component or BF 501 two-component cement grout, in accordance with the instructions on the corresponding datasheet.

Before applying SPECIAL WALL B 550 M, saturate the substrate, avoiding the formation of pools of water on the surface.

Masonry substrate

Completely remove any finishes and layers of plaster or render on the surface to as to expose the masonry; also remove all the masonry parts that are crumbling or coming loose until obtaining a solid, strong and roughened substrate. Remove any crumbling and/or loose parts of the bed joints. After scarifying all of the substrates, remove dirt, dust and any processing residues that may compromise adhesion of the mortar to the substrate. Carry out any repairs or levelling work on the masonry wall.

Before applying SPECIAL WALL B 550 M, saturate the substrate, avoiding the formation of pools of water on the surface.

Mixing

SPECIAL WALL B 550 M is mixed in a concrete mixer, using plaster sprayers such as FASSA, TURBOSOL, PFT, PUTZKNECHT, or, for small mixes, using a mechanical stirrer at low speed. Mixing by hand is not recommended. If mixing in a concrete mixer or using a stirrer, add the product to the corresponding amount of clean water (as specified in the Technical Data) and mix until obtaining a uniform, smooth and thixotropic mixture.

The product is applied using a trowel or plaster sprayer, without the need for formwork.

SPECIAL WALL B 550 M is applied together with adequate metal reinforcement. Specifically, for the consolidation of masonry, suitably-sized welded mesh (for example, 6 mm diameter and 10x10 cm mesh size) should be used, fixing this the existing substrate by metal connectors and embedding it half-way into the total thickness of the mortar while also guaranteeing a net concrete cover of at least 1.5 cm. Depending on the thickness, also evaluate the use of two layers of mesh. For work on concrete structures, a minimum concrete cover of 2 cm is recommended.

SPECIAL WALL B 550 M is applied in thicknesses of up to 3 cm per layer. The additional layer must be applied before the material has set completely (from 2 to 3 hours at a temperature of +20°C).

When the mortar has cured, the next stage is to apply a skim coat using GEOACTIVE FINE B 543 or A 64 R-EVOLUTION, so as to smooth off and level the surface. Ideally these products should be applied in two layers, embedding alkali-resistant mesh in the first layer of skim coat. This type of application is required for the consolidation and reinforcement of existing structures, on large surfaces and in all cases where there is the need to limit the possibility of hairline cracks appearing. To maximise durability, the work is completed by the application of a protective finish.

Warnings

- Product for professional use.
- Always consult the safety data sheet before use.
- Avoid freezing and quick drying of the fresh grout.
- SPECIAL WALL B 550 M can be used at ambient temperatures between 5°C and 35°C.
- As the hardening depends on the hydraulic setting of the cement, a temperature of +5°C is suggested as a minimum value for application and for obtaining proper hardening of the mortar. Below this value, setting would be delayed excessively and below 0°C the fresh or partially hardened mortar could be broken up by frost. For application temperatures between 5°C and 10°C, to overcome the problem of mechanical strength being achieved very slowly, it is recommended to use water at a temperature of around 20°C.
- When ambient temperature is above 30°C, it is recommended to use cold water.
- Dampen the mortar in the first 24 hours in order to avoid rapid evaporation of the water, which could otherwise cause superficial cracks due to shrinking in the plastic stage.
- Application in strong winds may lead to the formation of cracks and "burn marks" on the mortar. In these conditions suitable precautions should be adopted (protection of indoor spaces, etc.).

SPECIAL WALL B 550 M must only be used in its original condition without the addition of other materials.

Storage

Keep dry for a period not exceeding 12 months. Once the product has expired, it must be disposed of in accordance with current legislation.

Quality

SPECIAL WALL B 550 M is subjected to accurate and constant checks in our laboratories. The raw materials used are rigorously selected and controlled.

Technical Data

Class according to EN 1504/3	R3
Specific gravity of the powder	approx. 1,500 kg/m ³
Granulometry	< 3 mm
Yield	approx. 18 kg/m ² with 10 mm thickness
Mixing water	17-19%
Workability time (at 20°C and 65% RH)	approx. 30 minutes

SPECIAL WALL B 550 M complies with the principles established by EN 1504-9 and the minimum requirements specified by European standard EN 1504-3, class R3.

	Test method	Product performance	Standard requirement for R3
Compressive strength after 1 day	EN 12190	15 N/mm ²	no requirement
Compressive strength after 7 days	EN 12190	30 N/mm ²	no requirement
Compressive strength after 28 days	EN 12190	40 N/mm ²	≥ 25 N/mm ²
Ion content Cl ⁻	EN 1015-17	≤ 0.01%	≤ 0.05%
Adhesion strength	EN 1542	> 1.5 N/mm ²	≥ 1.5 N/mm ²
Adhesion strength after contrasted expansion/shrinkage	EN 12617-4	> 1.5 N/mm ²	≥ 1.5 N/mm ²
Carbonation resistance	EN 13295	out-of-date	Depth of carbonation ≤ of reference concrete
Modulus of elasticity in compression	EN 13412 - method 2	≥ 22,000 MPa	≥ 15,000 MPa
Thermal compatibility of freeze/thaw cycles	EN 13687-1	> 1.5 N/mm ²	adhesion after 50 cycles ≥ 1.5 N/mm ²
Thermal compatibility, storm cycles	EN 13687-2	> 1.5 N/mm ²	adhesion after 30 cycles ≥ 1.5 N/mm ²
Thermal compatibility, dry cycles	EN 13687-4	> 1.5 N/mm ²	adhesion after 30 cycles ≥ 1.5 N/mm ²
Capillary absorption	EN 13057	0.35 Kg m ² h ^{-0.5}	≤ 0.5 Kg m ² h ^{-0.5}
Crack resistance	O-Ring test	no cracking after 180 days	not required
Hazardous substances (Cr hexavalent)	EN 196-10	< 2 ppm on cement	≤ 2 ppm on cement
Reaction to fire	EN 13501-1	Euroclass A1	Class declared by the manufacturer

The above information refers to laboratory testing; it is possible that in practical applications on site these may differ considerably according to the conditions in which the material is applied. In any case the user must check that the product is suitable for the intended application, taking all responsibility for its use. Fassa reserves the right to make technical modifications without notice.

Technical specifications regarding the use of Fassa Bortolo products for structural or fire prevention applications will only be officially valid if provided by Fassa Bortolo's "Technical Service" and "Research, Development and Quality System". If necessary, contact Technical Service in your country of reference (IT: area.technica@fassabortolo.com, ES: asistencia.technica@fassabortolo.com, PT: assistencia.technica@fassabortolo.com, FR: bureau.technique@fassabortolo.fr, UK: technical.assistance@fassabortolo.com).

Please note that for the aforementioned products, the assessment is required by the appointed professional, in accordance with regulations in force.