SA 500

DATA SHEET

Self-levelling cement screed for residential interior floors

Interior flooring

Sack

Silo

By machine

Advantages

- Excellent workability
- Shrinkage-compensated product
- Suitable for underfloor heating/cooling systems
- High flatness

Composition

SA 500 is a dry premix made from specific cements, graded sands and specific additives to improve workability and optimise the product's self-levelling characteristics.

Supply

- In bulk in silo
- Special bags with moisture protection from approx. 25kg

** Depending on the country of destination, some sales formats may not be available*

Use

SA 500, thanks to its special formulation, can be used for the construction of interior floor screeds with the function of load distribution, before laying wood or resilient coverings (linoleum, PVC, carpet, LVT, rubber, etc.) and ceramic tiles.
Thanks to its excellent mechanical strength, SA 500 is suitable for the following uses:

- Environments for residential use (hotels, homes and related services); Private and public offices; Public environments (restaurants, healthcare facilities, schools, gyms, etc.).

Particularly suitable for application on heating/cooling systems, thanks to its high compactness, resulting in low thermal inertia.
Comply with the requirements of the main application technical standards (UNI 11493-1, UNI 11371, etc.).

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Substrate preparation

The application surface must be free of all foreign matter, mechanically resistant, dimensionally stable, cured, dry and clean.
For the construction of unbonded or floating screeds, before laying the screed, any substrates that are irregular or with significant differences in level must be levelled off the same height, making a compensating layer using products such as FASSAFLOOR LIGHT 300 or CALCESTRUZZO CELLULARE; any plumbing or electrical systems must also be embedded in the compensation layer.
In the specific case of floor slabs resting on the ground, suitable waterproofing will be needed (coatings or sheathing, making sure that the screed is protected against possible rising damp).

Unbonded screed (minimum thickness 3 cm)

Lay a vapour barrier (thickness according to the value of S_d, equivalent air layer, required) over the entire surface of the cast, making sure to both overlap the joints by at least 10-15 cm and to fold the sheet up onto the walls to the same height as the compressible strip; seal all joints with moisture-resistant adhesive tape.
Arrange, along the perimeter walls and the elements in elevation, a strip of compressible material 0.5-1 cm thick and at least as high as the finished portion of the flooring, including the finish coverings.
Furthermore, it is recommended to place welded wire mesh inside the screed (see the paragraph on "Warnings").

Floating screed (minimum thickness 4 cm)

For screeds on thermal insulation or soundproofing systems, such as SILENS STA 10, scrupulously apply the insulating materials, following the manufacturer's installation instructions and, as regards soundproofing, standard UNI 11516 "Installation instructions for floating flooring systems for soundproofing".
If necessary, lay a vapour barrier (thickness according to the value of S_d, equivalent air layer, required) over the entire surface of the cast, making sure to both overlap the joints by at least 10-15 cm and to fold the sheet up onto the walls to the same height as the compressible strip; seal all joints with moisture-resistant adhesive tape.
Arrange, along the perimeter walls and the elements in elevation, a strip of compressible material 0.5-1 cm thick and at least as high as the finished portion of the flooring, including the finish coverings.
The thickness of the screed must be decided based on the compressibility and thickness of the insulation, the final intended use and the type of covering used.
Furthermore, it is recommended to place welded wire mesh inside the screed (see the paragraph on "Warnings").

Floor screed with heating/cooling system

Where radiant systems are installed, make sure that all the panels are stable, bonded to the substrate and are arranged side-by-side up to perimeter compressible tape, in order to avoid thermal bridges.
As specified by standard EN 1264-4, before laying the screed, the heating circuits must be checked for tightness using a water pressure test.
Furthermore, it is recommended to place welded wire mesh inside the screed, making sure this is suitably fixed to the radiant panels. Typically, the mesh will measure 50x50 mm with a wire thickness of 2 mm, and must be interrupted at the height of the expansion joints.
Before starting application, the reference levels must be checked with a spirit level or laser level, and any side retainers for the cast must be prepared.

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Mixing

If using the product supplied loose, SA 500 is mixed using a horizontal mixer connected directly to the silo station. Once the machine has been started and the right amount of water has been added to obtain the correct consistency of the mixture (fluidity test with specific Fassa equipment), the operator can then go to the application position. The system will be switched on and off directly from the application surface using a remote control. The system has a flow-rate of about 100 litres/min (about 6 cubic metres/hour).
If using the product supplied in sacks, a suitably-equipped I 41 or m-Tech Duo-mix plaster sprayer can be used.
The product is spread starting from the thicker areas and then levelled using a levelling rod, compacting the screed a first time, then applying a second finishing coat crosswise to the first. The operations described above must be completed within the product's workability time.
For installation of ceramic or stone coverings, it is recommended to use our AZ 59 FLEX, AT 99 MAXYFLEX, SPECIAL ONE or AD 8 adhesive mixed with FASSACOL LATEX S2, or, if quick-setting products are required, RAPID MAXI S1.
For laying wooden coverings, it is recommended to use our ADYWOOD 2K two-component epoxy-polyurethane adhesive, or ADYWOOD MS, single-component silane adhesive for laying wooden floors.
The adhesive will be chosen according to the expected format and type of covering.
In any case, begin applying the covering only after verifying the suitability of the substrate according to the application regulations in force.

First radiant system start-up cycle

After curing for a period of at least 21 days, the system must be started in accordance with the requirements of standard EN 1264-4, or the following instructions:

- the first heating cycle starts with a water outlet temperature of 20-25°C, which must remain constant for 3 days;
- subsequently, the water inlet temperature must be increased by 5°C per day, until reaching the maximum expected operating temperature;
- this temperature must be maintained for 5 days for thicknesses up to 55 mm; for every additional 5 mm in thickness, the time must be increased by one day;
- then the water inlet temperature must be reduced by 10°C a day, until reaching the initial temperature;
- during the period in which the system is started for the first time, check ventilation in the rooms so as to avoid the formation of drafts.

It is always good practice to start the system before bonding any type of flooring, in order to make any cracks appear on the screed due to accumulation of stress resulting from thermal expansion; the covering must then be laid when the screed has cooled.

Joints/maximum surface without divisions

- Division joints must be made on the screed (at least 1/3 of the thickness); in principle, the joints must subdivide the surface into square or rectangular sections, and must therefore be made in correspondence with openings in the walls, protrusions or areas with irregular shapes (i.e. "L" or "U" etc.)
- The joints are made during application by inserting an elastic PVC joint into the screed, without interrupting the reinforcing mesh embedded in the screed, if used; the mesh must be interrupted at the expansion joints on the heated floor screed or at the structural joints.
- The maximum area should be around 40 m²; for regular, square or rectangular shaped rooms, these dimensions can be extended, with a maximum length ratio of 2 to 1 and the longest side not exceeding 8 metres.
- Structural joints must be marked on the screed.

For joints in areas with irregular shapes, it is recommended to follow the designer's instructions or contact Fassa Technical Service at area.tecnica@fassabortolo.it.

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Warnings

- SA 500 must only be applied by specialists.
- The product must be applied by installers who have completed training for the application of SA 500 with Fassa Bortolo's technical staff.
- Fassa cannot be held liable for any damage resulting from use that is not compliant with the datasheet or due to incorrect implementation.
- Product for professional use.
- Always consult the safety data sheet before use.
- The fresh product must be protected against frost and quick drying. Normally a temperature of +5°C is suggested as a minimum value for application and proper hardening of the product. Below this value, setting would be delayed excessively and below 0°C the fresh or partially hardened product could be broken up by frost.
- Do not use for exteriors.
- Avoid applying SA 500 at temperatures above +30°C.
- Avoid air draughts and strong sunlight in the first 48 hours after application (in summer it is recommended to use dark fabrics to block sunlight on all openings). From the third day onwards, ventilate the area to assist hardening and ensure optimum drying of the screed.
- The screed must be protected against humidity, accidental contact with water and the formation of condensate.
- Avoid laying SA 500 in thicknesses of less than 3 cm.
- If the screed is laid on underfloor heating systems, there is no need to use fluidifying agents, since they are already contained in the product formulation.
- Avoid applying the product directly in contact with pure aluminium.
- Lay wooden, resilient and laminated floors only after having ascertained by carbide hygrometer that the moisture content is ≤ 2% (in compliance with UNI 11371 and UNI 11515-1).
- For application of wooden floor coverings on screeds enclosing underfloor heating coils, residual moisture must be ≤ 1.7% (in compliance with UNI 11371 and UNI 11515-1).
- The residual humidity must be measured with a carbonate hygrometer when it is assumed that the screed humidity content is lower than 3%. For the measurement introduce a 50 gr sample in the vessel together with a calcium carbide vial. The reading must be made on the 50 gram scale, or using the appropriate conversion scales supplied with the instrument, 20 minutes after starting the test (in accordance with the requirements of standard UNI 10329). Electrical instruments may provide inaccurate values.
- For correct installation of ceramic flooring on any cement screed, the residual moisture content must be ≤ 3% (in compliance with standard UNI 11493-1).
- The use of adhesives in aqueous dispersion for parquetry requires, after sanding the screed, the use of a primer that is compatible with the chosen type of adhesive.
- For the production of unbonded screeds on vapour barriers, intended for the subsequent application of thin coverings in general and/or resilient coverings, the minimum thickness must be at least 4 cm, placing metal reinforcing mesh half-way into the floor screed.
- Remember that for the installation of moisture-sensitive coverings (wood, resilient, etc.), the vapour barrier must have an S_d (equivalent air layer thickness) that complies with the requirements of the corresponding application standards.
- Depending on the intended use, useful thickness, compressibility of insulating materials, surface geometries and type of covering, evaluate whether to use welded wire mesh inside the screed. Typically, the mesh will measure 50x50 mm with a wire thickness of 2 mm, and must be interrupted at the height of the expansion joints.
- For application on underfloor heating systems, the minimum recommended thickness is 3 cm above the piping (for applications on some radiant systems with low thermal inertia, contact Fassa Technical Service).

SA 500 it must be used in its original state without the addition of foreign materials.

Storage

Store in a dry place for no longer than 6 months. Once the product has expired, it must be disposed of in accordance with current legislation.

Quality

SA 500 is subjected to accurate and constant checks in our laboratories. The raw materials used are rigorously selected and controlled.

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Technical Data

Specific gravity of the powder	approx. 1,500 kg/m³
Application thickness	3-6 cm
Granulometry	< 3 mm
Mixing water	approx. 16.5%
Yield	approx. 18 kg/m² with 10 mm thickness
Density of hardened product	approx. 2,100 kg/m³
pH	alkaline
Workability time at +20°C	approx. 30 minutes
Typical drying time at +20°C and 65% RH	1 week/cm for the first 4 cm of thickness; 2 weeks/cm for each additional cm; at lower temperatures and/or higher R.H. drying time may increase
Thermal conductivity coefficient (EN 1745)	λ = 1.41 W/m·K (tabulated value)
Specific heat (EN 1745)	1 kJ/(kg·K) (tabulated value)
Water vapour diffusion resistance factor (EN ISO 10456)	110 Dry conditions - 65 Wet conditions (tabulated value)
Reaction to fire	$A1_{fl}$
Resistance to stresses parallel to the application surface (UNI 10827)	≥ 1.6 N/mm²
Thermal expansion (EN 1770)	0.015 mm/(m·K)
Flexural strength after 28 days (EN 13892-2)*	≥ 5 N/mm²
Compressive strength after 28 days (EN 13892-2)*	≥ 20 N/mm²
Walkability at +20°C	approx. 24 hours
Compliant with standard EN 13813	CT-C20-F5
* The specimens for mechanical resistance tests are prepared under laboratory conditions, using a specific procedure in accordance with the reference standard (EN 13892-1)	

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.tecnica@fassabortolo.com, ES: asistencia.tecnica@fassabortolo.com, PT: assistencia.tecnica@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.

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