

SM QUARTZ® - SM MARBLE® INSTALLATION

The information provided with this document is intended as a general guideline, and does not replace the opinion of professional installers, who can also evaluate jobsite conditions.

SUBSTRATE PREPARATION

The substrate (concrete slab), according to DIN 18560 standard, must be allowed to cure for more than 28 days and have a concrete reinforcement mesh 3-4 mm in diameter, 20x20 cm mesh embedded in the substrate. Place a polythene steam barrier on the top of the substrate, making sure the sheets are overlapping by at least 20 cm (7" – 8").

THE SCREED

The screed is a thin layer of material, poured on the top of the structural concrete for self levelling purposes and to create a flat surface to install the flooring. The screed is usually a mortar, either cement or anhydrite based.

The screed can be:

- adhering, when it adheres to a structural concrete, e.g a reinforced concrete floor.
- disconnected, when something is placed between the structural concrete and the screed (e.g a polythene or pvc steam barrier).
- floating, when installed on a thermal and/or sound insulation layer.
- radiant, a floating screed, with pipes in the middle, where hot (85 – 105°F) or cold (60 – 65°F) air circulates.

The screed for residential buildings must show a minimum mechanical strength 20 Mpa, and the thickness (minimum 3.5 cm) must be adequate to the type of flooring to be installed; the screed must be flat and sound.

In commercial and industrial buildings, where high pedestrian traffic is to be expected, the minimum mechanical strength of the screed is 30 Mpa, minimum thickness 5 cm, and it is highly recommended to embed in the middle of the thickness a zinc-coated or stainless steel net, 5x5 cm mesh with diameter of 2 mm.

Allow the screed to cure by reaching 90% of the planned shrinkage, which is a consequence of the water drying from the original mixture.

Double check the residual humidity of the screed prior to starting the installation of the

tiles, no matter how old the screed is. When installing engineered stone tiles, we recommend residual humidity to be lower than 3%. The screed must be clean and free from any dust, dirt or grease that may compromise the adhesion between screed and glue. Possible cracks, usually caused by excessive water/binder in the mixture, or too thin grits, must be sealed before the installation with epoxy resin based products.

When installing tiles on floating or sound proofed floors, the thickness of the screed must be increased, and an arc-welded net be embedded in the middle. Usually, a 5x5 cm with 3 mm diameter net is enough to absorb the deformation caused by the compressibility of the insulating layer.

When the floating flooring embeds a heating/cooling system, the thickness of the screed is to be increased. Once the screed has cured, it is advisable to expose it to a gradual thermal shock, until the normal usage temperature is reached. As a result of this procedure, cracks will appear on the surface that should be sealed with epoxy resin based products before starting the installation of the tiles.

In order to avoid issues due to bad mixing, we suggest the use of pre-mixed adhesives, which allow a controlled hygrometric shrinkage and consistent compressive strength.

When installing tiles on a large area, a system of expansion and control joints should be used. The cutting (2/3 of the thickness of the screed) must be carried out as soon as the solidity of the screed itself allows it.

IMPORTANT INFORMATION FOR THE INSTALLATION OF ENGINEERED STONE TILES

Engineered stones, both marble and quartz based, in addition to marble, granite and ceramic tiles, are subject to warping and expansion due to the humidity coming from the screed and the adhesive, and to temperature gradients.

Warping, detachment or cracking of the tiles can appear when tiles are not properly installed.

The evaluation of the warping caused by humidity is carried out according to a specific test that classifies the materials in three categories:

A – Stable materials, warping < 0.3 mm

B – Slightly instable materials, warping >0.3 mm <0.6 mm

C – Instable materials, warping > 0.6 mm

All SANTAMARGHERITA® engineered stones belong to Class A, except Verde Liguria and Rosso Levanto, which belong to Class B.

Please consider that with SANTAMARGHERITA® products the linear thermal expansion coefficient increases the thinner the aggregates are. All our products show thermal expansion $12 - 50 \cdot 10^{-6} \text{°C}^{-1}$ (e.g a tile showing linear thermal coefficient of expansion $24 \cdot 10^{-6} \text{°C}^{-1}$, whose long edge at 15°C is 600.00 mm, when heated up to 50°C will expand to 600.50 mm).

INSTALLATION

Thin set installation is recommended for indoor only.

Installation with sand and cement mortar is not recommended.

The result of a good installation depends on the correct execution of all phases of the process: substrate preparation, screed, adhesive, expansion joints, joints, and quality of the tiles.

The designer must carefully write the specification, including the installation process, the materials to be used, the joints' width, the structural, expansion, perimeter joints, etc. While choosing the most suitable adhesive and its application process, we suggest to follow the recommendation of the adhesive's manufacturer.

The choice of the adhesive depends on the final use of the building and the material to be installed.

We recommend the use of a notched trowel with deep enough grooves to achieve 95-100% minimum mortar contact with the back side of the tiles to be installed on floors (80% for tiles to be installed on walls). When installing large sizes, back butter each tile with a sufficient mortar layer to achieve a 100% mortar contact and a void-free solid support.

When it comes to installation, SANTAMARGHERITA® products can be divided into three categories:

CLASS 1: SM QUARTZ®

Taking into consideration the technical characteristics of the engineered stones belonging to this category, we recommend bi-component high performance flexible cement based adhesives (cementitious adhesive + latex) for the installation of tiles in areas not subject to significant mechanical and/or thermal stress.

Products catalog 2016: Alberta, Amiata, Aosta, Apulia, Ardenne, Atena, Beige stardust, Bianco papiro, Bianco stardust, Blu stardust, Breda, Bronze, Calais, Caledonia, Cancun, Carnia, Cervinia, Contract beige, Contract black, Contract dark grey, Contract grey, Contract white, Corda, Corsica, Florence, Georgia, Grigio nube, Grigio stardust, Guam, Iron, Istria, Itaca, Lyskamm, Manaus, Marrone stardust, Maui, Metropolis beige, Metropolis brown, Metropolis dark, Metropolis grey, Miami, Mosa, Nero, Nero stardust, Nevada, Otello, Pewter, Phuket, Pompei, Rimini, Rodi, Rosso stardust, Sabbia beige, Silver, Sky stardust, Torrone, Vega, Victoria, Virginia, Vulcano, Zenith.

CLASS 2: SM MARBLE® (granulometry less than 10 mm)

Taking into consideration the technical characteristics of the engineered stones belonging to this category, we recommend bi-component high performance flexible cement based adhesives (cementitious adhesive + latex) for the installation of tiles in areas not subject to significant mechanical and/or thermal stress.

Products catalog 2016: Agave, Althea, Avena, Bianco avorio, Bianco ghiaccio, Bianco neve, Cotone, Daphne, Dhalia, Fiorito, Iris, Lapponia, Lino, Magnolia, Maremma, Mimosa, Ninfea, Olympia, Peonia.

CLASS 3: SM MARBLE® (granulometry larger than 10 mm)

Taking into consideration the technical characteristics of the engineered stones belonging to this category, we recommend high performance cement based monocomponent adhesives for the installation of tiles in areas not subject to significant mechanical and/or thermal stress. When installing tiles larger than 40x40 cm it is better to use bi-component high performance flexible cement based adhesives (cementitious adhesive + latex).

Products catalog 2016: Arabescato bianco, Black royal, Botticino, Breccia aurora, Fior di pesco, Giallo reale, Grigio carnico, Napoleon brown, Nero portoro, Perlato royal, Rasotica, Rosa del garda, Rosa perlino, Rosso levanto, Rosso verona, Verde alpi, Verde liguria.

When installing tiles in areas subject to mechanical and/or thermal stress (e.g floors exposed to direct sunlight), we suggest the use of polyurethane based bi-component highly flexible adhesives.

JOINTS

SANTAMARGHERITA® tiles are always to be installed with joints. No butt joints are allowed.

The minimum recommended joint is 3 mm for tiles up to 40x40 cm, 4 mm for tiles 60x60 cm and 5 mm for tiles larger than 60x60 cm.

To grout the joints, use polymer-modified sanded grouting mixed the polymer latex.

Remove all grout and mortar residue as soon as the grout loses its plasticity. Should you need to remove hardened grout from the tiles' surface, use wet Scotch-Brite, then clean with a sponge. If the residue is removed too early, joints may be partially emptied, becoming subject to deterioration; on the other hand, if the residue's removal takes place once the grout has hardened, the mechanical cleaning may lead to scratches on the tiles' surface.

EXPANSION JOINTS

Expansion joints must be minimum 5 mm wide and go through the screed, adhesive and tiles.

Expansion joints must be placed every 5 linear meters, creating squares 25 m². For installation in areas subject to direct sunlight, we suggest the installation of expansion joints every 3-4 linear meters.

Perimeter joints filled with flexible grouts (e.g expanded polystyrene) must be placed along the walls, around columns and curbs.

The structural joints planned in the concrete slabs must be carried through the covering surfaces.

Expansion joints are to be grouted with neutral silicone or polyurethane-based grout. Be careful in choosing the grout to use. Make sure it does not stain the tiles: avoid acetic-reticulated silicones.