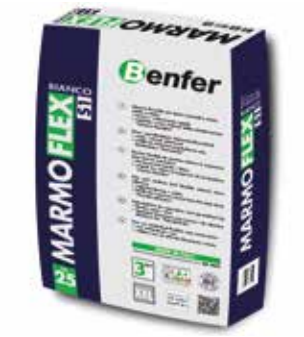
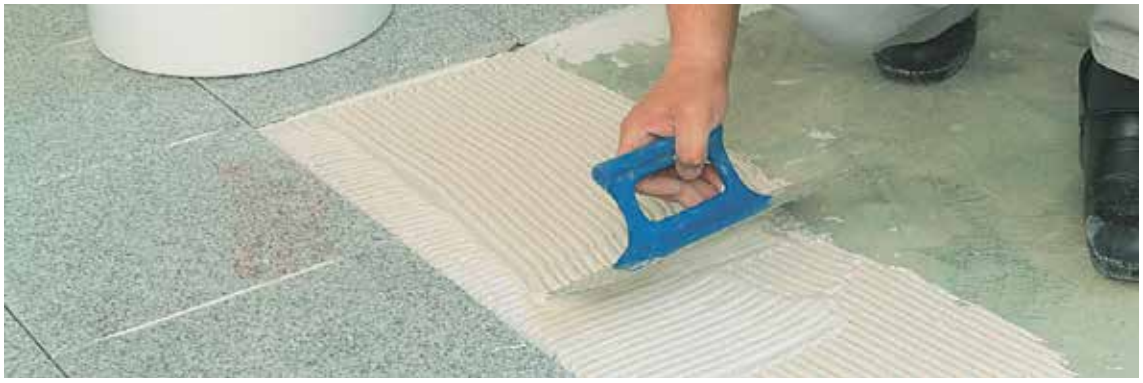


MARMOFLEX S1

Modern flexible adhesive with increased yield

- Rapid crystalline water binding
- Rapid hardening
- Flexible
- Up to 15 mm bed thickness
- For the installation of natural stone tiles
- Good slump resistance
- White
- For interior and exterior use
- For heated substrates
- Especially creamy application
- Tested in accordance with EN 12004, C2 FT S1
- CE

This product improvable with CEMLATEX 600



TECHNICAL FEATURES:

MARMOFLEX S1 is a high quality white adhesive based on cement. Its formula has been conceived and developed for quick and sure laying of marble, porcelain, ceramic and natural stone.
Its ability to chemically bind most of the water in the mix, with very rapid setting and hydration eliminate the risk of irreversible staining of the slabs and prevent possible deformation of reconstituted tiles.

AREAS OF APPLICATION:

MARMOFLEX S1 is a particularly creamy to use thin or medium bed adhesive. For the installation of natural stone tiles as well as earthenware and vitrified ceramic tiled finishes, ceramic tiles with low water absorption < 0,5% (fully vitrified). It is preferred for work under time constraints and for fixing light, translucent materials and those sensitive to discolouration such as e.g. crystalline marble, limestone, granite, porphyry, quartzite, sandstone etc. Due to the efficient binding of the water, MARMOFLEX S1 offers further protection against discoloration from the stone's own constituents.

TECHNICAL ASSISTANCE

INSURANCE GUARANTEE

TECHNICAL ASSISTANCE

INSURANCE GUARANTEE

CONTRACT ITEM SPECIFICATIONS:

Floor and wall in ceramic tiles must be applied with a cement-based adhesive flexible, water-repellent, white, rapid hardening with an application thickness up to 15 mm, in accordance with EN 12004 class C2FT S1like MARMOFLEX S1 by Benfer.

MARMOFLEX S1 is suitable for assured fixing on flat and uneven load-bearing substrates.
Furthermore MARMOFLEX S1 can be used as a repair and patching mortar up to 15 mm beneath tiles. It is additionally suitable as a bonding material for lightweight construction boards e,g, extruded polystyrene and for tiling onto mineral-based and dispersion-based BENFER waterproof membranes.
Modify 25 kg of MARMOFLEX S1 with 6 kg di CEMLATEX 600 to obtain an adhesive of class C2 FT S2.
MARMOFLEX S1 is suitable for use in wet duty classes A0 and B0 in accordance with the ZDB information sheet "Bonded waterproof membranes".

SUITABLE SUBSTRATES:

- Concrete
- Cement-based screeds, standard or heated with water system or electric resistance
- Cement-based plaster
- Waterproofing flexible made up of concrete and polymers (AQUASHIELD-2KF)
- Concrete blocks

INSIDE ONLY:

- Fluid cement-based screeds (prior application of an appropriate Primer if demanded), standard or heated with water system or electric resistance
- Old ceramic tiles (prior application of an appropriate Primer if demanded)
- Plasterboard standard or waterproofed
- Elastomeric waterproofing membranes (ACQUASHIELD-GEL)

MAXIMUM SIZES:

- Internal floors with maximum length of longest tile side up to 360 cm
- External floors with maximum length of longest tile side up to 120 cm
- Internal walls coverings with maximum length of longest tile side up to 360 cm
- External walls coverings with maximum length of longest tile side up to 90 cm

See the choice guide to verify size limits by tile/substrates characteristics

METHOD OF USE:

SUBSTRATES PREPARATION:

The substrates must be solid, free from oil, grease and dust. Any paint-work must be in good condition, washed and degreased. If this is not the case, the paint must be removed. Gypsum or calcium sulphate based or absorbent substrates substrates must be previously treated with BENFERPRIM.Do not use to lay products with evidently subject to persisting stains, in case of contact with water, even for short times; in this case use BENFERJOLLY (see table page 4). Do not use to lay composed tiles which are highly unstable in presence of humidity like those based in green marble and some types of slate, or sandstones; in this case use BENFERJOLLY (see table page 4). Do not use on plastic materials, metal or wood. Do not use on supports subject to moisture pressure and moisture rising.

- Smooth screeds must be roughened
- Anhydrite screeds, as all the supports made of a combination of calcium sulphate, must be roughened, cleaned with a vacuum cleaner and carefully treated with Primer BENFERPRIM.
- Before the gluing on heated supports, they need to be turned on in conformity with norms and valid regulation now being.

To define when the support is ready to be coated, control humidity level with a carbide gauge.
The measure of residual humidity made with a carbide gauge must not be higher than:
Cement screeds: <2% for screeds on separating or insulating layers.
Non-heated anhydrite screeds: < 0,5%
Heated anhydrite screeds: < 0,3%

PRODUCT PREPARATION:

Place clean water in a clean mixing bucket, add MARMOFLEX S1 and mix with a drill and paddle (approx. 300-700 rpm) to a homogenous consistency.
Mixing ratio: 6.5-7.0 litres water : 25 kg MARMOFLEX S1
Mixing ratio, highly deformable (conforms to class C2FT S2, deflection ≥ 5 mm):
6 kg CEMLATEX 600: 25 kg MARMOFLEX S1.
Allow to stand briefly then remix.
Do not prepare more adhesive than can be used within the pot life of the product.

TILING:

INTERIOR: Lay the tiles while exerting a good pressure on the tiles surface, so that contact between tile and adhesive will be at least of 95-100%.
EXTERIOR: The contact between tile and adhesive must be 100% so to avoid the eventual rain infiltrations that in case of frost could cause the detachment of the tiles. Therefore, it is suggested to spread also a layer of MARMOFLEX S1 on the back of the tiles.
We suggest to do the same things even inside for:

- Floor tiles largest than 500 cm^2 with water absorption of the tiles ≥ 0.5% (e.g. porcelain tiles)
- Floor tiles largest than 1100 cm^2 with all the other types of tiles
- Wall tiles largest than 120 cm^2 with water absorption of the tiles ≥ 0.5% (e.g. porcelain tiles)
- Wall tiles largest than 500 cm^2 with all the other types of tiles
- Special applications such as industrial refrigerators, basins, swimming pools, etc.

It is essential to leave a joint of at least 3 mm between each tile, and to ensure that the tiling conforms with the expansion joints of the structure, to be elastically sealed, as well as the joints between walls, and the joints between wall and floor. In any case expansion joints and perimeter joints must be carried out every about 20 m^2.

FULL SERVICE:

At 23°C and with 50% relative humidity, the open time of the mix is approximately 20 minutes. In unfavourable conditions, these times may be significantly reduced. You are therefore advised to spread the adhesive a little at a time and to check frequently that it has not formed a surface film before laying the tile. To improve workability, especially in summer, it is beneficial to exclude draughts. In the first 12 hours after application, the adhesive does not withstand frost. Flooring installed using MARMOFLEX S1 can be walked over cautiously after about 3 hours for grouting, and full service after 3 days.

ADVICE:

- Large irregularities in the substrate up to 15 mm can be evened out by applying a levelling layer of MARMOFLEX S1. Allow the levelling layer a minimum of 3 hours *) to cure.
- To avoid curling effects due to water absorption when installing serpentinite, schist and agglomerate/ synthetic stone tiles which contain these natural stones, we recommend the use of BENFERJOLLY.
- Not suitable for under water application.
- For applications on REVOFLEX we reccommend to use BENFERJOLLY.
- When installing natural and synthetic stone tiles heed the specific product properties of the material to be fixed (tendency to discolour, risk of curling etc) and follow the manufacturer's installation recommendations. In cases of doubt carry out a trial area.
- Thoroughly prime calcium sulphate based substrates with BENFERPRIM or STARPRIM.
- Do not attempt to re-life adhesive that has already stiffened by adding water or fresh mortar, there is a risk of inadequate strength development.
- Eliminate rising damp from the substrate.
- When installing tiles in heavy duty areas in exterior locations (balconies and terraces) use the highly elastic bonded waterproof membrane system ACQUASHIELD-2KF or ACQUASHIELD-2KF.
- In continuously immersed areas (swimming pools, containers etc.) we recommend the use of system based thin bed adhesives BENFERFLEX onto the Benfer waterproof membrane appropriate for the particular application. Heed the specific product properties of the material being laid.
- MARMOFLEX S1 is a hydraulic hardening mortar that needs to be protected against water and frost penetration until fully cured, which may take a few days in bad weather conditions.
- Protect areas not be treated with MARMOFLEX S1.
- Direct contact between cement-based mortars and magnesite screeds leads to the destruction of the magnesite screed through a chemical reaction. Moisture penetration from the rear must be eliminated with appropriate measures.
- Please consult the European technical safety sheet available.

CONSUMPTION: The consumption changes according to planarity of the support, to the used trowel and to the laying system (simple or double gluing).

Support	Tile Surface	Laying System	Trowel Type mm.	Consumption kg/m²
Interior floor	S<1100	simple gluing*	8/10	3,1/4,1
	1100<S<3600	double gluing	10/15	5,1/6,1
	3600<S<10000	double gluing	15	7
Ext. floor	400<S<1100	double gluing	8/10	4,1/5,1
	1100<S<3600	double gluing	10/15/20	5,1/7
Interior wall	S<400	simple gluing*	6	2,3
	400<S<2000	double gluing	8/10	4,1/5,1
	2000<S<3600	double gluing	10	5,1
Ext. wall	S<400	simple gluing*	6	3,1
	400<S<2000	double gluing	8/10	4,1/5,1
	2000<S<3600	double gluing	10	5,1

*for buildings classified U4 P4S and double gluing water pool

List of some of the typical natural stones and application advice

MARMOFLEX S1 is suitable for the application of the following natural stones

Beige Alicante	Bianco zandobbio
Bianco Alicantino	Botticino
Bianco Carrara	Calacatta
Bianco cristallino	Crema Marfil
Bianco di Siena	Nero Assoluto Africa
Bianco Jura	Nero Marquinia
Bianco Naxos	Rosa Beta
Biancone	Rosa Perlino
Bianco Nero Carrara	Rosa Portogallo
Bianco statuario venato	Travertino
Bianco Thassos	

For the following natural stones it is necessary to contact the technical office in Benfer or using BENFERJOLLY

Breccia	Rosa Chiampo
Crema Valencia	Rosa Nembro
Onici	Rosso Alicante
Perlato Olimpo	Rosso Verona
Rosa Atlantide	Trani

For the following natural stones we recommend NOT to use MARMOFLEX S1.
Use BENFERJOLLY

Ardesie	Rosso Antico d'Italia
Arenarie	Rosso Levanto
Basaltica di Bagnoregio	Rosso Verona
Pietra di Carniglia	S.Gottardo
Pietra di Vicenza	Verde Alpi
Pietra serena	All kind of green.
Porfidi di Albiano	

All the granite and all the reconstructed materials are composed by resins and stones as reported above.

CLEANING: Clean tools immediately after use with water.
PACKAGING: MARMOFLEX S1 is available in 25 kg poly-lined bags.
STORAGE: Dry, in the original unopened packaging.
SHELF LIFE: 12 months. Use opened packaging promptly.

PRODUCT TECHNICAL DATA

Classification EN 12004:	C2FTS1
Basis:	White special cement, selected aggregates, additives
Colour:	Extra white
Apparent mass volume:	1,2 kg/dm^3
Maximum grain size:	0,5 mm
Storage and Duration:	12 months in the original closed package in a cool dry place
Danger of toxicity:	No. The product may cause irritation to the eyes and skin due to presence of cement
Inflammable:	No
Mixture ratio:	26 -28% - 6,5-7,0 lt water per 25 kg bag
Mixture consistency:	Creamy
Density of paste:	1,6 kg/dm^3
Application temperature:	From +5°C to + 35°C
Pot Life:	30 – 45 minutes*
Open time:	10-20 minutes
Vertical sliding to EN 1308:	< 0,5 mm
Maximum thickness:	15 mm
Foot traffic after:	3 hours
Grouting:	3 - 4 hours*
Full service:	3 days
Final hardening:	7 days
Final performance:	
Adhesion (after 28 days):	> 1,0 N/mm^2
Adhesion after warming:	> 1,0 N/mm^2
Adhesion after water immersion:	> 1,0 N/mm^2
Adhesion after frost-thaw cycles:	> 1,0 N/mm^2
Deformability according EN 12004:	> 2,5 mm
Temperature resistance:	From -30° C to +90° C
	* at 23°C and 50% relative humidity

PLEASE NOTE: The information given in this chart is based on our best experience and indicative only. It must in any event be verified by the end user, who assumes all liabilities deriving from utilization of the product.