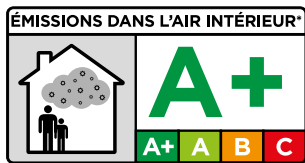




BENFERFLEX MAX-S2

Highly flexible, multi-purpose adhesive, applicable in thickness up to 20 mm, designed for very large size technical porcelain

- Highly deformable • Designed for very large sizes
- Highly resistant to sinking, with outstanding application properties
- Long open time • For heated substrates
- Dust reduced • Tested in accordance with European standard EN 12004, C2 TE S2
- High yield • For exterior and interior use
- **CE**



TECHNICAL FEATURES:

BENFERFLEX MAX-S2 is a hybrid powder adhesive composed of cement, high tech polymers, selected granulometry aggregates and special additives. Its formulation has been conceived and developed for the fast, safe laying of technical porcelain of any size and thickness. Its high resistance to vertical sliding allows for the laying of top coatings. Thanks to its special composition, BENFERFLEX MAX-S2 is especially suited for laying with back buttering, essential for the creation of floors and walls with very large size technical porcelain.

AREAS OF APPLICATION:

Laying of all sizes and thickness of porcelain on:

- Interior and exterior walls and floors
- Heavy duty areas
- In conjunction with ACQUASHIELD waterproofing systems
- On top of old wall and floor tiles



TECHNICAL
ASSISTANCE



INSURANCE
GUARANTEE



TECHNICAL
MEETINGS



PROFESSIONAL
USE

CONTRACT ITEM SPECIFICATIONS:

Floor and wall in ceramic tiles must be applied with a hybrid one-component adhesive in powder, highly deformable (deformation > 5 mm according to EN 12004), applicable with trowel in thickness up to 20 mm, conforming to norm EN 12004 class C2 TE S2 as BENFERFLEX MAX-S2 by Benfer.

SUITABLE SUBSTRATES:

- Concrete
- Cement-based screeds, standard or heated with water system
- Cement-based plaster
- Flexible waterproofing membranes made up of cement and polymers
- Cement based blocks
- Thermal insulation coating systems (see pt. 3 in section ADVICE)

INSIDE ONLY:

- Fluid cement-based screeds (prior application of an appropriate primer if demanded), standard or heated with water system
- Fluid anhydrite-based screeds (prior application of an appropriate primer), standard or heated with water system
- Old ceramic tiles (prior application of an appropriate primer)
- Standard or waterproof plasterboard
- Elastomeric waterproofing membranes (ACQUASHIELD-GEL)
- Cement-based and gypsum-based boards (prior application of an appropriate primer)

Maximum length of longest tile side in cm /Floor

	External	Internal	Swimming-Pool
Cementitious supports	120	360	120
Flexible waterproofing products	120	360	120
Supports in anhydrite		120	
Old tiles		360	
Wooden boards		60	
Steel		NO	NO

Maximum length of longest tile side in cm /Wall

	External	Internal	Swimming-Pool
Cementitious supports	120	360	120
Flexible waterproofing products	120	360	120
Plasterboards		360	
Old tiles		360	
Wooden boards		90	
Steel		NO	NO

METHODE OF USE:**SUBSTRATES PREPARATION:**

The supports must be solid, able to bear the covering load, oil-free, free from grease or dust; intact, free from cracks at the moment of the application and free from detachment of the parts; dry, seasoned and consequently stable in dimensions.

The superficial part of the support must have a proper mechanical resistance and shear strength equal at least to 1 N/mm². The maturation of the cementitious support needs in general at least one week for every cm of thickness to obtain a surface with no dimensional shrinkage. We recommend a test of the residual humidity in the support through the carbide hygrometer, anyway.

Remaining paints must be in excellent condition, clean and free from oil; at the contrary it is necessary to remove them accurately from plaster. Use on gypsum or anhydrite supports, or on particularly absorbent supports only after a previous treatment with a specific primer such as BENFERPRIM or STARPRIM of the range BENFER.

The flat support is extremely important, especially when you lay gres in big formats. Laying on an irregular supports or different levels of the supports may become impossible; in this case we recommend to verify the respect of maximum tolerance of 3 mm by measuring it with a proper instrument of 2 m (tolerance decreases at 1,5 mm in case you are working with tiles with thickness < 4 mm), as reported in norm UNI 11493. In case you do not reach those conditions we recommend to fill the difference of levels with self-levelling or smoothing products, such as MULTIPLAN or TRIOTECH of range BENFER.

MIXTURE PREPARATION:

Mix BENFERFLEX MAX-S2 in a clean mixing bucket with clean water until homogenous.

Mixing ratio:

8.5-9.5 litres of water : 25 kg BENFERFLEX MAX-S2

Allow to stand for 2 minutes, then re-mix.

Do not mix more BENFERFLEX MAX-S2 than can be used within the pot life (about 3 hours).

TILING:

BENFERFLEX MAX-S2 is applied in a homogeneous and continuous coat with a notched trowel, suitable for the tiles format. Laying the floor tiles within the open time of the product. We recommend to lay a coating of adhesive with the smooth back part of the trowel, and then apply the product with a notched trowel to obtain the necessary thickness for application to wet completely the back part of the tile. Consider that the contact between the adhesive and wall or floor tiles must be complete, especially in external areas, to avoid water infiltrations which may cause the detachment of the tiles in case of frost.

For this reason we always recommend the methods of the double application, that is applying a layer of adhesive even on the back part of the tile in the following cases:

- When you need to lay slabs whose maximum length of longest tile side is over 100 cm, or/ and in case of gres with thickness equal or lower than 6 mm;
- In case of tiles with profiled rear side with important prominences;
- For application of floors and walls in external areas;
- If the tiling will be subject to mechanical or thermal-hygrometric stress;
- If the support has a heating system;
- When the conformation of the tiles or the conditions of support are not suitable to obtain the complete flow-bed in one laying.

We recommend to lay a double coating with a notched trowel, with large teeth (of 8/10 mm) on the support, and with small teeth (of 3 mm) or with the smooth part on the rear side of the ceramic slab, carefully wet with adhesive the entire surface and spreading the product in only one direction, both on supports and on the rear side of the slab.

Once you lay every tile, the adhesive must have a good adhesion in every part and let the air flowing out; for this reason we recommend to beat the slab with proper rubber trowel, from centre to exterior. It is necessary to keep always one grout of at least 2 mm in interior and 5 mm in exterior, to fill with appropriate sealers (such as DEKOGROUT or DEKOGROUT+) or epoxy (such as DEKOGROUT-2K) after waiting for about 12 hours.

Respect the possible expansion joints of the structure to seal elastically, as well as the joints between the walls and between walls and floors. In every case provide proper fractional joints every 25 m² in interiors, and every 6 linear meters anyway; and every 9/12 m² and maximum every 4 linear meters in exterior. Fill the joints with elastic sealers such as DEKOSIL.

At 23°C and with 50% relative humidity, the open time is approximately 30 minutes. Under 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 tiles.

The fixing of tiles can be finalized with the help of appropriate suction cups within 45 minutes from tiles application.

To improve workability, especially in summer, it is useful to exclude draughts. In the first 12 hours after application, the adhesive does not withstand frost.

FULL SERVICE:

Flooring installed using BENFERFLEX MAX-S2 can be walked over cautiously after about 12 hours for grouting 12 hours.

Full service after 3-7 days, depending on formats, supports and environmental temperature.

ADVICE:

- In case of application of tiles on waterproofing system, we recommend the use of BENFERJOLLY as adhesive.
- When installing tiles in more demanding conditions externally (balconies and terraces), we recommend the highly elastic bonded waterproofing system ACQUASHIELD-2KF.
- In case you need to apply tiles and slabs on insulation boards or thermal insulation coating systems, we recommend to contact our technical department to jointly evaluate and choosing the best solution.
- When you apply natural stones or assembled stones you need to consider the specific characteristics of the product (tendency to discoloration, risk of warping etc...) and follow the recommendations of the producer. We recommend to use adhesives of range MARMOFLEX or BENFERJOLLY anyway.
- To avoid curling effects through water absorption, we recommend that when fixing natural/synthetic stone BENFERJOLLY is used.
- Thoroughly prime calcium sulphate based substrates with BENFERPRIM, STARPRIM. To avoid the formation of ettringite, BENFERFLEX ANHYDRITE is especially suited for installing tiles to calcium sulphate based substrates up to a residual moisture of 1.0% when heated.
- Adhesive, which has started to stiffen, should not be re-lifted through the addition of water or fresh mortar as there is a risk of inadequate strength development.
- BENFERFLEX MAX-S2 is a hydraulically hardening mortar and should be protected from water and frost penetration until completely hardened, which may take a few days in unfavourable weather conditions.
- BENFERFLEX MAX-S2 contains cement which has an alkaline reaction in contact with humidity, so it is necessary: protecting from contact with skin and eyes; in case of irritation wash accurately with clean and fresh water; in case of contact with eyes please contact immediately a doctor.

CLEANING: Tiling should be cleaned with a damp cloth or sponge when the adhesive has already started to set.

PACKAGING: BENFERFLEX MAX-S2 is available in 25 kg poly-coated paper bags on europallet of 1.050 kg.

STORAGE: In the original closed package in a cool dry place.

SHELF LIFE: 12 months from the date printed on the packaging.

CONSUMPTION: The consumption changes according to planarity of the support, to the used trowel and to the laying system.

NOTCHED TROWEL	Consumption kg/m ²
4 mm	1,5
8 mm	3
10 mm	3,5-4
20 mm	7-8

PRODUCT TECHNICAL DATA

Classification:	C2 TE S2
Basis:	Cement, aggregates, additives
Colour:	White and grey
Apparent mass volume:	0,92 kg/m ³
maximum grain size:	0,3 mm
Storage and Duration :	12 months in the original closed package in a cool dry place
Danger of harm:	No, possible irritation of the eyes and skin upon contact
Flammability:	No
Mixture ratio:	34-38%, 8,5-9,5 lt of water per 25 kg bag
Mixture consistency:	Cream
Mass volume of paste:	1,4 kg/dm ³
Application temperature:	From + 5° C to + 35° C
Pot Life:	About 3 hours
Open time:	Approx. 30 minutes
Maximum thickness:	20 mm
Light foot traffic:	12 hours*
Grouting:	12 hours*
Full service conditions after:	7 days*
Final hardening:	28 days*
Final performance:	
Adhesion at start (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
Deformable according to	
DIN EN 12004 (medium):	6 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.