FE 838

DATA SHEET

Two-component acid resistant coloured epoxy sealant for joints of at least 3 mm, for interiors and exteriors

Interior/Exterior

Interior/exterior flooring

In pools

Plastic containers

Rubber trowel

Notched trowel

Advantages

- Excellent resistance to acids
- Excellent resistance to alkalis
- Excellent resistance to oils

Composition

Component A: made from epoxy resins and special quartz
Component B: corresponding hardener

Supply

- Special sacks with protection against moisture, approx. 10 kg (9.4 kg Comp. A and 0.6 kg Comp. B)
- Tints: Available in 1 colour

Use

FE 838 is used for interiors and exteriors as a grouting for floors and ceramic or stone coverings, acid-resistant floors and coverings in the food industry, in chemical laboratories, in cheese factories, slaughterhouses, butcher's shops, fishmonger's, wineries and wherever a high level of hygiene is required, in tubs containing chemically-aggressive waters and in industry where a high level of mechanical and chemical resistance is required, for the acid-resistant cementing of tiles.

Substrate preparation

Before grouting the joints with FE 838, check that the covering has been laid in compliance with the application instructions and the regulations in force, and that all of the tiles are firmly bonded to the substrate.
Also make sure that the bedding mortar or adhesive used for bonding the covering is well cured, sufficiently hardened and dry, and that the specified waiting times have been complied with. This prevents residual rising damp, which can cause problems with the grout.
The joints and the finish covering (ceramic, etc.) must be cleaned beforehand to remove any adhesive residues, dust and loose parts, which must be carefully vacuumed up; in addition, the joints must be empty and free for at least 2/3 of the thickness of the tiles (or the entire thickness for thin tiles).
When used as an adhesive, before applying the product, make sure that the application surface is cured, intact, dry, stable and mechanically resistant. Any traces of oil, grease, wax, paints, varnishes etc. must be removed beforehand, as well as any crumbling or loose parts.

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Mixing

Add one 0.6 kg pack of FE 838 Comp. B to each 9.4 kg pack of FE 838 Comp. A and carefully mix using a helical rotor at low speed until obtaining a uniform and smooth mix. Make sure that the components are carefully mixed together, moving the mixture from the bottom and sides of the container using a spatula or trowel. Apply the mix using a rubber-coated trowel. Apply diagonally to the direction of the tiles, making sure to completely fill the joints and remove any excess material with the spatula. The paste can be worked for around 45 minutes and can be walked on after about 24 hours at +20°C. Lower temperatures significantly extend the time after which the surface can be walked on (at +15°C this will be around 3 days). While the product is still fresh, spray water that is as hot as possible and clean with an abrasive felt with a circular motion to remove the grout residues, making sure to emulsify the entire surface in the same way. The second step should be performed using a cellulose sponge and DETERPOXY diluted 1:5 with water. The water used for washing and the equipment must always be kept clean; sponges and felts must be replaced when they are excessively impregnated with resin. If the tiles have some stains or sticky spots the day after cleaning, these can be cleaned using a cellulose sponge and a 1:5 solution of DETERPOXY and water. For more persistent dirt and hardened grout residues, use pure DETERPOXY within 24 hours of application. Finally, wash with plenty of water and then dry or remove the water with a wet vacuum cleaner.
If applying as an adhesive, mix the two components as instructed previously, spread the adhesive using a suitable notched trowel, and then apply the covering. Depending on the characteristics of the tile (weight and size) and the thickness of adhesive applied, to assist application it is recommended to use Fassa Bortolo levelling systems (e.g. NEW LEVEL TILE kit). In accordance with application standard UNI 11493-1, where required, spread the adhesive on both surfaces being bonded, so as to ensure full contact.
For correct application, please see the technical documents for each individual product described above.

Warnings

- Product for professional use.
- Do not change the ratio of Comp.A to Comp.B.
- The fresh sealant must be protected against frost and quick drying.
- Do not use FE 838 to grout coverings dirtied by adhesive, mortar or dust.
- Clean equipment with abundant water when the mix is still fresh.
- If the product has already started setting, for cleaning add 10% alcohol to the water.
- Do not use FE 838 when there is water in the joints.
- Before grouting natural stone floors, carry out a test to check that tiles can be cleaned.
- Do not grout absorbing tile floors/coverings.
- Do not use FE 838 as a division or expansion joint.
- Do not allow the water used for washing to form pools in the joints.
- Extended contact of FE 838 with acids and oxidants will cause colour changes.

FE 838 must only be used in its original state without the addition of other materials.
FE 838 cannot be cleaned off once hardened.

Storage

If stored in a suitable environment, in its original packaging, the material has a shelf life of 12 months.

Quality

FE 838 is subjected to careful and constant testing in our laboratories. The raw materials used are rigorously selected and checked.

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Technical Data

Specific gravity comp. A thixotropic resin	approx. 1.6 kg/l
Specific gravity comp. B amber liquid	approx. 0.98 kg/l
Specific weight of the mix	approx. 1.6 kg/l
Mix ratio	9.4 parts of Comp. A + 0.6 parts of Comp. B (pre-dosed packs)
Duration of the mix at +20°C	approx. 45 minutes
Application temperature	from +12°C to +30°C
Ready for normal use	after approx. 15 days at +20°C
Moisture resistance	excellent
Ageing resistance	excellent
Alkali resistance	Excellent: ammonia, caustic soda, hypochlorite (active chlorine 6.4%)
Acid resistance	Excellent: acetic acid up to 5%, hydrochloric acid, citric acid, lactic acid, tannic acid, tartaric acid, oxalic acid, phosphoric acid up to 50%
Oil resistance	Very good: petrol, diesel oil, fuel oil, petroleum
Temperature resistance	from -20°C to +140°C
Walkability	after at least 24 hours at +20°C
Classification according to standard 13888	RG
Classification according to standard EN 12004	R2

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Estimated consumption of FE 838 kg/m² approx. for some types of tiles

TILE SIZE			D = JOINT WIDTH					
A	B	C	3	5	8	10	12	15
20	20	4	2	3.2	5.2	6.4	7.7	9.6
50	50	4	0.8	1.3	2.1	2.6	3.1	3.9
50	50	8	1.6	2.6	4.1	5.2	6.2	7.7
75	150	6	0.6	1	1.6	2	2.4	2.9
100	100	6	0.6	1	1.6	2	2.4	2.9
100	100	10	1	1.6	2.6	3.2	3.9	4.8
100	100	8	0.8	1.3	2.1	2.6	3.1	3.9
100	200	6	0.5	0.8	1.2	1.5	1.8	2.2
100	200	10	0.8	1.2	2	2.4	2.9	3.6
150	150	6	0.4	0.7	1.1	1.3	1.6	2
150	150	10	0.7	1.1	1.8	2.2	2.6	3.2
200	200	8	0.4	0.7	1.1	1.3	1.6	2
120	240	12	0.8	1.2	2	2.4	2.9	3.6
250	250	12	0.5	0.8	1.3	1.6	1.9	2.4
250	250	20	0.8	1.3	2.1	2.6	3.1	3.9
250	330	8	0.3	0.5	0.8	0.9	1.1	1.4
300	300	8	0.3	0.5	0.7	0.9	1.1	1.3
300	300	10	0.4	0.6	0.9	1.1	1.3	1.6
300	300	20	0.7	1.1	1.8	2.2	2.6	3.2
300	600	10	0.3	0.4	0.7	0.8	1	1.2
330	330	10	0.3	0.5	0.8	1	1.2	1.5
400	400	10	0.3	0.4	0.7	0.8	1	1.2
450	450	12	0.3	0.5	0.7	0.9	1.1	1.3
500	500	12	0.3	0.4	0.7	0.8	1	1.2
600	600	12	0.2	0.4	0.6	0.7	0.8	1

(A+B)/(AxB) x C x D x 1.6 = kg/m²	A = tile length (in mm)
	B = tile width (in mm)
	C = tile thickness (in mm)
	D = joint width (in mm)

Performance in accordance with EN 13888 - RG	
Abrasion resistance (EN 12808-2)	≤ 250 mm³
Flexural strength after dry storage (EN 12808-3)	≥ 30 N/mm²
Compressive strength after dry storage (EN 12808-3)	≥ 45 N/mm²
Shrinkage (EN 12808-4)	≤ 1.5 mm
Water absorption after 240 minutes (EN 12808-5)	≤ 0.1 g

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Performance in accordance with EN 12004 - R2	
Initial shear adhesion strength (EN 12003)	≥ 2 N/mm²
Shear adhesion strength after water immersion (EN 12003)	≥ 2 N/mm²
Open time: Tensile strength (EN 1346)	≥ 0.5 N/mm² after no less than 20 minutes
Shear adhesion strength after thermal shock (EN 12003)	≥ 2 N/mm²

Table of colours

White	

All Fassa Bortolo sealants used to fill joints between ceramic tiles and stone materials meet the requirements of EN 13888.

The colours reproduced are purely indicative and may vary for reasons due to printing, reproduction and conversion of the images.

It should also be noted that colour rendering is affected by several other factors, including, by way of example: natural light, which is not uniform or constant; artificial light, affected by the colour temperature of the light source or CCT - Correlated Colour Temperature; and the colour of adjacent surfaces. The display of colours by computers is also affected by the user's display settings.

For a more meaningful colour match, refer to the grouting samples provided in the colour chart.

In any case, the final colour obtained on site will depend on the processing, application and cleanliness of the sealant and the type and colour of the tiles adjacent to the joints, and may also be subject to changes over time, including for reasons relating to environmental conditions (humidity, light, etc.).

For all of these reasons, Fassa Srl offers no guarantee whatsoever relating to the colour of Fassa Bortolo sealants and the product's correspondence to the images and samples provided, as well as to the final result obtained on site, declining all liability pertaining to this attribute.

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". Our Technical Service can be contacted by email at area.tecnica@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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