

FEBGUARD RAPID REPAIR MORTAR

Formerly sold as FEBDURA STANDARD

Rapid Setting Pre-Blended Repair Mortar

Description of Product

FEBGUARD RAPID REPAIR MORTAR provides pre-blended material for concrete repair, which reaches an adequate strength for trafficking (or other use) within 90 minutes at 15°C to 20°C.

Fields of Application

- For use in any situation where the minimum of delay and work disruption is of utmost importance
- Patching floors or roads
- Repair of factory or workshop floors
- Repair to concrete, including marine environments
- Bedding or re-levelling manhole frames, road furniture, kerbs, gratings and hydrants
- Setting posts or balustrades

Features and Benefits

The advantages over conventional repair materials are:

- Simple and easy to use for many types of repairs
- Saves time and labour
- High early strength
- Minimum delay to traffic and production. When used to repair concrete pavings, it usually permits re-opening to traffic only 90 minutes after laying at 15°C to 20°C
- Pre-blended, ready-to-use. Only requires the addition of water
- Excellent adhesion to most building surfaces. (See 'Priming')
- Highly durable. Excellent resistance to de-icing salts
- High freeze/thaw resistance
- More economic and simpler to use than epoxies or polyesters

Technical Data/Typical Properties

Composition

FEBGUARD RAPID REPAIR MORTAR is a dark grey coloured blend of high alumina cement and selected fine aggregates, specifically formulated to give controlled high early strength properties.

Compressive Strength in N/mm².

Tested according to BS 1881. (Water Cured)

Temp.	Compressive Strength at Age Shown					
	1½ hr	3 hrs	6 hrs	24 hrs	3 days	28 days
20°C	17	26	28	29	34	53
10°C	2	9	23	38	45	52
5°C	—	1	6	40	49	74

Water addition 2.1 litres per 20 Kg of FEBGUARD RAPID REPAIR MORTAR.

Flexural Strength in N/mm².

Tested accordingly to BS 1881.

Temp.	Flexural Strength at Age Shown					
	1½ hr	3 hrs	6 hrs	24 hrs	3 days	28 days
20°C	5	6	7	8	7	8
10°C	1	2	5	10	10	9
5°C	—	—	4	7	8	10

Water addition 2.1 litres per 20 Kg of FEBGUARD RAPID REPAIR MORTAR.

Setting Time:	Approx. 14 mins. dependent on temperature.
% Workability (BS 4551):	52% (5 drops in 5 seconds)
Plastic Density:	2350 Kg/m ²
Application Temp. Range:	0°C to 40°C. Can be used down to -10°C.
Service Temp. Range:	-20°C to over 100°C.
Volumetric Expansion (24 hours):	-0.390%
Linear Expansion (24 hours):	-0.0217%
Water Permeability:	5.6% at 24 hours tested in accordance with BS 1881.
Colour:	Dark grey

Performance

Under conditions of 15°C - 20°C FEBGUARD RAPID REPAIR MORTAR will start to harden in 10 to 15 minutes and can be subjected to vehicular traffic after 90 minutes.

Application Procedure

Preparation of Substrate

It is essential the surface of the concrete substrate to which the FEBGUARD RAPID REPAIR MORTAR is to be applied should be thoroughly sound and uncontaminated by dirt, oil or grease.

Preparation should expose a sound, reasonably level, lightly textured surface, which must then be cleaned. Recommended methods of preparation are scabbling; bush hammering or grit blasting.

The minimum thickness of repairs normally should not be less than 20 mm. The boundaries of the repair must be saw cut. Under no circumstances should "feather edging" be used. It is also essential the minimum thickness be measured from the "peaks" and not the "troughs" of any scabbled concrete.

Where reinforcement is exposed, all scale should be removed and the bar thoroughly cleaned by wire brushing or sand blasting.

Priming

The area to be repaired must be thoroughly pre-wetted with clean water. Care should be taken, however, to ensure that all standing water is removed.

Where necessary, grout the surface with a wetter mix of FEBGUARD RAPID REPAIR MORTAR. Well brushed into the surface with a short-bristled brush. Scrape away any surplus grit with the edge of a trowel, leaving the surface fully covered with moist grout. Place FEBGUARD RAPID REPAIR MORTAR without delay.

Batching

This should always be carried out in 20 Kg units (ie. one bag) of FEBGUARD RAPID REPAIR MORTAR or multiples thereof. If quantities of less than one bag are to be used, the amount must be weighed - not estimated - in order that the maximum addition rate of water is not exceeded.

For thickness less than 30 mm, use the neat material as above. For thicknesses over 30 mm, add single sized, clean, saturated surface dry, aggregate up to a maximum of 10 Kg per 20 Kg bag of FEBGUARD RAPID REPAIR MORTAR.

Maximum water addition for one bag of FEBGUARD RAPID REPAIR MORTAR is 2.3 litres. Pre-measure this quantity of water before commencing mixing.

Mixing

The following sequence must be followed at all times when mixing FEBGUARD RAPID REPAIR MORTAR.

1. A suitable efficient mixer should be located as near as possible to the area of work. A "half bag" mixer is suitable for one 20 Kg bag of FEBGUARD RAPID REPAIR MORTAR.
2. The amount to be mixed should never exceed that which can be transported, placed, compacted and finished within ten minutes.
3. Wet down the mixer and drain off the free water.
4. Empty the full contents of the FEBGUARD RAPID REPAIR MORTAR bag into the mixer and let the mixer drum turn. If aggregates are used, add to the mix and turn dry until incorporated.
5. From the container (in which is the pre-measured maximum recommended amount of clean drinking water) add water until the desired workability is achieved.
Warning: addition of too much water will cause excessive bleeding and segregation.
6. Minimum mixing time is 1½ minutes.

Workability

The maximum water addition stated should **not** be exceeded.

Application

Placing and Finishing - As described above, prime the substrate. The freshly mixed FEBGUARD RAPID REPAIR MORTAR (or concrete) should be placed into the prepared area without delay.

In view of FEBGUARD RAPID REPAIR MORTAR's flow characteristics, the use of vibrating pokers, or vibrating screed board is not normally required. However, full compaction must be achieved. Compact by hand in small areas and level the surface by ruling with a firm, straight edged tamping bar.

Finishing with wooden floats leaves a better skid-resistant surface. However, particular care should be taken to achieve good compaction and bond at the edges and corners. On large areas alternate 1 -1.5 m wide bay construction is desirable.

Do not re-tamp or over trowel once the material has begun to stiffen.

Coverage

20 Kg of FEBGUARD RAPID REPAIR MORTAR, combined with the correct amount of clean drinking water (see instructions for use: Mixing), will yield approximately 0.009 m² (9 litres), ie. 111 bags per cubic metre. With the addition of aggregate, yield can increase to 0.014 m² (14 litres), ie 74 bags per cubic metre.

Curing/After Treatment

Whenever possible, normal curing should be carried out for 24 hours minimum period, commencing immediately surface sheen has dulled.

Special Circumstances

Extremes of temperature affect the setting time of FEBGUARD RAPID REPAIR MORTAR. However, providing pre-conditioning of the substrate and gauging water is carried out, normal properties can usually be achieved.

Cold Weather Working

Below 5°C down to freezing point (0°C), warm the mixer and equipment with warm water before batching. It is advisable to insulate in temperatures below 7°C. The repaired area should be covered by insulating material, such as loft insulation. The area should be covered for not less than three hours, depending on the severity of the temperature.

Hot Weather Working

Where the temperature is above 30°C the use of chilled water in the mix will allow the open time to be extended, thereby allowing normal procedure to be carried out in areas such as those found in steel works, etc. wash down immediately when mixing is complete.

The mixer drum, barrows and equipment must be kept cool by shading, use of cold water, etc.

Wet Weather Working

In wet conditions, care should be taken to ensure that both mixing and placing are carried out in protected environments, eg. tenting. FEBGUARD RAPID REPAIR MORTAR must be protected from the effects of inclement weather for a period not less than 45 minutes after placing and finishing.

Cleaning

Clean all equipment immediately after use with water.

Packaging

Available in 20 Kg bags.

Storage

Store in cool, dry conditions.

Shelf Life

1 year when unopened and stored in accordance with the manufacturer's instructions.

Watchpoints

Joints

All joints (and non-static cracks) into the substrate must be duplicated in the FEBGUARD RAPID REPAIR MORTAR.

As soon as the repair is hard, any joints that could not be preformed must be saw cut through the full depth of the repair and to at least the same width as the joint in the substrate. Clear out all debris from the formed joint and seal with a suitable sealant. It is essential that the joint is cut **before** excessive stresses due to movement are imposed - for this reason, where practical to do so, joints are preferably preformed.

Grouting

Grouting is recommended in all cases where bond is essential and/or where there is not an excellently keyed surface - see "Priming".

Structural Members

FEBGUARD RAPID REPAIR MORTAR is not generally for structural repair; where structural repair or long term strength data is an essential part of the job then please contact Degussa Construction Chemicals (UK) for a suitable product.

FEBGUARD RAPID REPAIR MORTAR Degussa Construction Chemicals UK Version 3

Health and Safety

*For full information on Health and Safety matters regarding this product the relevant Health and Safety Data Sheet should be consulted.

The following general comments apply to all products.

As with all chemical products, care should be taken during use and storage to avoid contact with eyes, mouth, skin and foodstuffs, (which may also be tainted with vapour until the product is fully cured and dried). Treat splashes to eyes and skin immediately. If accidentally ingested, seek medical attention. Keep away from children and animals. Reseal containers after use.

Solvent Based Products

Use in well ventilated areas; avoid inhaling. Suitable respiratory equipment may be needed, eg when spraying. Can cause skin, eye irritation. Wear protective eye shields and gloves during use. Do not smoke or allow sparks or naked lights when stored or in use.

Powder Products

Should be handled to minimise dust formation; use light mask if excessive dust unavoidable. Cement powders when wet or moistened can cause burns to skin and eyes which should be protected during use.

Resin Products

Can cause irritation, dermatitis or allergic reaction. Use protective equipment particularly for skin and eyes. Use only in well ventilated areas.

Spillage

Chemical products can cause damage; clean spillage immediately.

Disclaimer:

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