

PRESENTATION

DESCRIPTION

The product **MORTEX® REPAIR CONCRETE** is a grey, cement-based product containing selected silicas and conditioners.

Depending on the type of liquid mixed with the powder and on whether filler aggregates are added, the product **MORTEX® REPAIR CONCRETE** can be used as a compactable filling product and as a quick-setting patching product for repairing small to medium-sized holes in concrete and masonry.

When mixed with the product **MORTEX® BEALCRYL 2** liquid admixture and/or with suitable inert materials the characteristics of the product can be modified to suit various repair applications. Using the same base product in this way for different applications considerably reduces the cost of the repair work.

FIELD OF APPLICATION

Interior and exterior. Above or below ground level.

For patching concrete and masonry. For repairing and preparing BEFORE using other MORTEX and BEALSTONE systems.

1. Product **MORTEX® REPAIR CONCRETE** + product **MORTEX® BEALCRYL 2**

*It is always advisable to use the product **MORTEX® BEALCRYL 2** as the liquid admixture instead of water since this significantly improves all the properties of the hardened product **MORTEX® REPAIR CONCRETE**.*

- Semi-professional repairs of reinforced concrete are possible as a result of the product's excellent adherence both to metal reinforcement elements and to the surrounding concrete. Specific adhesive coats or primers are not necessary.
- As a filling mortar used to patch holes in concrete and masonry with a volume of up to 2 litres in all situations. Comment: For larger repairs or when installing posts, it is advisable to add up to 50 % of crushed coarse aggregate (breakstone), 3 to 8 mm in diameter (7 litres per 25 kg of the product **MORTEX® REPAIR CONCRETE**). For more details, refer to the sections entitled "MIXING" and "APPLYING THE PRODUCT" in this document.
- As a concrete patching product for semi-professional use on reinforced concrete structures damaged by carbonation, freeze-thaw cycles, acid rain, impacts, etc.
- As a quick-setting smoothing product for large surface areas or for rendering up to a maximum thickness of 10 mm under the sealing layer.
- As a fast-setting levelling product for damaged floor screeds in situations where the traffic over the surface can only be interrupted temporarily. Foot traffic can be permitted after 1 hour, with full strength achieved after 24 hours.
- As a fast-hardening render with sealing properties at low temperatures (5 to 10°C).

2. Product **MORTEX® REPAIR CONCRETE** + WATER

- As a hole-filling product for small patching jobs, for holes with a volume of less than 1 litre, on concrete and masonry structures protected from harsh conditions.
- For filling joints between walls and slabs and vertical wall assemblies in cellars made of stone, brickwork or blockwork, with no active leaks, and before applying a sealant.
- As a product for repairing honeycombing (weak areas in concrete due to segregation), holes resulting from formwork, air pocket inclusions, pouring seam defects and cracks in concrete basements, so long as there are no active leaks, prior to the application of a sealant.
- For the fast installation of lamp posts, fence posts, etc.

Refer to the legal information at the end of the document

ADVANTAGES

- The product is mineral, like the substrate
- Continuous covering
- Impermeable yet permeable to water vapour
- Strong
- Good adherence
- Easy to apply, small to medium-sized repairs can be completed as a single operation.
- Fast compaction, setting and hardening
- Reduction in costs: formwork is not really necessary. If necessary, additional coats may be applied quickly to ensure that the repaired structure is returned to service quickly.
- Can be shaped after compaction and initial setting has occurred (after about 20 minutes under normal conditions). The product **MORTEX® REPAIR CONCRETE** is thus very well suited to repairing cornices/coving or creating detailing.
- Can be washed off with water before it sets
- Non-toxic
- Eco-friendly: not hazardous for the environment, since it does not contain any toxic ingredients.

TECHNICAL SPECIFICATION

IDENTIFICATION DATA	
State	Solid
Appearance	Powder
Colour	Grey
Particle size	Max 0.8 mm
Apparent density (at 20°C)	+/- 1.65 kg/l
Packaging	25 kg bags (net weight) 5 kg tubs (net weight)
Storage	6 months in a dry place, protected from frost and with no contact with the ground, in the sealed, original packaging. Never leave the products in direct sunlight.
Customs classification	38 16 00 00
APPLICATION INFORMATION	
Mixing ratio	200 ml of product MORTEX® BEALCRYL 2 / 1 kg of product MORTEX® REPAIR CONCRETE (variable depending on the humidity of the ambient air)
Density of the wet product	2.10 kg/l
Coverage	+/- 1.7 kg/m ² per mm of thickness With no additional aggregate: 13 l of repaired volume per 25 kg With coarse aggregate (breakstone) 20 l of repaired volume per 25 kg
Thickness per coat	1.5 mm
Application temperature	+5°C min. to +30°C max.
Air humidity	65 % min. and 90 % max. Ensure that air-drying equipment (dehumidifiers, air conditioning units, etc.) is not used for 1 week before and for 1 week after performing the work, as well as while work working.
Wetting the substrate	Not soaking wet, but with a wetted surface
Working time (at 20°C)	About 15 min
Drying time (at 20°C)	Gentle flow of air: 1 h Between coats: 8 h to 24 h maximum Ok to withstand use: 24 h Completely dry: 7 days

Refer to the legal information at the end of the document

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FINAL PROPERTIES (AFTER 28 DAYS) ¹	
Compressive strength EN 1015-11	40 N/mm ²
Bending strength EN 1015-11	8 N/mm ²
Initial adhesion EN 1015-12	1.5 N/mm ²

APPLICATION

SUBSTRATE AND PREPARATION

The substrate must be:

- mineral with normal levels of porosity;
- sound, clean, non-shiny, free from dust and grease;
- hard, solid, non-chalking, with no through-holes and with all concrete or render fully set;
- structurally sound.

It is essential to ensure that the substrate is stable. If in doubt, contact us. Carrying out a test is always a good idea.

All foreign materials likely to have a negative effect on the adherence of the product must be eliminated. This is ideally done by cleaning using a high-pressure jet of water, shot-blasting or sand-blasting.

After cleaning in this way, the surface should be washed with water and then vacuumed with a vacuum cleaner to remove any loose dust and particles.

It is essential to take the precautions necessary to avoid, wherever possible, any movement of the substrate resulting from expansion, or to differences between surface and internal tensions, and shear forces. Examples of the measures to take include:

- fitting reinforcing meshing or netting (e.g. scrim tape) or metal reinforcement mesh.

Any points of ingress of water under pressure must be eliminated beforehand using the product **MORTEX® RAPID+** (refer to the technical documentation).

Any filled areas or pointed joints must be flush with the stonework/brickwork.

All foreign bodies likely to have an adverse effect on the adherence of the product must be eliminated

When repairing reinforced concrete (balcony edging, cornices, etc.) the entirety of the detached and cracked concrete must be removed. If the rebar has already rusted the concrete must be removed until sound rebar is revealed. Then, all rust on or flaking of the exposed rebar must be eliminated using a wire brush.

Comment: When repairing degraded structural reinforced concrete (concrete columns, beams, etc.), additional strengthening or protective measures may be necessary.

Before applying the product, remove any salts which might compromise the adherence of the coats and the aesthetic appearance of the finish. This can be achieved by treating the surface with undiluted **DISSEL A15** (refer to the technical documentation).

Wet the substrate thoroughly before starting to apply the product.

PREPARING THE MIXED PRODUCT

Mixing liquid

Depending on the final properties required and on the conditions, the product **MORTEX® REPAIR CONCRETE** can be mixed with clean water or with the product **MORTEX® BEALCRYL 2**. (refer to "Applications").

¹ Results obtained under standardised conditions. Some data may vary depending on the atmospheric conditions.

Refer to the legal information at the end of the document

Quantities:

As a general rule, the product **MORTEX® REPAIR CONCRETE** should be prepared in small quantities and it is therefore important to check the consistency of the mixed product.

Crushed coarse stone (breakstone) may be added when making larger repairs or when installing posts; this added stone will also have an impact on the amount of liquid required. In this case, it is once again important to check the consistency of the product before applying it.

Never mix more product than you intend to use in the following ten minutes.

How to mix

Due to its specific properties in terms of compaction time, start-of-setting time and workability, the product **MORTEX® REPAIR CONCRETE** should almost always be mixed by hand. Mix until the product is free from lumps, which should take about 1 or 2 minutes.

Mechanical mixing using a slowly rotating paddle mixer (400 to 600 rpm) is suitable when repairing large areas or when installing posts. In this case, you can quickly and efficiently mix entire batches of the product **MORTEX® REPAIR CONCRETE** by adding 50% of crushed coarse stone (breakstone), 3 to 8 mm in diameter (approximately 7 litres per bag of the product **MORTEX® REPAIR CONCRETE**).

Pour 5 litres of the product **MORTEX® BEALCRYL 2** or water into a clean tub and gently add 2/3rd of the product **MORTEX® REPAIR CONCRETE** powder. Mix at a slow speed, add in the remaining 1/3 of the powder and continue mixing until you produce a uniform and lump-free mix.

To delay the setting time, add **RBE3** (1.6 to 8 ml/kg of the product **MORTEX® REPAIR CONCRETE**) to the **MORTEX® BEALCRYL 2** liquid mixture and mix it in before adding the powder to this mixture. To increase the fluidity, add **FBE3** (2.2 to 4.4 ml/kg of the product **MORTEX® REPAIR CONCRETE**) as described above. Never add both these additives to the same batch of product.

At a temperature of 20°C, and if no additives are used, the product can be used for about 15 minutes. Lower temperatures extend the working time and higher temperatures reduce it.

APPLICATION INSTRUCTIONS FOR DIFFERENT TYPES OF JOB**1. Product MORTEX® REPAIR CONCRETE used as a patching product:*****For small patching jobs:***

The substrate must always be wetted directly before applying the product **MORTEX® REPAIR CONCRETE**; however, no unabsorbed water should lie on the surface.

When patching concrete, it is advisable to start by applying 2 or 3 coats of a runny mix (slurry) of the product **MORTEX® REPAIR CONCRETE** using a stiff brush to ensure good contact with the substrate and good coating of the reinforcement/rebar. Leave 6 to 24 hours between each coat.

Before the final slurry coat has set, the first coat of product mixed normally should be applied. These subsequent coats should be applied "fresh" (i.e. as soon as the previous coat starts to set) by vigorously pressing the product **MORTEX® REPAIR CONCRETE** against the substrate using a trowel. The repair may be built up gradually in layers, 15-mm thick, when the product **MORTEX® REPAIR CONCRETE** is mixed with water, or in 30-mm thick layers when the product **MORTEX® REPAIR CONCRETE** is mixed with the product **MORTEX® BEALCRYL 2**.

Caution: the optimum timing for the application of the product to the "slurry" coat depends on the slope of the surface of the substrate: horizontal ("fresh" application), inclined or vertical.

In principle, a slight excess of the product **MORTEX® REPAIR CONCRETE** is applied. Once the product has been compacted and has started to set, it may be shaped to match the contours of the surrounding surface.

If the repaired surface is to be finished with another product which has a specified coat thickness, such as a sealant or a protective coating such as the product **MORTEX® COLOR 2-N**, it is advisable to leave the product **MORTEX® REPAIR CONCRETE** with a rough surface by finishing with a stiff brush.

However, if the product **MORTEX® REPAIR CONCRETE** shall produce the finished surface, it may be smoothed with a trowel.

Refer to the legal information at the end of the document

For large patching jobs:

For this type of job, it is always advisable to mix the product **MORTEX® REPAIR CONCRETE** with the product **MORTEX® BEALCRYL 2**. This makes it possible to complete the job with coats up to 3 cm thick, finished as described for small patching jobs (see above). When patching horizontal surfaces, the product **MORTEX® REPAIR CONCRETE** can be mixed with up to 50% of crushed coarse aggregate, 3 to 8 mm in diameter (about 7 litres per 25-kg bag).

It is advisable to start by applying (with a stiff brush) a coat of the product **MORTEX® REPAIR CONCRETE** with no added aggregate, and mixed with the product **MORTEX® BEALCRYL 2**, to improve the adherence of the product to the substrate.

Subsequent coats are then applied "fresh" (i.e. as soon as the previous coat starts to set, with these coats consisting of the product **MORTEX® REPAIR CONCRETE** mixed with crushed coarse stone.

Once the product **MORTEX® REPAIR CONCRETE** mixed with crushed coarse stone has been compacted and has started to set, the last 5 to 10 mm may be finished using the product **MORTEX® REPAIR CONCRETE** (with no aggregate) mixed with **BEALCRYL**.

2. Product MORTEX® REPAIR CONCRETE applied as a render:

For this application, the product **MORTEX® REPAIR CONCRETE** should always be mixed with the product **MORTEX® BEALCRYL 2**.

The substrate must always be wetted directly before applying the product **MORTEX® REPAIR CONCRETE**, however, no unabsorbed water should lie on the surface.

To ensure good contact with the substrate, it is advisable to start by applying a scratch coat with a trowel, and then to apply the required thickness of render "fresh" as soon as this first coat starts to set. This coat should not be more than 10 mm thick

3. Product MORTEX® REPAIR CONCRETE used to anchor posts:

For the fast installation of lamp posts and fence posts, the product **MORTEX® REPAIR CONCRETE** is generally mixed with 50% of crushed coarse stone (breakstone), 3 to 8 mm in diameter (7 litres per 25-kg bag).

The post is placed in the hole, and then the product **MORTEX® REPAIR CONCRETE** plus coarse stone is poured around the post. As soon as the product **MORTEX® REPAIR CONCRETE** plus coarse stone has been poured in, the post must be lined up and then held in position until the product has been compacted and has started to set.

Comment: When pouring the product **MORTEX® REPAIR CONCRETE** plus coarse stones, it is advisable to vibrate the product while it is still plastic using a suitably sized metal bar or a vibrating rod. This ensures that the cavity is filled completely and thus a secure anchoring. If excess water is added to increase the fluidity of the product **MORTEX® REPAIR CONCRETE** plus crushed coarse stone mix, this may have an adverse effect on the mechanical properties of the hardened product **MORTEX® REPAIR CONCRETE** and will produce sub-optimal anchoring.

If the ambient temperature is high and/or there is a lot of wind, light spraying with water immediately before applying the next coat may simplify the installation process.

In enclosed spaces or where humidity levels are high, condensation may form on the surface which should be sponged off before applying the next coat.

SUBSEQUENT TREATMENTS**- Product MORTEX® REPAIR CONCRETE + WATER:**

No subsequent treatments are required if the product **MORTEX® REPAIR CONCRETE** is applied in an enclosed space with low levels of ventilation.

If applied in open air, the product **MORTEX® REPAIR CONCRETE** must, once it has started to set, be kept damp through the use of water sprays or coverings. Our **CURING TR** product can also be used since it forms a surface skin and thus stops the evaporation of the water which the product needs to allow it to set.

- Product MORTEX® REPAIR CONCRETE + MORTEX® BEALCRYL 2:

When used outdoors, the product **MORTEX® REPAIR CONCRETE** mixed with the product **MORTEX® BEALCRYL2** only needs to be kept damp if the humidity of the air is low, combined with wind, or if the product is applied in direct sunlight. Once the product has been compacted and has started to set, keeping the product damp may be performed by spraying or by fitting coverings. Our **CURING TR** product can also be used since it forms a surface skin and thus stops the evaporation of the water which the product needs to allow it to set.

Refer to the legal information at the end of the document

MISCELLANEOUS**CLEANING TOOLS**

All tools can be cleaned using water, as long as the product has not hardened. If the product has already started to set, leave the tools to soak for 30 minutes in water before cleaning.

WARNINGS

The work area must be protected from rain, sun, wind and frost until completely dry and until it is filled with water (for certain constructions, such as a swimming pool).

In enclosed and poorly ventilated spaces, large amounts of condensation may form after applying the product, due to the lower relative temperature of the walls. Increasing the ventilation will usually resolve this problem quickly. Dehumidifying equipment should not be used during the 28 days following the application of the product.

We strongly advise against applying the product to substrates containing salts (sodium sulphate, nitrates, calcium, etc.).

The product **MORTEX® REPAIR CONCRETE** cannot be applied when the ambient temperature during and in the following 24 hours is less than 5°C.

ADVICE

BEAL strongly recommends following one or more training courses on **MORTEX®** brand products depending on the nature of the work to be performed. BEAL regularly organises, either at its head offices or at the distributors' premises, various training courses (covering all its product systems). These are available to professionals and individuals, in Belgium and in other countries (visit www.beal.be).

If additional help is required after completing the training courses, on-site sessions can be arranged. For more information, contact us.

Depending on the intended application of the product, follow the instructions carefully. Never use products other than those described in this document, to avoid any risk of problems.

For the same site and the same type of product, always use products bearing the same batch number.

ENVIRONMENT

Dispose of waste in a specialist collection centre.

SAFETY

Contains lime, cement, silicates and additives. Avoid inhaling the powder when mixing. Protect your skin and eyes. Wear gloves. In case of contact with eyes or skin, rinse the area directly with plenty of clean water. In the event of a problem, consult a specialist.

The safety data sheet is available on request or at www.bealinternational.com

LEGAL INFORMATION

The technical instructions and in particular the recommendations about how to apply and use the products are provided in good faith and are based on the current knowledge and experience acquired by BEAL about its products when they are properly stored, handled and applied under normal conditions. In practice, variations in the various materials, substrates and specific conditions encountered on site are such that adhering to this information or to any written recommendation or advice given does not deliver any guarantee of marketable quality other than the statutory guarantee against hidden defects. We accept no liability should the customer fail to adhere to our instructions or recommendations when applying a product. None of the data and information provided relating to the use and application of our product releases customers from the requirement to conduct their own checks and tests. All order are accepted subject to our current general terms and conditions of business. It is essential that users read the most recent version of the instructions for the product in question, which will be sent to them on request.

Refer to the legal information at the end of the document