

EmO FC XTRA

Single component polymer modified cementitious fairing coat

Uses

EmO FC xtra is designed for application in thin layers to produce a fair-faced appearance to concrete surfaces or masonry surfaces in readiness to receive a protective/ decorative coating. Surface imperfections up to 3 mm in depth can be filled with the scrape-coat application. Voids of greater depth should be separately filled as a prior operation, again limiting the material thickness to 3 mm. EmO FC xtra can also be used in association with other mortars from ELMRR. Under normal conditions, the product does not require an independent primer or curing membrane.

Advantages

- Easy to use — no independent primer or curing membrane necessary
- Excellent bond to the concrete substrate
- Pre-blended to overcome site-batched variations — only the site addition of clean water is required
- Contains no chloride admixtures

Description

EmO FC xtra is supplied as a ready to use blend of dry powders which requires only the site addition of clean water to produce a highly consistent cementitious fairing mortar. The material is based on a blend of cements, graded aggregates, special fillers and chemical additives to provide a material with good handling characteristics, while minimising water demand. The product exhibits excellent thermal compatibility with concrete and is fully compatible with other ELMRR mortars and EmOguard coatings.

Technical support

ELMRR offers a comprehensive range of high performance, high quality construction products. In addition, ELMRR offers a technical support service to specifiers, end-users and contractors, as well as on-site technical assistance.

Design criteria

EmO FC xtra is designed for vertical and overhead use to infill honeycombing and voids up to 3 mm deep in the surface of concrete.

Properties

The following results were obtained at a water : powder ratio of 0.3 :1 by weight or 1: 3 by volume and temperature of 20°C.

Test method typical result

Coefficient of thermal expansion: 7 to 12x10⁻⁶/°C

Working life: Approximately 20 minutes*

Setting time (BS 4550): 30 minutes to 1 hour*

Fresh wet density: Approximately 2000 kg/m³

* Note: working life and setting time will vary dependent on ambient and substrate temperatures.

Specification clauses

Fairing coat

The fairing coat shall be EmO FC xtra, a single component polymer modified cement-based

blend of powders to which only the site-addition of clean water shall be permitted. The material shall be capable of use without independent priming and curing systems.

Application instructions

Preparation

Clean the surface and remove any dust, unsound material, plaster, oil, paint, grease, corrosion deposits or algae. Roughen the surface to remove any laitance and expose the fine aggregate by light scrubbing or grit-blasting. Oil and grease deposits should be removed by steam cleaning, detergent scrubbing or the use of a proprietary degreaser. The effectiveness of decontamination should then be assessed by a pull-off test. No independent priming system is required. The cleaned areas should be blown clean with oil-free compressed air before continuing. All prepared areas should be saturated surface dry immediately before the application of EmO FC xtra, i.e. they should be thoroughly saturated with clean water and any residual surface water removed. Under severe drying conditions repeated soaking may be necessary to ensure the substrate is still saturated at the time of application. Care should be taken and the work scheduled to ensure the water does not run onto areas of recently applied EmO FC xtra less than 12 hours old.

Mixing

Care should be taken to ensure that EmO FC xtra is thoroughly mixed. Small quantities (up to 10 kg) can be mixed by hand using a suitable mixing drum or bucket. Greater quantities should be mixed using a forced-action mixer. Mixing in a suitably sized drum using an approved spiral paddle in a slow

speed (400/500 rpm) heavy-duty drill is an acceptable alternative.

Mixing warning

As with other 'one pack' repair mortars, EmO FC xtra may exhibit satisfactory handling characteristics even though inadequately mixed. This will result in a significantly lower level of performance or possible failure. It is therefore essential that mixing Instructions are strictly adhered to with particular emphasis on the quantity of water used and the time of the mixing operation. If mixing small quantities by hand, EmO FC xtra should be volume-batched. Add three volumes of the EmO FC xtra powder (loose-filled to excess and struck off level with the top of the measuring container) to one volume of drinking quality water. This should be mixed vigorously for a minimum of 3 minutes. For larger volumes, place 7.0 to 8.0 litres of drinking quality water into the mixer and, with the machine in operation, add one full 25 kg bag of EmO FC xtra and mix for a minimum of 3 minutes (maximum 5 minutes). Dependent on the ambient temperature and the desired consistency, the amount of water required may vary slightly but should not exceed 8.0 litres per 25 kg bag of EmO FC xtra. Do not subsequently re-temper with extra water.

Note: that in all cases EmO FC xtra powder must be added to water.

Application

Apply the mixed EmO FC xtra to the prepared substrate by steel trowel as a scrape coat of minimal thickness. It should be applied with the minimum of working and be allowed to partly set before finally trowelling to a smooth finish. If a very smooth finish is required, a small amount of water may be flicked on to the surface of the EmO FC xtra

with a paint brush prior to final trowelling. Do not proceed with the application when rainfall is imminent unless in a sheltered or protected situation.

Note: the maximum applied thickness of EmO FC xtra is 3 mm from the depths of the imperfections to the finished surface.

Low temperature working

Normal precautions for winter working with cementitious materials should then be adopted. The material should not be applied when the substrate and/or air temperature is 5°C and falling. At 5°C static temperature or at 5°C and rising, the application may proceed.

High temperature working

At ambient temperatures above 35°C, the material should be stored in the shade and cool water used for mixing.

Curing

EmO FC xtra does not require any form of curing in moderate ambient conditions, but under strong drying conditions curing may be necessary. In this case EmO FC should be cured immediately after finishing in accordance with good concrete practice. The use of EmOguard AR, sprayed on to the surface of the finished EmO FC xtra in a continuous film, is recommended. Large areas should be cured as trowelling progresses (0.5 m² at a time) without waiting for completion of the entire area. In very fast drying conditions, supplementary curing with polythene sheeting taped down at the edges should be used. In cold conditions, the finished repair must be protected from freezing.

Overcoating with protective decorative finishes

EmO FC xtra may be over coated with a protective barrier/ decorative coating after a minimum of 48 hours. ELMRR recommend the use of the EmOguard range of protective, anti-carbonation coatings. These products provide a decorative and uniform appearance as well as protecting parts of the structure which have not been repaired and might otherwise be at risk from the environment

Cleaning

EmO FC xtra should be removed from tools, equipment and mixers with clean water immediately after use. Cured material can only be removed mechanically.

Limitations

EmO FC xtra should not be used when the temperature is below 5°C and falling. Do not proceed with the application when rainfall is imminent unless in a sheltered or protected situation. Exposure to rainfall prior to the final set may result in water uptake and severe reduction in the performance of the hardened product. The product should not be exposed to moving water during or after application.

Estimating

Supply

EmO FC xtra : 25 kg bags

Coverage and yield

EmO FC xtra: Approximately 15.0 litres / 25 kg bag. (5.0 m² at 3 mm thickness)

Storage

Shelf life

All products have a shelf life of 12 months if kept in a dry store in the original, unopened bags or packs.

Storage conditions

Store in dry conditions in the original, unopened bags or packs. If stored at high temperatures and/or high humidity conditions the shelf life may be reduced to 4 to 6 months.

Precautions

Health and safety

EmO FC contains cement powders which, when mixed or become damp, release alkalis which can be harmful to the skin. During use, avoid inhalation of dust and contact with skin and eyes. Wear suitable protective clothing, gloves, eye protection and respiratory protective equipment. The use of barrier creams provides additional skin protection. In case of contact with skin, rinse with plenty of clean water, then cleanse with soap and water. In case of contact with eyes, rinse immediately with plenty of clean water and seek medical advice. If swallowed, seek medical attention immediately — do not induce vomiting.

Fire

EmO FC xtra is non-flammable.
For further information, refer to the Product Safety Data Sheet.

Additional information

ELMRR manufactures a wide range of products specifically designed for the repair and refurbishment of damaged reinforced

concrete. This includes hand-placed and spray grade repair mortars, fluid micro-concretes, chemical resistant epoxy mortars and a comprehensive package of protective coatings. In addition, a wide range of complementary products is available. This includes joint sealants, waterproofing membranes, grouting, anchoring and specialised flooring materials.

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