

Expanmortar SP^{*}

Shrinkage controlled, cementitious repair mortar, specifically designed for spraying

Uses

Expanmortar SP is suitable for wet or dry spraying in a wide variety of repair applications, and is particularly well suited to vertical and overhead repairs. Typical applications would include, but not be limited to, the following:

- Mass infill to large areas.
- Repairs to irregular profiles.
- Excellent for repairs to fire-damaged concrete.
- Fast track repair programmes, where rapid application at high volume is required.
- Single layer, high build applications.

Advantages

- Cost effective - shrinkage control enables repairs to be completed 'right first time'.
- Enhanced durability - works in tandem with extremely low permeability to prolong effective working life.
- Compatibility - aligns performance closer than ever before, to that of host concrete.
- User friendly - specifically developed to provide an easy-to-apply product, suitable for local conditions.
- Definable performance - positive benefits are easily demonstrated via a single, simple measurement.

Description

Expanmortar SP is supplied as a ready to use blend high strength cement, silica fumes, high performance superplasticiser and special additives to control the shrinkage of cement, which requires only the addition of clean water to produce a highly consistent, spray grade, repair mortar suitable for most structural and load bearing repairs.

Properties

The following typical results were obtained at a water:powder ratio of 0.2.

Test method	Typical result
Drying shrinkage to ASTM C 157-93	
7 days	: < 300 microstrain
28 days	: < 500 microstrain
Permeability : <10 mm (DIN 1048 Part 5)	
Flexural strength (BS 6319 Pt.3)	: > 6.5 N/mm ² at 28 days
Tensile strength (BS 6319 Pt.7)	: > 3 N/mm ² at 28 days
Compressive strength (BS 1881 Pt.116 ¹)	: 40 N/mm ² at 28 days (by hand) 55 N/mm ² at 28 days (iterative result, based upon spray application)
Water absorption (BS 1881 Pt.121)	: < 2%

Note 1: 50mm cubes, air cured @ 25°C for hand application.

Design criteria

Attention to the basic design criteria given below should ensure that the full benefits of this technology are achieved :

(i) Recommended limits for a single application are:

Minimum applied thickness	: 10 mm
Overhead sections	: up to 200 mm thick
Vertical sections	: up to 200 mm thick
Surface area of a single repair	: see 'Note'

NOTE : The restricting factor on surface area will be the practicality of maintaining a continuous application

ii) In situations where a substrate/repair barrier is required, or enhanced bond strength/working time is required, or where the substrate is likely to be damp (e.g. seawalls, quays etc.), Expanbond EP epoxy bonding agent should be used.

(iii) Water addition - not greater than 4.0 liters per 20 kg bag
Under no circumstances should part bags be used or additional water be employed. Either of these two actions will adversely affect material performance, automatically invalidating Fospak's standard product guarantee.

Estimating

Supply

Expanmortar SP	:	20 kg bags
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Coverage

Yield and coverage rate listed below are approximate, and will be wholly dependent upon the general substrate condition. It is recommended, therefore, that site trials over a typical area are conducted to determine the likely usage/coverage rates for a particular substrate.

Expanmortar SP	:	1.2 m ² at 10 mm thick (approximately 12.8 liters per 20 kg bag)
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Limitations

- Expanmortar SP should not be used when the ambient temperature is below 5°C and falling.
- Expanmortar SP should not be part mixed, nor part bags used.
- Expanmortar SP should not be exposed to running water either during application or prior to final set.
- Water pounding is not recommended for curing.

Storage

Shelf life

Expanmortar SP has a shelf life of 12 months if kept in a dry environment, in its original packing. If stored in conditions of high temperature and/or humidity, the shelf life may be reduced to as little as 4 months.

Standards compliance

Expanmortar SP repair mortar system complies with the following international standards :

ASTM C157-93 : Test for drying shrinkage
DIN 1048 Part 5 : Test for permeability
BS 1881 Pt.121 : Test for water absorption

Precautions

Health and safety

Expanmortar SP contains cement powders which, when mixed with water or upon becoming damp, release alkalis which can be harmful to the skin.

During use, avoid inhalation of the dust and contact with the skin or eyes. Wear suitable protective clothing - eye protection, gloves and respiratory equipment (particularly in confined spaces).

The use of barrier creams to provide additional skin protection is also advised. In case of contact with the skin, rinse with plenty of clean water, then cleanse thoroughly 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

Expanmortar SP, is non-flammable and thus presents no fire hazard.

For further information, please refer to the Product Material Safety Data Sheet for Expanmortar SP.

***Denotes the trademark registered**

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