



Expanmortar* S

Shrinkage controlled, polymer modified, structural grade cementitious repair mortar system

Uses

Expanmortar* S is suitable for hand application to repairs where significant load bearing is required. Typical applications would include, but not be limited to, the following :

- Vertical and overhead repair of honeycombing.
- Patch repairs of column, beam and slab.
- Patch repairs to stairs, steps and other areas subject to repeated, heavy trafficking.
- Arris repairs to joint edges
- General structural repairs where formwork cannot be easily erected.

Advantages

Expanmortar* S features Dimensional Stability Technology –a new materials technology which controls the rate of drying shrinkage such that, when used correctly:

The dimensions of the repair remain stable; and thus eliminating failure, due to shrinkage cracking.

This in turn leads to a series of associated benefits :

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* S is supplied as a ready to use blend of dry powders, which requires only the addition of clean water to produce a highly consistent repair mortar suitable for most structural and load bearing repairs.

Properties

The following typical results were obtained at a water to powder ratio of 0.15.

Test method Typical result

Drying shrinkage to ASTM C 157-93

7 days : < 300 microstrain

28 days : < 500 microstrain

Permeability (DIN 1048 Part 5) : < 10 mm

Flexural strength (BS 6319 Pt.3) : > 7 N/mm² at 28 days

Tensile strength (BS 6319 Pt.7) : > 3.5 N/mm² at 28 days

Compressive strength (BS 1881 Pt.116 1) : 50 N/mm² at 7 days
55 N/mm² at 28 days

Water absorption (BS 1881 Pt.122) : < 2%

Note1: 100mm cubes, air cured @ 25 °C

Design criteria

Dimensional Stability Technology is a major step forward in the general compatibility of repair mortar systems with the host substrate, and the control of drying shrinkage in particular.

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

(i) Recommended limits for a single application are:

Minimum applied thickness : 5 mm
Overhead sections : up to 25 mm thick
Vertical sections : up to 35 mm thick
Small pockets or horizontal : up to 100 mm thick
Maximum length : up to 3 m

NOTE: If the repair area exceeds 2.5 m² , consideration should be given to the use of mass fill by means of either Expanmortar* Spray, spray applied mortar or Expanmortar* LA micro-concrete.



CONSTRUCTION CHEMISTRY

(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 = 3.00 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 Expanchem's standard product guarantee.

Instructions for use

Expanmortar* S should be mixed and applied in strict accordance with the Product Method Statement, a copy of which may be obtained from your nearest Expanchem office.

Estimating

Supply

Expanmortar* S: 20 kg bags

Yield

Expanmortar* S: 10.00 liters per 20 kg bag

Limitations

Expanmortar* S should not be used when the ambient temperature is below 5°C and falling.

Expanmortar* S should not be part mixed, nor part bags used.

Expanmortar* S should not be exposed to running water either during application or prior to final set.

Water ponding is not recommended for curing.

Storage

Shelf life

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

Standards compliance

Expanmortar* S 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* S 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* S, is non-flammable and presents no fire hazard.

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

* Denotes the trademark registered.



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