

# Expanmortar\* Plug



CONSTRUCTION CHEMISTRY

**Rapid setting cement-based, water-stopping mortar**

## Uses

For the rapid temporary patching and plugging of concrete segments, concrete and brick tunnel linings, sewage systems, below ground access chambers, pipes, basements, foundations and mines.

## Advantages

- Emergency water-stopping capability
- Single component - only the addition of clean water is required
- Excellent bond to the substrate
- Low exotherm minimizes thermal cracking
- Pre-bagged formulation to overcome variations in site batching
- Contains no chloride admixtures

## Description

Expanmortar\* Plug 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, rapid setting mortar which is easy to apply in many difficult conditions. The material is based on a blend of cements, graded aggregates, special fillers and chemical additives which control the rate of set and minimize the risk of thermal cracking.

Expanmortar\* Plug provides an initial set time of approximately one minute.

## Design criteria

Expanmortar\* Plug can be applied to horizontal, vertical or overhead surfaces at a wide range of thicknesses. Generally, the volume of mixed material used in a single application is restricted to that which can be applied by trowel or gloved hand. Thicker sections can be built up in layers. If any doubt arises about the nature of the substrate, consult the local Expanchem Fospak office for further information.

## Properties

### Compressive strength

(BS 6319 Pt 2: 1983): 5 N/mm<sup>2</sup> @ 2 hours @ 20°C  
25 N/mm<sup>2</sup> @ 28 days @ 20°C

**Initial set time** : Approximately 1 min @ 25°C

Note: Set times will be extended when mixed at lower temperatures.

## Specification

### Water stopping mortar

The water stopping mortar shall be Expanmortar\* Plug, a single component cement-based blend of powders to which only the site-addition of clean water shall be permitted. It must be chloride-free and must be formulated to prevent high exotherm and minimize thermal cracking.

### Instructions for use

#### Preparation

Areas to be patched should be cut back to a depth of 15 mm and given a good mechanical key. Feather-edges must not be allowed. Surface should be brushed clean to remove loose material, dust and laitance. Grease, slime or mould growth should be removed by steam cleaning or high-pressure water jetting. A proprietary degreasing agent should be used for removal of light oil or grease contamination.

To seal leaks, crack openings must be chased out to approximately 20 mm square. The chase should always be undercut to avoid leaving a v-section. All loose material and debris should be removed.

#### Mixing

Expanmortar\* Plug should be added to clean water in the following proportions:

One part clean water: 3 parts Expanmortar\* Plug (measured by volume).

Mix to a stiff consistency in a suitable mixing drum or bucket, using a trowel or gloved hand. Due to the rapid set characteristics of the product, only prepare a quantity of mortar which can be placed within the prescribed set time.

#### Application

Trowel apply or hand-knead the mixed mortar in place, ensuring maximum contact with the substrate before the material sets. If being used to plug running water, Expanmortar\* Plug should be used and held in place until the initial set is reached.

Note the minimum applied thickness of Expanmortar\* Plug should be 15 mm.



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### Low temperature working

In cold conditions down to 1°C, the use of warm water (up to 20°C) is advisable to accelerate strength development. Normal precautions for winter working with cementitious materials should be adopted. The material should not be applied when the substrate and/or air temperature is 1°C and falling. At 1°C static temperature or at 1°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 cooler water (down to 20 °C) used for mixing.

### Cleaning

Expanmortar\* Plug products should be removed from tools, equipment and mixers with clean water prior to the initial set. Cured material can only be removed mechanically.

### Limitations

Expanmortar\* Plug should not be used when the temperature is below 1 °C and falling. If any doubts arise concerning application or substrate conditions, consult the local Expanchem Fospak office.

### Technical support

Expanchem Fospak offers a comprehensive technical support service to specifiers, end users and contractors. It is also able to offer on-site technical assistance, an AutoCAD facility and dedicated specification assistance in locations all over the world.

### Estimating

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#### Supply

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Expanmortar\* Plug : 10 kg bags

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#### Yield

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Expanmortar\* Plug : 5 liters per 10 kg bag

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### Shelf life

Expanmortar\* Plug has a shelf life of 6 months if kept in a dry store in the original, unopened bags or packs. If stored at high temperatures and/or high humidity conditions the shelf life will be reduced.

### Precautions

#### Health and safety

Expanmortar\* Plug products contain 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 provide 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

Expanmortar\* Plug is non-flammable.

For further information, refer to the Product Material Safety Data Sheet.

\* Denotes the trademark registered.



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