British Gypsum
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GYPROC FIRE MORTAR

Installation Guide

Installation images shown are from a benchmark application of firestopping products, and do not reflect on-site conditions.

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Typical applications

The Gyproc Firestopping range delivers trusted passive fire protection across a variety of applications.

Backed by a comprehensive suite of test data, each product is designed to meet rigorous performance standards. This guide outlines installation best practices to ensure reliable firestopping and compliance with certified system requirements.

For illustrative purposes only

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Introduction

Gyproc Fire Mortar is a gypsum-based compound containing perlite. Gyproc Fire Mortar is designed to provide up to 4-hours fire resistance (dependent on application), in fire rated floors and walls where they have been penetrated by multiple services.

When mixed with water, Gyproc Fire Mortar forms a thermally insulating fire seal that prevents the spread of fire and smoke. During the curing process, it expands approximately 1% through hydraulic reaction, ensuring a tight seal along the aperture edges and around service penetrations.

The mortar is easy to install and is particularly suitable for areas where there are multiple penetrations or where a load bearing seal (minimum 100 mm thickness) is required in floors.

The mortar is easy to sand or drill. The compound dries to an off-white colour.

The mortar will also assist to maintain the acoustic design performance of the construction.

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Properties

- Tested for applications in walls and floors with multiple service configurations
- Simple to apply leaving a smooth level finish
- High degree of mechanical resistance; provides a load-bearing seal without reinforcement
- Maximum load-bearing performance will be achieved 28 days after casting
- Tested for air permeability with excellent resistance to pressure
- No priming necessary prior to application in most building material substrates however metal services in contact with the seal must be corrosion protected
- Suitable for most surfaces, including concrete, bricks, Leca, steel, plastic, etc
- Not suitable to fitting of doors or in service openings that involve movement
- Tested for use in walls but it is recommended to use Gyproc Fire Batt for these applications
- Fast drying, fully set within one hour
- The fire performance specification of the compound has been derived when the seal has been left to cure for one month
- The SpecSure® Warranty covers British Gypsum Gyproc® Firestopping within new build British Gypsum and Isover partition Systems, performing as specified with a working life of 25 years*.

SpecSure®
SYSTEMS WARRANTY

* The provisions made in the United Kingdom Technical Assessment for Gyproc Firestopping are based on an assumed working life of 25 years, provided that the conditions laid down in the manufacturers datasheet and instructions for the packaging/transport/storage/installation/use/repair are met. See SpecSure® Firestopping Insert for full details here: british-gypsum.com/SpecSure

CURING TIMES		
APPLICATION	**TEMPERATURE (°C)**	**CURE TIME IN MINUTES**
For filler 3.5 to 1 mix	0	19
	10	18
	20	17
	30	16
	40	15
For casting 2 to 1 mix	0	40
	10	35
	20	30
	30	25
	40	20

Notes: The greater the sheer/agitation generated in the mixing process the quicker the mortar will set. Gyproc Fire Mortar is designed to be a quick curing system for professional installers where prompt application times are important.

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General guidance

Tools required

- Paddle mixer
- Measuring jug or container
- Mixing bucket
- Trowel
- Float trowel
- Insulation knife or saw

Health and Safety

The mechanical effect of fibres in contact with skin may cause temporary itching.

- Cover exposed skin
- When working in unventilated area wear a disposable face mask
- Clean area using vacuum equipment
- Waste should be disposed of according to local regulations
- Rinse skin in cold water before washing
- Ventilate working area if possible
- Wear goggles when working overhead
- See the product Safety Data Sheet (SDS) for more information

Supporting constructions

Flexible walls must have a minimum thickness of 100 mm and comprise steel studs or timber studs* lined on both faces with minimum two layers of 12.5 mm thick boards. For GypWall or timber stud systems the exact partition specification will be subject to the fire resistance requirements.

In rigid constructions it is advisable to keep the size of the penetration as small as practically possible. Rigid walls must have a minimum thickness of 100 mm and comprise concrete, aerated concrete or masonry, with a minimum density of 350 kg/m^3 (650 kg/m^3 in rigid wall details). Rigid floors must have a minimum thickness of 100 mm and comprise aerated concrete or concrete with a minimum density of 650 kg/m^3. The supporting construction must have a proven fire resistance rating established through testing in accordance with the appropriate BS EN standard for the element or have a classified performance in line with BS EN 13501-2. The fire resistance rating must be at least equal to the required fire performance.

Services in floors should be supported at maximum 450 mm from the top face. Services in walls should be supported at maximum 270 mm from both faces of the wall.

* Timber studs: no part of the penetration seal may be closer than 100 mm to a stud, and minimum 100 mm of insulation of class A1 or A2 according to EN 13501-1 must be provided within the cavity between the penetration seal and the stud.

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Floor installation

Prior to installing Gyproc Fire Mortar, ensure that the surface of all service penetrations and surrounding construction is clean, dry, free from all loose contaminants, dust, oils and grease.

The concrete edges of the aperture may be moistened for enhanced adhesion.

We recommend using Gyproc Fire Batt as a shutter batt to support the weight of the mortar as it cures (Image 2). Cut and friction fit the batt between the edges of the floor and the services to form a lightweight temporary or permanent shutter.

The placement of the shutter batt should allow for the minimum depth of mortar required (usually 100 mm for loadbearing seals, but please check tested details appropriate to your installation). If it is intended to remove the shuttering after installation of the mortar, overlay the shutter board with a polyethylene sheet for ease of removal.

Ensure a tight seal. Any gaps can be in filled using Gyproc Acrylic Fire Sealant as shown.

All combustible services will require a fire rated closure device or material (such as Gyproc Pipe Collar or Gyproc Pipe Wrap) in accordance with tested details.

Gyproc Pipe Wrap will need to be situated flush within the Gyproc Fire Mortar layer.

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Floor installation

Use a clean bucket. Fill the bucket with the required amount of clean water, then slowly add the mortar, mixing as you go (check ratio using the table below). Keep mixing until the mortar is a smooth, even consistency.

PRODUCT CONSUMPTION AT 2:1 MIX RATIO	
COMPOUND THICKNESS	NUMBER OF BAGS/m²
50 mm	3.42
100 mm	6.83
120 mm	8.21
150 mm	10.26

The mortar will set quickly so use immediately. Pour the mortar into the hole to the required depth. For non-loadbearing seals, it is possible to reduce the depth of mortar to 50 mm if a 50 mm high, 45° angled cone made of mortar is formed around the service/s.

Smooth off the surface with a float trowel.

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Wall installation

Prior to installing the Gyproc Fire Mortar ensure that the surface of all service penetrations and surrounding construction is clean, dry, free from all loose contaminants, dust, oils and grease.

Any bare metal in contact with the mortar must be protected against corrosion using a suitable primer/ protection system.

If utilising Gyproc Pipe Wrap around services, this should be fitted prior to installing the shutter batt and Gyproc Fire Mortar. The Gyproc Pipe Wrap should be placed flush to each face of the Gyproc Fire Mortar seal, or in some instances situated centrally within the Gyproc Fire Mortar seal (see standard details for application requirements).

Cut and friction fit Gyproc Fire Batt within the aperture and around the services to form a shutter. The placement of the shutter batt should allow for the minimum depth of mortar required. The shutter batt may be placed centrally within the aperture or to one side dependent on application requirements.

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Wall installation

Gyproc Fire Mortar can be mixed by hand or by a power mixer.

In a suitable mixing container, using clean water, add the Gyproc Fire Mortar and mix to form a thick consistency suitable for trowelling.

Mix steadily at low speed and ensure that any lumps of powder are fully dispersed. Always add the mortar to the water, do not reverse the mixing process.

Normal ratio is approximately 2 parts Gyproc Fire Mortar to 1 part water. This may vary according to site conditions.

Once the desired consistency is achieved, trowel the compound into the aperture starting at the base of the opening.

Ensure that the correct thickness of mortar is installed. Work progressively towards the top of the opening until the mortar layer is complete.

If the shuttering slab is installed centrally, repeat the process on the other side.

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