



The Passive Fire Protection Handbook

Chapter 7: Penetration Seals - Promat PROMASEAL® Fire Compound Extra Strength

INTRODUCTION

Promat PROMASEAL® Fire Compound Extra Strength is a blend of high quality gypsum cement, fire resisting aggregates and additives, giving a compound with excellent fire resistance, combined with high strength, versatile workability and excellent acoustic insulation. Acoustic data is available on this product, please contact the Technical Services Department on 01344 381 400.

Promat PROMASEAL® Fire Compound Extra Strength is easily mixed with water to consistencies ranging from pourable, to stiff and trowelable, with controlled expansion on setting, giving a gas tight seal within the opening and around services.

Loadbearing Floor Seals

In a concrete floor slab opening, the unique combination of structural properties of the Promat PROMASEAL® Fire Compound Extra Strength seal enables it to support a load of several tonnes, even across quite large spans, without reinforcement.

Structural Seals around Fire Dampers

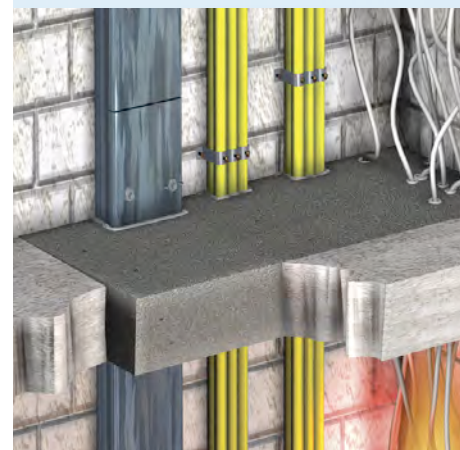
When installed around fire damper units the excellent crushing strength and shear resistance of Promat PROMASEAL® Fire Compound Extra Strength ensures that the installation frame will be retained in the wall or floor, if the ductwork should collapse, even when the damper frame is not tied back to the structure.

Table 7d

Flexural Strength $F_{rupture}$ at 28 days			
Compound : Water ratio 2.5:1		5.2N/mm ²	
Compressive Strength at 28 days			
Compound: Water ratio 2.5:1 - pourable		14.0N/mm ²	
Compound: Water ratio 3.0:1 - stiff		21.0N/mm ²	
* Compound: water ratio by volume			
Fire Performance			
	Depth of seal (mm)	Insulation (mins)	Integrity (mins)
Cables & Pipework through floors (EN 1366-3)	100	231	240
Ductwork Dampers through floors	90	225	240
	82	164	240
through walls (BS 476 Part:20)			
Loadbearing Capacity at 48 hours			
Un-reinforced floor seal, mix ratio 2.5:1			
Span of Seal (mm)	Span/Depth Ratio (100mm deep floor seal)	Tensile Failure Pressure (kN/m ²) (one way spanning)	*Safe Working Load (kN/m ²)
900	9:1	30	10
1200	12:1	25	8
1500	15:1	15	5

* Safe working load of the floor seal is taken as one third of the tensile failure pressure. Safe working load is for temporary foot traffic not permanent loading.

Assessment No: BRE LPC CC 237371 PUKL



TYPICAL PROPERTIES

Colour:	Light Grey
Density loose bulk:	950 Kg/m ³
Density wet cast:	1750 - 1900 Kg/m ³
Density oven dry:	1450 - 1600 Kg/m ³
Setting time:	approx 1 hour
Expansion on setting:	0.1%

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MIXING PROCEDURE

Mix with clean water in a plastic container. Slowly add the dry powder to water while stirring by hand or power mixer to ensure a smooth lump-free mix.

Recommended Mixes

Compound	Water (by volume)
Floor Openings	2.5:1
Wall Openings	3.0:1

Do not attempt to remix by adding more water after the compound has started to set.

Using dirty mixing buckets can accelerate setting and result in a weak compound.

NOTE: The wet mix will remain useable for approximately 45-60 minutes depending on batch size, water content and temperature. Any spillage should be wiped up with a damp cloth before setting occurs.

FLOOR OPENINGS

When sealing holes in floor slabs, appropriate shuttering must be installed, cut to fit tightly around any services within the opening, to support the wet mix until it sets. Combustible materials i.e. timber shuttering must be removed, after the mix has set.

For complex penetrations it may be preferable to initially form a thin seal around all the services, with a nominal 5mm layer of the compound mix. Once this has set, the remaining depth of seal should be poured in one operation.

Building up the seal in several operations with the individual layers being allowed to set, will result in a weak laminated structure with severely reduced load bearing performance.

YIELD

Approximately 7 x 20kg bags per m² at 100mm thick.

HEALTH AND SAFETY

Contains gypsum plaster and natural aggregates. Wear appropriate protective clothing, including gloves, dust mask, safety glasses, especially during mixing, to guard against dust inhalation, eye damage and skin irritation. Safety data sheets are available from Promat Technical Services Department.

PACKAGING

20kg bags.

STORAGE

Must be stored in dry conditions. Shelf life, in unopened bag, at least 6 months.

TECHNICAL SERVICES

For additional technical support, please contact Promat Technical Services Department:
Telephone: 01344 381400 Fax: 01344 381401 E-mail: technicaluk@promat.co.uk

A safety data sheet is available from the Promat Technical Services Department and, as with any other materials, should be read before working with the product. The product is not classified as a dangerous substance and so no special provisions are required regarding the carriage and disposal of the product to landfill. This can be placed in an on-site skip with other general building waste which should be disposed of by a registered contractor.