

Firebreak Compound

TECHNICAL DATA SHEET

Firebreak Compound is a single pack material that, when mixed with water, provides a fire resistant smoke stop seal able to reinstate the fire resistance of separating walls and floors when penetrated by a wide range of building services.



Description

Firebreak Compound is a specially formulated single pack material that is mixed with water to provide a strong and robust fire resistant smoke stop seal. It is designed to reinstate the fire resistance of separating walls and floors when penetrated by a wide range of building services such as electrical cables, pipes and ducts.

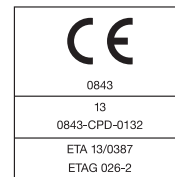
It is suitable for use in both small and large service openings and can be easily mixed to either a stiff or pourable consistency. Fire testing includes for use in minimum 100mm thick flexible (plasterboard) partitions.

Performance

Firebreak Compound has been tested to the latest European requirements for applications in walls and floors. Testing to other National Standards is also available.

- Fire Classification to EN 13501-2 and CE Mark (ETA 13/0387)
- Flexible Walls (stud partitions) or rigid walls (masonry, concrete) of 100mm minimum thickness
- Rigid (concrete) floors of 150mm minimum thickness
- Tested in conjunction with a wide range of penetrating services including bunched telecommunications cables, large power cables and steel and copper pipes
- Reaction to fire classification EN 13501-1:2007 +A1: A1 (non-combustible)
- High strength to enable loadbearing designs

- Mechanical and durability testing to ETAG 026-2; Y₂ (-5/+70°C) (internal use with temperature range of -5°C to +70°C and high humidity) with no loss of compressive strength
- Sound insulation: RW up to 57dB (BS EN ISO 10140-2: 2010)
- VOC Emissions Classification: M1 (highest European classification)
- Third party product certification with UL International (Certificate # UL-EU-00643-A1-M1)



For fire performance tables

see the next page

Other Properties

- Colour: Off White
- Cured density (28 days): 1040 – 1200kg/m³ (variable with mix ratio)
- Compressive strength (28 days) *see chart*
- Modulus of rupture (28 days) [EN 993-6 1995] *see chart*

| Compound / water ratio (by volume) | Compressive strength (N/mm ²) | Modulus of rupture (N/mm ²) |
|------------------------------------|---|---|
| 2:1 | 8.51 | 2.08 |
| 2.5:1 | 10.37 | 3 |
| 3:1 | 14.51 | 3.98 |

50mm thick Firebreak Compound over unsupported 50mm stone mineral wool batts (140kg/m³) in concrete floors of minimum 150mm thickness and openings of up to 700mm width x unlimited length

| Penetrating service | Fire performance (mins) | |
|--|-------------------------|-----------------------------|
| | Integrity (E) | Integrity & insulation (EI) |
| Blank Seal | 240 | 240 |
| Steel cable trays and ladders | 120 | 120 |
| Type* A2 electrical cable, single or in bundles | 120 | 120 |
| Type* A1 and A3 electrical cable, single or in bundles | 120 | 90 |
| Type* D2 electrical cable, single or in bundles | 120 | 60 |
| Type* B, D1, D3 and G1 electrical cable, single or in bundles | 120 | 30 |
| Telecom cable up to 21mm diameter, single or in bundles up to 100mm diameter | 120 | 30 |
| Type* E and G2 electrical cable, single or in bundles | 120 | 15 |
| Type* C1 and C2 electrical cable, single or in bundles | 90 | 60 |
| Type* C3 electrical cable, single or in bundles | 90 | 30 |
| Type* A1, A2, A3 and D2 electrical cable, single or in bundles + Insulwrap** | 120 | 120 |
| Type* B, C1, C2, C3, D1, D3, E, G1 and G2 electrical cable, single or in bundles + Insulwrap** | 120 | 90 |
| 22mm to 89mm diameter x 1mm minimum wall copper pipe | 120 | 0 |
| 19mm diameter x 1mm minimum wall steel pipe | 120 | 60 |
| 20mm to 194mm diameter x 1.2mm minimum wall steel pipe | 120 | 0 |
| 22mm diameter x 1mm minimum wall copper pipe + 19mm minimum thickness foam rubber insulation interrupted at seal | 120 | 120 |
| 23mm to 93mm dia. x 1.6mm minimum wall copper pipe + 25mm minimum thickness foam rubber insulation interrupted at seal | 120 | 120 |
| 10mm to 42mm diameter x 1mm minimum wall copper pipe + 25mm minimum thickness continuous stone wool insulation | 240 | 240 |
| 43mm to 110mm diameter x 1mm minimum wall steel pipe + 30mm minimum thickness continuous stone wool insulation | 240 | 120 |
| 10mm diameter x 1mm minimum wall steel pipe + 25mm minimum thickness continuous stone wool insulation | 240 | 240 |
| 11mm to 60mm diameter x 1.6mm minimum wall steel pipe + 25mm minimum thickness continuous stone wool insulation | 240 | 180 |
| 61mm to 219mm diameter x 1.6mm minimum wall steel pipe + 30mm minimum thickness continuous stone wool insulation | 240 | 180 |

*Cables as referenced in EN 1366-3: 2009, Annex A, Tables A.1 and A.3.

**Insulwrap is a 300mm wide x 5mm thick foil faced insulating wrap. It is fixed around the services above the floor only in a single layer to increase the fire performance of the seal.

**90mm thick Firebreak Compound over supported 50mm stone mineral wool batts (140kg/m³)
in concrete floors of minimum 150mm thickness and openings of up to 1400mm width x unlimited length or
unsupported batts in openings up to 700mm width x unlimited length** *Note: see installation instructions for details of suitable supports*

| Penetrating service | Fire performance (mins) | |
|---|-------------------------|-----------------------------|
| | Integrity (E) | Integrity & insulation (EI) |
| Blank Seal | 240 | 240 |
| Steel cable trays and ladders | 240 | 240 |
| Type* A1, A3 and D1 electrical cable, single or in bundles | 240 | 120 |
| Type* A2, B and C1 electrical cable, single or in bundles | 240 | 90 |
| Type* C2, C3, D2, D3 and E electrical cable, single or in bundles | 240 | 60 |
| Telecom cable up to 21mm diameter, single or in bundles up to 100mm diameter | 120 | 60 |
| Type*G1 and G2 electrical cable, single or in bundles | 120 | 30 |
| 16mm diameter copper conduits | 120 | 15 |
| 16mm diameter plastic conduits | 90 | 15 |
| Type* D1, D2, and E electrical cable, single or in bundles + Insulwrap** | 240 | 240 |
| Type* A1, A2 and D3 electrical cable, single or in bundles + Insulwrap** | 240 | 180 |
| Type* A3, B and C1 electrical cable, single or in bundles + Insulwrap** | 240 | 120 |
| Type* C2 and C3 electrical cable, single or in bundles + Insulwrap** | 240 | 90 |
| Telecom cable up to 21mm diameter, single or in bundles up to 100mm diameter + Insulwrap** | 120 | 90 |
| Type*G1 and G2 electrical cable, single or in bundles + Insulwrap** | 120 | 60 |
| 16mm diameter copper conduits + Insulwrap** | 120 | 60 |
| 16mm diameter plastic conduits + Insulwrap** | 90 | 60 |
| 22mm diameter x 1mm minimum wall copper or steel pipe | 240 | 240 |
| 23mm to 42mm diameter x 1.2 mm minimum wall copper or steel pipe | 240 | 90 |
| 43mm to 89mm diameter x 1.6 mm minimum wall copper or steel pipe | 240 | 15 |
| 90mm to 194mm diameter x 1.6 mm minimum wall or steel pipe | 240 | 15 |
| 22mm dia. x 1mm minimum wall copper or steel pipe + 19mm minimum thickness foam rubber insulation interrupted at seal | 240 | 240 |
| 23mm to 42mm dia. x 1.2mm minimum wall copper or steel pipe + 25mm minimum thickness foam rubber insulation interrupted at seal | 240 | 240 |
| 43mm to 89mm dia. x 1.6mm minimum wall copper pipe + 25mm minimum thickness foam rubber insulation interrupted at seal | 240 | 60 |
| 43mm to 194mm dia. x 1.6mm minimum wall steel pipe + 22mm minimum thickness foam rubber insulation interrupted at seal | 240 | 240 |
| 10mm to 42mm diameter x 1mm minimum wall copper pipe + 25mm minimum thickness continuous stone wool insulation | 240 | 240 |
| 43mm to 110mm diameter x 1mm minimum wall steel pipe + 30mm minimum thickness continuous stone wool insulation | 240 | 120 |
| 10mm diameter x 1mm minimum wall steel pipe + 25mm minimum thickness continuous stone wool insulation | 240 | 240 |
| 11mm to 60mm diameter x 1.6mm minimum wall steel pipe + 25mm minimum thickness continuous stone wool insulation | 240 | 180 |
| 61mm to 219mm diameter x 1.6mm minimum wall steel pipe + 30mm minimum thickness continuous stone wool insulation | 240 | 180 |

*Cables as referenced in EN 1366-3: 2009, Annex A, Tables A.1 and A.3.

**Insulwrap is a 300mm wide x 5mm thick foil faced insulating wrap. It is fixed around the services

Continues on the next page.

100mm thick Firebreak Compound in partitions or masonry/concrete walls of minimum 100mm thickness and openings up to 400mm height x unlimited width

| Penetrating service | Fire performance (mins) | |
|--|-------------------------|-----------------------------|
| | Integrity (E) | Integrity & insulation (EI) |
| Steel cable trays and ladders | 120 | 120 |
| Type* D1 and D2 electrical cable, single or in bundles | 120 | 120 |
| Telecom cable up to 21mm diameter, single or in bundles up to 100mm diameter | 120 | 120 |
| Type* A1, A2, A3, D3, E, G1 and G2 electrical cable, single or in bundles | 120 | 90 |
| Type* B, C1, C2 and C3 electrical cable, single or in bundles | 120 | 60 |
| Electrical cable up to 80mm diameter, single or in bundles + Insulwrap** | 120 | 120 |
| 22mm diameter x 1mm minimum wall copper pipe | 120 | 90 |
| 23mm to 38mm diameter x 1.2mm minimum wall copper pipe | 120 | 15 |
| 39mm to 93mm diameter x 1.6mm minimum wall copper pipe | 120 | 30 |
| 19mm diameter x 1.2mm minimum wall steel pipe | 120 | 120 |
| 20mm to 38mm diameter x 1.2mm minimum wall steel pipe | 120 | 60 |
| 39mm to 194mm diameter x 6.3mm minimum wall steel pipe | 120 | 15 |
| 22mm to 38mm dia. x 1mm minimum wall copper pipe + 19mm minimum thickness foam rubber insulation interrupted at seal | 120 | 120 |
| 39mm to 93mm dia. x 1.6mm minimum wall copper pipe + 25mm minimum thickness foam rubber insulation interrupted at seal | 120 | 120 |
| 9mm diameter x 1.2mm minimum wall steel pipe + 19mm minimum thickness foam rubber insulation interrupted at seal | 120 | 120 |
| 20mm to 38mm dia. x 1.2mm minimum wall steel pipe + 25mm minimum thickness foam rubber insulation interrupted at seal | 120 | 120 |
| 39mm to 194mm dia. x 6.3mm minimum wall steel pipe + 25mm minimum thickness foam rubber insulation interrupted at seal | 120 | 120 |
| 22mm to 38mm dia. x 1mm minimum wall copper or steel pipe + 25mm minimum thickness continuous stone wool insulation | 120 | 120 |
| 39mm to 93mm dia. x 1.6mm minimum wall copper or steel pipe + 25mm minimum thickness continuous stone wool insulation | 120 | 120 |

*Cables as referenced in EN 1366-3: 2009, Annex A, Tables A.1 and A.3.

**Insulwrap is a 300mm wide x 5mm thick foil faced insulating wrap. It is fixed around the services on both sides of a seal in a single layer to increase the fire performance of the seal.

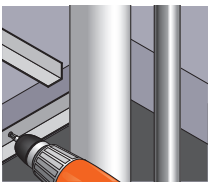
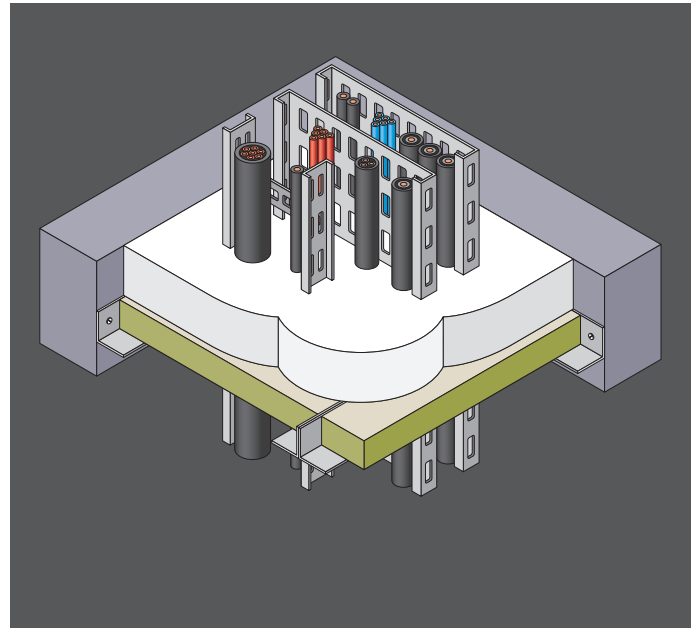
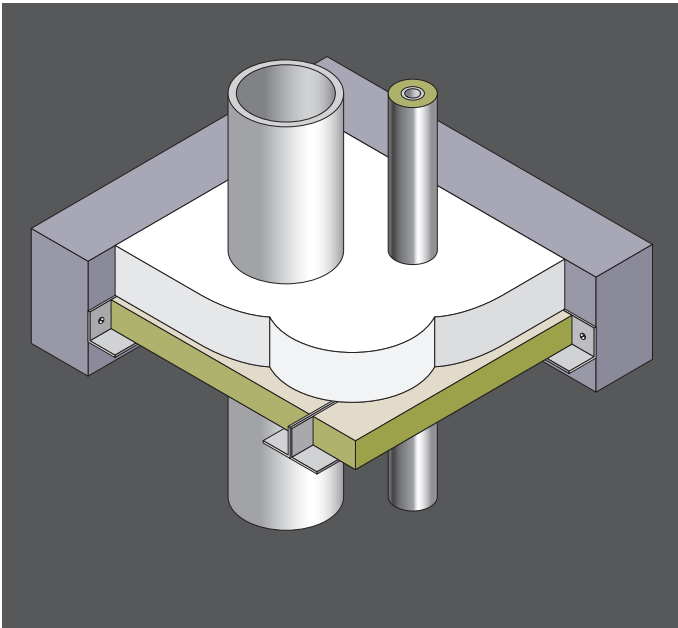
150mm thick Firebreak Compound in masonry/concrete walls of minimum 150mm thickness and openings up to 1500mm height x unlimited width

| Penetrating service | Fire performance (mins) | |
|--|-------------------------|-----------------------------|
| | Integrity (E) | Integrity & insulation (EI) |
| Steel cable trays and ladders | 240 | 180 |
| Type* A1, A2, A3 and D2 electrical cable, single or in bundles | 240 | 120 |
| Telecom cable up to 21mm diameter, single or in bundles up to 100mm diameter | 180 | 120 |
| Type* C2 electrical cable, single or in bundles | 240 | 90 |
| Type* B, C1, C3, D1, D3 and G1 electrical cable, single or in bundles | 240 | 60 |
| Type* E and G2 electrical cable, single or in bundles | 240 | 45 |
| Steel cable trays and ladders + Insulwrap** | 240 | 240 |
| Type* A1, A2, A3, D2 and G1 electrical cable, single or in bundles + Insulwrap** | 240 | 240 |
| Type* C3 and G2 electrical cable, single or in bundles + Insulwrap** | 240 | 180 |
| Type* B, C2, D1 and E electrical cable, single or in bundles + Insulwrap** | 240 | 120 |
| Telecom cable up to 21mm diameter, single or in bundles up to 100mm diameter + Insulwrap** | 240 | 120 |
| Type* C1 electrical cable, single or in bundles + Insulwrap** | 240 | 90 |
| 22mm diameter x 1mm minimum wall copper pipe | 240 | 90 |
| 23mm to 42mm diameter x 1.2mm minimum wall copper pipe | 240 | 30 |
| 43mm to 89mm diameter x 1.6mm minimum wall copper pipe | 240 | 15 |
| 19mm diameter x 1.2mm minimum wall steel pipe | 240 | 240 |
| 20mm to 38mm diameter x 1.2mm minimum wall steel pipe | 240 | 180 |
| 39mm to 194mm diameter x 5mm minimum wall steel pipe | 240 | 15 |
| 22mm x 1mm minimum wall copper pipe + 19mm minimum thickness foam rubber insulation interrupted at seal | 240 | 240 |
| 23mm to 42mm x 1.3mm minimum wall copper pipe + 25mm minimum thickness foam rubber insulation interrupted at seal | 240 | 240 |
| 43mm to 89mm dia. x 1.6mm minimum wall copper pipe + 25mm minimum thickness foam rubber insulation interrupted at seal | 240 | 90 |
| 19mm dia. x 1.2mm minimum wall steel pipe + 19mm minimum thickness foam rubber insulation interrupted at seal | 240 | 240 |
| 20mm to 194mm dia. x 1.2mm minimum wall steel pipe + 25mm minimum thickness foam rubber insulation interrupted at seal | 240 | 120 |

*Cables as referenced in EN 1366-3:2009, Annex A, Tables A.1 and A.3.

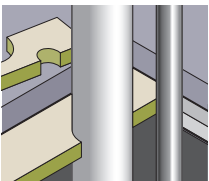
**Insulwrap is a 300mm wide x 5mm thick foil faced insulating wrap. It is fixed around the services on both sides of a seal in a single layer to increase the fire performance of the seal.

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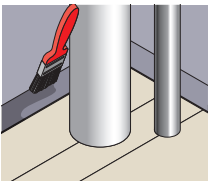
Floor seal installation

- Ensure contact surfaces are clean, dry and dust free



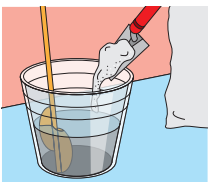
- Apply between 5°C and 40°C

- For larger opening cut suitable lengths of 50 x 50 x 2mm steel angle and fix around the inside face of the floor opening using steel fixings at 250mm maximum centres



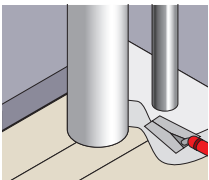
- The angles should be positioned at a depth to permit one layer of 50mm thick stone mineral wool batt supported on the angle overlaid with a minimum 90mm thickness of Compound to be contained within the floor depth

- Additional lengths of angle can be used to subdivide large openings and positioned as required by laying them back to back supported without mechanical fixings on the perimeter angles or other crossing angles. 10mm should be allowed in the cut length to permit thermal expansion under fire conditions

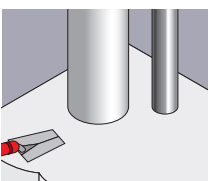


- Measure the opening size and the position of the services within the opening and transfer the dimensions onto the face of one or more batts

- The objective is to fill the opening with as few separate pieces of batt as possible and to ensure that each piece has a good compressive fit to the penetrating services



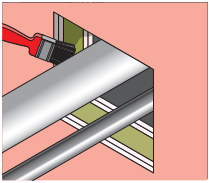
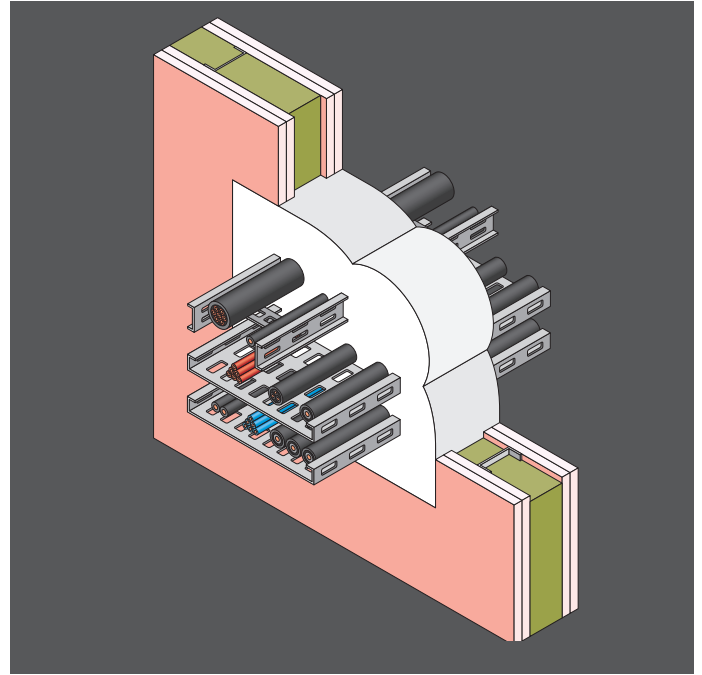
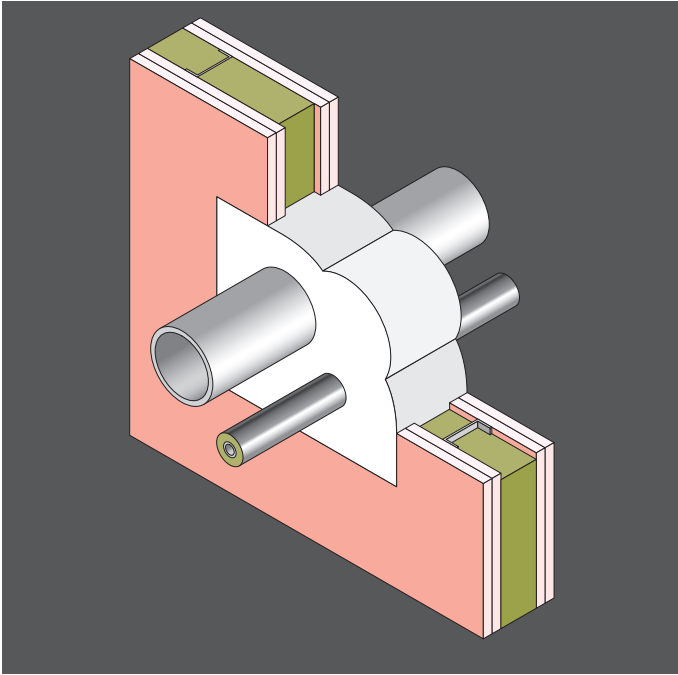
- Using a suitable safe cutting blade proceed to cut out the required pieces of batt sections and install within the opening to form a complete layer of permanent shuttering for the Compound



- For large openings the batt sections will be supported by the steel angles whilst for smaller openings they will be friction fitted within the opening at a depth so as to permit a minimum 50mm thickness of overlaid Compound to be contained within the floor depth

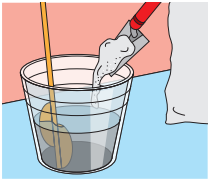
- Any remaining small gaps can be filled using pieces of the mineral wool or Firebreak 22 sealant

- Lightly wet any porous contact surfaces to aid adhesion
- Proceed to mix the Compound to a pouring consistency in a suitable clean container by adding it to clean water and mixing manually or with a mechanical mixer [Compound/ water ratio (by volume) approximately 2:1]
- Pour the mix into the opening working it around and between services to form a complete seal
- For large openings which may be accessible to occasional foot traffic the initial layer of Compound should be around 25mm thick to allow for a 50 x 50 x 2mm diameter steel mesh to be laid over all open areas once the 25mm layer is firm enough to support the mesh
- Repeat the mixing procedure and apply further Compound to achieve the required minimum depth of seal trowelling the surface to achieve an even finish
- Clean any excess material from around the opening and/or on the services using a wet cloth
- Clean tools after use using soap and warm water

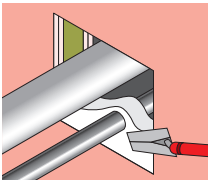


Wall seal installation

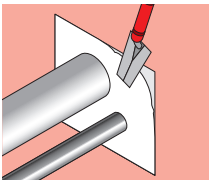
- Ensure contact surfaces are clean, dry and dust free
- Apply between 5°C and 40°C
- If required, apply protective paper masking tape around the opening and around the services in the plane of the wall surface



- Lightly wet any porous contact surfaces to aid adhesion
- Proceed to mix the Compound to a trowelling consistency in a suitable clean container by adding it to clean water and mixing manually or with a mechanical mixer [Compound/water ratio (by volume) approximately 3:1]



- Starting at the bottom trowel the mix into the opening working it around and between services to form a complete seal
- For larger openings repeat the mixing procedure and apply further layers of Compound onto each previous layer to close the opening



- Additional Compound can then be applied to both faces of the seal to achieve the required minimum depth of seal and a uniform finish
- Once dry, carefully remove any protective masking tape
- Clean tools after use using soap and warm water

End use conditions

Firebreak Compound is intended for internal use and has been subjected to EN mechanical and durability testing to support use across a wide temperature range of -5°C to +70°C and in high humidity conditions.

Maintenance

No routine maintenance is required although periodic inspection for possible damage is recommended. All penetrations seals which are subsequently modified should be made good using Firebreak Compound

Supply, packaging and usage

Firebreak Compound is normally supplied in 20kg sacks. It can also be supplied in 10kg sacks to order.

The approximate quantity of Firebreak Compound required to fill a 1m x 1m blank opening to a depth of 50mm is 2x 20kg sacks.

Storage

It is recommended to store in dry conditions between 5°C and 35°C.

Shelf life

Minimum 12 months when stored under recommended storage conditions.

Health and safety

Please refer to safety data sheet before use.



Since the product is applied under circumstances beyond our control, Neutron Fire Technologies Limited can accept no direct or consequential liability whether in contract or in tort, for the interpretations of such recommendations and reserves the right to modify the recommendations as necessary.