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CI/SfB

M797 INTUMEX® F.C. FIRE CEMENT DATASHEET – Mar 14

Product specifications
can change. Contact
us to ensure you have
our latest datasheet

INTUMEX® F.C. FIRE CEMENT

- Fire stopping wall & floor gaps
- Suitable for use around pipes and cables
- Fire & Loadbearing Tests
- Non-shrink when curing or in fire
- Readily cut or drilled & resealed

DESCRIPTION

Intumex® FC is a fire stopping compound for application in fire walls and floors, mainly around penetrating items. It is hard setting, lightweight and simple to apply. It is supplied as a pre-mix powder that water is added to, forming a mortar.

It has been fire tested in wall and floors for up to 4 hours fire resistance (in some situation up to 6 hours -/360/360). Tests to BS476:20 and in some cases AS1530.4 have included both unpenetrated Intumex® FC Fire Cement and penetrated with pipes and cables. Cables tested include a variety of sizes and in some cases, cable trays. Pipes tested penetrating floors include 100mm diameter steel and 100mm PVC pipe which was additionally protected by a Unicollar friction fitted from below into the mineral fibre board installed so the fixing lugs extended 15mm into the Intumex®FC when that was installed. The collar passes through the mineral fibre board leaving the base of the collar exposed to the fire. The PVC pipe above the Intumex®FC is further protected with an additional 50mm deep Intumex®FC around it.

Load bearing testing has been carried out, including a test on a sample after it was fire tested.

LOAD BEARING CAPABILITIES

Load bearing tests have been carried out on Intumex® FC Fire Cement. An unpenetrated floor opening of size 1000mm x 500mm, with 100mm thick reinforced Intumex® FC Fire Cement achieved a FRL of -/360/360 after which it successfully supported a load of 1000kg.

The steel reinforcing for the above Fire Test and post fire test Weight Bearing Test was 12mm thick rod, inserted 25mm into the inside edge of the aperture. Four rods were located length-ways across the aperture 54mm below the upper surface of the infill slab, and one rod was located 42mm below the surface. Shuttering was removed before the fire test.

An unpenetrated floor opening of size 1000mm x 600mm, with 50mm mineral wool and 40mm thick reinforced Intumex® FC Fire Cement successfully supported 7.56KN and a 70mm thick unreinforced Intumex® FC Fire Cement supported 10.21KN (non fire tested, non penetrated specimen).

Note the minimum gap width that it is normally practical to drill into to install reinforcing is approximately 300mm.

It is recommended that on unreinforced floor installation, warning signs be placed upon the system. A steel plate or similar should be placed over the system if foot traffic is possible.

NOTE: The technical information and suggestions for use and application presented herein represent the best information available to us and are believed to be reliable. If used beyond the situations detailed on this datasheet we advise confirming their suitability before installation. All dimensions are nominal.

We reserve the right to make changes or to withdraw designs and products without notice.

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INSTALLATION WITHIN FLOORS

Install 50mm thick mineral wool board of minimum 140kg/m³ density positioned such that the top of the Intumex® FC Fire Cement will be flush with the top surface of the floor slab. The maximum size of opening fire tested to BS476:20 is 1500mm x 600mm.

It may be necessary to use temporary support for the mineral wool board. The mineral wool board forms part of the system and **MUST NOT BE REMOVED**. Add Intumex® FC Fire Cement to the depth required to achieve the desired fire resistance as follows:

1 hour	2 hours	3 hours	4 hours
30mm	30mm	40mm	40mm

Cut the mineral wool board to ensure that this formwork is tightly fitted within the aperture, otherwise temporary support for the board is required. This is to prevent the wet cement from collapsing with the mineral wool board due to its weight when the cement is poured onto the mineral wool board.

For the cable penetrations it is essential to liberally apply M706 Intumescent Acrylic Sealant between the cables where they are bunched and along their length where they pass through the mineral wool formwork and for the full depth of Intumex® FC Fire Cement.

Apply a bead of M706 Intumescent Acrylic Sealant on the top side of the mineral wool, at the junction of the mineral wool and slab and around all service penetrations. Apply a bead of M706 Intumescent Acrylic Sealant on the top side of the Intumex® FC Fire Cement, at the junction of the Intumex® FC Fire Cement and slab and around all service penetrations. Allow the fire cement to cure before covering with impermeable materials.

INSTALLATION WITHIN WALLS

Install 50mm mineral wool board of minimum density 140kg/m³ in the centre of the wall. The maximum size of wall opening fire tested to BS476:20 without the need to provide support of joints in the system is 600mm x 200mm. The wall must be designed so that any construction above the opening is self-supporting, i.e. it does not impose any load onto the penetration seal.

The system is not for use in lightweight steel stud partition walls. Where hollow blocks or cavity wall systems are used, the cavities must be backfilled all round with Intumex® FC Fire Cement or a mortar mix. Add 25mm thick Intumex® FC Fire Cement to both sides of the mineral wool, to achieve a 4-hours fire resistance (FRL -240/180).

To provide an insulation barrier system increase the thickness of Intumex® FC Fire Cement to 50mm on both sides of the wall (FRL-240/240).

Cut the mineral wool to ensure it is a tight fit within the opening and around all services. For cable penetrations it is essential to liberally apply M706 Intumescent Acrylic Sealant between the cables where they are bunched and along their length where they pass through the mineral wool formwork and the full depth of Intumex® FC Fire Cement.

Apply a bead of M706 Intumescent Acrylic Sealant on both faces of the mineral wool at service penetrations and at the junction of the mineral wool and wall before installing the Intumex® FC Fire Cement.

After the Intumex® FC Fire Cement has been installed, at the junction of the Intumex® FC Fire Cement and wall and around all service penetrations on both faces of the wall, apply a bead of M706 Intumescent Acrylic Sealant.

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ITEMS PENETRATING

Penetrating items such as pipes and cables are to be independently supported so that they will not damage the Intumex® Fire Cement. Typically this is done by attaching cable tray brackets or steel brackets to surrounding concrete wall and floors.

JOINTS

The size of the penetration fire tested was 1500mm x 600mm. In the case of penetrations longer than this gaps may be necessary. This is typically a 6mm saw cut through the Intumex®FC, but not through the mineral fibre board, the gap then being filled with intumescent sealant. Joins in the mineral fibre board with a butt joint and stagger these 300mm from joints in the Intumex®FC.

Should large movement joints be required a 20mm gap can be left in the Intumex®FC. A 29mm IBS rod is then installed above the mineral fibre board at the bottom of the gap, with the remainder filled with intumescent sealant.

MIXING & INSTALLATION INSTRUCTIONS

When mixed with 15 to 19 litres (kg) of clean water, the bag will produce approximately 25 litres of mix which will fill an area approximately 0.63m² at 40mm deep or 0.84m² at 30mm deep.

This equates to approximately 1.5 x 20kg bags per m² of clear opening at 40mm deep or 1.1 x 20kg bags at 30mm deep (other usage depths can be calculated directly from these figures). The final yield will depend upon the volume of water used and the figures given in this data sheet are for guidance only.

For best surface finish use approximately 2 : 1.33 (cement water).

Intumex® FC Fire Cement can be mixed to a consistency to suit the application. For floors, if services are close together, a wetter, pouring mix is preferable. For walls, it is always preferable to use a dry, packing mix. The amount of water used will also depend on the weather conditions at the time, but do not use a ratio of less than 2:1.33. The following may be used as a guide:

Pourable mix: 2kg of compound to 1.8 litres of water

Packing mix: 2kg of compound to 1.35 litres of water

The mix will remain useable for approximately 30 minutes but this will depend upon the weather conditions and amount of water used. DO NOT attempt to remix by adding water after setting has commenced.

In some applications it may be necessary to provide bond breakers around services that may move as a result of natural building or thermal movement. This can be achieved using plastic film wrap. Always apply a bead of M706 Intumescent Acrylic Sealant at the junction of the services and Intumex® FC Fire Cement. This provides a smoke, water and movement seal.

Store in dry conditions. Shelf life 12 months in an unopened bag.

PRECAUTIONS: Goggles, a suitable dust mask and gloves should be worn during mixing and application. Before using, read and follow the Health & Safety Data Sheet. This is available upon request.

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APPLICATIONS

- Intumx® FC Fire Cement should not be installed at temperatures below +5°C.
- Do not attempt to remix by adding more water after the compound has started to set.
- Do not use a mix ratio of less than 2kg (powder): 1.33 (water).

TECHNICAL DATA

- Colour White
- Consistency Powder
- Density (nominal)

Loose	730kg/m ³
Wet cast	1450-1650kg/m ³
Cured	950-1100kg/m ³
- Consumption (dry cement) Cured density: 0.95-1.1kg/m³ per mm thickness
- Mixing ratio Pouring mix for floors is 2kg of powder : 1.8kg of water
Pouring mix for walls is 2kg of powder : 1.35kg of water
- Expansion on setting 0.1% (approximate)
- Thermal conductivity 0.2 W/mK
- Flexural strength 1-3 N/mm² (varies with water content)
See note on page 1 concerning loadbearing capacity
- Compressive strength 5.4 N/mm² (varies with water content)
- Curing time 2-3 hours
- Pot life 20-40 minutes (depending on consistency of mix and weather conditions)

STORAGE AND PACKAGING

- Store in a cool dry place.
- Protect from heat and frost.
- Sealed bags can be stored for 12 months.
- Opened bags should be resealed and used within 24 hours. In some humid climates this time can be dramatically reduced.
- Supplied in paper bags, 20kg in weight.

SAFETY MEASURES

- Avoid contact with eyes and food. Read Safety data sheet before using.

*NOTE: The technical information and suggestions for use and application presented herein represent the best information available to us and are believed to be reliable. They should not however be construed as controlling suggestions and there is no warranty of performance of our materials either expressed or implied. We urge that users of our materials conduct confirmatory tests to determine final suitability for their specific end uses. All dimensions are nominal. **We reserve the right to make changes or to withdraw designs and products without notice.***