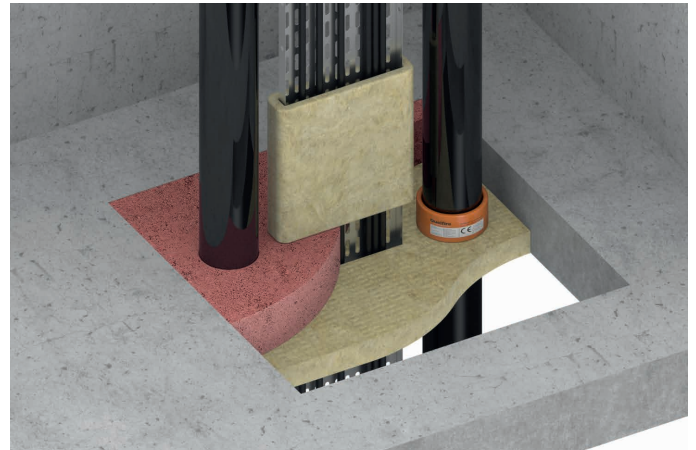


# QF2 FIRE PROTECTION COMPOUND

**QF2 Fire Protection Compound** is intended for use as a gap filling material where cables and pipework services penetrate fire compartment floors and walls. QF2 Fire Protection Compound expands slightly on curing (0.1%), to form a rigid seal and is also suitable for use in load bearing situations. Subsequent to installation it will accept further services penetrating the barrier without damage.



QF2 Fire Protection Compound



QF2 Fire Protection Compound used in conjunction with MW Mineral Wool Slab and QWW Intuwrap

## FEATURES & BENEFITS

- 🔥 Fire Tested to BS 476-20-1987 and BS EN1366-3-2009
- 🔥 Up to 4 hour fire rating
- 🔥 Acoustic tested to 47dB
- 🔥 Suitable for load bearing situations
- 🔥 Expands slightly on curing to form a rigid seal
- 🔥 The use of extensive shuttering is not necessary
- 🔥 Can be used in conjunction with other Quelfire Products such as the QWW & QuelCoil Intuwraps and QWR fire Collars
- 🔥 Ideal for service risers

## COMPOSITION

The QF2 Fire Protection Compound is a non-combustible compound manufactured from lightweight graded fire resisting aggregates, in organic binders and high-quality gypsum cements to give excellent fire resistance, strength and versatile workability.

The QF2 Fire Protection Compound is mixed on site with water and can be applied to both floors and walls. Once cured, QF2 will provide a load bearing and fire rated seal.



The Warringtonfire Logo displayed is the trademark of Warringtonfire registered in the United Kingdom. The Warringtonfire Logo is evidence that the products denoted as 'Tested by Warringtonfire' were tested to BSEN 1366-3: 2009 in England between September 22nd 2015 and January 7th 2021.

## APPLICATION / INSTALLATION

The QF2 Fire Protection Compound may be used in rigid walls and floors. QF2 is readily mixed with water in a bucket or concrete mixer, to consistencies that range from pourable, stiff or suitable to be trowelled.

QF2 can be used in conjunction with other QuelStop system products such as the QWW and QuelCoil Intuwaps and the QWR fire collar.

QF2 Fire Protection Compound expands slightly on curing (0.1%), to form a rigid seal and will provide a load bearing seal at 100mm thick.

The setting time for QF2 depends on the atmospheric temperature. It may be built up further within two or three hours where large barriers are required.

## PHYSICAL PROPERTIES

|                                   |             |
|-----------------------------------|-------------|
| <b>Colour</b>                     | Pink        |
| <b>Density loose bulk (kg/m3)</b> | 650         |
| <b>Density wet cast (kg/m3)</b>   | 1300 - 1400 |
| <b>Density over dry (kg/m3)</b>   | 850 - 950   |
| <b>Setting time (mins)</b>        | 60          |
| <b>Expansion on setting (%)</b>   | 0.1         |

## ACOUSTIC INSULATION PERFORMANCE

The QF2 Fire protection compound achieved the following acoustic insulation ratings:

| Mortar at 100mm thickness    | R'w (C; Ctr)<br>(dB) |
|------------------------------|----------------------|
| QF2 Fire Protection Compound | 47 (1)               |

## STRUCTURAL PROPERTIES

Relationship between Workability and compressive strength:

| Consistency | QF2 Fire Protection Compound (N/mm2) |         |
|-------------|--------------------------------------|---------|
|             | 24 hours                             | 28 days |
| Pourable    | 2.5                                  | 5       |
| Plastic     | 4                                    | 8       |
| Stiff       | 5                                    | 10      |

## THERMAL CONDUCTIVITY AND U VALUES:

| Material                     | Thermal Conductivity<br>'K' (w/moc) | Thickness<br>(mm) | Thermal Resistance<br>'R' (t/k) | U Value<br>I / 'R' |
|------------------------------|-------------------------------------|-------------------|---------------------------------|--------------------|
| QF2 Fire Protection Compound | 0.21                                | 100               | 0.48                            | 2.1                |

## YIELD

One square metre at 100mm thickness requires approx. 4 x 20kg sacks of QF2 Fire Protection Compound.

## PACKAGE AND STORAGE

QF2 is supplied in 20kg bags which must be stored in dry conditions. Shelf life, in an unopened bag is typically 12 months.

## HEALTH & SAFETY

QF2 Fire Protection Compound contains gypsum plaster and natural, or heat processed aggregates. Appropriate protective clothing, including gloves, dust mask, safety glasses, should be worn, especially during mixing, to guard against dust inhalation, eye damage and skin irritation.

For further information, please refer to the Material Safety Data Sheet, available on request.

## MIXING

QF2 is mixed on site with clean water in a plastic container by slowly adding the dry powder to the water while stirring by hand or power mixer to ensure a smooth lump-free mix.

### Recommended mixes:

|                   | Dry Powder / Water Ratio |           |
|-------------------|--------------------------|-----------|
|                   | By Volume                | By Weight |
| Pourable / Floors | 2 1/2 : 1                | 1.3 : 1   |
| Stiff / Walls     | 3 : 1                    | 1.9 : 1   |

The wet mix will remain useable for approximately 45-60 minutes depending on batch size, water content and temperature.

## INSTALLATION

### Vertical openings through floors:

It is recommended that appropriate shuttering such as MW Mineral Wool Slabs should be cut to suit the penetration slightly oversize and around all penetrating services so when installed it will be a good friction fit.

The MW Slab should be positioned towards the bottom of the hole to allow the correct depth of the QF2 Fire Protection Compound to be installed on top – normally a minimum of 100mm but this should be checked in accordance with the test evidence and recommendations.

Consideration should be given to any necessary temporary or permanent support that may also be required.

Once the MW Shuttering Slab is securely fitted, any necessary closure devices required around the service penetrations such as QWW Intuwraps to plastic pipes may be installed.

The QF2 Fire Protection Compound can then be poured on top of the MW Shuttering Slab.

Once the QF2 Fire Protection Compound has cured, the shuttering can be removed so that the fire seal is visible. If retained, we recommend that the shuttering is at least cut back around the service so that the fire seal is visible and exposed to fire. All combustible materials such as plywood, must be removed, after the QF2 Fire Protection Compound has set.



Where the barrier is required to provide a load bearing capability, consideration should be given to structural support, such as reinforcing bars. Consideration may also be given to the use of a permanent shuttering system. In all loadbearing situations the QF2 Fire Protection compound thickness must be at least 100mm.

As the load bearing performance particularly in un-reinforced situations is dependent on compressive membrane action against the concrete slab edge or other rigid boundary, it is essential to check that this is vertical, before commencing installation.

Where the thickness of the seal is built up using multi layers, the structural strength of the seal may be reduced. It is therefore recommended, particularly in load bearing situations, that a maximum of 10% thickness is installed initially, and the remaining thickness applied as a further single 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.

Cutting out part of the finished seal to accommodate additional services, must not be undertaken without review by a competent person, of the effect on the structural integrity of the seal and also to ensure that the seal will still fall within the tested scope of application.



## Horizontal Openings through walls:

It is recommended that the QF2 Fire Compound should be installed to a minimum thickness of 100mm. The QF2 Fire Protection Compound may be pre-cast into convenient sized blocks with a stiff mix being used as a bedding mortar or the QF2 Fire Protection Compound can be plastered onto a MW shuttering slab to the required depth.

### Technical Support & Guidance:

Should you require any further information regarding this product, please do not hesitate to contact the technical department at Quelfire Ltd.

Tel: **0161 928 7308**. Email: [technical@quelfire.co.uk](mailto:technical@quelfire.co.uk)

Please be aware that this document is intended for general information only and all details should be checked against all relevant supporting test evidence, certification and installation guidelines.

Use of alternative components or deviations from the instructions in any way is likely to mean that the installation will not comply with the assessed rating.

Quelfire Ltd does not accept responsibility for the consequences of using Quelfire products in applications or for purposes not authorised by Quelfire Ltd. Expert advice should be sought where such applications are contemplated.

The policy of Quelfire Ltd is one of constant improvement. Details are subject to change and/or withdrawal without notification therefore you must ensure this is the latest published documentation. Whilst Quelfire will endeavour to keep its publications up to date, the accuracy of the information contained within this document may be affected by pertinent changes in the law or regulatory requirements and alterations or amendments to the specification of Quelfire products.

All information contained in this document is given in good faith and is provided for guidance only. Any drawings provided are for illustrative purposes only. As Quelfire Ltd has no control over the methods or competence of installation and of prevailing site conditions, no warranties, expressed or implied, is intended to be given as to the actual performance of the product mentioned or referred to herein and no liability whatsoever will be accepted for any loss, damage or injury arising from the use of the information given. Full terms and conditions can be accessed at: <https://quelfire.co.uk/terms-conditions-of-sale/>