

## MATERIAL SAFETY DATA SHEET

Product name	Quelfire QF1 Fire Protection Compound
Product Code(s)	QF1
Revision Date	01/01/2021
Revision number	02

### Section 1: Identification of the substance/mixture and of the company / undertaking

#### 1.1. Product identifier

Product name	Quelfire QF1 Fire Protection Compound
Product Code	QF1

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Main Applications – non exhaustive list	Passive Fire stopping mortar infill for service penetrations
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#### 1.3. Details of the supplier of the safety data sheet

Company Name	Quelfire Limited Springvale Industrial Estate Millbuck Way Sandbach CW11 3HT
Tel	0161 928 7308
Fax	0161 924 1340
Email	<a href="mailto:technical@quelfire.co.uk">technical@quelfire.co.uk</a>

#### 1.4. Emergency telephone number

Emergency telephone number	0161 928 7308 (Office hours only)
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### Section 2: Hazards Identification

#### 2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]	<p><b>Hazard Categories:</b> Skin Corrosion/ irritation: Skin Irrit. 2 Serious eye damage/ eye irritation: Eye Da. 1</p> <p><b>Hazard Statements:</b> Causes skin irritation Causes serious eye damage.</p>
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#### 2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 [CLP]	<p><b>Hazard components for labelling</b> – Portland Cement</p> <p><b>Signal word:</b> Danger</p> <p><b>Pictograms:</b></p> 
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	<p><b>Hazard Statements:</b>                  H315 – Causes skin irritation                  H318 – Causes serious eye damage</p> <p><b>Precautionary statements:</b>                  P101 – if medical advice is needed, have product container or label at hand.                  P102 – Keep out of reach of children.                  P103 – Read label before use                  P280 – Wear protective gloves/ protective clothing/ eye protection/ face protection.                  P302+P352 – IF ON SKIN: wash with plenty of soap and water.                  P305+P351+P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.                  P315 – Get immediate medical attention/ advice.                  P332+P313 – If skin irritation occurs: Get medical attention/ advice.                  P362+P364 – Take off contaminated clothing and wash it before reuse.</p> <p><b>Additional advice on labelling:</b>                  The product is labelled in accordance with Regulation (EC) no. 1272/2008 (GHS).</p>
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2.3. Other hazards

Adverse physicochemical, human health and environmental effects	<p>According to Regulation (EC) No 1907/2006 (REACH) none of the substances, contained in this product are a PBT/ vPvB substance.</p> <p>Dust particles, like other inert materials, may mechanically irritate the eyes. May cause irritation of the respiratory tract. Aqueous solution is alkaline. May cause eye/ skin irritation.</p> <p>The preparation is low in chromate because the level of sensitizing chromium (VI) is reduced by additives to less than 2 ppm in the cement content of the ready-to-use mortar. Prerequisite for the effectiveness of the chromate reduction is the proper storage and observance of the expiry date (see point 7.2). In case of improper storage (ingress of moisture) or superimposition, the contained chromate reducer may lose its effectiveness.</p>
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**Section 3: Composition/information on ingredients**

3.1. Substances

Name	Product Identifier	%	EC No.	GHS Classification
Portland Cement	(CAS-No.) 65997-15-1	10-25	266-043-4	Skin Irrit 2, Eye Dam 1, STOT SE 3; H315, H318, H335

3.2. Impurities

Not relevant
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**Section 4: First aid measures**

4.1. Description of first aid measures

General Information	Water forms corrosive alkaline solutions. (pH 11-11.5) – alkaline reacts with water and becomes solid. Remove contaminated clothing immediately and dispose of safely. Ensure adequate ventilation. Provide appropriate exhaust ventilation at places where dust is formed. Avoid dust deposits.
Skin contact	Remove contaminated soaked clothing immediately. In case of contact with the skin wash off immediately with plenty of water. Consult a doctor if skin irritation persists.

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Eye contact	Rinse immediately with plenty of lukewarm water, also under the eyelids, for at least 15 minutes. Do not rub the eyes – contains inorganic fillers, which irritate the eyes mechanically like other inert materials. Rinse thoroughly with plenty of water. Consult a doctor if skin irritation persists.
Ingestion	Never give anything by mouth to an unconscious person. Do not induce vomiting. Rinse out the mouth and give plenty of water to drink. Consult a physician.
Inhalation	Take affected person into fresh air. Consult a physician. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

### 4.2. Most important symptoms and effects, both acute and delayed

Causes skin irritation.  
Causes serious eye damage.  
Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough. Dust particles, like other inert materials, are mechanically irritating to the eyes. May cause irritation of the respiratory tract.

### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptoms

## Section 5: Fire-Fighting measures

### 5.1. Extinguishing media

Suitable Extinguishing Media	Product itself does not burn. Use firefighting measures that suit the environment and products stored. Foam, CO <sub>2</sub> , Dry chemical, water-spray
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### 5.2. Special hazards arising from the substance or mixture

None

### 5.3. Advice for fire-fighters

Advice for fire-fighters	In case of fire, wear suitable respiratory equipment with positive air supply. <b>Additional information:</b> Knock down dust with a water spray jet. Fire residues and contaminated firefighting water must be disposed of in accordance with local regulations.
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## Section 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Avoid contact with eyes, skin or mucous membrane. Avoid dust formation. Do not breathe dust. Ensure adequate ventilation, especially in confined areas.

### 6.2. Environmental precautions

Do not discharge large amounts into drains or bodies of water. Inform competent authority about release into sewage, ground or into waters.

### 6.3. Methods and materials for containment and cleaning up

Clean-up procedures	Pick up mechanically, avoiding dust and dispose in suitable recipients. Use chemical neutralizers.
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### 6.4. Reference to other sections

Refer to section 8 'Exposure controls/ personal protection' and section 13 'Disposal Considerations'

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**Section 7: Handling and storage**

7.1. Precautions for safe handling

Handling requirements	<p>No special measures necessary if used correctly.</p> <p>Provide appropriate exhaust ventilation at machinery and not at places where dust can be generated. Ensure adequate ventilation, especially in confined areas. Avoid the formation of duct.</p> <p>Avoid contact with skin, eyes and clothing.</p> <p>Take the usual precautions when handling chemicals. When using do not eat, drink or smoke.</p>
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7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	<p>Keep packaging closed when not in use.</p> <p>Protect from moisture</p> <p>Store in a dry, cool and well-ventilated place.</p> <p>Keep only in original container.</p>
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7.3. Specific end use(s)

Specific end use(s)	See identified use in section 12.
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**Section 8: Exposure controls/personal protection**

8.1. Control parameters

CAS No.	Substance	ppm	Mg/m <sup>3</sup>	Category	Origin
65997-15-1	Portland Cement, respirable dust	-	4	TWA (8h)	WEL

8.2. Exposure controls

Engineering measures	Ensure there is sufficient ventilation of the area, especially in confined spaces
Protective and hygiene measures	Take the usual precautions when handling chemicals. Clean skin thoroughly after working. Use barrier skin cream. Keep away from food, drink and animal feeding stuffs. Remove contaminated clothing immediately and dispose of safely. Wash hands before breaks and at the end of workday. Avoid contact with the skin and the eyes. At work do not eat, drink, smoke or take drugs.
Respiratory protection	In case of prolonged exposure to airborne dust concentrations, wear dust mask Type P2 or above.
Hand protection	Chemical-resistant gloves, appropriate safety gloves for the site. Follow the recommendations of the glove manufacturer for the breakthrough properties especially for the workplace conditions involving mechanical stress and contact duration. Wash hands at the end of each work session.
Eye protection	Tightly fitting goggles. Use equipment for eye protection tested and approved under appropriate standards.
Skin protection	Protective clothing

**Personal protective equipment symbol(s):**



**Environmental exposure controls:**

Avoid release to the environment.

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**Section 9: Physical and chemical properties**

9.1. Information on basic physical and chemical properties

State	Powder
Appearance	Grey
Odour	Odourless
Odour threshold	Not applicable
pH	Not applicable
Melting point	Not applicable
Initial boiling point and boiling range	Not applicable
Flash point	Not applicable
Sustaining combustion	Not applicable
Flammability: solid	Not applicable
Explosive properties	The product is not explosive
Lower explosion limits	Not applicable
Upper explosion limits	Not applicable
Ignition temperature	No data available
Auto-ignition temperature: solid	No data available
Decomposition temperature	No data available
Oxidizing properties: not fire promoting	No data available
Vapour pressure	Not applicable
Density	No data available
Water solubility	Slightly soluble
Solubility in other solvents	No data available
Partition coefficient	No data available
Viscosity/ dynamic	Not applicable
Viscosity/ kinematic	Not applicable

9.2. Other information

Solid content – 100%
No data available

**Section 10: Stability and reactivity**

10.1. Reactivity

Reactivity with the intended use is not associated with any hazards
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10.2. Chemical stability

Stable under normal conditions.
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10.3. Possibility of hazardous reactions

No hazardous reactions
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10.4. Conditions to avoid

Protect from moisture
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### 10.5. Incompatible materials

Strong acids, strong oxidizing agents

### 10.6. Hazardous decomposition products

No decomposition if stored and applied as directed.

## Section 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity	Based on available data, the classification criteria are not met.
Skin corrosion/ irritation	Causes skin irritation.
Serious eye damage/ irritation	Causes serious eye damage
Respiratory Irritation	Inhalation of duct may cause shortness of breath, tightness of the chest, a sore throat and cough.
Skin Irritation	Based on available data, the classification criteria are not met. Repeated or prolonged skin contact may cause skin irritation and/ or dermatitis and sensitization of susceptible persons.
Germ cell mutagenicity	Based on available data, the classification criteria are not met.
Carcinogenicity	Based on available data, the classification criteria are not met.
STOT-single exposure	Based on available data, the classification criteria are not met.
STOT-repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met

## Section 12: Ecological information

### 12.1. Toxicity

No data available

### 12.2. Persistence and degradability

Methods for the determination of biodegradability are not applicable to inorganic substances. Inorganic product.

### 12.3. Bioaccumulative potential

There is no indication of bioaccumulation potential

### 12.4. Mobility in soil

Not established

### 12.5 Results of PBT and vPvB assessment

According to regulation (EC) No 907/2006 (REACH) none of the substances, contained in this product are a PBT/ vPvB substance.

### 12.6. Other adverse effects

No specific adverse effects known

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### Section 13: Disposal considerations

#### 13.1. Waste treatment methods

Regional legislation (waste)	Disposal must be done according to official regulations.
Waste treatment methods	<p>Dispose of contents/ container in accordance with licensed collector's sorting instructions.</p> <p>Should not be disposed of with household waste.</p> <p>Do not empty into drains.</p> <p>Wet the leaked product with water and allow to solidify on air.</p> <p><b>List of wastes code – residues/ unused products:</b></p> <p>170101 – Construction and demolition wastes (including excavated soil from contaminated sites); concrete, bricks, tiles and ceramics: concrete</p> <p><b>List of wastes code – contaminated packaging:</b></p> <p>150101 – waste packaging; absorbents, wiping cloths, filter materials and protective clothing not otherwise specified; packaging (including separately collected municipal packaging waste); paper and cardboard packaging.</p> <p><b>Contaminated packaging:</b></p> <p>Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse. Packaging that cannot be cleaned should be disposed of like the product.</p> <p>Cleaning agent: water</p>

### Section 14: Transport information

#### 14.1. UN number

Not relevant

#### 14.2. UN proper shipping name

Not relevant

#### 14.3. Transport hazard classes

In accordance with ADR/ RID/ IMDG/ IATA/ ADN	
ADR	Not Applicable
RID	Not Applicable
IMDG	Not Applicable
IATA	Not Applicable
ADN	Not Applicable

#### 14.5. Environmental hazards

No

#### 14.6. Special Precautions for user

Overland Transport	Not Applicable
Transport by sea	Not Applicable
Air transport	Not Applicable
Inland waterway transport	Not Applicable
Rail transport	Not Applicable

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14.7. Transport in bulk according to annex II of MARPOL 73/78 and the IBC Code

Not relevant
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### Section 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

2004/42/EC (VOC):	0g/l
Information according to 2012/18/EU (SEVESO III):	Not relevant

15.1.2 National Regulations

Slightly water contaminating
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15.2. Chemical Safety Assessment

Chemical Safety Assessment	No chemical safety assessment has been carried out
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### Section 16: Other information

Abbreviations and acronyms	
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of dangerous goods by Road
ATE	Acute Toxicity Estimate
CAS-No.	Chemical Abstract Service Number
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 272/2008
EN	European Standard
GHS	Globally Harmonized System of Classification, Labelling and Packaging of Chemicals
ICAO	International Civil Aviation Organisation
IMDG-Code	International Maritime Code for dangerous goods
IATA	International Air Transport Association
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
vPvB	Very Persistent and Very Bioaccumulative
WGK	Water Hazard Class

Classification for mixtures and used evaluation method according to Regulation (EC) No. 1272/2008 {CLP}	
Skin Irrit. 2; H315	Calculation method
Eye Dam. 1; H318	Calculation method

Relevant H and EUH statements (number and full text)	
H315	Causes skin irritation.
H318	Causes serious eye damage.



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H335	May cause respiratory damage.
Data Sources	Regulation (EC) No1272/2008 of the European parliament and the council of 16 <sup>th</sup> December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing directives 67/548/EC, and amending Regulation (EC) No 1907/2006
Legal disclaimer	The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product.

**Quelfire QF1 Fire Protection Compound** is a premixed inorganic powder that is mixed with water on site to produce a fire protection compound that is used in service penetrations seals. QF1 is London Underground approved and is deemed a “softer” compound and is primarily used around electrical services through both floors and walls as it can be easily re-penetrated.



QF1 Fire Protection Compound used in fire compartment floor penetrated by services



QF1 Fire Protection Compound used in fire compartment wall penetrated by services

## FEATURES & BENEFITS

- ❏ Approved for use on the London Underground
- ❏ London Underground Product ID: 2424
- ❏ Fire tested to BS476: Part 20: 1987
- ❏ Regarded as a “soft” compound and can be easily re-penetrated for additional services.
- ❏ The use of extensive shuttering is not required
- ❏ Often used in conjunction with QF4 (a “harder”) compound as per LUL details

## COMPOSITION

Quelfire QF1 Fire Protection Compound is a premixed inorganic powder consisting of lightweight aggregates, inorganic binders and gypsum cement supplied in 20kg bags. It is mixed with water on site to produce a fire protection compound that is used around services through fire compartment floors and walls.



LUL approved. London Underground Product ID: 2424

## APPLICATION / INSTALLATION

Quelfire QF1 Fire Protection Compound is one of 2 Quelfire compounds currently approved for use on the London Underground network – the other product being QF4. QF1 is regarded as a softer compound and is generally used around cable penetrations. QF1 can potentially be penetrated very easily to install additional services making it very popular. Quelfire have limited test evidence for the product so technical support for this product is very limited and the QF1 is regarded as a product rather than a system. Instead the product tends to be tested directly by London Underground and their approved contractors, often without Quelfire knowledge so we recommend that you consult London Underground to establish how the product should be used.

QF1 is supplied in 20kg bags and should be mixed in a clean container or mixer with approximately 6 litres of clean water per bag by slowly adding the dry powder to the water while stirring by hand or power mixer to ensure a smooth lump-free mix.

The opening should be clean and dust free and can be pre-wetted. A temporary (or permanent shutter) should be considered and fitted then the QF1 can be poured or trowelled into position to the correct depth and smoothed off ensuring all gaps and voids are fully filled in accordance with the approved detail.

Any excess residue should be cleaned from services and surfaces and once cured, any temporary shutters can be removed.

## PHYSICAL PROPERTIES / HANDLING

<b>Colour</b>	Grey
<b>Gross density (wet mortar)</b>	1.200 ± 100 kg/m <sup>3</sup>
<b>Gross density (dry mortar)</b>	≥ 900 kg/m <sup>3</sup>
<b>Pressure resistance</b>	≥ 2.5 N/mm <sup>2</sup>
<b>Consumption</b>	6 - 7 l water + 20 kg dry mortar ≈ 20 l ready-to-use wet mortar ≈ 20 l volumes after curing time

Surfaces must be firm and free from adhesion-reducing substances and dust. Absorbent surfaces are to be pre-wetted with water.

<b>Application temperature</b>	> +5 °C
<b>Application time app</b>	4 - 5 hours
<b>Fully cured time</b>	app. 28 days

## YIELD

One square metre at 150mm thickness requires approx. 8 x 20kg sacks of QF1 Fire Protection Compound and will provide a 2 hour rated fire seal.

## PACKAGING AND STORAGE

Supplied in 20kg bags which must be stored in cool and dry conditions. Shelf life is approximately 12 months.

### 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.

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# QF2 FIRE PROTECTION COMPOUND INSTALLATION INSTRUCTIONS

This installation guide is intended for general information only and all details should be checked against relevant supporting test evidence and certification.



QF2 Fire Protection Compound is intended for use as a gap filling material where cables, ducts or pipework services penetrate fire compartment floors and walls. QF2 expands slightly on curing (0.1%), to form a rigid seal and is also suitable for use in load bearing situations.

## YIELD

One square metre at 100mm thickness requires approx. 4 x 20kg sacks of QF2 Fire Protection Compound and will provide a loadbearing 4 hour rated fire seal.

## PACKAGE AND STORAGE

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

Mix with clean water in a plastic container, slowly adding the dry powder to 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

Do not attempt to extend working time by remixing with more water after the mortar has started to set, as this will interfere with the setting process.

Always mix in clean buckets. Using dirty buckets containing remnants of mortar from earlier mixes, will accelerate the setting process and may reduce working time to as little as 10 minutes.

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.

## Installation Guidelines:

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 Intuwraips 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.

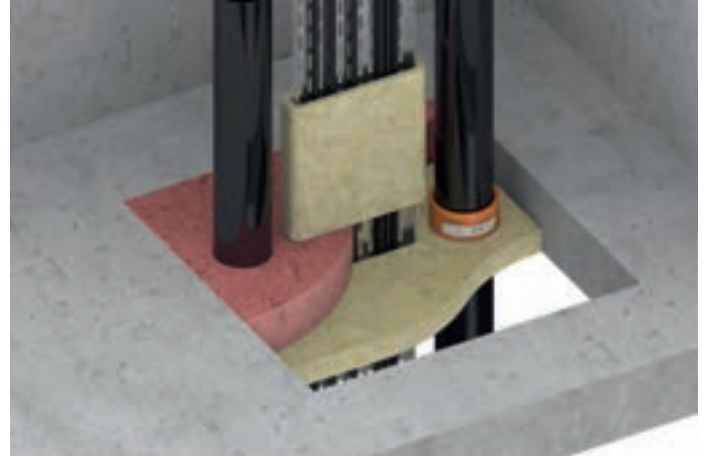
As the load bearing performance particularly in un-reinforced situations is dependent on compressive membrane action against the concrete slab edge or other rigid boundary, it is essential to check that this is vertical, before commencing installation.

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.




There are several different types of service penetration and each requires a different approach to fire stopping. Some service penetrations require additional Quelfire products as part of the overall seal such as the QWW or QuelCoil Intuwraips, the QWR Fire Collar or even insulation wrapping around services.

We recommend you speak to the Quelfire Technical Team before commencing installation who will be able to provide you with further guidance, including detail drawings and the tested scope of application to help assist you with your project.



## Example Installation: Plastic Pipe penetrating an oversized hole through a concrete floor

### Quelfire Products used:

-  QF2 Fire Protection Compound
-  QWW Intuwrap
-  MW Shuttering Slab (mineral wool)

- 1.** Assess the scenario and identify a suitable tested application that covers the floor specification and type of service penetration.
- 2.** Make sure that the surfaces of the aperture and the services are clean of any debris and remove dust from all edges.
- 3.** Cut slightly oversized and friction fit the Quelfire MW Shuttering Slab into the opening around the services within the aperture ensuring a tight fit and that the correct minimum depth of the QF2 Fire Protection Compound (usually 100mm) can be achieved. Consider temporary support if required.
- 4.** Wrap the QWW Intuwrap around the plastic pipe and use the self adhesive tab to secure around the pipe.



- 5.** Ensure the QWW is tight around the pipe and is sitting flush on the MW Shuttering Slab.



- 6.** Mix the QF2 Fire Protection Compound with clean water in a plastic container or bucket by slowly adding the dry powder to the water whilst stirring by hand or power mixer to ensure a smooth lump-free mix. Refer to the recommend mix table on page 1, for the recommended dry powder to water ratio.

# QF2 FIRE PROTECTION COMPOUND INSTALLATION INSTRUCTIONS

- 7.** Pour the QF2 Fire Protection Compound into the opening around the services to the required thickness – minimum 100mm.



- 8.** Use a trowel to ensure the aperture is full and remove any excess QF2 Fire Protection Compound from around the opening.
- 9.** Use a Trowel to level the surface of the QF2 Fire Protection Compound and ensure a neat finish.



- 10.** Any spillages should be wiped up with a damp cloth before setting occurs.
- 11.** Allow 28 days for the QF2 Fire Protection Compound to fully 'cure'
- 12.** The MW Shuttering Slab can then be removed or alternatively may remain in place but we recommend cutting back the shutter so that the QWW is visible from the underside and exposed to fire. Any combustible shuttering such as plywood must be removed.

## 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)

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The policy of Quelfire Ltd is one of constant improvement. Installers should therefore ensure they are working from the latest published drawings and instructions. Whilst Quelfire will endeavour to keep its publications up to date, the accuracy of the information contained within this drawing may be affected by pertinent changes in the law or regulatory requirements and alterations or amendments to the specification of Quelfire products.

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## MATERIAL SAFETY DATA SHEET

Product name	Quelfire QF2 Fire Protection Compound
Product Code(s)	QF2
Revision Date	01/01/2021
Revision number	02

### Section 1: Identification of the substance/mixture and of the company / undertaking

#### 1.1. Product identifier

Product name	Quelfire QF2 Fire Protection Compound
Product Code	QF2

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Main Applications – non exhaustive list	Passive Fire stopping mortar infill for service penetrations
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#### 1.3. Details of the supplier of the safety data sheet

Company Name	Quelfire Limited Springvale Industrial Estate Millbuck Way Sandbach CW11 3HT
Tel	0161 928 7308
Fax	0161 924 1340
Email	<a href="mailto:technical@quelfire.co.uk">technical@quelfire.co.uk</a>

#### 1.4. Emergency telephone number

Emergency telephone number	0161 928 7308 (Office hours only)
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### Section 2: Hazards Identification

#### 2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]	Not Classified
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#### 2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 [CLP]	Not Classified
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#### 2.3. Other hazards

Adverse physicochemical, human health and environmental effects	To our knowledge, this product does not present any particular risk, provided it is handled in accordance with good occupational hygiene and safety practice.
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### Section 3: Composition/information on ingredients

#### 3.1. Substances

Name	Product Identifier	%	EINECS
Calcium Sulphate	(CAS No.) 7778-18-19	>80	231-900-3
Perlite	(CAS NO.) 93763-70-3	<21	N/A

#### 3.2. Impurities

Contains <1% Organic substances
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## MATERIAL SAFETY DATA SHEET

### Section 4: First aid measures

#### 4.1. Description of first aid measures

Skin contact	P264, P280 Wash skin thoroughly with soap and water
Eye contact	P305, P338, P351 Rinse with copious quantities of water and seek medical attention if irritation persists
Ingestion	P30, P330, P331 Rinse out mouth, do not induce vomiting
Inhalation	P264, P280 Move exposed person to fresh air immediately and seek medical advice if required.

#### 4.2. Most important symptoms and effects, both acute and delayed

No acute and delayed symptoms and effects are observed

#### 4.3. Indication of any immediate medical attention and special treatment needed

Not applicable

### Section 5: Fire-Fighting measures

#### 5.1. Extinguishing media

Suitable Extinguishing Media	No specific extinguishing media is needed
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#### 5.2. Special hazards arising from the substance or mixture

Exposure hazards	Non-Combustible. No hazardous thermal decomposition
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#### 5.3. Advice for fire-fighters

Advice for fire-fighters	No specific firefighting protection is required
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### Section 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

Avoid airborne dust generation, wear personal protective equipment in compliance with national legislation

#### 6.2. Environmental precautions

No special requirements

#### 6.3. Methods and materials for containment and cleaning up

Clean-up procedures	Avoid dry sweeping and use vacuum cleaning systems where possible.
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#### 6.4. Reference to other sections

Refer to section 8 'Exposure controls/ personal protection' and section 13 'Disposal Considerations'

### Section 7: Handling and storage

#### 7.1. Precautions for safe handling

Handling requirements	Provide good ventilation in process area to prevent dust formation. Wear suitable PPE. Wash hands and other exposed areas with soap and water before eating.
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## MATERIAL SAFETY DATA SHEET

7.2. Conditions for safe storage, including any incompatibilities.

Storage conditions	Keep packaging closed when not in use. Protect from moisture
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7.3. Specific end use(s)

Specific end use(s)	No data available
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### Section 8: Exposure controls/personal protection

8.1. Control parameters

United Kingdom WEL TWA (mg/m <sup>3</sup> )	10mg/m <sup>3</sup>
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8.2. Exposure controls

Engineering measures	Ensure there is sufficient ventilation of the area
Respiratory protection	In case of prolonged exposure to airborne dust concentrations, wear dust mask Type P2 or above.
Hand protection	Appropriate protection (e.g., gloves, barrier cream) is recommended for workers who suffer from dermatitis or sensitive skin. Wash hands at the end of each work session.
Eye protection	Safety glasses with side shields. Use equipment for eye protection tested and approved under appropriate standards.
Skin protection	No specific requirements

**Personal protective equipment symbol(s):**



**Environmental exposure controls:**

Avoid release to the environment.

### Section 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

State	Solid
Appearance	Pink Powder
Odour	Odourless
Odour threshold	Not relevant
pH	Neutral
Melting point	>1000°C

9.2. Other information

No data available
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### Section 10: Stability and reactivity

10.1. Reactivity

Inert, not reactive
---------------------

10.2. Chemical stability

Chemically stable
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**MATERIAL SAFETY DATA SHEET**

10.3. Possibility of hazardous reactions

No hazardous reactions

10.4. Conditions to avoid

Not relevant

10.5. Incompatible materials

No particular incompatibility

10.6. Hazardous decomposition products

Not relevant

**Section 11: Toxicological information**

11.1. Information on toxicological effects

Acute toxicity	No evidence of acute toxicity
Skin corrosion/ irritation	Not classified
Serious eye damage/ irritation	May cause mechanical irritation
Respiratory or skin sensation	No evidence
Germ cell mutagenicity	No evidence
Carcinogenicity	No classification
Reproductive toxicity	No evidence
Aspiration hazard	Based on available data, the classification criteria are not met

**Section 12: Ecological information**

12.1. Toxicity

Not established

12.2. Persistence and degradability

Not established

12.3. Bioaccumulative potential

Not established

12.4. Mobility in soil

Not established

12.5 Results of PBT and vPvB assessment

Not established

12.6. Other adverse effects

No specific adverse effects known

**Section 13: Disposal considerations**

13.1. Waste treatment methods

Regional legislation (waste)	Disposal must be done according to official regulations.
Waste treatment methods	Dispose of contents/ container in accordance with licensed collector's sorting instructions

**MATERIAL SAFETY DATA SHEET**

**Section 14: Transport information**

14.1. UN number

Not relevant

14.2. UN proper shipping name

Not relevant

14.3. Transport hazard classes

In accordance with ADR/ RID/ IMDG/ IATA/ ADN	
ADR	Not Applicable
RID	Not Applicable
IMDG	Not Applicable
IATA	Not Applicable
ADN	Not Applicable
No supplementary information available	

14.5. Environmental hazards

Not relevant

14.6. Special Precautions for user

Overland Transport	Not Applicable
Transport by sea	Not Applicable
Air transport	Not Applicable
Inland waterway transport	Not Applicable
Rail transport	Not Applicable

14.7. Transport in bulk according to annex II of MARPOL 73/78 and the IBC Code

Not relevant

**Section 15: Regulatory information**

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions
Contains no substance on the REACH candidate list
Contains no REACH annex XIV substances

15.1.2 National Regulations

No additional information available

15.2. Chemical Safety Assessment

Chemical Safety Assessment	No chemical safety assessment has been carried out
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**Section 16: Other information**

Abbreviations and acronyms	
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of dangerous goods by Road
ATE	Acute Toxicity Estimate

## MATERIAL SAFETY DATA SHEET

CAS-No.	Chemical Abstract Service Number
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 272/2008
EN	European Standard
IATA	International Air Transport Association
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail

Data Sources	Regulation (EC) No1272/2008 of the European parliament and the council of 16 <sup>th</sup> December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing directives 67/548/EC, and amending Regulation (EC) No 1907/2006
Legal disclaimer	The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product.

**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



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.

## 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.

## 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) (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 'K' (w/moc)	Thickness (mm)	Thermal Resistance 'R' (t/k)	U Value 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

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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

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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

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### 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 Intuwaps 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.

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## MATERIAL SAFETY DATA SHEET

Product name	Quelfire QF4 Fire Protection Compound
Product Code(s)	QF4
Revision Date	01/01/2021
Revision number	02

### Section 1: Identification of the substance/mixture and of the company / undertaking

#### 1.1. Product identifier

Product name	Quelfire QF4 Fire Protection Compound
Product Code	QF4

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Main Applications – non exhaustive list	Passive Fire stopping mortar infill for service penetrations
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#### 1.3. Details of the supplier of the safety data sheet

Company Name	Quelfire Limited Springvale Industrial Estate Millbuck Way Sandbach CW11 3HT
Tel	0161 928 7308
Fax	0161 924 1340
Email	<a href="mailto:technical@quelfire.co.uk">technical@quelfire.co.uk</a>

#### 1.4. Emergency telephone number

Emergency telephone number	0161 928 7308 (Office hours only)
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### Section 2: Hazards Identification

#### 2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]	<p><b>Hazard Categories:</b></p> <p>Skin Corrosion/ irritation: Skin Irrit. 2            Serious eye damage/ eye irritation: Eye Da. 1            Specific target organ toxicity – single exposure: STOT SE 3</p> <p><b>Hazard Statements:</b></p> <p>Causes skin irritation            Causes serious eye damage.            May cause respiratory irritation.</p>
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#### 2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 [CLP]	<p><b>Hazard components for labelling:</b></p> <p>Portland Cement            Calcium Dihydroxide</p> <p><b>Signal word:</b> Danger</p>
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MATERIAL SAFETY DATA SHEET

	<p><b>Pictograms:</b></p> <div style="text-align: center;"> </div> <p><b>Hazard Statements:</b>                  H315 – Causes skin irritation                  H318 – Causes serious eye damage                  H335 – May cause respiratory irritation</p> <p><b>Precautionary statements:</b>                  P101 – if medical advice is needed, have product container or label at hand.                  P102 – Keep out of reach of children.                  P103 – Read label before use                  P261 – Avoid breathing dust/fume/gas/mist/vapours/spray.                  P271 – Use only outdoors or in a well-ventilated area.                  P302+P352 – IF ON SKIN: wash with plenty of soap and water.                  P310 – Immediately call a Poison centre/ Doctor                  P321 – Specific treatment (See information on this label)                  P304+P340 – IF INHALED: Remove person to fresh air and keep comfortable for breathing.                  P305+P351+P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.                  P312 – Call a Poison Centre if you feel unwell                  P362+P364 – Take off contaminated clothing and wash it before reuse.                  P332+P313 – If skin irritation occurs: Get medical attention/ advice.                  P403+P233 – Store in a well-ventilated place. Keep container tightly closed.                  P405 – Store locked up.                  P50 – Dispose of contents/ container in accordance with local/ regional/ national/ international Regulations.</p> <p><b>Additional advice on labelling:</b>                  The product is labelled in accordance with Regulation (EC) no. 1272/2008 (GHS).</p>
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2.3. Other hazards

<p>Adverse physicochemical, human health and environmental effects</p>	<p>According to Regulation (EC) No 1907/2006 (REACH) none of the substances, contained in this product are a PBT/ vPvB substance.</p> <p>Dust particles, like other inert materials, may mechanically irritating the eyes. May cause irritation of the respiratory tract. Aqueous solution is alkaline. May cause eye/ skin irritation.</p> <p>The preparation is low in chromate because the level of sensitizing chromium (VI) is reduced by additives to less than 2 ppm in the cement content of the ready-to-use mortar. Prerequisite for the effectiveness of the chromate reduction is the proper storage and observance of the expiry date (see point 7.2). in case of improper storage (ingress of moisture) or superimposition, the contained chromate reducer may lose its effectiveness.</p>
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## MATERIAL SAFETY DATA SHEET

### Section 3: Composition/information on ingredients

#### 3.1. Substances

Name	Product Identifier	%	EC No.	GHS Classification
Portland Cement	(CAS-No.) 65997-15-1	10-25	266-043-4	Skin Irrit 2, Eye Dam 1, STOT SE 3; H315, H318, H335
Calcium Dihydroxide	(CAS-No.) 1305-62-0	2.5 - 10	215-137-3	Skin Irrit 2, Eye Dam 1, STOT SE 3; H315, H318, H335

#### 3.2. Impurities

Not relevant

### Section 4: First aid measures

#### 4.1. Description of first aid measures

General Information	Water forms corrosive alkaline solutions. (pH 11-11.5) – alkaline reacts with water and becomes solid. Remove contaminated clothing immediately and dispose of safely. Ensure adequate ventilation. Provide appropriate exhaust ventilation at places where dust is formed. Avoid dust deposits.
Skin contact	Remove contaminated soaked clothing immediately. In case of contact with the skin wash off immediately with plenty of water. Consult a doctor if skin irritation persists.
Eye contact	Rinse immediately with plenty of lukewarm water, also under the eyelids, for at least 15 minutes. Do not rub the eyes – contains inorganic fillers, which irritate the eyes mechanically like other inert materials. Rinse thoroughly with plenty of water., also under eyelids. Consult a doctor if skin irritation persists.
Ingestion	Never give anything by mouth to an unconscious person. Do not induce vomiting. Rinse out the mouth and give plenty of water to drink. Consult a physician.
Inhalation	Take affected person into fresh air. Consult a physician. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

#### 4.2. Most important symptoms and effects, both acute and delayed

Causes skin irritation.  
Causes serious eye damage.  
May cause respiratory irritation.  
Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough. Dust particles, like other inert materials, are mechanically irritating to the eyes.

#### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptoms

### Section 5: Fire-Fighting measures

#### 5.1. Extinguishing media

Suitable Extinguishing Media	Product itself does not burn. Use firefighting measures that suit the environment and products stored. Foam, CO <sub>2</sub> , Dry chemical, water-spray
Unsuitable extinguishing media	Full water jet

## MATERIAL SAFETY DATA SHEET

### 5.2. Special hazards arising from the substance or mixture

None

### 5.3. Advice for fire-fighters

Advice for fire-fighters	In case of fire, wear suitable respiratory equipment with positive air supply. <b>Additional information:</b> Knock down dust with a water spray jet. Fire residues and contaminated firefighting water must be disposed of in accordance with local regulations.
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## Section 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Avoid contact with eyes, skin or mucous membrane. Avoid dust formation. Do not breathe dust. Ensure adequate ventilation, especially in confined areas.

### 6.2. Environmental precautions

Do not discharge large amounts into drains or bodies of water. Inform competent authority about release into sewage, ground or into waters.

### 6.3. Methods and materials for containment and cleaning up

Clean-up procedures	Pick up mechanically, avoiding dust and dispose in suitable recipients. Use chemical neutralizers.
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### 6.4. Reference to other sections

Refer to section 8 'Exposure controls/ personal protection' and section 13 'Disposal Considerations'

## Section 7: Handling and storage

### 7.1. Precautions for safe handling

Handling requirements	No special measures necessary if used correctly. Provide appropriate exhaust ventilation at machinery and not at places where dust can be generated. Ensure adequate ventilation, especially in confined areas. Avoid the formation of dust. Avoid contact with skin, eyes and clothing. Take the usual precautions when handling chemicals. When using do not eat, drink or smoke.
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### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	Keep packaging closed when not in use. Protect from moisture Store in a dry, cool and well-ventilated place. Keep only in original container.
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### 7.3. Specific end use(s)

Specific end use(s)	See identified use in section 1.2.
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## Section 8: Exposure controls/personal protection

### 8.1. Control parameters

CAS No.	Substance	ppm	Mg/m <sup>3</sup>	Category	Origin
1305-62-0	Calcium Hydroxide	-	5	TWA (8h)	WEL
65997-15-1	Portland Cement, respirable dust	-	4	TWA (8h)	WEL

## MATERIAL SAFETY DATA SHEET

### 8.2. Exposure controls

Engineering measures	Ensure there is sufficient ventilation of the area, especially in confined spaces
Protective and hygiene measures	Take the usual precautions when handling chemicals. Clean skin thoroughly after working. Use barrier skin cream. Keep away from food, drink and animal feeding stuffs. Remove contaminated clothing immediately and dispose of safely. Wash hands before breaks and at the end of workday. Avoid contact with the skin and the eyes. At work do not eat, drink, smoke or take drugs.
Respiratory protection	In case of prolonged exposure to airborne dust concentrations, wear dust mask Type P2 or above.
Hand protection	Chemical-resistant gloves, appropriate safety gloves for the site. Follow the recommendations of the glove manufacturer for the breakthrough properties especially for the workplace conditions involving mechanical stress and contact duration. Wash hands at the end of each work session.
Eye protection	Tightly fitting goggles. Use equipment for eye protection tested and approved under appropriate standards.
Skin protection	Protective clothing

#### Personal protective equipment symbol(s):



#### Environmental exposure controls:

Avoid release to the environment.

## Section 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

State	Powder
Appearance	Grey
Odour	Odourless
Odour threshold	Not applicable
pH	Not applicable
Melting point	Not applicable
Initial boiling point and boiling range	Not applicable
Flash point	Not applicable
Sustaining combustion	Not applicable
Flammability: solid	Not applicable
Explosive properties	The product is not explosive
Lower explosion limits	Not applicable
Upper explosion limits	Not applicable
Ignition temperature	No data available
Auto-ignition temperature: solid	No data available
Decomposition temperature	No data available
Oxidizing properties: not fire promoting	No data available
Vapour pressure	Not applicable
Density	No data available

**MATERIAL SAFETY DATA SHEET**

Water solubility	Slightly soluble
Solubility in other solvents	No data available
Partition coefficient	No data available
Viscosity/ dynamic	Not applicable
Viscosity/ kinematic	Not applicable

9.2. Other information

Solid content – 100%
No data available

**Section 10: Stability and reactivity**

10.1. Reactivity

Reactivity with the intended use is not associated with any hazards
---

10.2. Chemical stability

Stable under normal conditions.
---------------------------------

10.3. Possibility of hazardous reactions

No hazardous reactions
------------------------

10.4. Conditions to avoid

Protect from moisture
-----------------------

10.5. Incompatible materials

Strong acids, strong oxidizing agents
---------------------------------------

10.6. Hazardous decomposition products

No decomposition if stored and applied as directed.
---

**Section 11: Toxicological information**

11.1. Information on toxicological effects

Acute toxicity	Based on available data, the classification criteria are not met.
Skin corrosion/ irritation	Causes skin irritation.
Serious eye damage/ irritation	Causes serious eye damage
Respiratory Irritation	Inhalation of duct may cause shortness of breath, tightness of the chest, a sore throat and cough.
Skin Irritation	Based on available data, the classification criteria are not met. Repeated or prolonged skin contact may cause skin irritation and/ or dermatitis and sensitization of susceptible persons.
Germ cell mutagenicity	Based on available data, the classification criteria are not met.
Carcinogenicity	Based on available data, the classification criteria are not met.
STOT-single exposure	Based on available data, the classification criteria are not met.
STOT-repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met

**Section 12: Ecological information**

12.1. Toxicity

No data available
-------------------

## MATERIAL SAFETY DATA SHEET

### 12.2. Persistence and degradability

Methods for the determination of biodegradability are not applicable to inorganic substances. Inorganic product.

### 12.3. Bioaccumulative potential

There is no indication of bioaccumulation potential

### 12.4. Mobility in soil

Not established

### 12.5 Results of PBT and vPvB assessment

According to regulation (EC) No 907/2006 (REACH) none of the substances, contained in this product are a PBT/vPvB substance.

### 12.6. Other adverse effects

No specific adverse effects known

## Section 13: Disposal considerations

### 13.1. Waste treatment methods

Regional legislation (waste)	Disposal must be done according to official regulations.
Waste treatment methods	<p>Dispose of contents/ container in accordance with licensed collector's sorting instructions.</p> <p>Should not be disposed of with household waste.</p> <p>Do not empty into drains.</p> <p>Wet the leaked product with water and allow to solidify on air.</p> <p><b>List of wastes code – residues/ unused products:</b></p> <p>170101 – Construction and demolition wastes (including excavated soil from contaminated sites); concrete, bricks, tiles and ceramics: concrete</p> <p><b>List of wastes code – contaminated packaging:</b></p> <p>150101 – waste packaging; absorbents, wiping cloths, filter materials and protective clothing not otherwise specified; packaging (including separately collected municipal packaging waste); paper and cardboard packaging.</p> <p><b>Contaminated packaging:</b></p> <p>Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse. Packaging that cannot be cleaned should be disposed of like the product.</p> <p>Cleaning agent: water</p>

## Section 14: Transport information

### 14.1. UN number

Not relevant

### 14.2. UN proper shipping name

Not relevant

### 14.3. Transport hazard classes

In accordance with ADR/ RID/ IMDG/ IATA/ ADN	
ADR	Not Applicable
RID	Not Applicable



**MATERIAL SAFETY DATA SHEET**

IMDG	Not Applicable
IATA	Not Applicable
ADN	Not Applicable

14.5. Environmental hazards

No

14.6. Special Precautions for user

Overland Transport	Not Applicable
Transport by sea	Not Applicable
Air transport	Not Applicable
Inland waterway transport	Not Applicable
Rail transport	Not Applicable

14.7. Transport in bulk according to annex II of MARPOL 73/78 and the IBC Code

Not relevant

**Section 15: Regulatory information**

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

2004/42/EC (VOC):	0g/l
Information according to 2012/18/EU (SEVESO III):	Not relevant

15.1.2 National Regulations

Slightly water contaminating

15.2. Chemical Safety Assessment

Chemical Safety Assessment	No chemical safety assessment has been carried out
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**Section 16: Other information**

Abbreviations and acronyms	
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of dangerous goods by Road
ATE	Acute Toxicity Estimate
CAS-No.	Chemical Abstract Service Number
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 272/2008
EN	European Standard
GHS	Globally Harmonized System of Classification, Labelling and Packaging of Chemicals
ICAO	International Civil Aviation Organisation
IMDG-Code	International Maritime Code for dangerous goods
IATA	International Air Transport Association
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration

## MATERIAL SAFETY DATA SHEET

REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
vPvB	Very Persistent and Very Bioaccumulative
WGK	Water Hazard Class

Classification for mixtures and used evaluation method according to Regulation (EC) No. 1272/2008 {CLP}	
Skin Irrit. 2; H315	Calculation method
Eye Dam. 1; H318	Calculation method

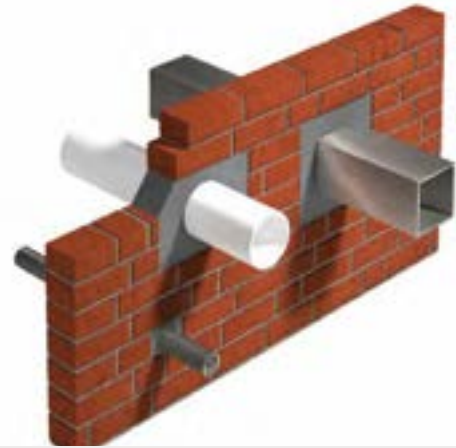
Relevant H and EUH statements (number and full text)	
H315	Causes skin irritation.
H318	Causes serious eye damage.
H335	May cause respiratory damage.

Data Sources	Regulation (EC) No1272/2008 of the European parliament and the council of 16 <sup>th</sup> December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing directives 67/548/EC, and amending Regulation (EC) No 1907/2006
Legal disclaimer	The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product.

**Quelfire QF4 Fire Protection Compound** is a premixed inorganic powder that is mixed with water on site to produce a fire protection compound that is used in service penetrations seals. QF4 is London Underground approved and is deemed a “harder” compound and is primarily used around mechanical service penetrations in floors and walls.



QF4 Fire Protection Compound used in a floor penetration



QF4 Fire Protection Compound used in a wall penetration

## FEATURES & BENEFITS

- 🔒 Approved for use on the London Underground
- 🔒 London Underground Product ID: 2425
- 🔒 Fire tested to BS476: Part 20: 1987
- 🔒 Up to 2 hour fire rating
- 🔒 The use of extensive shuttering is not required
- 🔒 Regarded as a “hard” compound and often used in conjunction with QF1 (a “softer”) compound as per LUL details

## COMPOSITION

Quelfire QF4 Fire Protection Compound is a premixed inorganic powder consisting of lightweight aggregates, inorganic binders and gypsum cement supplied in 25kg bags. It is mixed with water on site to produce a fire protection compound that is used around services through fire compartment floors and walls.



LUL approved. London Underground Product ID: 2425

## APPLICATION / INSTALLATION

Quelfire QF4 Fire Protection Compound is one of 2 Quelfire compounds currently approved for use on the London Underground network – the other product being QF1.

QF4 is regarded as a harder compound and is generally used around mechanical services – sometimes with the QF1 within the same seal around electrical services.

Quelfire have limited test evidence for the product so technical support for this product is very limited and the QF4 is regarded as a product rather than a system. Instead the product tends to be tested directly by London Underground and their approved contractors, often without Quelfire knowledge so we recommend that you consult London Underground to establish how the product should be used.

QF4 is supplied in 25kg bags and should be mixed in a clean container or mixer with approximately 4 litres of clean water per bag by slowly adding the dry powder to the water while stirring by hand or power mixer to ensure a smooth lump-free mix.

The opening should be clean and dust free and can be pre-wetted. A temporary (or permanent shutter) should be considered and fitted then the QF4 can be poured or trowelled into position to the correct depth and smoothed off ensuring all gaps and voids are fully filled in accordance with the approved detail.

Any excess residue should be cleaned from services and surfaces and once cured, any temporary shutters can be removed.

## PHYSICAL PROPERTIES / HANDLING

Surfaces must be firm and free from adhesion-reducing substances and dust. Absorbent surfaces are to be pre-wetted with water.

<b>Colour</b>	Grey
<b>Gross density (wet mortar)</b>	2.000 ± 100 kg/m <sup>3</sup>
<b>Gross density (dry mortar)</b>	1.75 - 1.85 kg/dm <sup>3</sup>
<b>Pressure resistance</b>	≥ 20 N/mm <sup>2</sup> (M 20)
<b>Consumption</b>	4.0—4.5 water + 25 kg dry mortar ≈ 15 l ready-to-use wet mortar ≈ 15 l volumes after curing time

<b>Application temperature</b>	> +5 °C
<b>Application time app</b>	2 - 3 hours
<b>Fully cured time</b>	app. 28 days

## YIELD

One square metre at 160mm thickness requires approx. 13 x 25kg sacks of QF4 Fire Protection Compound.

## PACKAGING AND STORAGE

Supplied in 25kg bags which must be stored in cool and dry conditions. Shelf life is approximately 12 months.

### 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.

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