



suppliers of passive fire products, acoustic and specialist insulation  
manufacturers of the Safire Fire Stopping Range

## **Safire Compound - Installation Instructions**

**Method Statement:** For 30 minutes, 1 hour, 2 hour, 3 hour and 4 hour multiple penetration seals using a property fire rated load bearing system

### **Materials**

Safire Compound  
Safire Shuttering Batts is recommended for shuttering, but timber or other mineral rockfibre may be used

### **Preparation**

Place protective sheeting under working area to collect debris and protect the surrounding area if required

Ensure all surfaces of the aperture are dry, clean, solid and free of dust and contamination

#### **Note!**

If all surfaces are straight and smooth it is recommended the sides should be roughed up and cut at an angle to enable a strong key for the compound in the aperture

### **Horizontal Seals (Load bearing in concrete floors)**

Measure and record dimensions of the aperture for QA/QC

Safire Compound is mixed with water to produce a fire resistant mortar

Fix Safire Shuttering Batts to the underside of the aperture, allowing adequate depth above for the specified thickness of Safire Compound

The correct amount of Safire Compound is then mixed by hand or powder mixer

Pour in the Compound to required depth and tamp it down ensuring that there are no gaps left behind penetrations.

Allow the compound to set which will take approximately 2 hours

For Larger areas pour approximately one third on the Compound and allow to harden. This allows the shuttering to take the weight of the additional thickness. Then pour in the remaining Compound to the required depth,

The shuttering may be removed once the Compound has set hard.

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## **Penetrations**

Any plastic pipes penetrating the seal should be fitted either with a recommended Fire Collar or Intumescent Pipe Wrap

Intumescent Pipe Wraps should be applied around each plastic pipe prior to casting of the Compound to enable them to be embedded in the seal

Fire Collars can be embedded or fixed externally when the Compound has set

### **Note!**

Apertures greater than 1m in both directions require reinforcement(see later details)

For Load-bearing applications the minimum thickness of Safire Compound is 80mm

## **Vertical**

### **Measure and record dimensions for QA/QC**

Fix shuttering to the back face of the aperture, allowing adequate space in front for the specified thickness of the Compound

Mix Compound with water as required

Trowel the Compound onto the face of the shuttering to the required thickness

Ensure that the Safire Compound is put up in one layer

The shuttering may be removed once the Compound has set hard

### **Note!**

For plastic pipe penetrations please see horizontal seals

## **Completion**

### **Operatives will remove all temporary shuttering materials**

Operatives will remove all debris and waste materials

For a tailored finish it is normal practice to align the barrier with one face of the compartment floor or wall

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## **Maintenance**

Safire Compound once installed is virtually maintenance free. However annual inspection is recommended to ensure unforeseen physical damage which may impair the performance of the seal

## **Repair and Retrofit**

Safire Compound can be easily repaired or further services and modifications can be easily accommodated

Mark area where damage or new service is to be accommodated

Cut out marked section with saw, drill or other woodworking tool

Re-cast section with newly mixed Compound

The modified section will provide the same structural and fire performance as the original seal

## **Important**

Safire Compound has been extensively tested for its compressive and flexural strength. It has also been subjected to a unique fire test including placing a weight of 750 kg onto an unreinforced Safire Compound seal 600mm x 600mm in size after the seal had been subjected to a 6 hour 5 minutes Fire Test

The Safire Compound seal was then subjected to high pressure hosing from above and below without any detrimental effect to the structural integrity of the fire seal which was 70mm thick

## **Thickness of Safire Compound**

**For apertures where reinforcement is not required the following specifications apply**

<b><u>Spec. Code</u></b>	<b><u>Fire Rating</u></b>	<b><u>Depth of Compound</u></b>	<b><u>Loadbearing</u></b>
SC60	1 Hour	60mm	No
SC120	2 Hours	80mm	Yes
SC180	3 Hours	80mm	Yes
Sc240	4 Hours	100mm	Yes

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Where reinforcement is required due to the size of the aperture the recommended thickness of Safire Compound is 100mm. The reinforcement required is detailed below

## **Reinforcement for Large Apertures**

### **Apertures with one dimension less than 1 metre do not need reinforcement**

One way spanning action, linear slabs up to 2 metres use 2 number 50mm 50mm x 1.5mm back to back angle supports at 900mm centres, with a single support angle around the perimeter.

One way spanning action, linear slabs up to 2.5 metres use 2 number 50mm x 50mm x 1.5mm back to back angle supports at 600mm centres, with a single angle support around the perimeter.

For apertures up to 2.8 metres x 2.8 metres use 2 number 50mm x 50mm x 1.5mm back to back angles at 900mm centres across both width and length, with additional angle support around all the perimeter.

For irregular shaped apertures where the maximum dimension does not exceed 2.8m, grid out the area with 2 number 50mm x 50mm x 1.5mm back to back angles at 900mm centres with additional angle support around the perimeter.

For larger or highly irregular shaped apertures please contact our technical department.

## **Reinforcement Summary**

<b><u>Aperture Width</u></b>	<b><u>Aperture Length</u></b>	<b><u>Perimeter Angle</u></b>	<b><u>Back to Back Angle</u></b>
<b>One dimension less than 1 metre</b>		<b>No</b>	<b>None</b>
<b>Less than 2m</b>	<b>Single spanning</b>	<b>Yes</b>	<b>900mm</b>
<b>2m - 2.5m</b>	<b>Single spanning</b>	<b>Yes</b>	<b>600mm</b>
<b>2m – 2.8m</b>	<b>2m – 2.8m</b>	<b>Yes</b>	<b>900mm</b>
<b>Less than 2.8m</b>	<b>Less than 2.8m</b>	<b>N/A</b>	<b>900mm</b>

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**Notes:**

All angles used are 50mm x 50mm x 1.5mm

M6 Rawbolts are used to fix the perimeter angles to clean aperture adge

The back to back angles are bolted together

Single spanning action means that one dimension can be any length

**Further information**

Contact the technical department of Fireus Ltd on tel: 01524 388898 for futher information on Safire Compound or other products within the Safire range.

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