

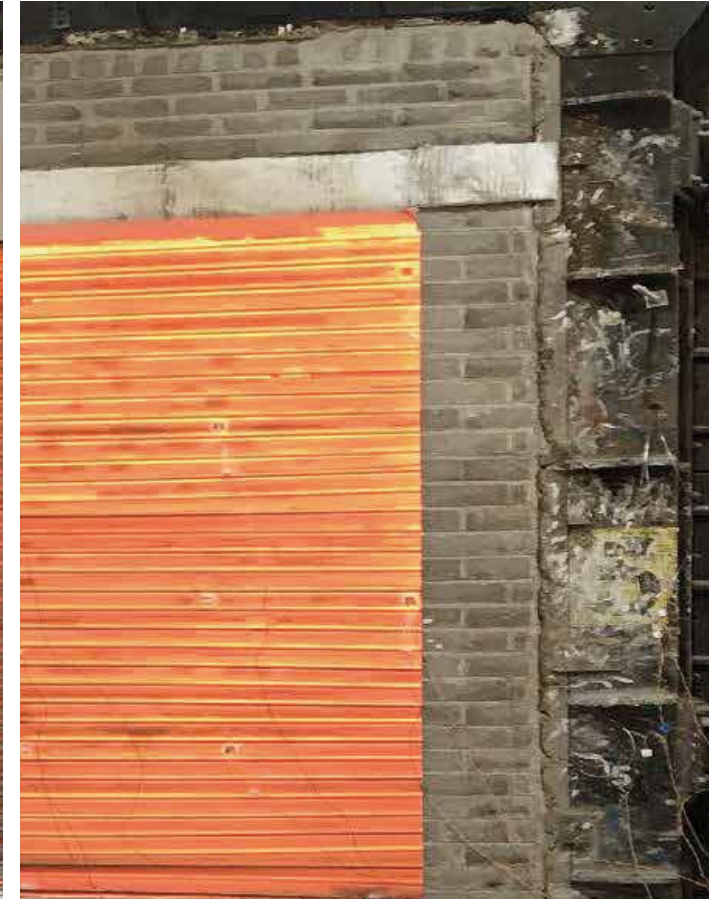


FIRE RESISTANT ROLLER SHUTTERS

- ✓ UKCA Marked to EN 16034
- ✓ CE Marked to EN 16034
- ✓ 'Flexible' structure tested and verified
- ✓ 'Rigid' structure tested and verified
- ✓ E60, E90, E120 & E240 fire integrity ratings available
- ✓ Tubular motor & Inline fire shutters available
- ✓ Gravity Fail-safe fire shutter tested and verified
- ✓ Nationwide delivery and installation



✓ Flexible Structure



✓ Rigid Structure

Fire Shutters CE & UKCA
Marked & Certified to
EN 13241 & EN 16034:2014



CERTIFIED TO INSTALL ON BOTH 'FLEXIBLE' AND 'RIGID' STRUCTURES



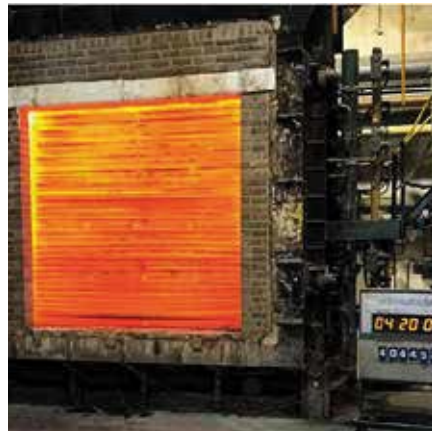
The current regulations **BS EN 16034** state that if the manufacturers original test specimen is tested to a 'rigid' structure (steel or masonry), an additional separate test is required for fixing to 'flexible' structures (timber stud or drywall).

As stated in the Extended Application Report **BS EN 15269-10** on page 35 (section J.1.2), the standard clearly states that rigid to standard flexible is **"NOT POSSIBLE WITHOUT ADDITIONAL TESTING"**.

As a result of this, the Flame Armour Fire Shutter was further tested to **BS EN 1634-1** on a flexible structure on Tuesday 7th July 2020, at WarringtonFire.



All manufacturers of fully CE marked fire shutters to **BS EN 16034** are aware of the additional testing required of **BS EN 15269-10**, which states testing data for both 'Flexible' and 'Rigid' structure is mandatory. Failure to provide evidence is proof of a non-compliant fire shutter.



**Rigid
structure tested**

On 8th February 2019, the Flame Armour Fire Shutter was tested to **EN 1634-1** at WarringtonFire Test Facility. The original specimen was tested to a rigid structure. As a result of this, any fire shutter manufactured at that time could only be installed on masonry or steel structures.

The image on the left is a photograph taken of the Flame Armour Fire Shutter being tested to a masonry structure.



**Flexible
structure tested**

On 7th July 2020, the Flame Armour Fire Shutter was once again tested to **EN 1634-1** at WarringtonFire Test Facility. The fire shutter was manufactured to be an identical copy of the original test specimen. However, the fixing structure was altered to a flexible structure.

The image on the left is a photograph of the Flame Armour Fire Shutter being tested to a timber stud and fire-resistant plaster board structure.

THE STAGES OF TESTING THE FIRE SHUTTER



On 8th February 2019, the Flame Armour Fire Shutter was tested to EN 1634-1 at Warrington Fire Test Facility. The fire shutter was installed on a masonry structure (rigid structure) and all the necessary pre-testing was completed.

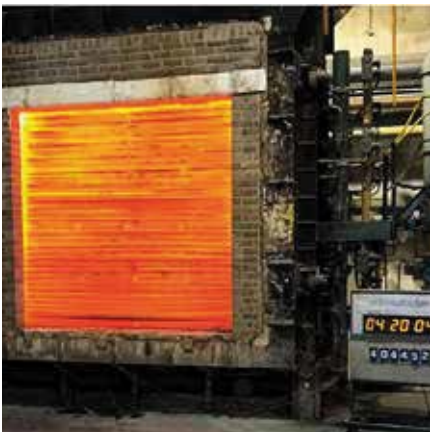
This included a compulsory cycle test which was completed to ensure the operability of the fire shutter remained uncompromised. This also included an 'open' and then 'close' cycle test on 'stored energy' from a battery backup.



Stage One | En 1634-1 Furnace Test

Once the Flame Armour fire shutter was installed on the masonry testing structure, the furnace was ignited. The sensors recorded the performance, temperature and radiation levels of the fire shutter throughout the duration of the test. Once the fire shutter has surpassed the one-hour testing period, it achieved the minimum rating of E60.

If a fire shutter fails to achieve a rating, then the manufacturer must make the necessary design alterations and retest. Full charges still apply, no documentation is provided for a failed test and the manufacturer must start the whole process again.



Stage Two | Integrity Rating Verified

After a four-hour period, the Flame Armour fire shutter had surpassed the maximum fire-resistant for a roller shutter. The Flame Armour fire shutters can be manufactured with the following integrity rating:

- (E60) 60 minute fire resistant rating
- (E90) 90 minute fire resistant rating (Timber only)
- (E120) 120 minute fire resistant rating
- (E240) 240 minute fire resistant rating

The test specimen was manufactured to 2400mm clear opening width x 2400mm clear opening height. For larger fire shutters applications, it is necessary that they are manufactured to the guidance stated in the **Extended Application Report BS EN15269-10**. This documentation is provided by the notified body and is accompanied with the certification.

TYPES OF FIRE SHUTTER



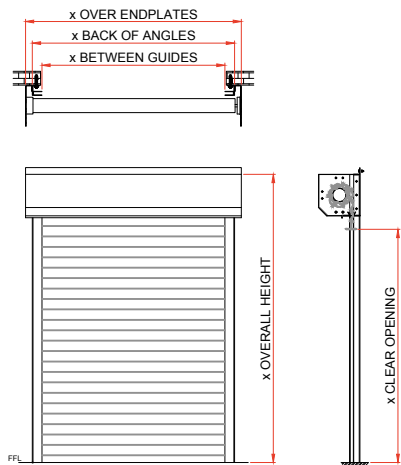
Tubular Motor Fire Shutter

This fire shutter is manufactured with a single-phase motor internally fitted to the barrel, it is designed to be smaller, ideal for applications with limited space and size. It operates through a powered-down device that requires a battery backup with mains supply to function.

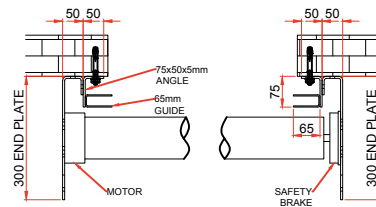
A tubular motor fire shutter is supplied with a UPS-FDI panel as standard to receive a volt-free signal from the fire alarm to close on activation.



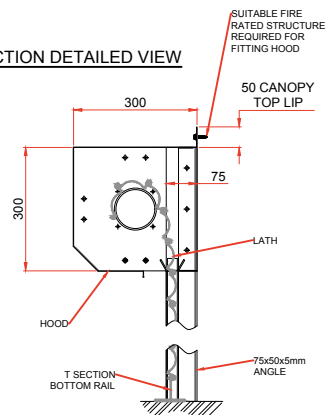
Tube Motor LH Masonry Face Fix



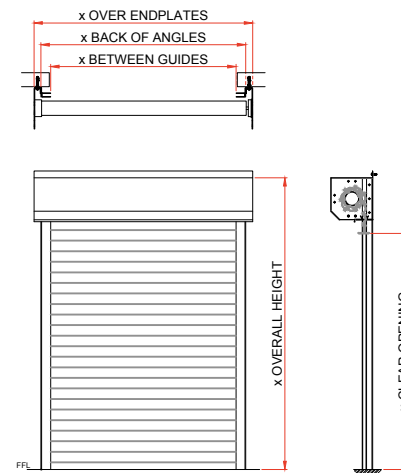
PLAN DETAILED VIEW



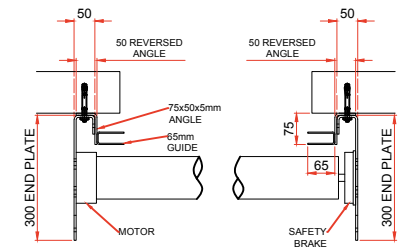
SECTION DETAILED VIEW



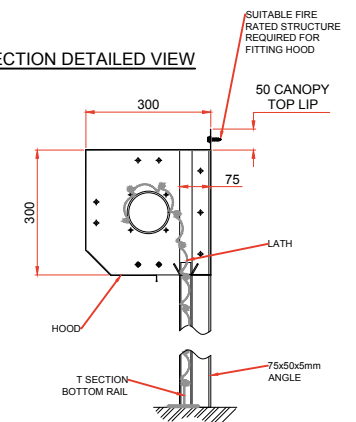
Tube Motor LH Masonry Rev Angles



PLAN DETAILED VIEW



SECTION DETAILED VIEW



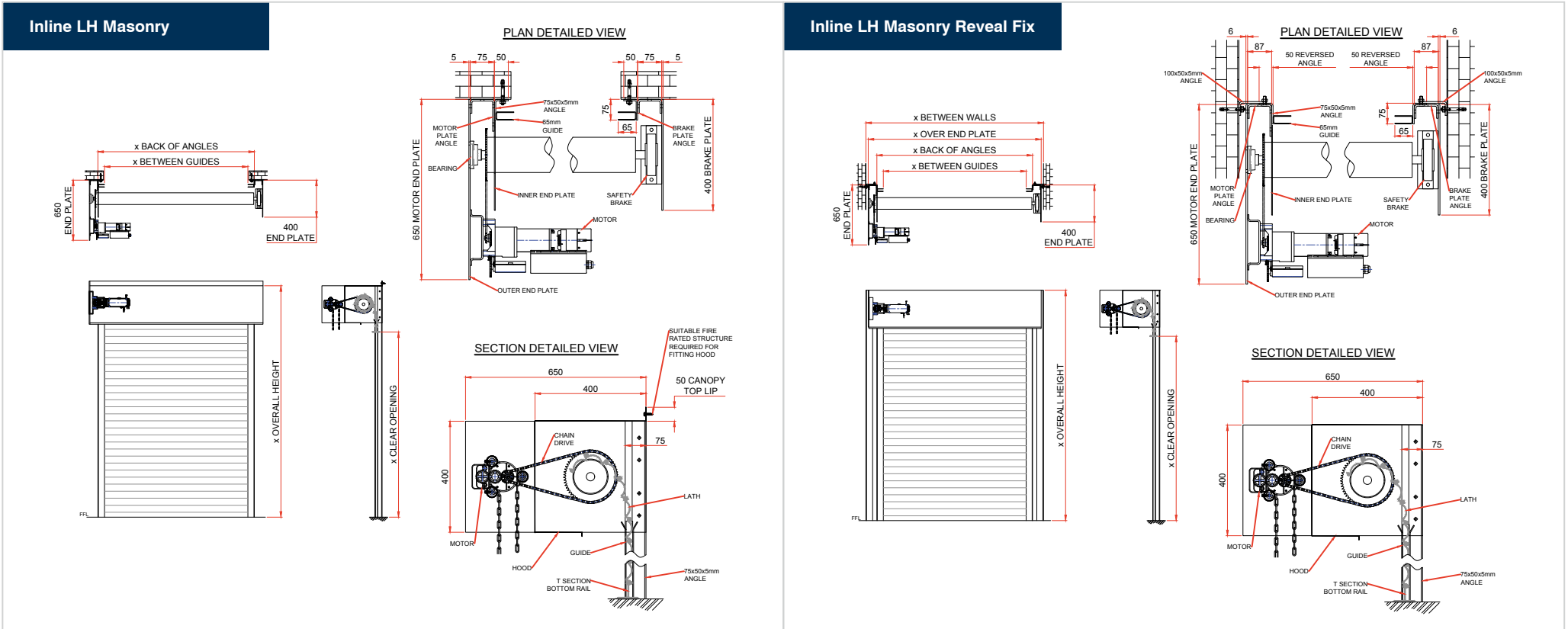
TYPES OF FIRE SHUTTER



Inline (External Motor) Fire Shutter

A conventional fire shutter previously operated by an external motor system. This is referred to as an inline fire shutter due to the motor being inline with the plate wheel on the shaft of the barrel. Manufactured with either a single-phase or three-phase motor which are fitted externally to the coil casing and chain-driven. These types of fire shutters are often used for larger applications.

They can link with an auto-solenoid release and fusible backup, however on single phase applications they can also be accompanied with a battery backup system. Power is not required for these shutters to activate in the event of fire, this is due to the shutter being in the 'open' position, allowing it to make a controlled descent when the thermal, fusible link is triggered.



TYPES OF FIRE SHUTTER



Gravity Fail-safe Tubular Motor Fire Shutter

Unlike typical tubular motor systems, a gravity fail-safe tubular motor fire shutter is manufactured with an internal 24DC volt brake that is electrically powered in the 'close' position. The key feature of this type of fire shutter is how it operates in the event of a power failure, should power supply be compromised this fire shutter will begin a gravity-controlled descent, compartmentalising a building and preventing the spread of fire.

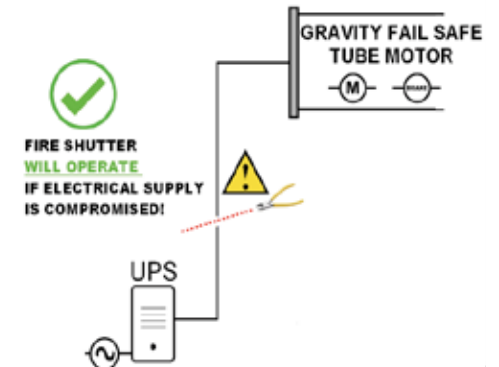
The control panel which is supplied with the 'Flame Armour' gravity fail-safe fire shutter motor continuously monitors the closed alarm input terminals. If the terminal is 'open', either by the triggering of the fire alarm or via a forced test then the fire shutter will close.

If the battery backup unit (BBU) or universal power supply (UPS) is damaged or faulty, then no power is being transferred to the motor. With this type of fire shutter, a controlled descent will activate within approximately 30 seconds.

This unique type of fire shutter still operates as intended and activates even when components of the fire shutter have been compromised.



- ✓ Lifting capacity of up 80KG
- ✓ Operates a descent without electrical power
- ✓ Built-in battery backup up to 96 hours)
- ✓ Delay before descent settings
- ✓ Audio visual warning
- ✓ Tested by WarringtonFire WF Report No. 429933)



The Gravity Fail-safe motor has been tested and successfully passed to **BS EN 1634-1** at WarringtonFire. Under current regulations **BS EN 16034**, this motor can only be included within a fire shutter/fire curtain that has been tested with that motor type.

Other manufacturers of fire shutters will still be required to have an additional test to use this component of a fire application.

SPECIFICATION



The original test specimen was designed as a tubular motor fire shutter, this means that the motor was located internally within the coil casing. Once the fire shutter has been furnace tested (BS EN 1634-1), then the notified body produces an Extended Application Report (BS EN 15269-10) which provides the manufacturer with information based on calculations from the testing procedure. Due to the limitations of the size of the furnace, it is not possible to test fire shutters for larger applications. The Extended Application Report resolves this issue and allows the manufacturer to create a fire shutters which is greater than that which was originally tested.

To manufacture a fire shutter, a measurement of the clear opening size is required. This is the measurement of the opening where the fire shutter needs to be installed. It is possible to install a fire shutter in a reveal or directly onto the wall. These measurements need to record by a competent site surveyor or engineer.

The type of fire shutter required depends on key variables such as the dimensions of the opening, fire rating required and the electrical supply on site.

Fire shutter dimensions

A standard tubular motor can be manufactured to the **minimum clear opening size of 600mm**. However, a **Gravity fail-safe fire shutter** can be manufactured to a **minimum clear opening size of 300mm**. The Extended Application Report allows the manufacturing of up to **10'000mm clear opening width or height**.

Fire ratings

Depending on the structure which the fire shutter is being fixed upon depends on the ratings available.

E60, E120 and E240 Integrity rating for **Rigid structures**. **E60 & E90** Integrity rating for **Flexible structures**.

Operation type & safe brake

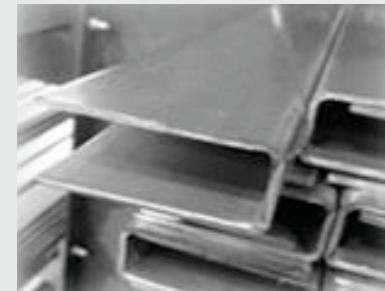
240 Volt (Single Phase Tube Motor)
415 Volt (Three Phase Inline Motor)
Auto Solenoid Release RSB0, RSB1/2,
RSB2/3 & RSB4 Safety Brakes



CURTAIN (LATH): Constructed from 75mm wide curved interlocking galvanised steel 22swg solid, complete with cast end locks.



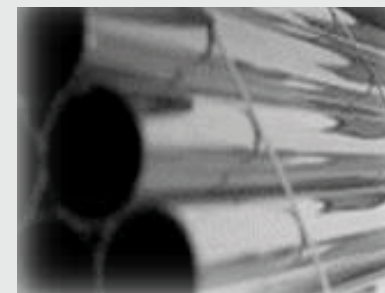
ANGLE: Constructed from 75mm x 50mm x 5mm steel angle complete with punched slots to allow for expansion during fire conditions.



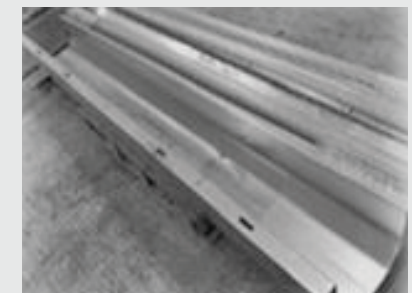
GUIDE (CHANNELS): Depending on the dimensions of the structural opening, results in the type of guide required. Standard fire shutters use 65 x 2.5mm guide channel.



END PLATES: Depending on the dimensions of the structural opening the specifications stated in the Extended Application Report.



BARREL: The Extended Application Report provides clear guidance on the barrel type required, depends on the size of the clear opening width and height.



CANOPY (COIL CASING): The Canopy is the width of the shutter and same shape of the end plate, complete with a punched 50mm top lip for allowing expansion.

ANCILLARIES

Depending on the type of fire shutter required, the following components are either a requirement or an additional component for the fire shutter.



FDI-UPS control panel

This is designed as a fire shutter interface panel with low voltage for tubular motors. It can be connected to a sleep-mode battery backup for a prolonged standby time. This is only compatible with single phase inline and tubular motor fire shutters.



Battery backup

A standard battery backup provides approximately 4 hours of continual power to the fire shutter in the event of a power failure. A sleep-mode battery backup can offer up to 30 days of standby time. Only compatible with single phase motors.



FDI Lite - audio visual panel

This audio visual is accompanied with a 90dB sounder. Operated by either membrane buttons or external controls. Delay timer functionality of up to 196 seconds settings. Door closing in the event of a fire via the fire alarm conformation relay (signal) or local heat detector



Fire alarm interface card

The fire alarm interface card connects into the power manager battery backup and monitors the fire alarm system directly. If a fault occurs on the fire alarm, the card will activate the battery backup and operates the fire shutter to either 'open' or 'close'.



FCP01 - audio visual panel

This control panel has an audio-visual warning which can be accompanied with a repeater panel for an adjacent wall. An audible alarm and LED visual warning is triggered when the fire alarm signal is received. Tubular motor fire shutter only.



Emergency buttons

Emergency 'break glass' push buttons or emergency 'door release' buttons can be connected to the FCP03 panel. It is also possible to connect an emergency palm / foot button for a powered 'open' or 'closed' functionality.



FCP03 - audio visual panel

This control panel has audio visual warning with LED visual indicator. Fully configurable system compatible with solenoid release mechanism, powered close & two stage closing. Self-contained batteries to release solenoid in the event of power failure.



Smoke & heat detector

Escape routes it is necessary that a local detector is near the fire shutter. Triggered by either heat, smoke or both the sensor will activate the fire shutter to close. This is ideal for ensuring that all personal have evacuated the building prior to the closure of the fire shutter.



Lockable, test & reset push button

This device allows the trained user to isolate the controls functionality, locally simulate a test of the fire alarm system and reset the fire shutter to the intended position. It was a requirement of BS 7273-6 (Section 11.C) and is purposely designed for fire shutters.



Powder coating

We offer in-house powder coating to all British Standards (BS) and RAL colours. For bespoke powders it will incur an additional cost. Using advanced anti-corrosive technology, we apply powder coating over hot-dip galvanised steel.

LEGISLATION & INFORMATION



Manufacturers of roller shutter products and components must supply the correct documentation and assessment data for CE marking to be applicable. It has been a compulsory requirement for CE marking of roller shutters since the introduction of the Machinery Directive 1995. As of July 2013, The Construction Product Regulations 2013 compliance and associated marking became mandatory for doors within the scope of BS EN 13241:2003+A1:2011. Doors with fire and smoke resisting characteristics were excluded from the scope at that time, from 2016 the scope was amended to incorporate these characteristics.

Since the 1st of November 2019, new legislation was introduced regarding the manufacturing, testing and installation of fire shutters. It is now a mandatory requirement that all fire shutters must be CE marked to BS EN 16034:2014 under the Construction Product Regulations (EU) 305/2011. The previous standard BS 476 part 22 (1987) is now a non-compliant and cannot be sold on the UK marketplace.

The Flame Armour fire shutter has two certificates for each conformity mark (UKCA & CE Marking). Both Conformity marks can be applied to the product once the fire shutter has been manufactured in accordance with the Extended Application Report. Depending on where the fire shutter is intended to be installed, the country of installations dictates which conformity mark is applicable and must be applied.

To ensure compliance, both UKCA marking and CE marking documentation will be included within the handover documentation. However, to ensure misconceptions do not occur, separate Declaration of Performance must be provided.

UK Conformity Assessed Mark (UKCA)

The Flame Armour Fire shutter has been UKCA marked by WarringtonFire Ltd.
Notified body number: **1121**
Certificate Number: **1121-CPR-UK-RA7003**

European Conformity Mark (CE)

The Flame Armour Fire shutter has been CE marked by Elements Materials Technology (Rotterdam B.V). Notified body number: **2812**
Certificate number: **2812-CPR-RA5006**



UKCA mark is only recognised within the Great British marketplace and is a mandatory requirement for England, Scotland and Wales.



CE Mark is only applicable for countries which are members of the European Union. This ensures that the manufacturer has complied with European health, safety and environmental protection standards.



What documentation should be provided with a compliant fire shutter?

Unfortunately, there are still companies that are selling fire shutters which are manufactured to the non-compliant standard BS 476 Part 22, these fire shutters cannot be CE Marked. Before you enquire for a quotation for a fire shutter, it is advised that you request the following documentation:

- ✓ The company's certification by a notified body (states BS EN 16034)
- ✓ The Declaration of Conformity
- ✓ The Declaration of Performance
- ✓ An Installation Manual for Supply only customers
- ✓ CE Marking documentation
- ✓ Instructions documentation

The new regulations state that the manufacturer must always label their product for liability and traceability purposes (in accordance with Construction Products Regulations (EU) 305/2011). Failure to provide the following documentation is evidence that the company are manufacturing non-complaint and unsafe fire shutters.

This labelling may not be apparent on first observations, for example, the Flame Armour Fire Shutter label is often located inside the endplate.



What happens if a manufacturer continues to sell fire shutters to BS 476 part 22?

It is illegal to manufacture and sell fire shutters to the previous standard BS 476 Part 22. Companies are breaking the law and are subject to the penalties for manufacturing and selling a faulty, unfit for purpose product. These fire shutters would not be correctly manufactured, or CE marked correctly and therefore are endangering life as a fire shutter is a life safety critical product. Any company that decides to not adhere to the new legislation and standards, by omission or otherwise would be directly violating the law. Failure to comply to the new standard BS EN 16034 and correctly CE mark a fire shutter is liable for damages.

Furthermore, a contractor/supplier would be in breach of JCT/NEC contractual agreement if they proceeded to install a non-CE marked fire shutter. The regulations states that installation of illegal fire shutters by an employer into the UK Marketplace is an infringement of Provision and Use of Work Equipment Regulations (1998).

Health and Safety Executive and Trading Standards are currently investigating companies which supply these non-complaint fire products.

