Passive Fire Guidance

For Property Management

A guide to Passive Fire Systems by Evolutions Fire

SAVING LIVES
SAVING COSTS
SAVING TIME

www.evolutionsfireprotection.com

The latest economic cost of Fire in England was estimated to be £8.3 billion

Source: National Archives Economic Cost of Fire Estimates 2008

FIRE

Fires are an ever-present threat that impact people, property and the economy in all countries around the world. They are a case of when not if.

GRENFELL serves as an everlasting example of what can happen if the right measures are not in place.

In three years since the tragic event that ended the lives of 74 people the inquiry continues. Findings from the inquiry reveal significant flaws in modern construction practices.

It's absolutely vital that an incident of this scale never happens again. Therefore, this document has been put together to help inform those responsible for building maintenance of key factors to consider.

The fire regulations are currently under review and are likely to introduce some significant changes.

By following this guidance alongside the Regulatory Reform (Fire Safety) Order 2005 (RRFSO) and Approved Document B it will allow the responsible person to make an informed decision into the building they look after to determine its feasibility and safety. This document will also cover the measures which must be undertaken in any building to provide safety in construction.

Ryan Farmer
Director
Evolutions Fire Protection

R. Farmer

Of 15,005 Primary Building Fires 16% affected the entire building from 2018 - 2019

Source: National Statistics Detailed Analysis of Fires 2018-2019

Ignorance can cost time, money and lives.

Managing properties the safe way

Managing a property can be a steep learning curve but missing out on thorough fire safety checks can be a costly experience.

£64 BILLION is the estimated size of the UK maintenance expenditure[1]. But what checks have been conducted to say that the property being purchased is safe in the event of a fire?

Buildings are an ever aging structure that require regular maintenance. Taking into account that over the past few years insurance claims for fire damage have reduced in number, the value of each claim has risen significantly in cost. Stricter measures are now being put in place by insurance underwriters to establish a baseline of the provision of suitable protection. The requirements of this protection are ever evolving due to a number of factors including modern construction practices, advances in technology and the effects of significant fire spread.

1 https://www.rics.org/uk/news-insight/latest-news/news-opinion/economic-significance-of-facilities-management/

Given these factors, an equal standard of protection should be in place in the event of a fire to match the ever changing requirements. This protection takes two forms; Active and Passive Protection.

Active Protection being the provision of fire alarms, smoke detectors, heat detectors, sounders, mechanical extracts and sprinklers.

And Passive Fire Protection is the provision of fire doors, fire stopping and the protection of structure and load-bearing elements to withstand fire, which Evolutions Fire specialise in. The locations for these measures are defined by a Fire Strategy Drawing. Every commercial or complex building should have one, If the property does not have a fire strategy to hand, it is not unreasonable to assume that it has little to no provision for passive protection.

Shine the light, spot it early

It is important to spot defective passive fire protection early. It is often overlooked in preliminary inspections and fire risk assessments but can often have the largest cost to put right. So its absolutely vital that the responsible person is proactive in searching for defects and keeping onto of their responsibilities. The moment issues occur a detailed compartmentation survey should be carried out to understand what the condition of the property is.

Passive Protection

Unfortunately, not every building has Passive Fire Protection. Even those that do, may not be to the required specification to abide by modern regulations or construction practices. Passive Fire Protection takes many forms but they all revolve around a core principle.

Compartmentation.

Compartmentation is a proven strategy to control the spread of fire and smoke by creating sub-divisions within the structure of a buildings, such as protected zones, corridors, rooms that will physically stop the smoke/flame spread for a set duration. Without compartmentation a fire could freely and quickly travel into rooms, corridors or floors.

In order to provide Compartmentation, it is vital the structure can physically withstand the duration required as defined by its Fire Strategy. Most internal walls can take the form of masonry or plasterboard construction. Its important that both can meet the required specification to provide means of structural protection and fire resistance.

> "It would not be unreasonable to assume that during the past decade, our commercial building stock has become less resilient to fire – and this goes some way to explaining the steep increase in fire losses".
>
> Roy Watkinson,
>
> Technical & Commercial Insurance Director, AXA Insurance, FRM Journal 2011

After the structure is acceptable, protection should be made for services, openings or hole penetrating a compartment wall, floor or ceiling, that may be present in the inner workings of the property or in the accessible corridor of the property.

This protection can take many forms, one of the fundamental forms is Fire Stopping. Which is the combination of fire resistant materials with the constructional fabric of the building to create an air-tight and sealed structure. This prevents the spread of flame, smoke and heat throughout the building.

Fire Stopping is a crucial component not only because it is a legal requirement. It's sole purpose is to protect occupants and the building in the event of a fire, thus giving as much time as possible for the Fire Brigade to gain control of the fire reducing damage, cost and saving lives.

Fire Doors are a secondary form of passive protection. Designed to allow an individual travel to through compartments freely without hindrance to the structural compartmentation. Due to the door set being designed to match the fire resistance of the compartment it is within. However, a fire door has a set series of requirements which must be maintained regularly to ensure that it will function when required.

Modern Construction

Construction is ever-evolving as competitors aim to build eco-friendly, competitive, attractive buildings there has been a significant change in the materials used, the most prevalent being combustible materials. The use of combustible materials has called for an ever growing need to change the current building regulations to account for them. As the current regulations only account for properties constructed of concrete, brick and mortar in part of the regulations age they do not consider many modern systems. This loophole means modern construction systems are to be interpreted in comparison to the defined original system of which the regulations were found upon.

Without a set definition in the regulations for modern systems it allows exploitation in many areas of modern construction. Which may result in the unsuitable fabrication of compartmentation. These construction practices often present significant issues for maintenance and the structure of the building. Which can be incredibly expensive and time consuming to rectify. One such example is the use of combustible cladding which has a detrimental impact on the speed of a fire.

BM Trada Accredited
Fire Stopping

Real Example

Croftwood
Care Home,
Halton Lodge

FINED

MAJOR FAILINGS were found at Croftwood Care Home in Halton Lodge, Runcorn. Which resulted in the care home company responsible for looking after it being fined £55,000. Minster Care Management was sentenced to four counts of failing to comply with the Fire Safety Order 2005 legislation over prosecutors claims they left elderly clients at risk of death or serious injury in the event of a blaze. A former fire-fighter Graham Foote, 70 was handed a sentence for four months in prison over his failings to create a sufficient fire risk assessment and a fine of £1,600.

In September 2011, it was shown to have a slew of different safety flaws after a false alarm. Shortly afterwards Croftwood were issued a notice demanding it to rectify the defects highlighted. On a return inspection in March 2014 by fire fighters no evidence was found that these defects had been dealt with. Due to the nature of the building, its occupants who are high risk, low mobility, bed bound or with dementia. It was fundamental that the correct procedures and fire risk assessments where in place. The fire risk assessment that had taken place was better suited for a small shop than a care home. Defects such as ill-fitting doors and gaps around pipe works going into flats and above doorways which would allow the spread of fire and smoke if a blaze broke out.

It is fortunate that the Fire Brigade was able to identify and follow up on the management companies failings to protect the elderly residents. However,

> Ignoring your responsibilities as an owner may come back to haunt you in the future.

> Had Minster Care Home conducted an independent inspection after the initial fire brigade findings it would have revealed the severity of the issues at hand and given them a plan to action and rectify protecting the lives of the occupants.

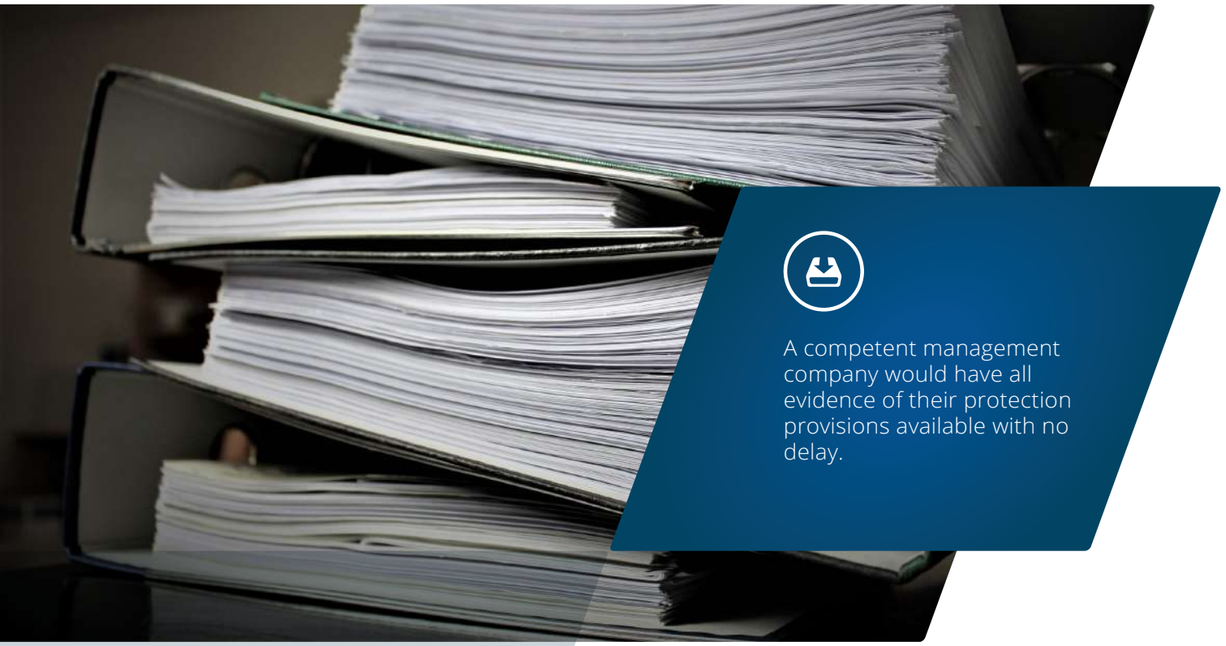
it is not the responsibility of the fire brigade to ensure everyone's buildings of adequate standard. It is the duty and responsibility of the responsible person to ensure they comply with the Approved Document B and Regulatory Reform Fire Safety Order. Upon receiving the initial notice Minster Care Management should of acted upon an independent inspection.

Catch the issues early, save time & cost.

Impartial Review

It is important to have an independent survey conducted by a third-party accredited specialist who has no ties to the fire risk assessor to avoid bias and get the true insight to what protection the building could provide on top of the fire brigades findings. We often recommend that two independent surveys are conducted one by an accredited installer of passive fire protection systems and one by a governing body such as ASFP, BM Trada, IFE or similar both of which should reveal similar outcomes;

- Insight into the current condition of the property
- An estimated cost/proposal to rectify any current defects
- Ability to create a phased action plan to rectify the defects.



A competent management company would have all evidence of their protection provisions available with no delay.

Warning signs

ALARM BELLS Knowing the warning signs of underlying issues can be complex with regards to compartmentation and passive fire protection measures. One of the primary warning signs is documentation. If the property does not have sufficient information to identify all present fire compartments (Walls/ Floors), fire stopping contractors and their relevant documentation or even a regular maintenance schedule for the fire door sets. Then it's clear that there has been little regard for the provision of passive fire protection. Secondly, another common warning sign is the Fire Risk Assessments as they highlight compartmentation defects in the accessible compartments such as Risers/Communal Area. These defects highlighted in fire risk assessments are not definitive (i.e. fix one hole and everything fine). If defects are present in these locations it is not unreasonable to assume they exist elsewhere in the property.

What to look for

It's essential to look for the following fundamentals with regards to passive fire protection systems to ensure that there has been some form of protection.

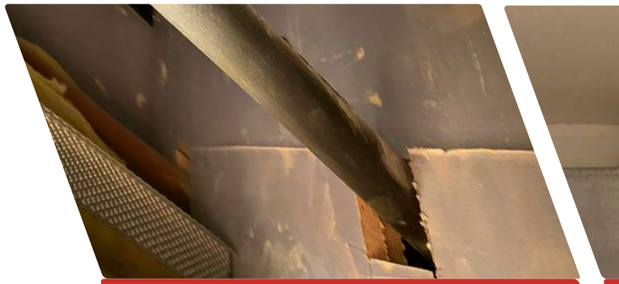
1. **INSTALLER** Were they NVQ Level 2 certified?
Do they know or have the manufacturers installation specifications?
When were they last trained?
Do they have an in-date industry approved accreditation? (FIRAS, ASFP, BM TRADA)

2. **PRODUCTS** Correct product selection is vital to the success of a firestopping seal. Products used must be BS476 Pt 22 or BS EN 1366-3/4 tested. This test dictates the fire resistance on non-load bearing elements.

3. **DOCUMENTATION** A competent contractor would provide as must documentation as possible. (Product data, safety data, certificates, manufacturers installation specifications, before and after photos, labelled installs, and suitable recording methods among others) If this is not available then its of grave concern.

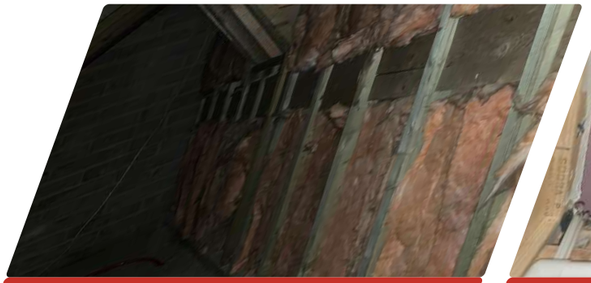
4. **ACCREDITATION** An accredited installer is regularly audited to ensure they are still complying with the requirements to provide passive fire protection. Only those with an accreditation have the highest chance to provide competent fire stopping.

Defective compartmentation

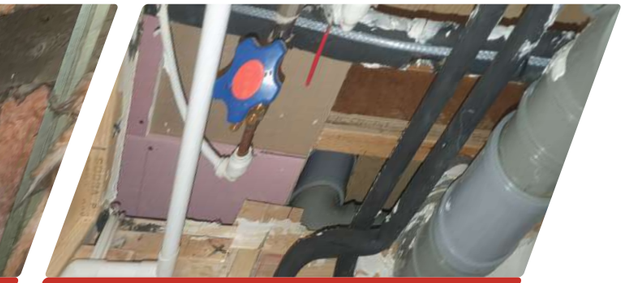


Missing Fire Stopping

Inadequate Fire Stopping



Incomplete Partition



Inadequate Partitions & Missing Fire Stopping

Inadequate Cavity Barrier

Inadequate Escape Route Partition

Saving lives

PEOPLE MATTER no one should die in a fire, people are more likely to be overcome by smoke or gas than to die directly by the fire. Of the 2977 fatalities caused by fire since 2010[1], 1057 were recorded to have been overcome directly by the gas/smoke, compared to the 771 who directly died by burns. While 1149 died from both burns and Smoke or unknown/other causes.

It is therefore absolutely vital that adequate measures to prevent the travel of smoke and flame are taken seriously. By conducting an independent survey, rectifying the findings it can only be

1 FIRE0504 Fatalities from fire by cause of death, England 2009 - 2019

Since 2010, there have been 2977 fatalities caused by Fire & Smoke.

How can we help?

We have four steps to be followed to ensure that your purchasing a safe building.

Survey

The first step is to have an independent survey. Evolutions Fire Protection will attend site, inspect all compartment walls and floors including concealed voids to locate any defects.

Rectify

Evolutions can then rectify those defects in-house using our BM Trada accreditation for Fire Stopping & Fire Doors to bring the building to a safe condition.

Restore

Evolutions will be able to restore the property to the high level of finish it may have previously had to ensure it is ready for use in quick succession.

Purchase

Evolutions Fire will certificate all installations and confirmation of compartments thus ensuring the building is completely safe for use and ready for purchase.

Our areas

evolutions
fire protection

Evolving the Industry

YOUR legal responsibility to protect
YOUR building and its occupants

Saving time

By using a BM Trada Accredited Installer it can be guaranteed to save headache and delays by providing leading protection.

THE DIAMOND IN THE ROUGH Get us involved with your investment or purchase and we will assist in locating the pitfalls with Modern Construction and the financial burdens it may reveal. Ensuring the investment can grow and be safe from the unforeseen.

By using a Third-Party Accredited Installer such as Evolutions Fire Protection our competence is regularly proven by BM Trada thanks to the bi-yearly audits they conduct. Ensuring only the highest quality, warranted and competent seals possible.

Turn over & contact us today for cost, time and life saving services.

Don’t become a relic, keep up with the change and save money at the same time.

EVOLUTIONS FIRE PROTECTION

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