Introduction

By Daniel McCroft: Passive Fire Consultant at Ventro
What We Will Cover:

1 - The Role of Passive Fire Protection
2 - What is Compartmentation?
3 - Fire Doors
4 - ASFP Understanding Competence
Passive Fire Protection in Buildings

By Howard Melvin: Technical Director at Ventro
Section 1

The Role of Passive Fire Protection
The role of Passive Fire Protection is to prevent the spread of fire and smoke, using features within the building construction.

- Generally enhanced by active fire measures such as sprinklers systems, alarms etc.
- Enables safe escape by protecting escape routes
- Helps to protect assets elsewhere in the building
- Can actually help extinguish a fire
- Passive Fire Protection is particularly important with horizontal evacuation or ‘stay put’ policies
Facts About Smoke

• Smoke travels at between 15 and 90 metres per minute
• 67% of fire related deaths are through smoke inhalation
• 44% of deaths are people who were not in the room of origin
• 47% of survivors could not see more than 3.5 metres.
Section 2

What is Fire Compartmentation?
**What is Fire Compartmentation?**

*Compartmentation* is the method of how the building structure is designed to **prevent** both the horizontal and vertical **spread of fire and smoke**.

The principle elements of this include:

- Walls
- Floors
- Ceilings
- Protected shafts – including stairwells, risers etc.
- Fire doors and shutters
- Ductwork dampers
- Fire stopping products
The responsible person must comply with the Fire Safety Order (remember Article 4 ‘Meaning of General Fire Precautions’).

- ‘Risk of Spread of Fire on the Premises’
- ‘Means of Escape from the Premises’
- ‘Means of Escape can be Safely and Effectively Used’
- ‘Instruction and Training of Employees’
- ‘Measures to Mitigate the Effects of Fire’
“...the building shall be designed and constructed so that the unseen spread of fire and smoke with concealed spaces in its structure and fabric is inhibited.”

“...If a fire-separating element is to be effective, every joint or imperfection of fit, or opening to allow services to pass through the element, should be adequately protected by sealing or fire-stopping so that the fire resistance of the element is not impaired.”
Excessive use of expanding foam around ductwork

Poorly installed fire curtain

Fire breaks not sealed to roof or floor slab
Images to illustrate poor Fire Stopping Installations inside a new hospital
Fire Break over Fire Doors in Residential Care Home

Before:
(Nothing there!)

After:
Correctly installed ablative board and fire stopping
Future-proof Cable Management system

Gun applied fire-stopping solution

Solution for multiple penetrations through wall
Section 3

Fire Doors
Fire Doors

• Fire doors are unlike normal doors; they are an engineered life saving device and there are standards and regulations that cover products, components and installation.

• They must be fire performance tested

• You cannot assume that all door hardware is suitable for fire doors
Fire Doors

• Most Fire Doors are rated FD30 or FD60

• Generally, these also provide cold smoke protection

• In the main, Fire Doors are made from timber products, although can be steel or composite.

• Passive fire safety device

• Life & Asset Protection

• Fire Doors only stop fire and smoke when in the closed position.
Benefits of Fire Doors:

• Fire doors are extremely effective in holding back fire and smoke

• They do save lives and protect buildings from further damage

• BUT in order to do so they must be installed and maintained correctly. Many are not!

Common Fire Door faults are:

• Doors not self-closing correctly

• Large gaps between door and frame / floor

• Damaged seals

• Incorrect or damaged glazing

• Poor installation and repairs
FIRE DOOR INSTALLATIONS TESTED BY BM TRADA

Video Link
You’ll be surprised how many fire door safety hazards we see on a regular basis!

65mm gap under riser cupboard door

Panic Escape in London Hotel

How effective would these fire doors be?

Back of house doors in another top London hotel
So what’s the word on Escape Doors?

- Not usually a fire resisting door (but could be)
- Usually the final exit door used in an emergency to reach place of safety

Predominantly there are two types:

1) Emergency Escape - An escape door, usually in a workplace with a limited number of occupants know how to use it.
2) Panic Escape - An escape door in a place where public may be present, or there are larger numbers of occupants.
Section 5

Understanding Competence
Article 18 of the Fire Safety Order says the ‘Responsible Person’ must appoint a ‘Competent Person’ as necessary to comply with the law.

The law makes reference to the Competent Person as ‘Someone with sufficient training and experience, qualifications and knowledge to be able to implement fire safety measures (some or all) in a building’.

When it comes to Passive Fire Protection, the ‘Competent Person’ should be able to demonstrate that they are suitably qualified to inspect, advise on, install, maintain or repair them.

Third party accreditation is an excellent way of ensuring a Company is competent to complete fire safety works.
Third Party Accreditation

- Implement a regular inspection of Passive Fire Protection, Fire Doors and Escape Doors as part of the building operator’s Fire Risk Assessment;


- Look for a BM Trada, or FDIS (Fire Door Inspection Scheme) certified contractor.

The Exova BM TRADA Scheme is a certification that provides you the reassurance and confidence that your passive fire safety is being installed under a 3rd party product installation scheme which is subjected to a rigorous initial vetting process and regular on-going checks to ensure that the quality of our work continues to meet the standards set by the scheme.

The Fire Door Inspection scheme is a scheme launched as a joint venture between the BWF-Certifire Scheme and the Guild of Architectural Ironmongers (GAI). The scheme is to help improve safety, give expert advice, provide vital resources, and to raise awareness of defective fire doors. The scheme provides a comprehensive knowledge in fire door specification, installation, inspection and maintenance, and repair.
UNDERSTANDING BEST PRACTICE
IN PASSIVE FIRE PROTECTION
– HOW THE ASFP CAN HELP

Tony Corcoran
Association for Specialist Fire Protection
The ASFP

• The ASFP provides guidance & support throughout the specification chain

• The ASFP & it’s members combine to create a strong industry voice, which has created a high level of support for the principles of Best Practice

The ASFP is recognised & respected as the leading authority in passive fire protection

• ASFP is the value added ‘go-to’ point of reference

• We continue to push, promote & educate on the importance of passive fire protection & best practice

• Key link to promoting the importance of PFP
  • Correct specification, procurement, installation & maintenance
Understanding Best Practice in Passive Fire Protection

Pioneering fire protection through innovation and professionalism

The website – the ‘go-to’ reference point

www.asfp.org.uk

Pioneering fire protection through innovation and professionalism
The ASFP - an information source

The website – access to guidance & support
You can access all the key published editorials issued by the ASFP via the website.
Major ASFP Publications:

This comprehensively revised second edition - a very popular download
The ASFP provides the industry with essential information relating to Passive Fire Protection


Major source of download activity
The ASFP provides the industry with essential information relating to Passive Fire Protection

Two recent publications

TGD 17 Code of Practice for the Installation and inspection of fire stopping

TGD 18: Code of Practice for the Installation and inspection of fire resisting duct systems
ASFP COLOUR BOOKS

Referenced in Building Regulations

Cover all Passive Fire Protection applications
Understanding Best Practice in Passive Fire Protection

Pioneering fire protection through innovation and professionalism

ASFP Video Library

Passive Fire Protection
Fire Risk Assessment
Fire Doors
Walls, Floors and Ceilings
Fire Stopping
Ducts & Dampers
Cavity Barriers
Structural Protection
Correct Specification & Installation of Fire Stopping

Pioneering fire protection through innovation and professionalism
Passive Fire Protection

“Built-in measures that protect the structure of the building and subdivide it into areas to limit the spread of fire and smoke.”
Passive Fire Protection Works
Passive Fire Protection Works
Passive Fire Protection Works
Installation issues
Understanding Best Practice in Passive Fire Protection

The installation issue

Pioneering fire protection through innovation and professionalism
The Reality - Incorrect application for materials used to seal around services
The Reality - Incorrect and non-tested penetration seal solutions
The Reality - No fire protection around services through compartment walls above ceilings
Intumescent pipe wrap installed around a plastic soil pipe.
The fixing instructions...
PU Foam Case Study
PU Foam

It says 4 hours on the tin!
Ensure the correct materials are used for the applications they have been tested against.
The devil is in the detail...

Claimed Fire Resistance to EN 1366-4

Does ‘what it says on the tin’ actually fit the end-use condition?

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Recent ASFP tests on PU foam based fire stopping

Time to failure? 9 minutes!
Recent ASFP tests on PU foam based fire stopping

Remember this?

Time to failure? 7 minutes!
NEW ASFP ON-SITE GUIDE TO FIRESTOPPING

- Operative friendly document
- 12 pages, but only 3 of text
- Lists of Do’s & Don’ts
- More illustrations than text
- Description of each type of fire stopping used
- Practical guidance for site staff of fire stopping
- Supported by the ‘Correct Specification & Installation of Fire Stopping’ video

ASFP Publications
An Industry Solution?

Third party certification...

Recommended by the ASFP & a requirement for installing contractor members
### 2 types of Certification

**Certification of Products**
- Relates to products sold
- For manufacturers
- Stakeholders:
  - Manufacturers
  - Installers
  - Architect/Specifier
  - Enforcement authority
  - Local authority
  - Wider community

**Certification of Installers**
- Relates to installation by contractors
- For installers/contractors
- Stakeholders:
  - Installers
  - Manufacturers
  - Architect/Specifier
  - Enforcement authority
  - Local authority
  - Wider community
Why clients/specifiers are looking for certification of installers

- Construction errors are often not easily seen
- The client/specifier is looking for evidence of competence
  - Correct product – in correct application – by certified installer
- Consequently, ASFP recommends specialist third party certification of contractors
ASFP Position on 3rd party certification

• Third party certification adds value
• Installer certification MANDATORY for installer members
• ASFP always recommends the use of third party certificated products for fire protection
• ASFP always recommends to use of third party certificated specialist contractors for installing Passive Fire Protection.
Questions and Answers

Thank you for attending!
Conclusion

Daniel McCroft: Passive Fire Consultant at Ventro