



TECHNICAL MEMORANDUM 012 (Edition 1) FIRE STOPPING

Modern buildings are designed to resist the spread of fire and smoke by the use of materials designed to be either non-combustible or of very limited combustibility. Blocks of flats for instance are designed to “compartmentalise” each dwelling from each other, and so to contain a fire within the dwelling until burnout.

There are a number of guidance’s and pieces of legislation that control work carried out on buildings such as :

- Approved Documents – Part B Fire Safety
- Building Regulations - particularly Regulation 7 [materials and workmanship) and Regulation 38 [Fire safety Information]
- CDM Regulations
- BS9999 - Code of practice for fire safety in the design, management and use of buildings
- BS 9991:2015 Fire safety in the design, management and use of residential buildings. Code of practice
- Regulatory Reform (Fire Safety) Order 2005
- The Construction Products Regulation
- etc

Fire stopping

Fire stopping is a fundamental part of the material package required to maintain the fire resisting performance of fire compartments found within modern buildings.

Fire stopping is best defined as the sealing of any openings to prevent fire (including smoke and heat) from passing through multiple building compartments.

The spread of a fire is contained by creating fire resisting compartments, which subdivide the building (vertically or horizontally). Buildings must ensure that any openings and gaps are fire stopped to restrict both lateral and vertical fire spread, for instance through :

- Concealed spaces (voids above ceiling lines or beneath floor surfaces)
- Service ducts (containing pipes, cables etc)
- Penetrations through a fire resisting wall, ceiling or floor

Where a compartment wall or compartment floor meets another compartment wall or an external wall, the junction should maintain the fire resistance of the compartmentation design which your designer has specified.

Plans and specifications

The start of making sure your work complies with building regulations and other legislation starts by making sure that you are working to compliant professionally prepared plans and specifications. You may be asked to supply supporting evidence of all fire stopping systems used together with their performance certificates.

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A plan which shows fire stopping provisions and locations of any specific fire stopping measures (such as fire dampers) may be requested by our office which clarifies how and where your contractors have fitted particular fire stopping materials or fittings.

Fire-stopping in general

The following issues must be addressed -

- a. Joints between fire-separating elements should be fire stopped
- b. All openings for pipes, ducts, conduits or cables to pass through any part of a fire-separating element should be:
 - (i) Kept as few in number as possible; and
 - (ii) Kept as small as practicable; and
 - (iii) Fire-stopped (which in the case of a pipe or duct, should allow thermal movement)



Image : Penetration of cable trays and pipes properly fire-stopped with approved materials in a fire resisting masonry compartment wall

Materials used for fire-stopping

Proprietary fire-stopping and sealing systems (including those designed for service penetrations) which have been shown by test to maintain the fire resistance of the wall or other element can be used. Fire-stopping materials include :

- Cement mortar
- Gypsum-based plasters
- Cement-based or gypsum-based vermiculite / perlite mixes
- Glass fibre , crushed rock, blast furnace slag or ceramic-based products (with or without resin binders)
- Intumescent mastics (including bagged or coiled strip systems)

Each or any of the above materials must only be used in situations appropriate for the particular situation or circumstance.

You may be required to submit your fire-stopping proposals with specifications and performance certificates which justifies your particular fire stopping proposals.



Image 2 : Showing professionally installed fire dampers on ductwork, fire collars around pipe penetrations, collars around cables – Image from HASMAN LIMITED

The should be carried out by competent operatives (preferably by 3rd Party Certified Installers – in complex situations in particular)

4.0 RESPONSIBILITY FOR COMPLIANCE (Regulation 7: Building Regulations) – It remains at all times that responsibility for carrying out building work that is compliant, and carried out in accordance with compliant professionally prepared plans is an obligation placed upon the building contractor, project managers, any owner appointed professional agent (Architects, Surveyors etc), and ultimately the building owner.

This document only provides a very general overview of your responsibility to carry out compliant work, you should seek advice from your professional designers.