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## Fire Risk Assessment of Passive Fire Protection

### **Introduction**

Passive Fire Protection comprises materials and products which, when 'built-in' to the fabric of a building restrict the growth and spread of fire by controlling the flammability of wall and ceiling linings and by dividing it into fire resisting compartments. It is vital that these measures are checked as part of any fire risk assessment under the Regulatory Reform (Fire Safety) Order.

The extent to which the Passive Fire Protection (PFP) needs to be investigated depends upon the purpose of the risk assessment. For life safety, any risk assessment only needs to verify that those PFP measures supporting primary means of escape are satisfactory. These would include the operation and condition of any fire doors and an evaluation of the condition of compartment walls and ceilings protecting escape routes (including penetrating services).

Whilst a full investigation of all PFP is the ideal; it cannot be undertaken thoroughly without a detailed and invasive inspection. This is impractical and is also outside the scope of expertise of most fire risk assessors. If a more detailed investigation is required, or if during a fire risk assessment significant issues or problems with the PFP are discovered, then the need for a professional site inspection should be included in the fire risk assessment

However the person tasked with completing the risk assessment on your premises must be 'competent' to do so. If you or any individual within your organization are not 'competent' to complete a suitable and sufficient fire risk assessment, you may wish to appoint someone to complete the assessment on your behalf. Should you wish to appoint a 'competent' professional, it is recommended that third party certificated fire risk assessors should be used.

### **What you as the assessor need to do**

You must familiarise yourself with the building layout and escape routes and compartmentation as designed. How easy this will be will depend on when the building was constructed. If a Fire Strategy document exists this should provide the required information and should be looked at with the building drawings.

- **Modern buildings:** If the building was constructed after April 2007 the requirements of Appendix G of Approved Document B (AD-B) of the Building Regulations will apply and so a file showing all fire safety information should be available to you. In a building constructed between 1994 and 2007 the Construction Design and Management (CDM) Regulations, Safety Plan should provide details of the fire safety provisions.
- **Older buildings:** For older buildings, or those where the information is not available, it may be impossible to determine the escape routes and critical compartmentation other than by a survey of the building. From this, you will need to create a document that lists the compartmentation as a basis for checking the PFP as part of your risk assessment. You should also check for any changes to the structure since the building was first occupied.

Approved Document B (AD-B) provides statutory guidance for PFP measures and if the building was constructed in accordance with the guidance in AD-B (i.e. the building is code compliant) then that will be clear in any plans and specification.

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## **Passive Fire Protection Federation**

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## The inspection

The inspection of PFP will include: fire doors and the walls and compartment walls, ceilings and floors protecting escape routes (including penetrating services). You should walk round all open floor areas and inspect the condition of:

1. The surfaces of any walls and ceilings in escape routes. Extensive over painting in escape routes is a hazard that should be identified as is the covering of walls and ceiling linings with significant quantities of combustible items e.g. notice boards, posters etc. In significant amounts these will contribute to rapid fire growth and spread. Guidance on this is given in:
  - Appendix B of the fire risk assessments guides for each building type published by CLG <http://www.communities.gov.uk/fire/firesafety/firesafetylaw/aboutguides/>
  - Building Bulletin 100 for educational establishments
  - Code of Practice for Multilayer Paints. <http://www.salamanderfire.co.uk/coatings-fire-risk-analysis.html>
  - Information sheet <http://www.warringtonfire.net/RegisteredUsers.asp>
  
2. All fire doors in the building which should be easily identified and marked. Guidance on what to check in fire doors is given in:
  - Appendix B of the fire risk assessments guides for each building type published by CLG <http://www.communities.gov.uk/fire/firesafety/firesafetylaw/aboutguides/>
  - British Woodworking Federation website: [www.bwf.org.uk/firedoors/fire-doors-your-responsibility](http://www.bwf.org.uk/firedoors/fire-doors-your-responsibility) and [www.bwf.org.uk/no\\_cache/help/publications/publications/fire-doors/](http://www.bwf.org.uk/no_cache/help/publications/publications/fire-doors/)
  - Code of Practice: Hardware for fire and escape doors: Section 13 – Maintenance, found on [www.firecode.org.uk](http://www.firecode.org.uk) , or [www.gai.org.uk](http://www.gai.org.uk) , or [www.dhfonline.org.uk](http://www.dhfonline.org.uk)
  
3. Above any suspended ceiling where this abuts a wall that bounds an escape route or compartment wall. (Suggested frequency one tile in 10 along each corridor?). Remote video equipment may be used for this. Pay particular attention to the wall above corridor ends of escape routes.
  - Check the sealing of any services (pipes, cables, etc) that penetrate the escape route/compartment walls. Any poor sealing or holes must be made good with materials/products that are compatible with the original penetrations seal. Guidance on fire stopping and penetration seals can be found in:
    - ASFP Red book [http://asfp.associationhouse.org.uk/default.php?cmd=210&doc\\_category=293](http://asfp.associationhouse.org.uk/default.php?cmd=210&doc_category=293)
    - Where else? There doesn't appear to be anything in BS 9999.
  - Check that there are fire dampers or fire resisting ducts at escape route/compartment walls (where applicable). Check when they were last cleaned/maintained. Guidance on fire resisting dampers can be found in:
    - ASFP Grey and blue books [http://asfp.associationhouse.org.uk/default.php?cmd=210&doc\\_category=293](http://asfp.associationhouse.org.uk/default.php?cmd=210&doc_category=293)

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- Information on the maintenance of ventilation and air conditioning ductwork is included in BS 9999 Annexes V & W
4. Below any raised floor where possible. Remote video equipment may be used for this. (suggested frequency one tile in 10 for each corridor?).
- Check that where the floor extends beyond a compartment wall that there is adequate fire stopping to prevent fire spread through the floor void
  - Pay particular attention to the ends of escape corridor.

The key to an examination of these elements is to understand their place in the design and their relevance to the building's current operation. You can then decide if the present compartmentation is adequate and that all the relevant PFP is sound and in good condition. **Your Risk Assessment needs to be balanced and pertinent to the occupation and purpose of the building.**

It will be necessary to report and record inadequacies and take remedial action to either reinstate the original or ensure that the function is adequate and appropriate by replacement. It may be necessary to seek guidance from the original product manufacturer. If significant faults are discovered e.g. major breaches of fire separation, significant damage to fire protection to the structural frame of the building, then this should be included in your risk assessment with a recommendation for a further inspection by a professional passive fire protection inspector to determine what remedial actions will be necessary.

A full data sheet for each element of PFP is available from the PFPF website and will show what makes it work and what it is reasonable for the Risk Assessment to check. Further advice may be obtained from the relevant Trade Association and the graphic illustration on the PFPF Home Page will give you a link to the body.

The Risk Assessment is a continuous document and should be reviewed on a regular basis and whenever work is done in the building that could affect these areas.