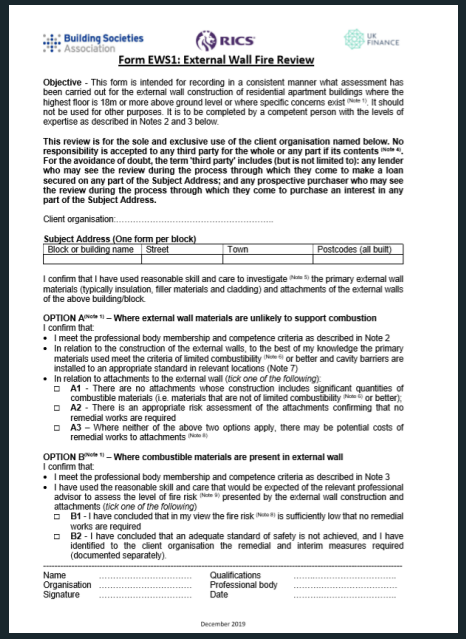
External Walls Fire Safety Review – EWS1



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Form EWS1: External Wall Fire Review

Objective - This form is intended for recording in a consistent manner what assessment has been carried out for the external wall construction of residential apartment buildings where the highest floor is 18m or more above ground level or where specific concerns exist (Note 1). It should not be used for other purposes. It is to be completed by a competent person with the levels of expertise as described in Notes 2 and 3 below.

This review is for the sole and exclusive use of the client organisation named below. No responsibility is accepted to any third party for the whole or any part if its contents (Note 4). For the avoidance of doubt, the term 'third party' includes (but is not limited to): any lender who may see the review during the process through which they come to make a loan secured on any part of the Subject Address; and any prospective purchaser who may see the review during the process through which they come to purchase an interest in any part of the Subject Address.

Client organisation: .....

Subject Address (One form per block)

Block or building name	Street	Town	Postcodes (all built)

I confirm that I have used reasonable skill and care to investigate (Note 5) the primary external wall materials (typically insulation, filler materials and cladding) and attachments of the external walls of the above building/block.

OPTION A(Note 1) – Where external wall materials are unlikely to support combustion
I confirm that:

- I meet the professional body membership and competence criteria as described in Note 2
- In relation to the construction of the external walls, to the best of my knowledge the primary materials used meet the criteria of limited combustibility (Note 6) or better and cavity barriers are installed to an appropriate standard in relevant locations (Note 7)
- In relation to attachments to the external wall (*tick one of the following*):
  - ☐ **A1** - There are no attachments whose construction includes significant quantities of combustible materials (i.e. materials that are not of limited combustibility (Note 6) or better);
  - ☐ **A2** - There is an appropriate risk assessment of the attachments confirming that no remedial works are required
  - ☐ **A3** – Where neither of the above two options apply, there may be potential costs of remedial works to attachments (Note 8)

OPTION B(Note 1) – Where combustible materials are present in external wall
I confirm that:

- I meet the professional body membership and competence criteria as described in Note 3
- I have used the reasonable skill and care that would be expected of the relevant professional advisor to assess the level of fire risk (Note 9) presented by the external wall construction and attachments (*tick one of the following*)
  - ☐ **B1** - I have concluded that in my view the fire risk (Note 9) is sufficiently low that no remedial works are required
  - ☐ **B2** - I have concluded that an adequate standard of safety is not achieved, and I have identified to the client organisation the remedial and interim measures required (documented separately).

Name ..... Qualifications .....
Organisation ..... Professional body .....
Signature ..... Date .....

December 2019

Joe Taylor BEng (Hons) MIFireE C.BuildE MCABE
Associate Consultant – Fire Risk Management

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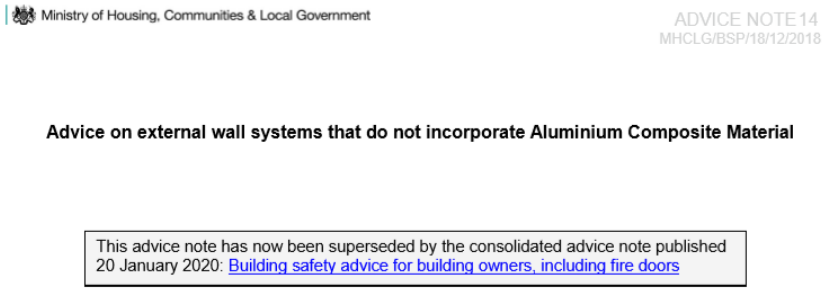
Advice Notes



Ministry of Housing, Communities & Local Government

ADVICE NOTE 14
MHCLG/BSP/18/12/2018

Advice on external wall systems that do not incorporate Aluminium Composite Material

This advice note has now been superseded by the consolidated advice note published 20 January 2020: Building safety advice for building owners, including fire doors

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- Operational Fire fighter
- Fire Risk Assessor
- Instructor – fire behaviour, operational and fire safety
- Fire Safety Manager
- Fire Engineer
- Lead Fire Risk Management Hydrock

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Key Points

- Legislation
- Government advice
- Industry

Where have we been…..?

Records Dating to 1068

Couvre-feu

Where the word Curfew comes from…

Where have we been…..?

- Rebuilding of London Act 1666

- Width of streets
- Materials of construction
- Dimensions of buildings

- Christopher Wren appointed, leading to the 1670 act….

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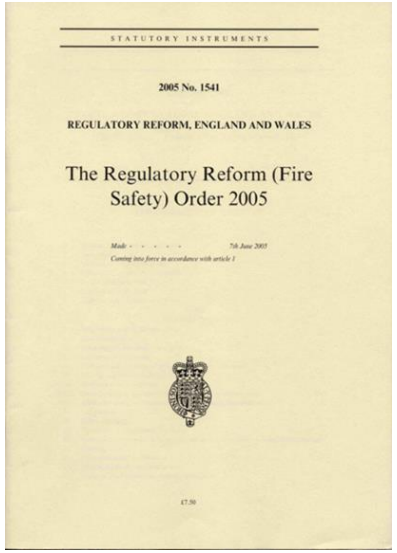
Where are we now?

The Regulatory Reform (Fire Safety) Order 2005



STATUTORY INSTRUMENTS

2005 No. 1541

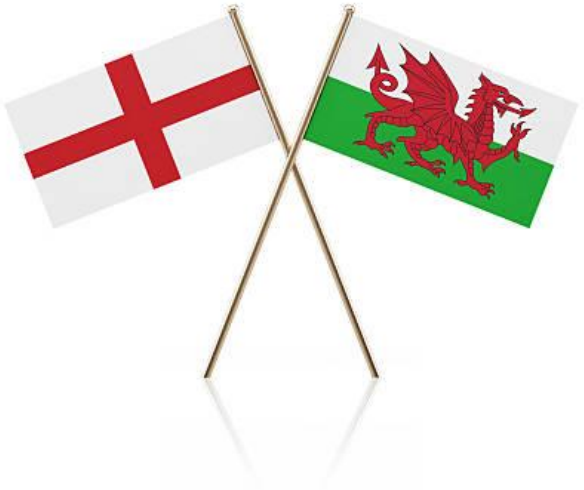
REGULATORY REFORM, ENGLAND AND WALES

The Regulatory Reform (Fire Safety) Order 2005

Made - - - - - 7th June 2005

Coming into force in accordance with article 1

£7.50



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Who is Responsible?

- The Employer
  - Usually a body corporate
  - Does not have to a physical ‘person’

- The person who has control of the premises in connection of trade or undertaking.

- The owner, where the person does not have control in connection with the trade or undertaking.

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Relevant Persons

- Anybody who is, or may be, lawfully on the premises
- Anybody in the immediate vicinity of the premises and who is at risk from a fire on the premises
- Residents – Visitors - Contractors
- Not firefighters engaged in operational duties

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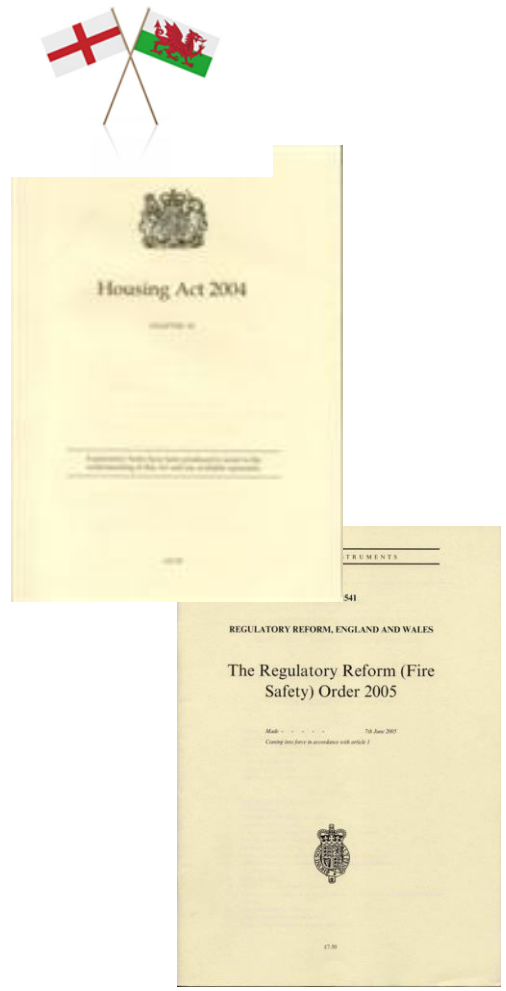
Joined up legislation

- Housing Act 2004 overlaps with RR(FS)O
- Internal powers in the flat
- Enforced by local authority (HHSRS)
- Enforcement protocol



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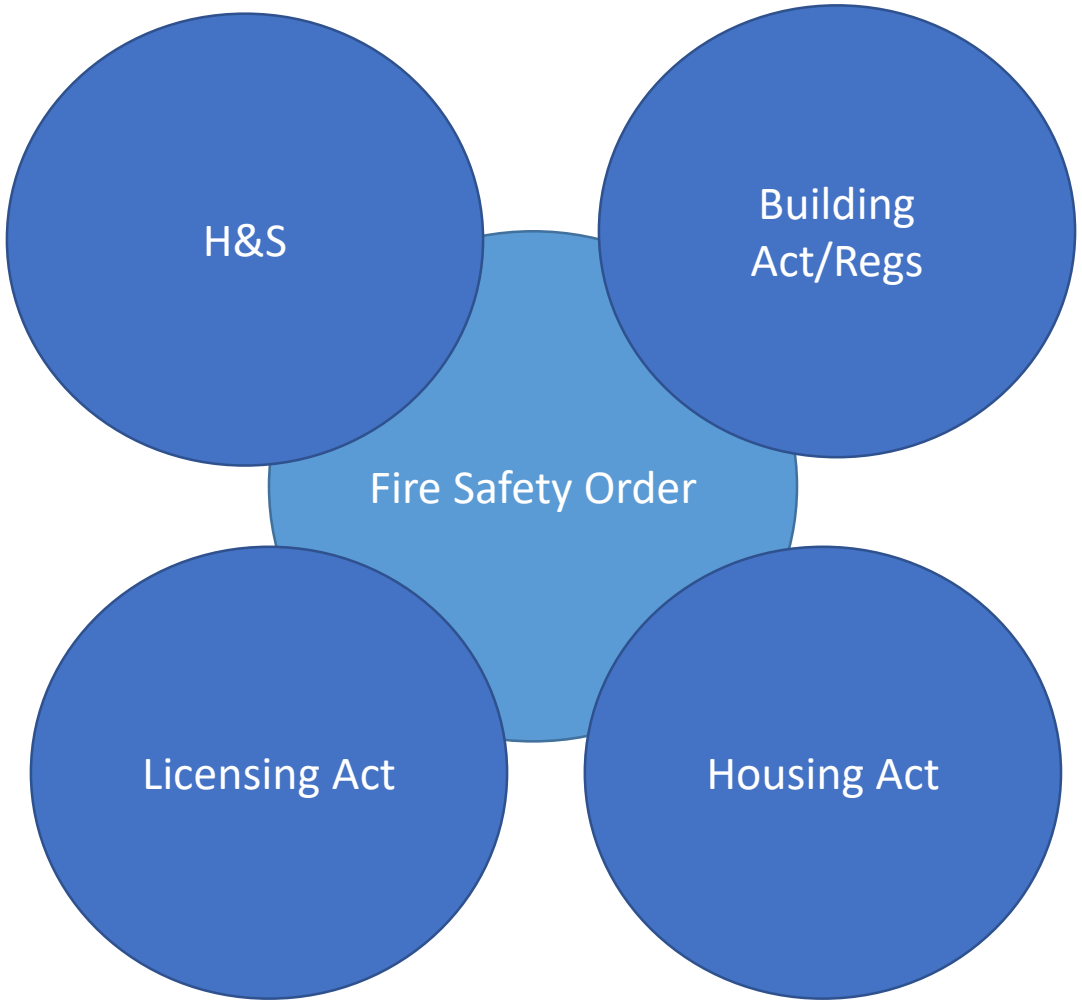
Legislative Framework



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Building Amendment Regulations

- The Building (Amendment) Regulations 2018
- The Building (Amendment) (Wales) Regulations 2019

Citation, extent, application and commencement

1.—(1) These Regulations may be cited as the Building (Amendment) Regulations 2018.

(2) These Regulations extend to England and Wales.

(3) These Regulations do not apply to any building in Wales.

(4) These Regulations come into force on 21st December 2018.

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Relevant buildings

- Relevant buildings are those with a storey at least 18m above ground level and which:
  - contain one or more dwellings
  - contain an institution
  - contain a room for residential purposes (excluding any room in a hostel, hotel or boarding house).

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Regulation 7(2) and requirement B4

Materials

12.10 Regulation 7(1)(a) requires that materials used in building work are appropriate for the circumstances in which they are used. Regulation 7(2) sets requirements in respect of external walls and specified attachments in relevant buildings.

NOTE: Guidance on regulation 7(1) can be found in Approved Document 7.

12.11 Regulation 7(2) applies to any building with a storey at least 18m above ground level (as measured in accordance with Diagram D6 in Appendix D) and which contains one or more dwellings; an institution; or a room for residential purposes (excluding any room in a hostel, hotel or a boarding house). It requires that all materials which become part of an external wall or specified attachment achieve class A2-s1, d0 or class A1, other than those exempted by regulation 7(3).

NOTE: The above includes student accommodation, care homes, sheltered housing, hospitals and dormitories in boarding schools. See regulation 7(4) for the definition of relevant buildings.

NOTE: The requirement in regulation 7(2) is limited to materials achieving class A2-s1, d0 or class A1.

12.12 External walls and specified attachments are defined in regulation 2 and these definitions include any parts of the external wall as well as balconies, solar panels and sun shading.

12.13 Regulation 7(3) provides an exemption for certain components found in external walls and specified attachments.

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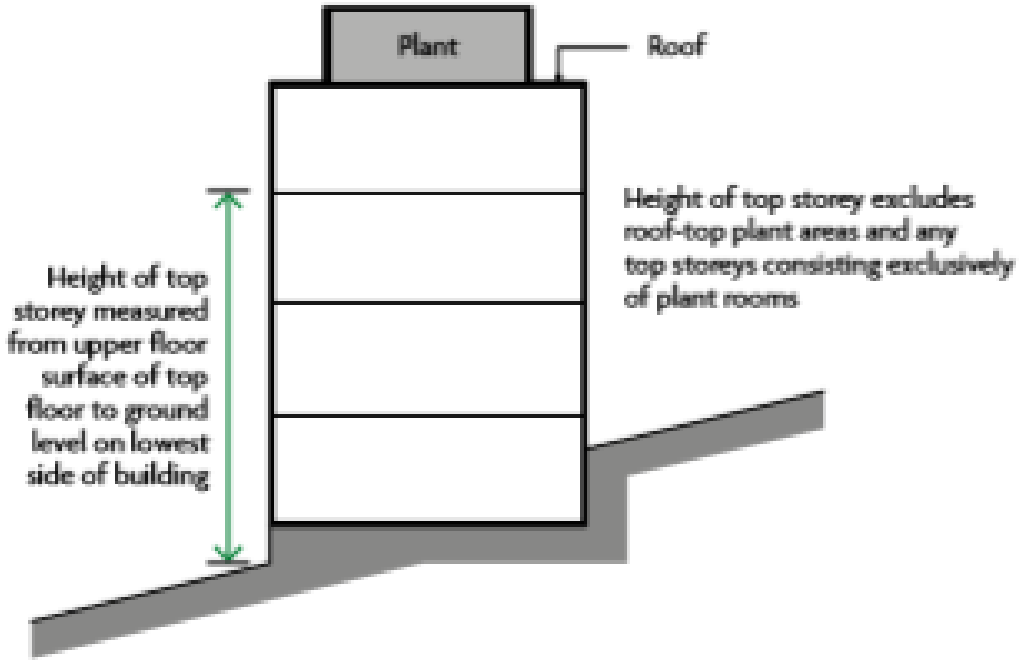

Diagram D6 Height of top storey in building

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Combustible materials

- The ban restricts the use of combustible materials in defined buildings with a storey 18m or more above ground level containing a sleeping risk. Known now as ‘relevant buildings’, they are defined by the new Building Regulation 7(4).

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Classifications

UK classification/test		European classification
BS 476-4		Class A1-s3,d2
BS 476-11		Class A2-s3,d2
BS 476-6 & 7	**Class 0**	Class B-s3,d2
BS 476-7	**Class 1**	Class C-s3,d2
BS 476-7	**Class 3**	Class D-s3,d2
		Class E-d2
		Class F

"Non-combustible"

"Limited combustibility"

"s" relates to smoke production

"d" relates to flaming droplets

s3,d2 is the lowest rating possible

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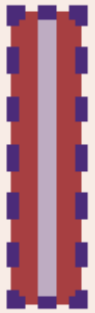
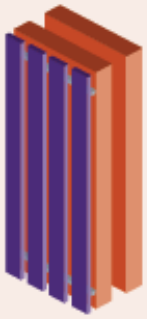
External Wall

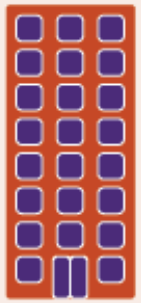
Any reference to an external wall of a building includes reference to:



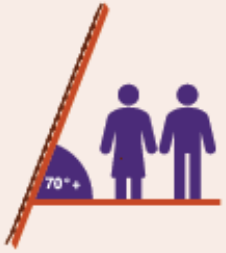
anything located within any space forming part of the wall



any decoration or other finish applied to any external (but not internal) surface forming part of the wall



any windows and doors in the wall



any part of a roof pitched at an angle of more than 70° to the horizontal if that part of the roof adjoins a space within the building to which persons have access, but not access only for the purpose of carrying out repairs or maintenance

Specified attachment means:

a balcony attached to an external wall

a device for reducing heat gain within a building by deflecting sunlight which is attached to an external wall

a solar panel attached to an external wall

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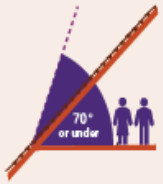
Exemptions

Cavity trays when used between two leaves of masonry



Any part of a roof (other than any part of a roof which falls within paragraph (iv) of regulation 2(6) if that part is connected to an external wall

Door frames and doors

Electrical installations

Insulation and waterproofing materials used below ground level

Intumescent and fire-stopping materials where the inclusion of the materials is necessary to meet the requirements of Part B of Schedule 1

Membranes

Seals, gaskets, fixings, sealants and backer rods

Thermal break materials where the inclusion of the materials is necessary to meet the thermal bridging requirements of Part L of Schedule 1

Window frames and glass

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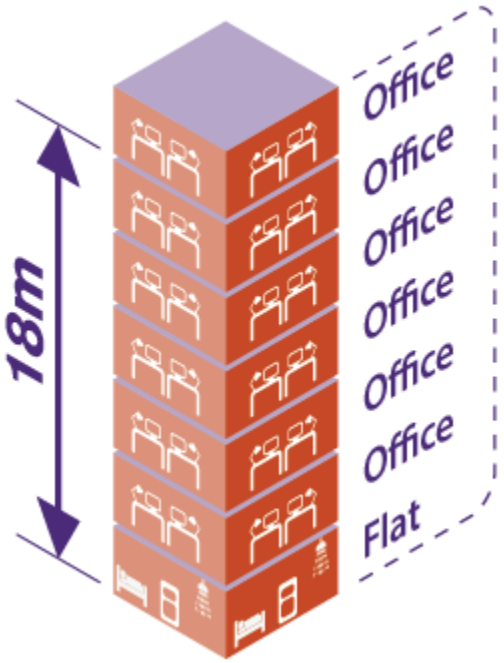
Mixed Use Relevant Buildings



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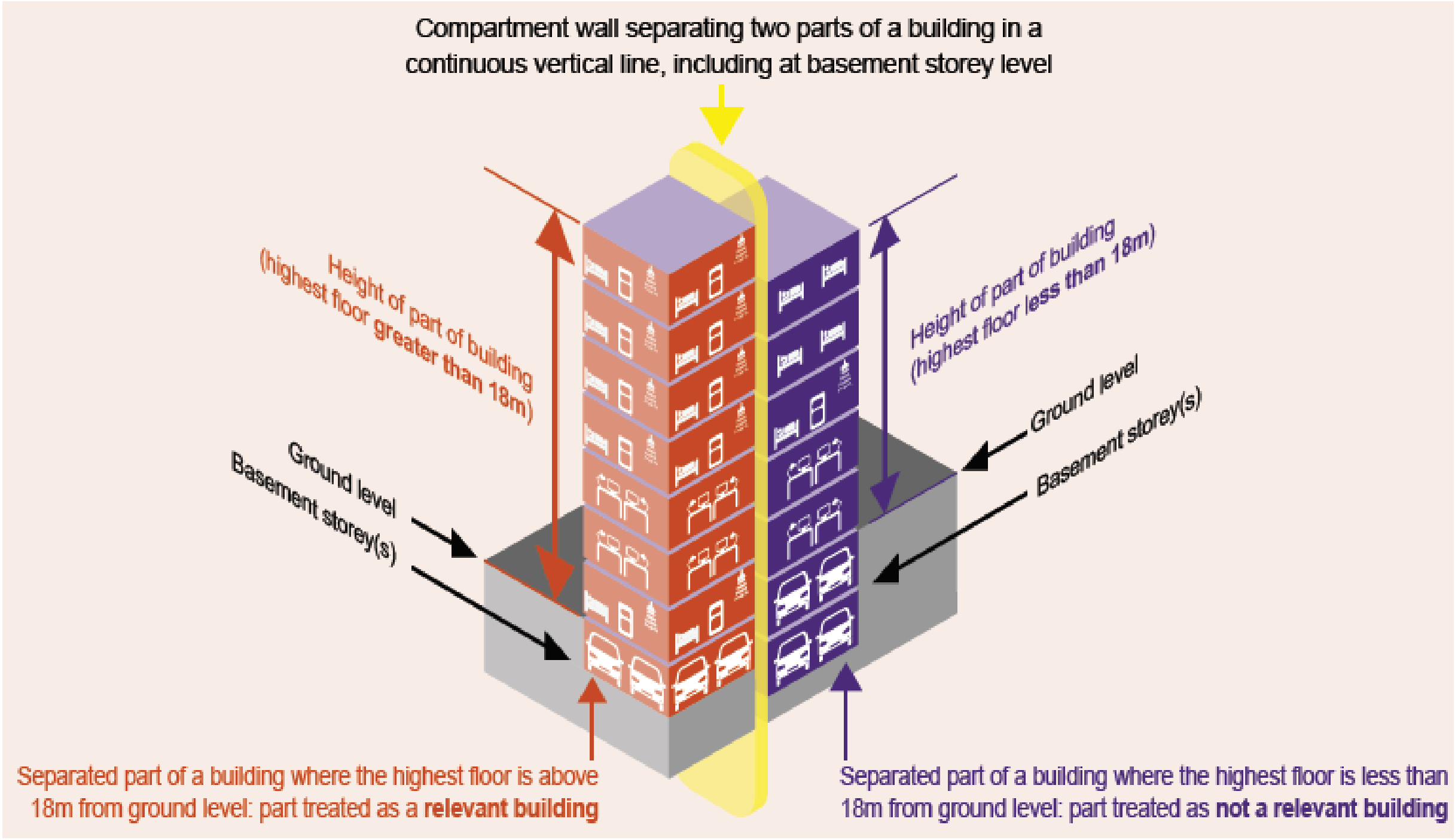
Compartment wall separating two parts of a building in a continuous vertical line, including at basement storey level
Height of part of building (highest floor greater than 18m)
Ground level
Basement storey(s)
Height of part of building (highest floor less than 18m)
Ground level
Basement storey(s)
Separated part of a building where the highest floor is above 18m from ground level: part treated as a relevant building
Separated part of a building where the highest floor is less than 18m from ground level: part treated as not a relevant building

Latest Advice Note

Advice for Building Owners of Multi-storey, Multi-occupied Residential Buildings

Contents

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Advice Notes

- This consolidated note brings the Expert Panel's advice together in a single document and supersedes the existing Advice Notes 1 to 22.
- The advice on the assessment of non-ACM external wall systems (previously Advice Note 14) has been updated and incorporated, and some of the advice within the previous published notes has been condensed to make it clearer.

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Advice Notes

- The government has been working with BRE to investigate the burning behaviour of selected cladding products using physical testing at bench/intermediate-scale in a laboratory.
- The Expert Panel has considered the interim results of these tests in developing this advice and understands that the government intends to publish the results later in the year.

Advice Notes

- “We are aware that some building owners have been waiting to act on building safety issues, in case further advice or information is to be published by the Expert Panel or the government. For the avoidance of doubt, building owners should follow the steps in this advice as soon as possible to ensure the safety of residents and not await further advice or information to act.“

Advice Notes

- All building owners of residential buildings of 18m or more to the height of the top occupied storey and also buildings at any height with residents who need significant assistance to evacuate (particularly where horizontal, phased evacuation is in place) should check their external wall systems

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Fire Safety Bill

- Building owners and residents should be aware that government has committed to reform the regulatory system and agreed with the principles outlined within Dame Judith Hackitt's review (Building a Safer Future, Independent Review of Building Regulations and Fire Safety).
- Under the proposed reforms, a new category of duty holder will be required to review the safety of their existing buildings - and remediate them where necessary.

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Fire Safety Bill

- “We strongly advise building owners to consider the risks of any external wall system and fire doors in their fire risk assessments, irrespective of the height of the building, ahead of the planned clarification”

Under 18m

- Vulnerability of residents, location of escape routes, and the complexity of the building
- Designed, installed, and, **maintained** appropriately.
- Combustible materials within or attached to external walls of residential buildings below 18m is not currently expressly prohibited. However, it has been a legal requirement since the 1980s to consider the risk from fire spread

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ACM Cladding

- The government set up a screening programme to assist building owners with the identification of the type of ACM present on their buildings.
- The screening is still open and remains free to building owners

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ACM Cladding

- The Expert Panel believes ACM cladding (and other metal composite material cladding) with an unmodified polyethylene filler (category 3) presents a significant fire hazard on residential buildings at any height with any form of insulation

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ACM Cladding

- ACM cladding (and other metal composite material cladding) with fire retardant polyethylene filler (category 2 in screening tests) when used with rigid polymeric foam insulation presents a notable fire hazard on residential buildings over 18m or buildings at any height with residents who need significant assistance to evacuate (particularly where horizontal, phased evacuation is in place) based on the evidence currently available. Action to remediate these unsafe wall systems should be taken as soon as possible.

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HPL Cladding

- Made by taking sheets of wood or paper fibre, layering them with a resin and bonding them under heat and pressure. An HPL panel, may or may not include additional chemicals to provide fire retardant properties to the panel
- High Pressure Laminate (HPL) systems using Class C-s3,d2 or D-s3,d2 HPL panels on residential buildings of 18m or more to the height of the top occupied storey or buildings at any height with residents who need significant assistance to evacuate (particularly where horizontal, phased evacuation is in place) would not meet the functional requirements of the Building Regulations, and that these systems should be remediated

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HPL Cladding

- The tested combination of HPL (FR) panels (Class B-s1,d0) with stone wool insulation successfully achieved the performance criteria set in BR135

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Advice Notes

BS EN 15725:2010
Extended application reports on the fire performance of construction products and building elements

Excluded from scope of this guide

Fundamental re-design or re-engineering, and fire engineering evaluations require a different approach to that of a simple, intermediate or complex assessment and are excluded within the scope of this guide.

This guidance is not suitable for use for assessments carried out on the external envelope facade or cladding systems.

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Advice Notes

- The Expert Panel has also updated advice on the assurance and assessment of Fire Doors, which applies to residential buildings at any height.
- Further advice is provided on spandrel panels, balconies, external wall insulation systems, and smoke control systems.

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Advice Notes

- Information should be available from as-built drawings or the operation and maintenance manual for the building or Regulation 38 package of fire safety information
- To be reviewed as part of a comprehensive fire risk assessment or external wall review

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Advice Notes

- Fire risk assessments should take into account the principles set out in the Fire Safety in Purpose-Built Blocks of Flats guidance published by the Local Government Association.
- Any fire risk assessment conducted should take in to account the likely fire performance of the external wall, as set out in section 72 of the LGA guidance

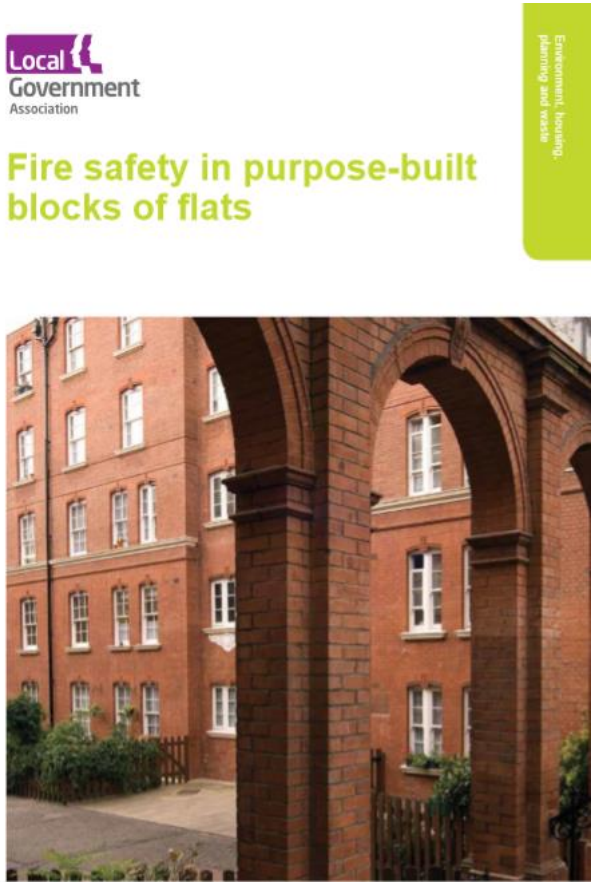
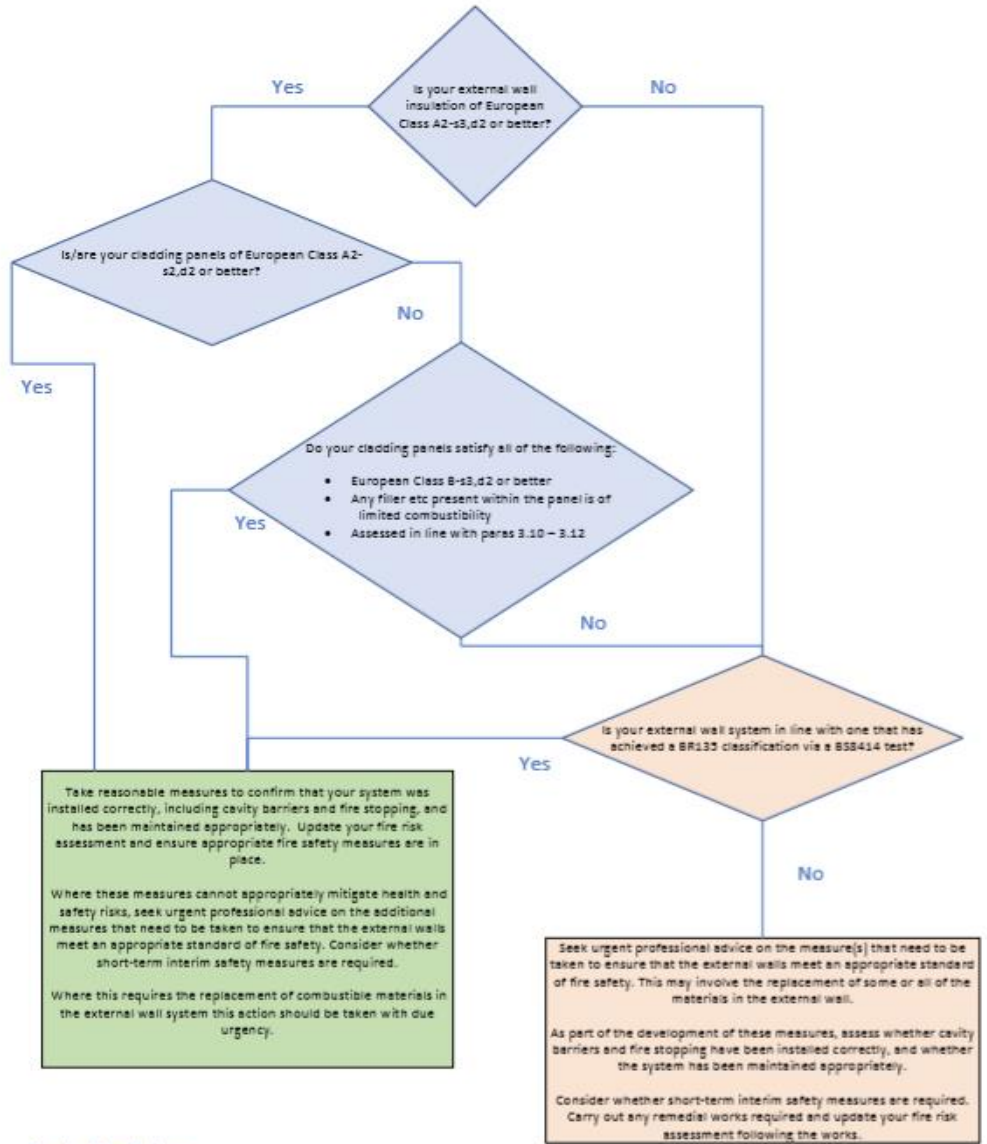


Diagram 1 – Process chart for assessing external wall systems



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Advice Notes – consideration for interim measures

- The fire and rescue service attendance time
- The general fire precautions in the building
- The height of the building
- Provision of sprinklers or other automatic fire suppression systems
- The number of flats
- The ability of residents to evacuate the building without assistance
- The type of cladding system (i.e. Category 2 or 3 and type of insulation)
- The extent of the cladding system
- The number of means of escape stairways
- The proximity of the cladding system to windows or vents within common parts, particularly the stairway(s)
- Risk of external ignition of the cladding system (e.g. taking into account the height at which the cladding starts, proximity of cars etc. to the cladding)
- Risk of internal ignition of the cladding system (e.g. from fires inside the building via unprotected window reveals and the proximity of ignition sources such as domestic appliances).
- The collective effect of the fire safety measures considered holistically, as opposed to each measure in isolation

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EWS1 - Certificate

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EWS1 - Certificate

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Form EWS1: External Wall Fire Review

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Client organisation:.....

Subject Address (One form per block)

Block or building name	Street	Town	Postcodes (all built)

I confirm that I have used reasonable skill and care to investigate (Note 5) the primary external wall materials (typically insulation, filler materials and cladding) and attachments of the external walls of the above building/block.

OPTION A(Note 1) – Where external wall materials are unlikely to support combustion
I confirm that:

- I meet the professional body membership and competence criteria as described in Note 2
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- In relation to attachments to the external wall (*tick one of the following*):
  - ☐ **A1** - There are no attachments whose construction includes significant quantities of combustible materials (i.e. materials that are not of limited combustibility (Note 6) or better);
  - ☐ **A2** - There is an appropriate risk assessment of the attachments confirming that no remedial works are required
  - ☐ **A3** – Where neither of the above two options apply, there may be potential costs of remedial works to attachments (Note 8)

OPTION B(Note 1) – Where combustible materials are present in external wall
I confirm that:

- I meet the professional body membership and competence criteria as described in Note 3
- I have used the reasonable skill and care that would be expected of the relevant professional advisor to assess the level of fire risk (Note 9) presented by the external wall construction and attachments (*tick one of the following*)
  - ☐ **B1** - I have concluded that in my view the fire risk (Note 8) is sufficiently low that no remedial works are required
  - ☐ **B2** - I have concluded that an adequate standard of safety is not achieved, and I have identified to the client organisation the remedial and interim measures required (documented separately).

Name	.....	Qualifications	.....
Organisation	.....	Professional body	.....
Signature	.....	Date	.....

December 2019

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NOTES

Note 1 - This form includes two options. Option A is for buildings where the materials used in the external wall would be unlikely to support combustion. Option B is for buildings where Option A does not apply and a more detailed review (and hence higher level of fire expertise) is required. The signatory should use either the Option A approach or the Option B approach and delete/cross out the unused option. Within each option there are sub-options, the user should tick the box of the relevant sub-option.

Note 2 –For Option A, the signatory would need the expertise to identify the relevant materials within the external wall and attachments and whether fire resisting cavity barriers and fire stopping have been installed correctly. However, this would not necessarily include the need for expertise in fire engineering. The signatory should be a member of a relevant professional body within the construction industry.

Note 3 - For Option B the signatory would need expertise in the assessment of the fire risk presented by external wall materials and should be a member of a relevant professional body that deals with fire safety in the built environment. This could be a Chartered Engineer with the Institution of Fire Engineers or equivalent.

Note 4 – Should there be a desire for a third party to rely on this form, they should contact the signatory's organisation.

Note 5 - The investigation must include evidence of the fire performance of the actual materials installed. For both Options A and B this would often include either a physical inspection by the signatory to this form, or inspection of photographic or similar information gathered by a 3rd party (subject to the signatory having sufficient confidence in that 3rd party). It would also include the standards of construction of key fire safety installations such as cavity barriers. Given the nature of external walls this would typically involve investigations in a limited number of locations (actual number to be determined by the signatory). Review of design drawings may assist but on their own would not be sufficient. If the wall construction includes multiple wall types, the investigation should include each type.

Note 6 – The term 'limited combustibility' is as defined in BS 9991:2015.

Note 7 – Cavity barrier fire performance and locations to be based on relevant fire safety design guidance documentation such as BS 9991 or relevant statutory guidance

Note 8 - In this situation the signatory should notify the client organisation that an appropriate risk assessment of the fire risk of the attachments might be required.

Note 9 - The assessment of fire risk as described above includes that insofar as is necessary to ensure a reasonable standard of health and safety of those in and around the building, all external wall constructions and any external attachments (e.g. balconies) of the building:

- Resist spread of fire and smoke so far as is reasonably necessary to inhibit the spread of fire within the building, and
- Are constructed so that the unseen spread of fire and smoke within concealed spaces is inhibited, and
- Adequately resist the spread of fire over the walls, having regard to the height, use and position of the building.

The assessment takes account of regulations and published design guidance as were current at the time of construction as well as those which are current at the time of this assessment. It cannot be guaranteed that it would address guidance and regulations which may be introduced in the future.

Note 10 - The signatory may wish to provide their client organisation with a separate report on their investigation to support their statements in this form. That separate report would not normally

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EWS1 – Certificate

- OPTION A – Where external wall materials are unlikely to support combustion
- OPTION B – Where combustible materials are present in external wall

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EWS1 – Certificate

- A1 - There are no attachments whose construction includes significant quantities of combustible materials (i.e. materials that are not of limited combustibility or better);
- A2 - There is an appropriate risk assessment of the attachments confirming that no remedial works are required
- A3 – Where neither of the above two options apply, there may be potential costs of remedial works to attachments

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EWS1 – Certificate

- B1 - I have concluded that in my view the fire risk is sufficiently low that no remedial works are required
- B2 - I have concluded that an adequate standard of safety is not achieved, and I have identified to the client organisation

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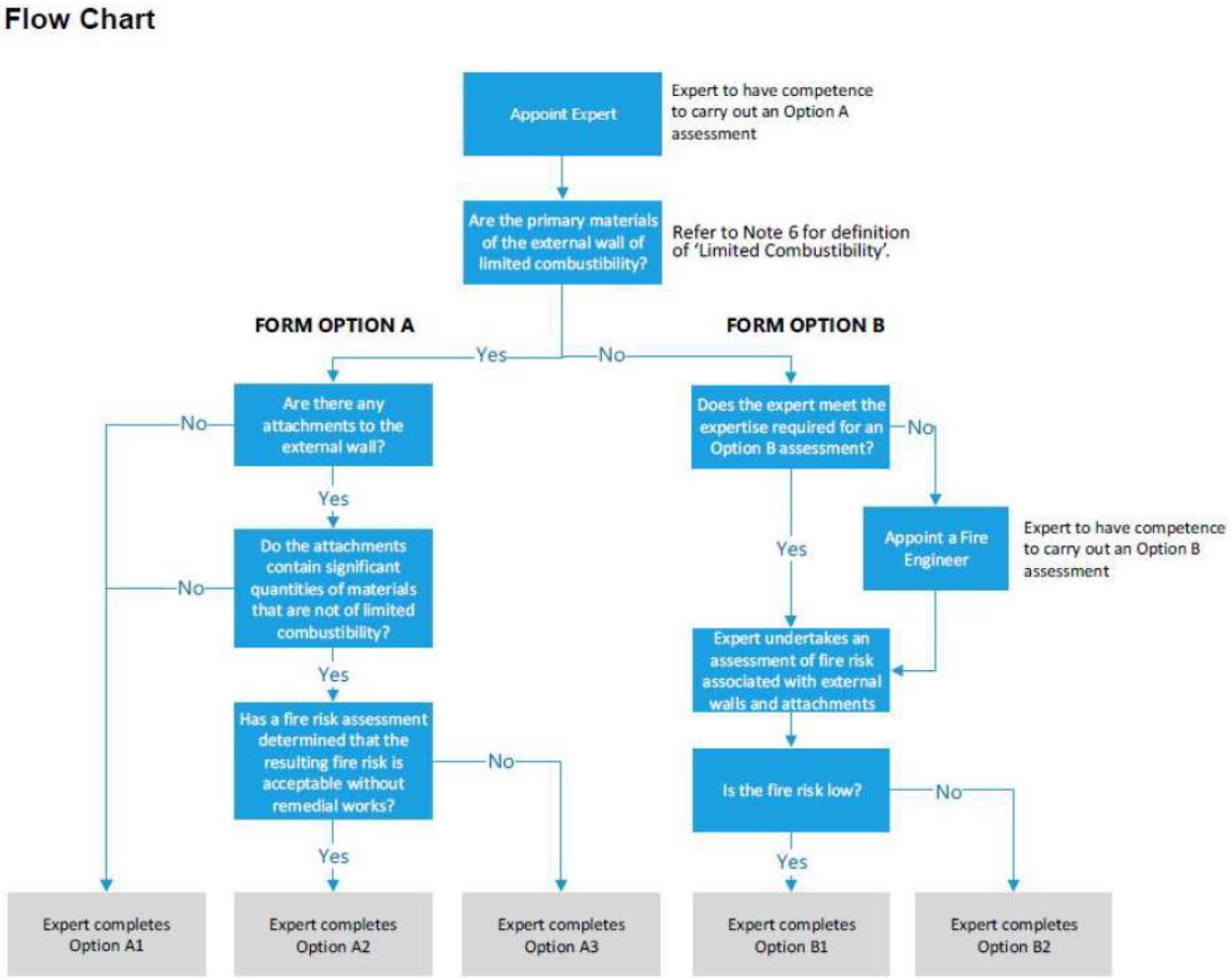
EWS1 - Certificate



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BS 8414

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BS 8414

Fire performance of external cladding systems.

PART 1 - Test method for non-loadbearing external cladding systems applied to the masonry face of a building
PART 2 - Test method for non-loadbearing external cladding systems fixed to and supported by a structural steel frame

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BS 9414

BS 9414:2019 Fire performance of external cladding systems.
The application of results from BS 8414-1 and BS 8414-2 tests

bsi.

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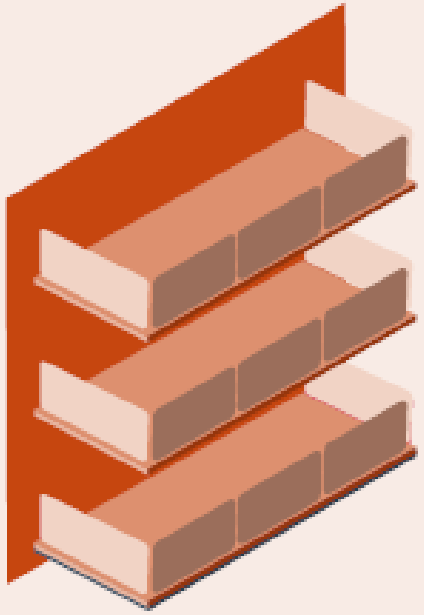
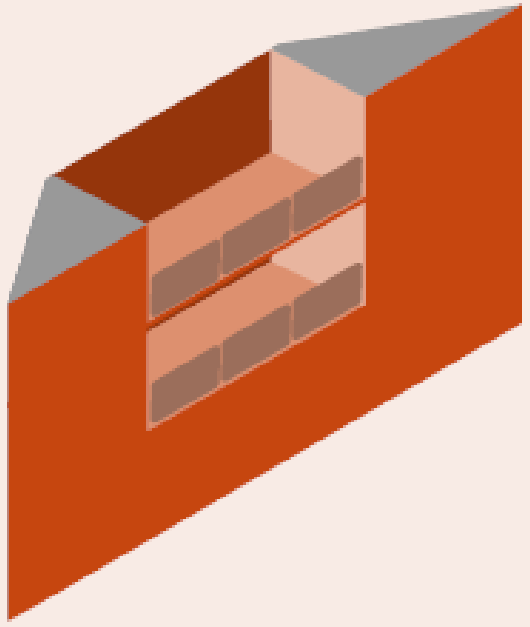
Balconies

Attached balconies



All products, materials and components of the external wall and the whole of the attached balconies (with the exception of those items excluded by Regulation 7(3)) to be European Class A1 or **A2-s1, d0**.

Inset balconies



All products, materials and components of the external wall and the whole of the attached balconies (with the exception of those items excluded by Regulation 7(3)) to be European Class **A1** or **A2-s1, d0**.

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Balconies

- All vertical parts (walls, ballustrades and so forth) should be Class A1 or A2s1, d0
Laminated glass is not considered to meet this requirement

- All horizontal parts (flooring, roof coverings, ceilings linings may be excluded from the Class A1 or A2 s1,d0 requirement).

Note that Regulation B4 still applies to these areas; therefore, this means the use of Class B membranes and principal components of at least A2 s3,d2

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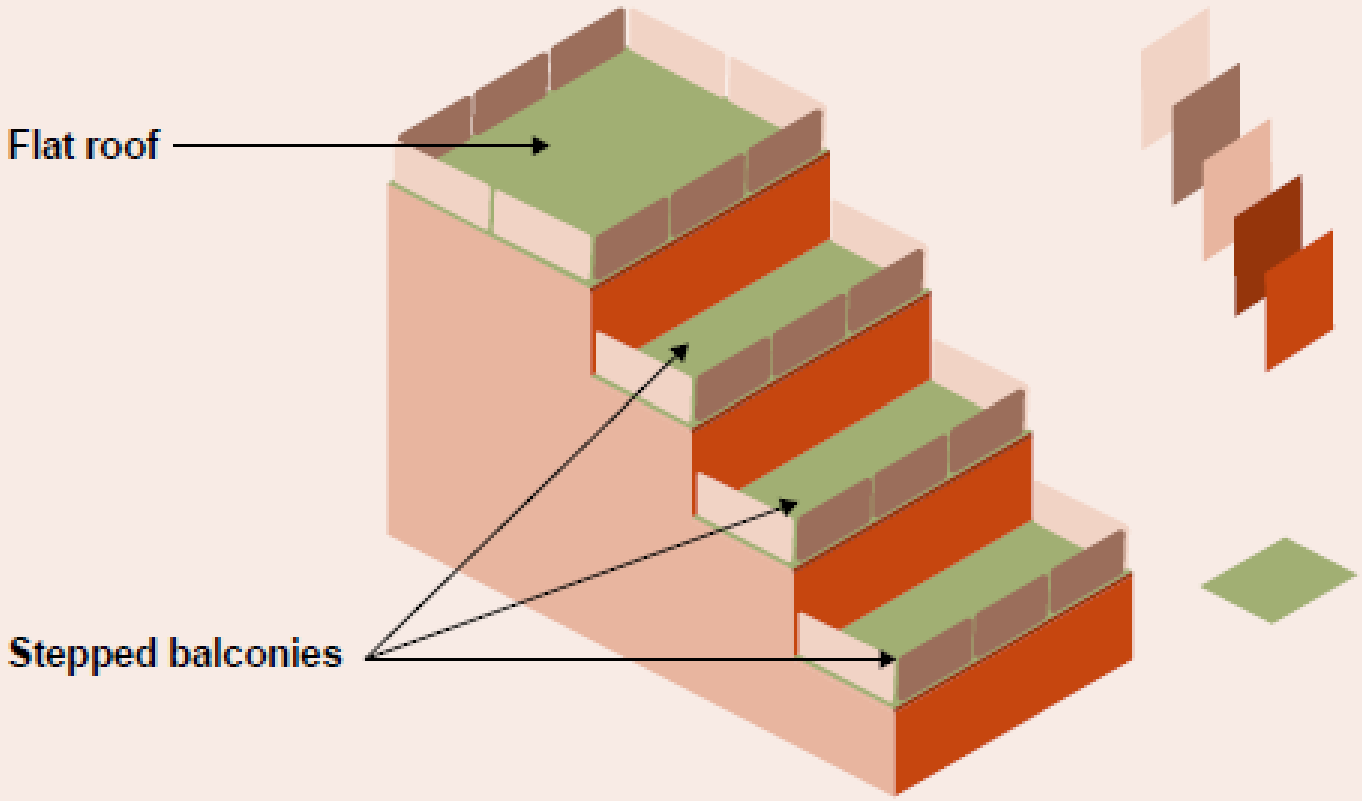
Balconies



All products, materials and components of the vertical parts of the external wall and the balustrades, etc. (with the exception of items excluded by Regulation 7(3)) to be European Class **A1** or **A2-s1, d0**.

Shown in orange or brown shades.

All products, materials and components of the horizontal parts (flooring, roof coverings, ceiling linings, etc. may be **excluded from** the European Class **A1** or **A2-s1, d0** requirement. Note that Regulation B4 still applies and guidance in respect of this should be followed.

Shown in green.

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Case Study

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Green Walls

Procedures for imminent danger

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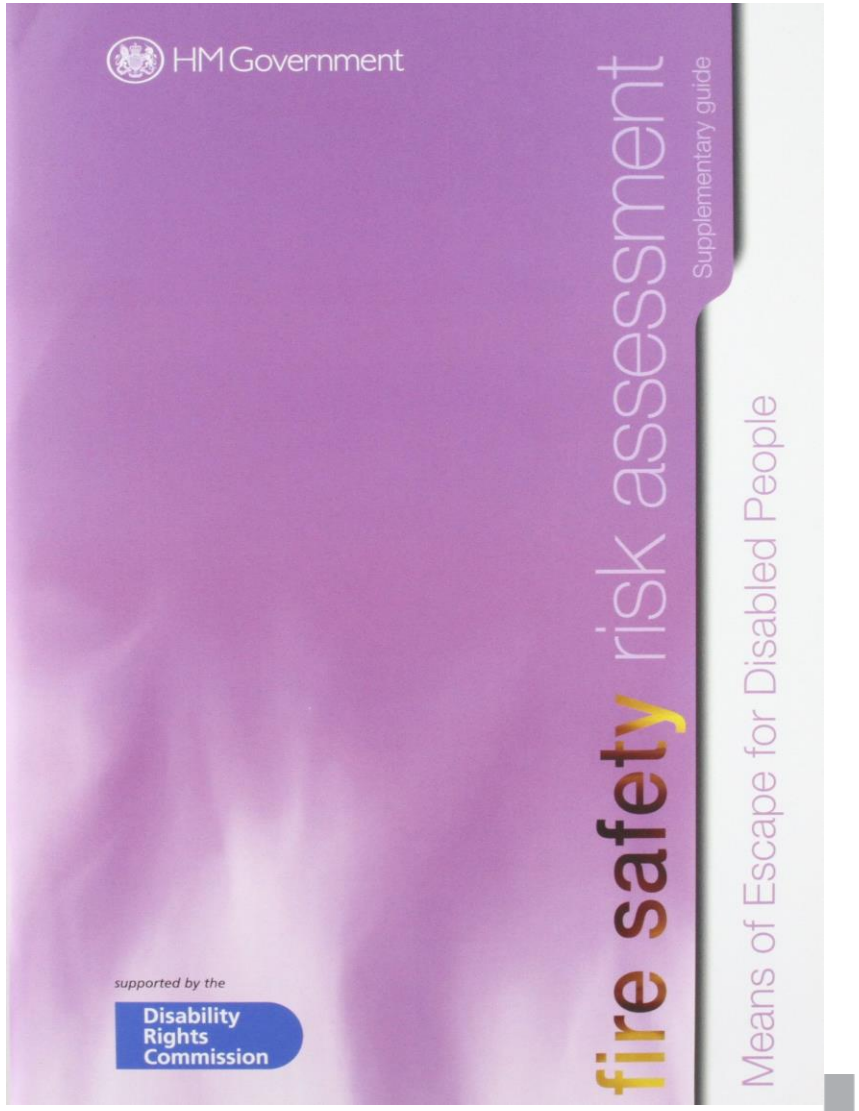
Procedures for imminent danger



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- Make an assessment of the fire risk

Table 1 – A simple risk level estimator

Likelihood of fire	Classification of fire risk		
	Likely consequences of fire:		
	Slight harm	Moderate harm	Extreme harm
Low	Trivial risk	Tolerable risk	Moderate risk
Medium	Tolerable risk	Moderate risk	Substantial risk
High	Moderate risk	Substantial risk	Intolerable risk

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PAS 79 approach

- Formulate action plan
  - Risk vs benefits
  - Timescales
  - Prioritization
  - Practicality of recommendations
  - Tolerable risk
  - ALARP
  - Don’t create new hazards
  - Consider hierarchy of controls

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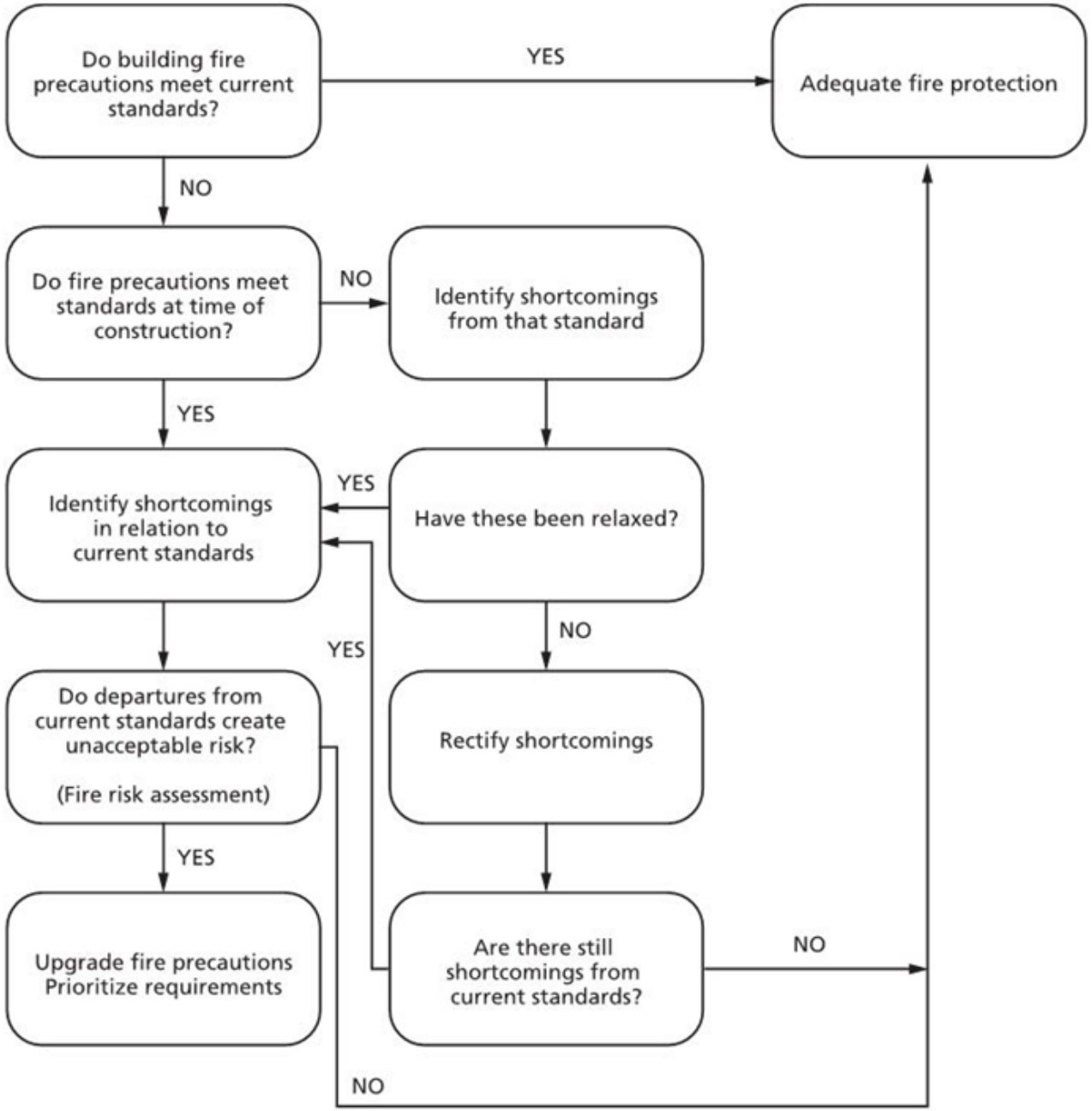
Do building fire precautions meet current standards?
YES
Adequate fire protection
NO
Do fire precautions meet standards at time of construction?
NO
Identify shortcomings from that standard
YES
Identify shortcomings in relation to current standards
YES
Have these been relaxed?
NO
YES
Do departures from current standards create unacceptable risk?
(Fire risk assessment)
Rectify shortcomings
YES
Upgrade fire precautions
Prioritize requirements
Are there still shortcomings from current standards?
NO
NO

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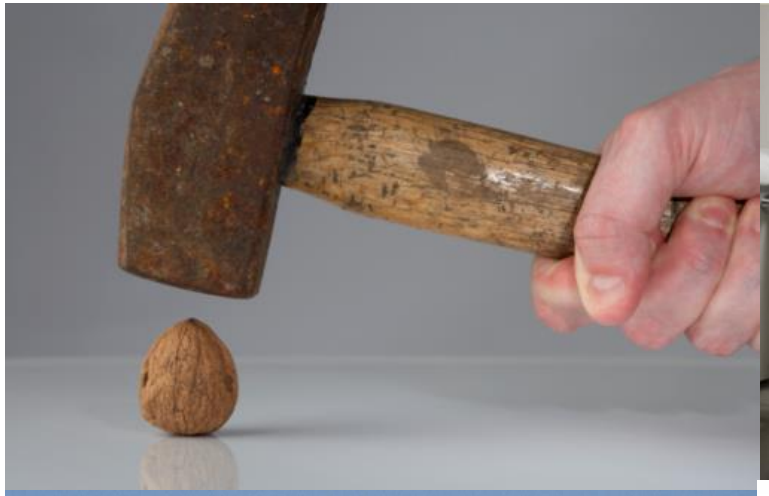
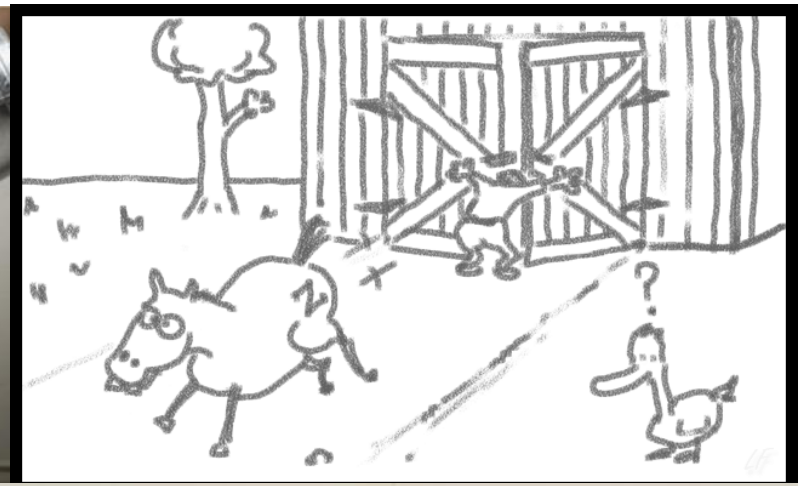
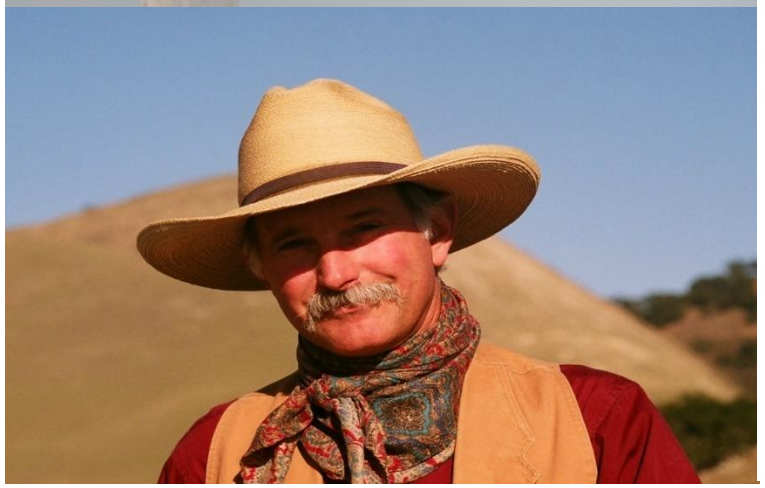
Competency







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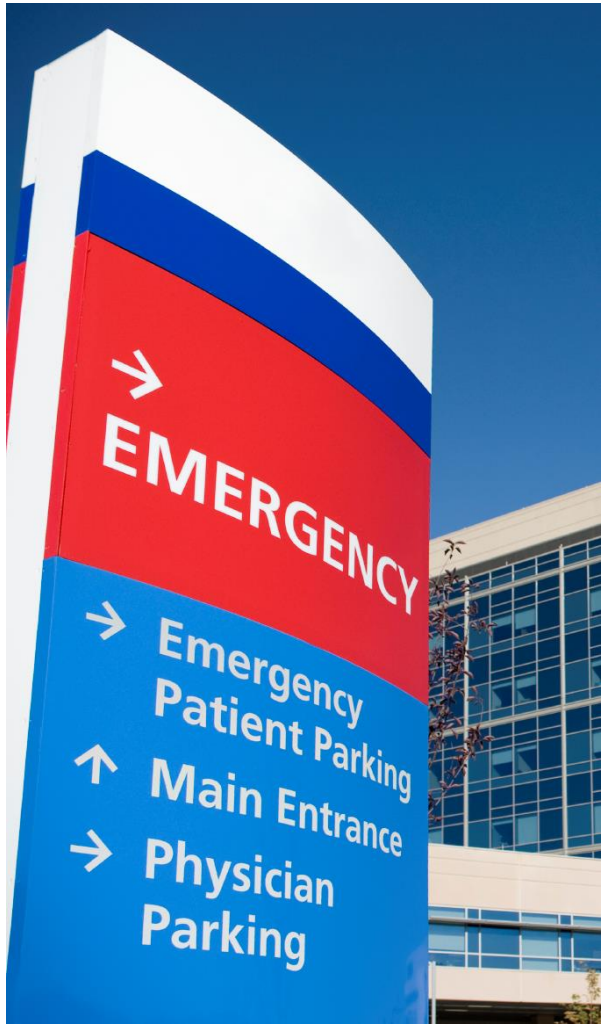
Competency

The level of competence required will depend on the complexity of the situation and the particular help you need.

A competent person is someone who has sufficient training and experience or knowledge and other qualities that allow them to assist you properly.

Competency



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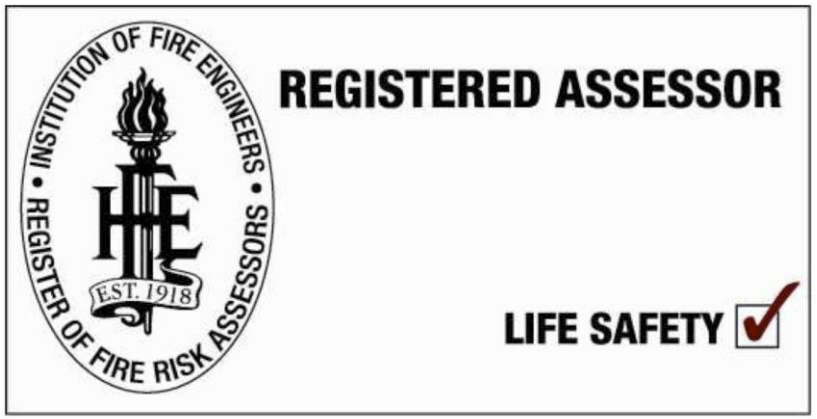
Competency

Accredited bodies



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Compartmentation

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Compartmentation

Upgrading / confirming compartmentation:

- Improving existing MOE
- Improving fire protection to escape routes only
- Provision of AFD
- Provision of sprinklers

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Compartmentation

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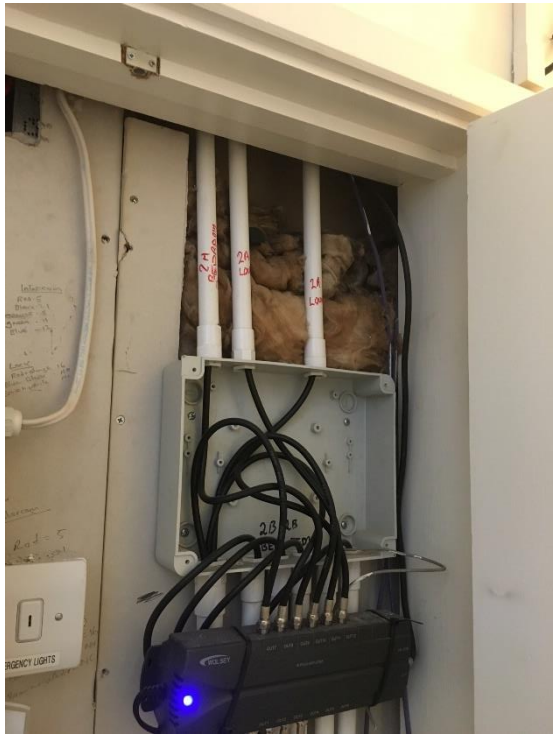
Compartmentation

Service Risers:

- Floor or no floor, that is the question…..
- Services breaching shaft wall



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LOCATIONS

BRISTOL
BIRMINGHAM
CARDIFF
CAMBORNE
GLASGOW
GLOUCESTER
LONDON
MANCHESTER
NORTHAMPTON
PLYMOUTH
SOUTHAMPTON
STOKE-ON-TRENT
TAUNTON
WETHERBY

Happy to take your questions now, or by email later

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