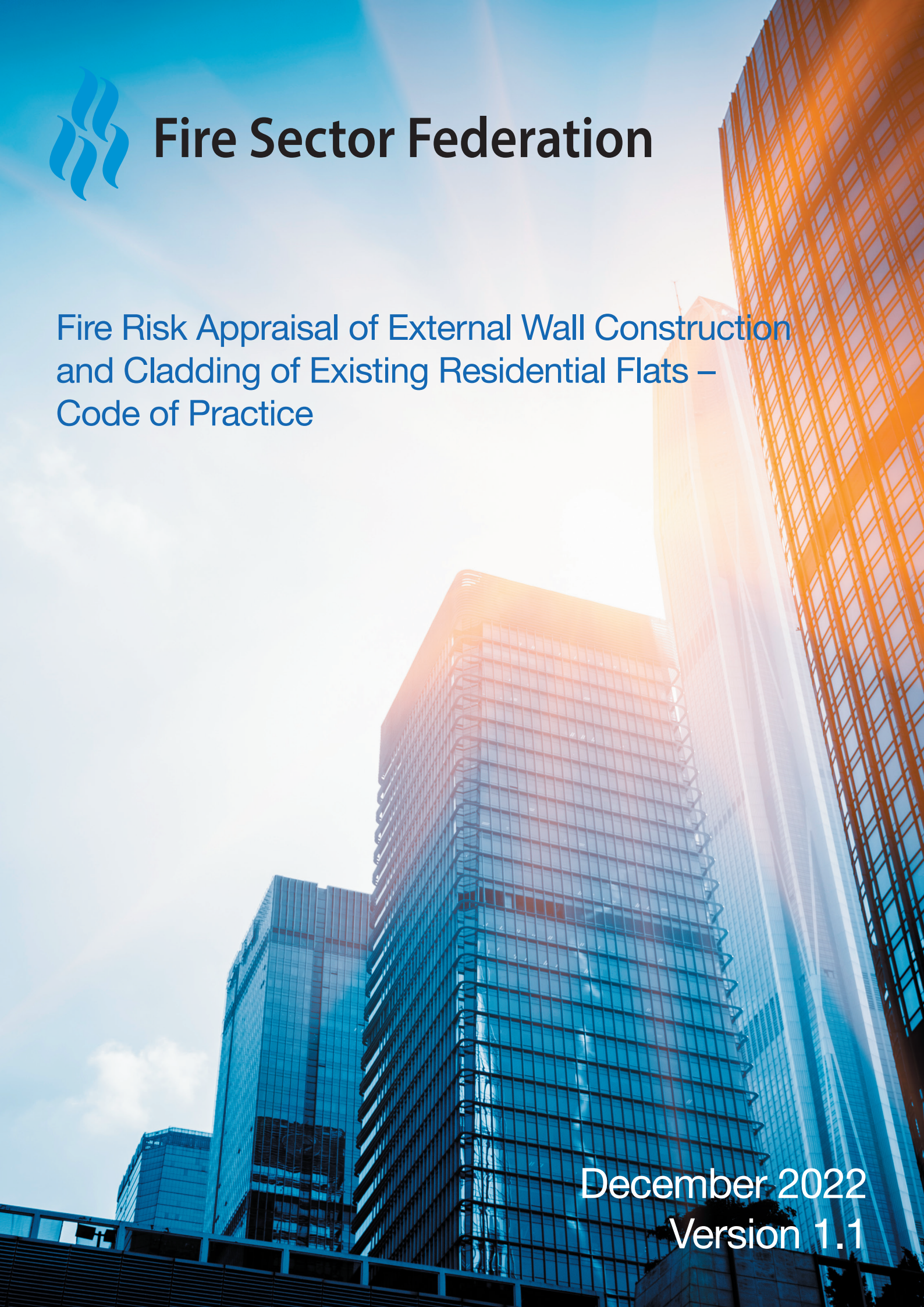
Fire Sector Federation

Fire Risk Appraisal of External Wall Construction and Cladding of Existing Residential Flats – Code of Practice



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FOREWORD

In response to the very tragic Grenfell Tower Fire and other notable fires post Grenfell, the UK and devolved governments, are continuing to implement changes to improve fire safety to residential buildings. A focus of many of these changes revolve around amendment to building control, fire safety regulations and associated guidance, that prevent use of combustible cladding materials on new build high rise multi-occupied residential buildings[1].

A continuing and significant feature of improving fire safety also includes fire risk assessment, including now assessment of the external walls of buildings. In new buildings this will be a clear and controlled part of the design, specification, procurement, and installation processes. However, in existing residential buildings, which are subject to the Regulatory Reform (Fire Safety) Order 2005, a statutory requirement also exists[2]. This guide is intended offers an initial process of assessing the fire risk presented by the external wall of a residential building of any height up to 18m.

The guide aims to assist the Fire Risk Assessor with a process of analysis designed to help them reach a clear informed and evidenced decision as to whether to recommend that a full external wall survey, be undertaken in accordance with PAS 9980 - *Fire risk appraisal of external wall construction and cladding of existing blocks of flats – Code of Practice, referred to in this guidance*. Guidance for fire risk assessors and advice on selection of a competent fire risk assessor may be found on the the Fire Sector Federation website [3].

The guidance is therefore designed to support a competent Fire Risk Assessor in undertaking a suitable and sufficient initial external wall appraisal as part of the building's fire risk assessment so as to determine if a specialist PAS 9980 assessment is required or not.

This guidance is not a substitute for PAS 9980 and requires competency to interpret findings from the process described to reach an informed decision.

Dennis Davis CBE QFSM
Fire Risk Assessors Working Group

[1] Readers should always consult the respective four Nations' government websites for details for current regulations and guidance which continues to evolve.
[2] Clarified by the Fire Safety Act 2021 Ch.24.Sec. 1.
[3] https://www.firesectorfederation.co.uk/fire-risk-assessment/

Index

BACKGROUND

In England and Wales, the Fire Safety Act 2021 clarified the Regulatory Reform (Fire Safety) Order 2005 (FSO). One significant area relates to the external wall system (EWS) of the building; overtly including an assessment of the risk posed by the external walls in any fire risk assessment for the building.

FIRE SAFETY ACT 2021
SECTION 1 PREMISES TO WHICH THE FIRE SAFETY ORDER APPLIES

(1A) where a building contains two or more sets of domestic premises, the things to which this order applies include—
(a) the building's structure and external walls and any common parts; (b) all doors between the domestic premises and common parts (so far as not falling within sub-paragraph (a)).
(1B) the reference to external walls includes—
(a) doors or windows in those walls, and (b) anything attached to the exterior of those walls (including balconies).

Accordingly, existing multi-occupied residential building that are subject to the FSO will need a fire risk assessment of the external walls if this has not already been undertaken. (In England alone perhaps circa 4.7 million flats[3]). Additionally, because of the complexities of some external wall systems, the competence of those undertaking these assessments has specialist fire engineering requirements.

PAS 9980:2022 FIRE RISK APPRAISAL OF EXTERNAL WALL CONSTRUCTION AND CLADDING OF EXISTING BLOCKS OF FLATS – CODE OF PRACTICE

PAS 9980 has been introduced to guide those specialists directly involved and states – This PAS is particularly intended for use by competent fire engineers and other competent building professionals tasked with advising on the fire risk of external wall construction of existing blocks of flats.

The expectation therefore is that where the external wall system has been identified as complex or if the make-up of the system is unknown, or likely to propagate fire spread, only competent specialists should complete a (PAS 9980) fire risk assessments of external wall systems (FRAEW). PAS 9980, is freely available, and recommends an explicit methodology for those buildings where a recommendation has been made to carry out a specialist FRAEW[4].

It is important to note that not all buildings require a PAS 9980 FRAEW. PAS 9980 states- *'It is for use in situations where external wall constructions of existing blocks of flats have not been shown to resist fire spread adequately or where required to inform the fire risk assessment. Where it is obvious to the fire risk assessor that the walls don't pose a risk of fire spread (such as buildings of traditional brick and masonry construction), there may be no need for a PAS 9980 assessment'.*

And also stating: *'Where homeowners and building owners are faced with external wall construction which does not meet the expected standards, PAS 9980 provides a voluntary methodology for assessing the level of safety.'*

[3] In England around 1 in 5 of in the region of 24 million dwellings are flats. Dwelling_Stock_Estimates_31_March_2020_Release.pdf (publishing.service.gov.uk)
[4] A list of relevant professional institutions whose members may be able to carry out the assessment, is available in PAS 9980, Annex H

BUILDING REGULATIONS 2010

The Building Regulations 2010 (legislation.gov.uk) contain the legal requirements in relation to construction. Supporting guidance in the form of approved documents, outline the minimal functional requirements for fire safety, in residential accommodation

ADB_Vol1_Dwellings_2019_edition_inc_2020_amendments.pdf (publishing.service.gov.uk) provides the expected minimal functional requirements. Alternative routes to compliance are possible, however, building control authorities must approve any such alternatives. Previous versions of this approved document are available and may be used as guidance for assessment.

It should be noted however, that the safety of people from harm caused by fire is paramount and any fire risk assessment, (although giving due regard to relevant legislation and guidance) should address the identified risk to occupants. It is therefore not intended that this initial external wall assessment is a compliance check of existing buildings against current building regulation requirements.

SCOPE OF THIS GUIDANCE

As outlined not all buildings subject to the FSO will require a specialist FRAEW, in accordance with the Fire Safety Act 2021, however all will require an initial fire risk assessment to be completed, if not previously undertaken, to determine if such a further specialised fire risk assessment should be completed.

An external wall risk assessment must therefore be completed by the Responsible Person, or their appointed competent person. It is anticipated that in most cases this will be completed as part of the general fire risk assessment for the building, with the fire risk assessor expected to make a clear recommendation, after an 'initial' assessment, for either no further action, because the threat of external fire spread is as low as can reasonably be expected, or that a more detailed survey must be carried out by a competent specialist.

This is a similar approach to a general fire risk assessor identifying issues with fire stopping of compartmentation during their assessment and recommending a full survey of the fire stopping within the building by a competent specialist. The scope of this guidance is for fire risk assessments carried out on low and medium rise multi-occupied residential buildings, below 18 m including residential and business mixed use, subject to the FSO[5]. Where the building is a mix of residential and business, it should be treated as residential due to the greater life safety risk associated with people sleeping in the building.

This guide aims to provide a proportionate and risk-based approach to life safety, thus ensuring as far as reasonably practicable, the external wall system meets the intent of life safety codes. It is for use in assessing existing buildings with the purpose of identifying premises that do or do not require an FRAEW by a competent specialist.

WHAT IT DOESN'T DO

This guide is not intended to be used for completion of a EWS 1 form, or for a PAS 9980 FRAEW survey.

The guidance is not intended to address all combinations of external wall systems and therefore fire risk assessors should seek additional support if the external wall system is beyond the scope of this document.

This guidance note applies to multi-occupied residential buildings below 18m and does not apply to:

- Multi-occupied residential buildings over 18 m
- Hospitals or other premises with overnight patient accommodation.
- Care homes.
- Hotels and hostels.
- Prisons.

This guide is not intended to address property protection of the building.

[5] Scotland and Northern Ireland are not covered by this guide as they have their own regulatory system.

FIRE RISK ASSESSMENT OF EXTERNAL WALLS (FRAEW)

Fire risk assessments to address life safety are a requirement under the FSO. The likelihood of spread of fire via the external wall system, is only one aspect that must be considered. A fire risk assessment is a holistic process that identifies life safety hazards and risks and through practicable recommendations, reduces risk to as low as reasonably practicable.

Existing risk-based fire safety guides (see below) should be used as primary methodology where applicable, with this guide supplementing any risk-based approach to the external wall fire risk assessment.

- Fire safety in purpose-built blocks of flats (publishing.service.gov.uk)
- LACoRS Fire Safety Guide.pdf (dashservices.org.uk)
- 9281_Sleeping_Accomodation_v2.pdf (publishing.service.gov.uk)

EXTERNAL WALL SYSTEMS DEFINITION

For the purpose of this guidance document, an external wall system includes:

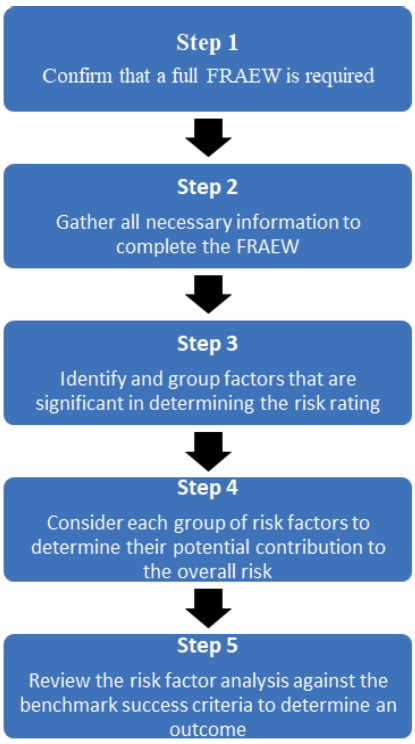
- External wall systems/cladding systems – plus the key functional components such as:
- Fire stopping elements around penetrations and windows, cavity barriers, thermal insulation materials, cavity wall insulation, sheet insulation materials, etc.
- Spandrel panels
- Window infill panels
- Balconies
- Solar blinds and shading
- Other attachment to the external wall such as decorative or design features

FRAEW BENCHMARKS

ASSESSMENT OF SUITABILITY OF EXISTING EXTERNAL WALL CONSTRUCTION

An approach based upon 5-steps is adopted as the basic level of assessment in PAS 9980:2022. Specialist assessors using this guidance are to adopt a risk-based approach to determine the safety of an existing building, in terms of external fire spread across and within external walls, and should recognize and take account of facade and fire performance factors listed below. Initial fire risk assessments on site are aimed at gaining an understanding of the composition and geometry of the external wall construction. This methodology is designed as a structured approach to adopt in reaching a conclusion as to whether the fire risks posed by the external wall is tolerable.

The PAS 9980 five step approach and process chart for determining risk factors in a full FRAEW is shown as an example below: this guidance follows a similar approach to that outlined below.



EVIDENCE GATHERING AND RECORDING

Any initial risk-based assessment must rely on evidenced and recorded information, used by the fire risk assessor to inform their recommendations. All reasonable effort should be made to obtain and reference supporting evidence for all types of external wall systems assessed.

Supporting evidence may be gathered onsite through observations, photographs, review of attached labels or proprietary labelling and manufacturer's performance information.

For example, a non-combustible cladding system with the manufacturers claimed fire performance of A2 in accordance with EN 13501 -1 [6] stamped on a cladding board, could reasonably be expected to be accurate. It would be unduly pessimistic to assume that the products fire performance isn't as marked. Product marking fire performance claims may be further determined through the identification of relevant supporting documentation.

Documentation that may be used in support of assessment could include:

- Building Regulation 38 [7] information - as built fire strategy documentation, operation and maintenance manuals, primary test evidence, third party certification evidence, building control documentation, manufacturers information, BIM data, purchase orders from developers, specification documents and historically accepted performance criteria.

- Additional information on more recent builds may be available from the local authority building control website, via the building regulations approval documents

NB It is not anticipated that this type of initial fire risk assessment will involve destructive inspection or that any samples or sections are removed to be taken away for retrospective fire testing or analysis.

[6] EN 13501-1 Fire classification of construction products and building elements - Part 1: Classification using test data from reaction to fire.
[7] The Building Regulations 2010 Statutory Instruments 2010 No. 2214 PART 8 Regulation 38

GENERAL APPROACH

The time taken for fire to spread from one flat, through windows and into the flat on the storey above via the windows, (after flash over), must be sufficiently long to allow for safe escape and ideally time for firefighting intervention.

External walls systems must therefore not unduly accelerate this process so it becomes unsafe for the occupants or so it has an impact on the means of escape from within the building. (The production of excessive smoke and toxic gases, for example). Likewise, fire spread should only result in limited secondary fires and those fires should occur at such a rate that occupants are not put at undue risk of harm or prevented from leaving the premises.

Many existing buildings have been constructed from materials that are non-combustible (A1) or that are of limited combustibility (A2), or a combination thereof. It is unlikely that older buildings will have an external wall system that has been subject to a large-scale test, such as BS 8414[8], and as a result have a classification as described in BR 135[9].

Fire risk assessors should therefore satisfy themselves, through recorded observations and the use of supporting documentation that existing external wall systems will only contribute to limited secondary fires and consequentially the growth of any secondary fires is tolerable for the building and occupants.

When considering the risk the external wall system poses, a fire risk assessor should, as outlined above, take a holistic view of the premises, and make judgement on the risk posed to the occupants in the context of all the contributory factors observed.

For example, location of the combustible external wall system, existing fire precautions within the premises (Active - Passive – Managerial), the height of the premises, means of escape configuration, facilities and access for the fire and rescue service, plus risks posed by external factors such as, arson or the proximity of combustible materials to the external walls. In addition, consideration must be given to the likely occupants of the building and their ability to evacuate the premises.

After assessment, the fire risk assessor should provide a risk rating for the external wall system which should be based not only the physical properties of the system (known or unknown), but on the building and occupancy as a whole.

[8] BS 8414 - Fire performance of external cladding systems
[9] BR 135 Fire performance of external thermal insulation for walls of multi-storey buildings, third edition

EXTERNAL WALL APPRAISAL

As outlined the risk assessment process should provide a judgement of the relative risk posed by the external wall system, from low to high. It is then possible to determine whether the risk is unacceptable and what actions are required to reduce that risk to as low as reasonably practicable. Low risk would be characterised by an external wall system of masonry construction with an accepted non-combustible rating. High risk would be a building of 11 m - 18 m with combustible ACM cladding of Category 3 (See note on ACM in
Step 2 below).

Guidance[10] accompanying the Building Regulations also offers the following advice regarding fire and external walls:

'Resisting fire spread over external walls'

The external envelope of a building should not contribute to undue fire spread from one part of a building to another part. This intention can be met by constructing external walls so that both of the following are satisfied.

a. The risk of ignition by an external source to the outside surface of the building and spread of fire over the outside surface is restricted.

b. The materials used to construct external walls, and attachments to them, and how they are assembled do not contribute to the rate of fire spread up the outside of the building. The extent to which this is necessary depends on the height and use of the building.

APPRAISAL PROCESSES

The following guidance provides the fire risk assessor with a methodology to reach a 'GO' or 'NO GO' decision as to whether a PAS 9980 survey is required.

FRAMEWORK FOR ASSESSMENT

The framework is based upon a scored system of applying the risk factors in order to determine whether the external walls on a particular building pose a high, medium or low risk. The total score will determine whether the external walls represent a high (RED), medium (AMBER) or low (GREEN) rating using a weighted system. The framework is used in conjunction with the score card shown at Annexe A and provides a quantified risk assessment to help guide the fire risk assessor towards a clear decision on Go or No Go for a PAS 9980 FRAEW.

The framework checklist is shown in Annexe A

[10] Approved document B Approved Document B Volume 1, 2019 edition

TWO STEP APPROACH - OUTLINE

The two-step approach helps determine, that the external wall system major components, no matter what construction should not unduly contribute to external fire spread, and if identified as A1 or A2 the building does not need a PAS 9980 survey. However, if the external wall system contains major components that are combustible, it then seeks documented supporting evidence as to whether fire spread would be rapidly propagated by the external wall system.

The two steps require information to be gathered regarding the external wall system major components, focused upon the whole construction. Components that are combustible should be documented with supporting evidence as to determine whether fire spread would be rapidly propagated by the external wall system. This may be in the form of reaction to fire testing, for example, where the external surface is Class B or better and core material and insulation is class A2 or better, or BS 8414 test evidence with an appropriate BR 135 classification is provided.

Once it has been established that the external wall system is either non-combustible (A1) or of an appropriate level of limited combustibility (A2) or of an appropriate level of combustibility, the assessor can make a risked based decision on the likely impact a fire involving the external wall system will have on the building, and what potential impact that may have on the occupants; determining if that risk is tolerable.

Should the assessor, not be able to determine the likely performance characteristics of the external wall system in a fire, an informed decision on the risk posed by the system becoming involved in a fire situation for the building in question, can also be made.

For example, where the undetermined combustible material is isolated to a small section of the noncombustible external wall system and it is located away from the means of escape and windows the risk to life could be regarded as low and therefore tolerable. However, should the external wall system be of unknown combustibility and make up a large percentage of the external wall system, the risk should be considered high.

If the risk level is determined as high, and therefore intolerable, as determined by the initial assessor, then a recommendation for a specialist FRAEW in accordance with the principles outlined in PAS 9980 should be made. The FRAEW will then inform the risk assessment process and any remediation or compensatory measures required to reduce risk to as low as reasonably practicable.

However, it is important to note, that interim measures to mitigate risks may be required before the findings of the FRAEW are provided. Measures may need to be introduced to reduce the potential of harm to occupants to an acceptable level.

STEP 1

A determination that the external wall system is non-combustible. The European Commission have published a document which lists products that have a Class A1 rating without need for testing[11]. This list provides performance validation that the materials listed make 'No contribution to fire'. Materials listed include clay bricks, concrete, cementitious renders, natural stone or slate and metals, all commonly used in external wall systems. Mineral wool insulation is also listed.

A building with external wall finishes of materials listed in this document can be considered to be Class A1 and therefore an assessor would need to consider any underlying insulation and any additional components such as.

- Fire stopping elements around penetrations and windows, cavity barriers, cavity wall insulation and sheet \ insulation materials.
- Spandrel panels
- Window infill panels
- Balconies
- Solar blinds and shading
- Other attachment to the external wall such as decorative or design features

Products that have an A2 classification, classified through testing, can be regarded as having no significant contribution to fire at any stage of the fire. It may be possible to determine the non-combustible or having no significant contribution to fire status of external wall systems via information and documentation such as:

- Building Regulation 38 information - as built fire strategy documentation, operation and maintenance manuals, primary test evidence, third party certification evidence, building control documentation, manufacturers information, BIM data, purchase orders from developers, specification documents and accepted documented performance criteria.
- Additional information on more recent builds may be available from the local authority building control website, via the building regulations approval documents.

STEP 2

If the external wall system is not Class A1 or A2, the fire risk assessor needs to determine the likely contribution the system will make to fire spread. In order to consider the potential impact, the external wall system may have on fire spread, it is important to determine the likely fire performance wherever possible. This should be done through an information gathering process, seeking documented evidence, when possible, of the makeup of the external wall system. This may be achieved through the information and documentation gathered from the list in Step 1.

It is generally regarded that a Class B external face with a class A2 insulation material should have no significant contribution to the spread of fire. A classification from BR 135 for a system that has been tested to BS 8414 will also provide a performance criterion for acceptance of the system.

N.B. It should be noted that the test evidence should match the external wall system as installed and accepted variations should be covered by an assessment in accordance with BS 9414[12] or via re action to fire certification with an extended application to cover the products as installed.

[11] Commission Decision 96/603/EC (OJ L 267 19.10.1966 p23) as amended by 2000/605/EC (OJ L 258 12.10.2000 p36) and 2003/424/EC (OJ L 144 12.6.2003 p9).- Publications Office of the EU (europa.eu)

[12] BS 9414 Fire performance of external cladding systems.

It is very common that for many buildings the information to determine the fire performance of the external wall system cannot be found. For all buildings, it is essential to adopt a risk-based approach.

Some buildings above 11 m may need remediation to reduce the risk to an acceptable level whilst other may not, and some buildings below 11 m may need remediation due to the specific risks encountered. It is important to note therefore, that it is the risk to life that an external wall system poses that is important, and that should be considered along with all the other mitigating factors within the specific building.

A classification of C or D is generally permitted on buildings below 11 m, and in some instances up to 18 m (see ADB for requirements and exceptions), however the occupants' ability to evacuate without fire and rescue service intervention should be a consideration. Should this be the case the fire risk assessor must follow a logical approach to assess the potential risk posed.

Following the above risk assessment methodology, fire risk assessors must consider:

The level of combustibility of the external wall system if known (If unknown, how can the level be determined?)

- Number of final exits and the number of alternative directions of escape.
- The extent location and orientation of the external wall system. Does it impact on means of escape, for example! If the external wall system is combustible with combustible insulation and has a continuous vertical orientation the risks of the system contributing to fire spread could be considered as high. (Not withstanding contrary test evidence).
- Size of airgaps in the system and how those have been fire stopped around openings compartment lines and floor levels.
- The height of the building, current building regulations for buildings 11 m or above require non-combustible external wall systems. (As stated previously this is a risk-based approach and not a compliance check against current building requirements).
- The occupancy of the building – including any commercial areas. Number of occupants and their level of ability to evacuate.
- Active systems within the premises – alarm detection – suppression and smoke control.
- The condition and maintenance of passive systems within the premises – fire doors ducts and dampers, fire stopping and compartmentation.
- The evacuation strategy for the building and the means of escape suitability. Management levels including maintenance, testing and servicing. Staffing levels and their training.
- Resident engagement and their compliance with expected fire precautions.
- Risk of ignition from external sources, e.g. arson or from a building in close proximity or internally via unprotected wall penetrations e.g. windows, vents, service cables or pipes.
- Provisions for fire and rescue services and access to the perimeter/highest levels.
- Potential for delamination or mechanical fixing failure and the impact falling debris may have on the fire and rescue service.

A specialist PAS 9980 FRAEW may be required where the expected performance of the external wall system cannot be determined or where the fire risk assessor after due consideration of the building as a whole, determines the risk to be high and intolerable.

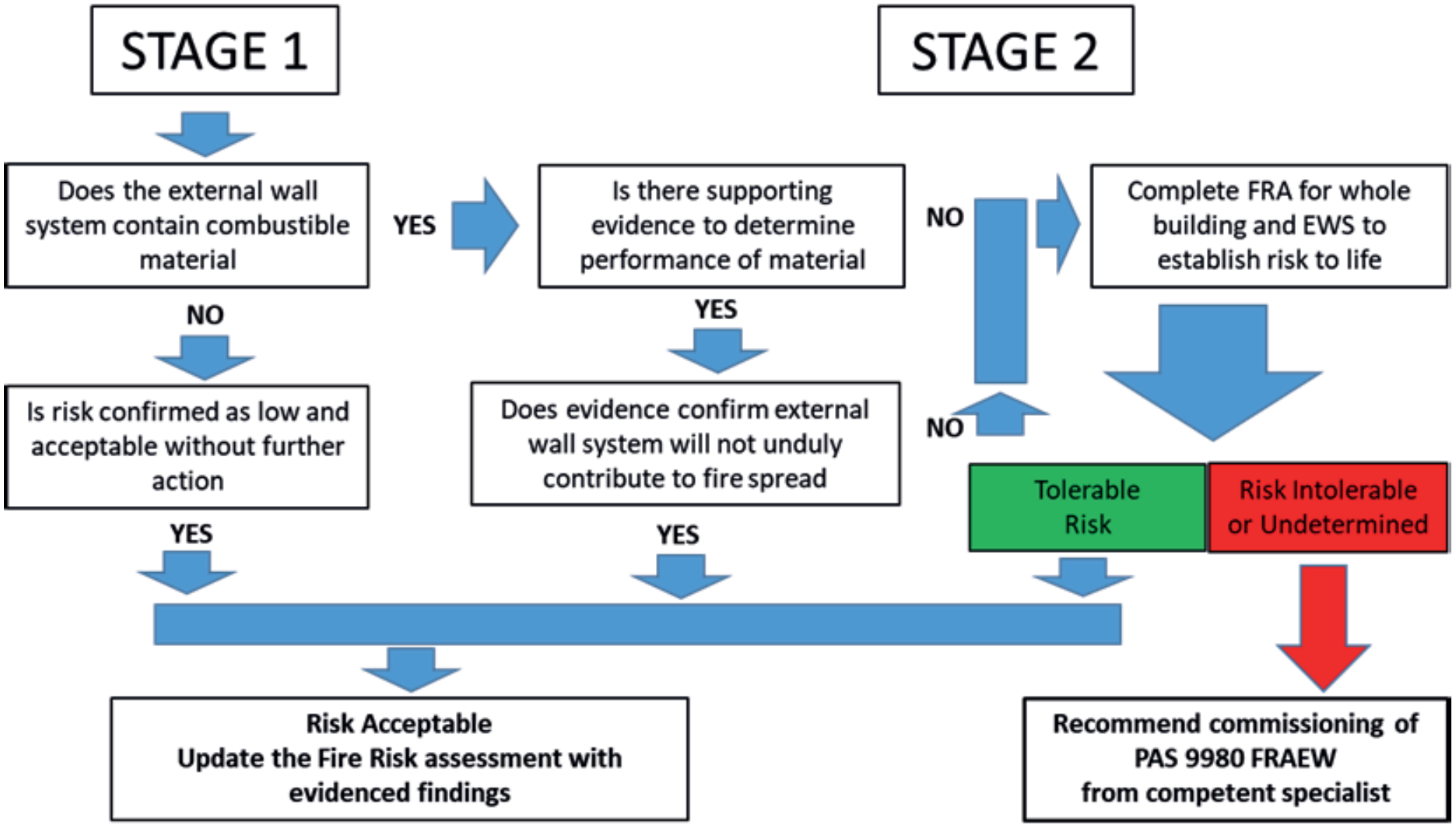
NB Any building with a significant covering of ACM cladding of category 3 should have the cladding removed as soon as practicable. Risk reduction measures should be implemented as soon as the hazard has been identified. The Responsible Person should inform the Fire and Rescue Service and seek their guidance, regarding the suitability of the risk reduction measures.

When considering additional added components to the external wall system it is important to note that – balconies, spandrel panels, solar shades, and additional decorative features can all contribute to external fire spread. For attachments to buildings over 11 m the components of the attachment should be Class A2 or better[13].

The Two Step checklist is shown in Annexe A

[13] Guidance on balconies can be found BRE Global Journal Article - Fire safety and balconies.docx
Green wall guidance can be found at Fire Performance of Green Roofs and Walls (publishing.service.gov.uk)

Initial Appraisal of External Wall Flow Diagram



Annexe A
Two Step Check List

This checklist is provided as a guide only for a risk-based assessment process of external wall systems, which can be applied to multi-occupied residential buildings below 18m.

Building to be assessed		**Description of the building**	
Fire Performance	**Elevation description – required where there are external variations**	**Evidence (add details)**	**Risk rating Low, Medium, or High**
EWS is determined as - Class A1 or A2		EC commission classification without testing or primary test or third-party certification	**Low**
Fire classification of the EWS in accordance with BS EN 13501-1; Class B and the insulation is Class A1 or A2		Primary test or third-party certification, manufacturer's documents.	**Low** (Other factors should also be considered)
Is it determined through documentation that the EWS has been classified to BR 135		Primary test or third-party certification	**Low** (Other factors should also be considered)
Insulation material – combustible Class B, C, D or E		Primary test or third-party certification, visual inspection, manufacturer's information/marks.	**Medium/High** (**Step 2** Other factors should also be considered)
Fire classification of the EWS in accordance with BS EN 13501-1. Class C, D or E		Primary test or third-party certification, manufacturers documents	**Medium/High** (**Step 2** Other factors should also be considered)
The EWS contains combustible material of unknown fire performance.		Observation	**High** (**Step 2** Other factors should also be considered)
External Wall Initial Evidence Summary			**Risk Rating**

Combustible EWS high and low-risk examples	Description	Score
1 Type of combustible material **Unknown material (5)** Expanded polystyrene (5) Composite or solid combustible, Class C, (3) D, (4) E (5) Limited contribution – Class B external face with Class B combustible insulation (3) Class B external face with non-combustible (A1) or limited combustibility (A2) thermal insulation (2)		
2 Height and position of combustible material Unbroken vertical - full height (4) Broken vertical – full height (4) Broken horizontal – full height (3) Broken vertical and horizontal – partial height (3)		
3 Extent/continuity of combustible material expressed as % of elevation – 50% to 100% (4) 25% to 50% (3) 5% to 25% (2) Decorative only - less than 5% (1)		
4 Proximity of combustible material to windows in common areas Windows fully surrounded (4) Windows with material above and below (4) Windows have material either side (3) Windows have material to one side only (3)		
5 Proximity of combustible material to windows (spandrel panels) of flat above Windows fully surrounded (4) Windows with material above and below (4) Windows have material either side (3) Windows have material to one side only (3)		
6 Proximity of combustible material to other openings/vents in walls to flats Opening fully surrounded in unbroken material (4) Opening fully surrounded in broken material (4) Opening has material directly above opening (4) Opening has material to either side within 1 m (3)		
7 Proximity of combustible material to other openings/vents in walls to common areas Opening fully surrounded in unbroken material (54) Opening fully surrounded in broken material (4) Opening has material directly above opening (4) Opening has material to either side within 1 m (3)		
8 Risk of ignition from external sources High (4) Medium (3) Low (2) Very Low (1)		
9 Insulation Type **Unknown (5)** Expanded polystyrene (5) Phenolic (PIR, PUR) – EPS - Polyester Class C or below (4) Class B Phenolic (3) Natural Wool (3) Mineral Wool (1)		
10 Risk of ignition from adjacent buildings < 1 m (4) > 3 m (3) > 6 m (2) > 10 m (1)		

11 Presence of a cavity (with combustible material present) **Unknown (5)** **Cavity with unknown fire stopping/cavity barriers (4)** Cavity with limited assurance of fire stopping/cavity barrier detailing. (3) Cavity with assurance of fire stopping/cavity barrier detailing installed (2)		
12 Height of building 5 storeys (4) 4 storeys (4) 3 storeys (3) 2 storeys (2) 1 storey single escape route (2) 1 storey independent alternative escape route (1)		
13 Number of individual units 20 and above units (4) 10 to 19 units (3) 4 to 9 units (2) 2 or 3 units (1)		
14 Egress – vertical and horizontal *see note Very poor (5) Poor (4) Fair (3) Good (2) Very good (1)		
15 Fire Suppression/Fire Service facilities *see note Very poor (5) Poor (4) Fair (3) Good (2) Very good (1)		
16 Installed Fire Protection *see note Very poor (5) Poor (4) Fair (3) Good (2) Very good (1)		
17 Speed of evacuation *see note Very poor (5) Poor (4) Fair (3) Good (2) Very good (1)		
18 Building management presence/resident engagement *see note Very poor (5) Poor (4) Fair (3) Good (2) Very good (1)		
Combustible External Wall System Initial RiskS ummary		**Risk Rating** (average of all scores recorded)

This template and scoring system are a generic guide only. It is not anticipated that it will cover every building and every EWS with ultimate accuracy. It is therefore expected that fire risk assessors will make competent assessments based on the evidence gathered, to enable them to make accurate entries into the templates. In addition, during the site visit, an assessor may need to adjust risk ratings according to the actual risks presented and incorporate any mitigating factors which may reduce risk.

NB A competent fire risk assessor will be aware of their limitations and should therefore seek competent assistance, when required to inform their decision making. It is not anticipated that assessors will default to recommending a PAS 9980 survey without undertaking reasonable steps to determine the risk posed by the EWS. Neither is it expected that caveats are automatically used within the report, to avoid risk assessing the external wall system.

Scoring System and Recommendations
Each completed score counts towards the total. Add up the scores for all sections completed and divide by the total number of questions answered, to determine an average score.

5 = Very High Risk – Risk mitigation measures as appropriate/recommendation for PAS 9980 FRAEW

4 = High Risk – Risk mitigation measures as appropriate/recommendation for PAS 9980 FRAEW

3 = Medium Risk – Risk mitigation if required and FRA updated

2 = Low Risk – FRA updated

NB 2 or more unknowns scoring a 5, should elevate the risk rating to 4 = high risk, regardless of the final average score.

Guidance notes*

11 Cavity Barriers and Insulation
One of the most difficult areas to assess without intrusion, cavity barriers, represent a challenge during initial assessment. Evidence should be sought from the responsible person or other persons familiar with the construction of the premises; for example, building or maintenance contractors. In addition, in all buildings at or near internal and external wall junctions (doors, windows, vents) or at pipe, cable or similar penetration points, observations may be possible. Cavity insulation materials added in a post construction phase may also be recalled or recorded. If in doubt record as Unknown and/or suggest a minor intrusive survey.

14 Egress – vertical and horizontal - key things to consider
The number of exits and the separation between multiple exits.
The EWS material around main or secondary exits
Travel distance to place of relative safety and to a place of ultimate safety
The suitability of the escape route from the upper floors

The number of stories and number of people that would need to evacuate from each/exit widths and capacity Smoke control in escape corridors and stairwells including any automatically activated systems. Systems where installed are inspected, tested, and maintained

15 Fire Suppression/Fire Fighting Facilities – key things to consider

The location of the nearest fire service water hydrant
The distance of hardstand from the building and its accessibility for fire service attendance/fire engine.
Accessibility for the fire service around the site and to each side of the building.
In buildings below 18 m it is not anticipated that internal provisions such as firefighting shafts or rising mains will be present to aid firefighting. This absence should not be regarded as a negative.
The absence of sprinklers should not be a negative, however where sprinklers are installed to the appropriate standard throughout each unit or in underground car parks, it should be seen as a positive. Partial suppression systems in risk areas of flats such as the kitchen, should also be considered a slight positive.
Systems, where installed, are inspected, tested, and maintained.

16 Installed Fire Protection - key things to consider

Level of passive fire protection. Fire stopping of service penetrations is appropriate and maintained.
Fire doors in common areas are in good condition and there is appropriate inspection and maintenance.
Fire separation is maintained through compartment walls and floors, through large voids such as above ceilings and in loft areas.

17 Speed of evacuation - key things to consider

The evacuation strategy for the building
The level of smoke and fire detection within the individual units and throughout the building
If there is an occupant warning system compliant with BS 8629 for use by the fire and rescue service
The number of storeys above ground
The number of likely occupants and their ability to self-evacuate
The length of corridors
Systems, where installed, are inspected, tested, and maintained

18 Building management presence/resident engagement – key things to consider

The level of onsite presence. Is there a 24/7 onsite presence, trained to aid safe evacuation
A part time presence of trained staff may be seen as slightly positive.
Tenants are regularly engaged in fire safety awareness with sharing of information/guidance and there is good assurance of resident cooperation.
Escape routes are clear of combustible materials and ignition sources with a good system for esidents to report incidents.
Recorded incidents of fires/near misses or reported fire risks are rare.

Annexe B
Common Types of Combustible External Wall Systems and Decorative Cladding

Aluminium (metal) Composite Material Panels
Metal composite panels are formed with two sheets of thin metal, sandwiching a core material.
This core material can be made of non-combustible material or commonly used is a combustible Polyethylene, either with or without fire retardants added.

The following information was originally published in the now withdrawn Government Guidance Document - Advice for Building Owners of Multi-storey, Multi-occupied Residential Buildings – and although offers insight into ACM behaviour in fire, it must also be treated with caution given ACM is now prohibited in some circumstances.

ACM cladding (and other metal composite material cladding) with A2 filler (category 1) can be safe on residential buildings at any height with foam insulation or stone wool insulation, if materials have been fitted and maintained appropriately, including provision for adequate fire breaks and cavity barriers.

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

ACM cladding (and other metal composite material cladding) with fire retardant polyethylene filler (category 2) used with non-combustible insulation (e.g. stone wool) can be safe on residential buildings at any height, where materials have been fitted and maintained appropriately, including provision for adequate fire breaks and cavity barriers.

High Pressure Laminate (HPL) Panels
HPL panels are usually made by taking sheets of wood or paper fibre, layered together in various thicknesses, which are then bonded under heat and pressure with a resin binder to form a ridged panel. Some HPL panels, will contain chemical fire retardants to provide better reaction to fire performance under testing. It is important to determine what specification of panel is on the building as they can vary significantly, and there are some instances of product substitution. i.e., what was specified may not be what was installed?

As with ACM above the withdrawn advice offered insight into HPL.

The Expert Panel has received no evidence to-date that there is a public safety risk arising from adequately installed (including the installation, extent and arrangement of adequate cavity barriers and fire stopping) and maintained systems involving Class B-s1,d0 HPL panels and stone wool insulation.

Building owners who have Class C-s3, d2 or D-s3, d2 HPL panels on residential buildings under 18m should also consider the risk from fire spread and consideration should be given to ensuring the overall intent of Requirement B4 is being met irrespective of building height.

The expert panel has not been presented with any evidence of a HPL panel of any class achieving the performance criteria set out in BRE 135 when used in combination with combustible insulation. Where existing residential buildings have any HPL panels in combination with combustible insulation, they (the RP) should immediately seek professional advice and take appropriate remedial action.

PVC and Composite Cladding

Made from plastic (PVC or uPVC) or Vinyl and normally shaped into a decorative profile with a variety of colours. Some variations do have chemical fire retardants, however fire performance in testing normally results in a C or D fire rating.

Some composite shiplap cladding systems are on the market with a B classification. These are made of commonly wood derivatives, plastic, and additives such as colour, binders and fire retardants.

These materials can be made to replicate wood or stone/concrete finishes and therefore it is important to determine what material is actually on the building and not what the appearance suggests it to be.

Timber Cladding

Timber cladding will contribute to external fire spread, although fire performance of timber is reasonably predictable with substantial timbers, cladding thicknesses can vary as can their performance. It can achieve class B fire performances when treated with fire retardants, however it is important to understand that weathering can leach factory applied chemical fire retardants and the initial claimed performance can be compromised.

It is important therefore to establish the potential performance and consider its location and potential to contribute to accelerated flame spread.

Renders

Render systems typically do not contribute to external fire spread. However, some rendered external wall systems may not be non-combustible and achieve an A1 classification, given they are composites and may contain binding materials or synthetic materials that are combustible. Large scale system testing evidence such as BS 8414 may not be available and although likely performance would be of very limited combustibility, the system may perform worse. Fire performance could be affected by the insulation material beneath the outer surface or via the painted surface. (See below) Rendered systems over polystyrene insulation should be considered as high risk.

Paint Finishes

Paints and coatings can have a significant impact on spread of flame. Factory applied or first coats shouldn't contribute to rapid spread of flame, as they should have good adhesion nd be thin applications. It is however important to note that tested systems should have details of the paint or coating finish which should include test evidence for all colours in the range.

Multilayer paint applications on existing surfaces can contribute to rapid flame spread. If the paint is not well adhered and there are multiple redecoration coats. Heat from a fire can delaminate the paint and thus provide readily ignitable fuel. This may cause burning sheets of paint to fall from the building and also contribute to rapid vertical flame spread.

It is possible to determine if there is a multilayer paint issue through some simple on-site tests and a competent expert can provide guidance. NB products that claim to upgrade paint finishes should have supporting test evidence which must provide evidence of improving the worst-case scenario on a substrate that reflects the onsite application i.e. the product must have been applied to a painted finish with a lower performance and improved that performance. e.g. improved a class D finish to a B class. Products that are not shown to upgrade performance should not be considered.

Built up systems with non-combustible outermost surfaces

Solid Metal Panels – Brick Slip – Concrete panels – Ceramic Tiles

Built up systems must have fire stops detailed as per the design specification. Where this information is missing/ not available, the fire stops provision must maintain compartmentation. Therefore, fire stop must be installed where compartment lines occur in the walls and floors. Any built up system with a cavity must have cavity barriers installed.

Mounting materials used may also influence the performance, along with the backing material, substructures/ sheathing boards. Consideration must be given to the entire system, as installed, and the evidence available to support likely performance in a fire.

Sandwich panels with combustible cores

The insulation material used between the metal outer sheets, will determine the risk posed. In particular the exposure of that material to fire. Edge and jointing details will be key to establishing if the core could become involved.

Table 1 - European classification and fire performance indicators

A1	No contribution to fire at any stage of the fire
A2	No significant contribution to fire at any stage of the fire
B	Very limited heat release and flame spread during the fire growth stage
C	Limited heat release and flame spread during fire growth stage of a fire
D	Will resist small flame attack for longer at the beginning of a fire and exhibit sufficiently delayed and limited heat release during growth stage of the fire
E	Will resist only a small flame attack in the beginning of the fire
F	Unacceptable fire behaviour

Table 2 - European classifications and example products.

Euroclass	Flashover	Example Materials	British Standard*
A1	No	Concrete Brick most rock and mineral wool	Non-combustible
A2	No	Plasterboard, cement particle board some rock and mineral wool (foil faced)	Limited combustibility
B	No	Painted gypsum board, some FR MDF, some birch plywood	O
C	Yes 10 - 20 mins	Most FR MDF, some Plywoods, Phenolic foam foil faced	1
D	Yes 2 -10 mins	Expanded Polystyrene type A, polyisocyanurate foam (foil faced), extruded polystyrene	2
E	Yes < 2 mins	Polyurethane foam (laminate faced), wood fibre board, polyisocyanurate foam sprayed	Unclassified – no performance determined
F	Yes early failure	Expanded polystyrene type N	Unclassified – no performance determined

- No direct comparison can be made to the Euroclass system