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

Contents

1. Background

Context

1.1. Since the tragedy at Grenfell Tower, the government's Building Safety Programme has predominantly focussed on identifying and advising on short-term interim and remedial measures for existing high-rise residential buildings with Aluminium Composite Material (ACM) cladding, while developing wider reforms for the future building safety regulatory system.

1.2. In support of the Building Safety Programme, the Independent Expert Advisory Panel (the Expert Panel) has issued advice on the measures building owners should take to review ACM and other cladding systems to assess and assure their fire safety, and the potential risks to residents of external fire spread. The Expert Panel has also issued advice on other key fire safety risks that need to be managed appropriately.

1.3. 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.

1.4. This advice represents the Expert Panel's position on the action that building owners should be taking immediately to address the risk of fire spread from unsafe external wall systems, and also covers other issues that have been previously the subject of 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.

1.5. Following recent events, the Expert Panel has significant concerns that consideration is not routinely given to Requirement B4 of Schedule 1 to the Building Regulations (on external walls resisting the spread of fire), particularly in circumstances where the guidance in Approved Document B is less specific. Requirement B4 is clear and requires that "the external walls of the building shall adequately resist the spread of fire over the walls and from one building to another, having regard to the height, use and location of the building." **The need to assess and manage the risk of external fire spread applies to buildings of any height**.

1.6. The government has announced its intention to introduce a Fire Safety Bill which will clarify that building owners and managers of multi-occupied residential premises of any height must fully consider and mitigate the risks of any external wall systems and fire doors in discharging their duties under the Fire Safety Order. **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.**

1.7. Building owners[1] 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. **We strongly advise that building owners should already be actively ensuring the safety of residents, and not wait for the regulatory system to be reformed.**

1.8. Expert Panel advice initially focussed on the risk to high-rise residential buildings of 18m or more to the height of the top occupied storey (as per Diagram D6 of Approved Document B 2019 edition). The 18m threshold is established in the guidance to the Building Regulations and is the point at which additional fire safety provisions are provided for. It was therefore extremely important to ensure that these buildings did not have issues with their design and construction which could lead to significant external fire spread.

1.9. Although the Expert Panel's advice does not explicitly cover all types of external wall systems for residential buildings below 18m, the risk of external fire spread should be considered as part of the fire risk assessment for these buildings. The fire risk assessment should take in to account a number of factors other than height and material type, including the vulnerability of residents, location of escape routes, and the complexity of the building. Those carrying out fire risk assessments will want to consider the implications of this Advice Note for residential buildings below 18m. Remedial actions may be required in buildings below 18m where there is a risk to the health and safety of residents. This Advice Note should be used to inform the fire risk assessment and resulting remedial actions.

[1] For the purposes of this document the term 'building owner' means the owner of the building or the person, group, company or other entity on whom duties are imposed or enforcement action could be taken under the following legislation: (i) the Housing Act 2004 in relation to certain hazards; or (ii) the Regulatory Reform (Fire Safety) Order 2005 to ensure the safety of occupants of a building from fire (see Articles 3 & 5 of Regulatory Reform (Fire Safety) Order 2005 for those with duties).

1.10. Existing residential buildings which have external wall systems that contain combustible materials may not meet an appropriate standard of safety and could pose a significant risk to the health and safety of residents, other building users, people in the proximity of the building or firefighters. External walls of residential buildings should not assist the spread of fire, irrespective of height. It is important therefore to understand both the materials used in the external wall construction and whether the entire system has been designed, installed, and, maintained appropriately.

1.11. While the use of combustible materials within or attached to external walls of residential buildings below 18m is not currently expressly prohibited, it has been a legal requirement since the 1980s to consider the risk from fire spread. This is in accordance with the functional requirements of the Building Regulations. It is also a requirement of the Fire Safety Order that any purpose-built block of flats – regardless of height – should have an up to date fire risk assessment and appropriate fire precautions in place.

1.12. As with all functional requirements in Schedule 1 of the Building Regulations, judgement should be used to consider and meet the overall intent of Requirement B4 and not just to comply with additional, more detailed guidance in the Approved Documents. This requirement applies to buildings at any height undertaking construction work.

1.13. Although the Expert Panel believes it was right to focus initially, on a risk basis, on residential buildings of 18m or more, the Panel continues to have significant concerns about levels of design competence and construction workmanship, in the construction of buildings. The Expert Panel is also concerned about the ability of the construction and property industries to manage the risks on existing buildings effectively. Evidence from recent fires and from industry continues to support this view.

1.14. The Expert Panel believes the building owners and the wider property and construction industries need to respond more urgently to the safety issues being clearly identified. This is of particular concern given the significant hazard posed by ACM cladding (and other metal composite material cladding) with an unmodified polyethylene filler. The safety of residents should always be an urgent concern.

1.15. The Expert Panel is now updating its advice, due to the increasing concerns that the industry is not acting with due haste to remediate buildings with category 3 ACM. **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[2] at any height with any form of insulation.**

1.16. Following the Grenfell fire, the government set up a screening programme[3] 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. We expect building owners who suspect they have ACM (or other metal composite material cladding) with an unmodified polyethylene filler to submit samples for testing.

1.17. For new residential buildings of 18 metres or more (or where building work is carried out on existing residential buildings of 18 metres or more), the government has introduced an effective ban, through an amendment to Regulation 7 of the Building Regulations 2010, on the use of combustible materials in external walls and specified attachments (including balconies, etc.). The ban limits the use of materials in the external wall and specified attachments to products achieving a classification of Class A1 or A2-s1,d0, subject to a number of specific exceptions. Details can be found in the Building (Amendment) Regulations 2018 (SI 2018/1230).

1.18. The government has also taken action to address the risks arising from balconies in the revisions to the Building Regulations introduced in December 2018. This requires balconies on new residential buildings 18m and over to be made of non-combustible materials (i.e. materials classified as A1 or A2-s1, d0).

1.19. The Expert Panel has had a regular dialogue with industry on its advice and welcomes ongoing industry feedback to ensure the safety of all residents. Any such feedback on this Advice Note from industry can be provided by email to: ieap@communities.gov.uk.

1.20. The government intends to put out a call for evidence on whether there are robust approaches to prioritising the risk of residential buildings, using factors other than height. We would welcome contributions from building owners and industry to that debate to ensure that those buildings with the most significant safety risks can be prioritised.

[2] For the purposes of this note, a 'residential building' has the meaning set out in paragraph 2.5 below.
[3] Further information on the screening programme can be found at https://www.gov.uk/government/publications/safety-checks-on-private-residential-blocks

Summary

1.21. The key points of the Expert Panel's advice can be summarised as follows:

1.21.1. ACM cladding (and other metal composite material cladding) with unmodified polyethylene filler (category 3 in screening tests) presents a significant fire hazard on residential buildings at any height with any form of insulation and action to remediate unsafe wall systems and remove unsafe cladding should be taken as soon as possible. Refer to section 4 for further advice.

1.21.2. 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. Refer to section 4 for further advice.

1.21.3. 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. Refer to section 5 for further advice.

1.21.4. Building owners with HPL systems of any class used with combustible insulation 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) should seek professional advice and take appropriate remedial action. Refer to section 5 for further advice.

1.21.5. 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 in line with the advice in section 3 of this Advice Note.

1.21.6. The risk of external fire spread should be considered as part of the fire risk assessment for all residential buildings, irrespective of height. The fire risk assessment should take in to account height, materials, vulnerability of residents, location of escape routes, and the complexity of

the building. The explicit remediation advice provided in this advice note should be used to support the fire risk assessment and remedial actions may be required in buildings below 18m where there is a risk to the health and safety of residents, other building users, people in the proximity of the building, or firefighters.

1.22. 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.

2. Expert Panel Advice - Principles

2.1. This advice is intended to assist building owners in assessing the safety of residential buildings. This advice does not replace or supersede requirements under the Building Act 1984, Housing Act 2004 or Regulatory Reform (Fire Safety) Order 2005.

2.2. Building owners are responsible for the safety of their buildings. They may currently be the 'Responsible Person' under the Regulatory Reform (Fire Safety) Order 2005. In future they are likely to be legal duty holders following the implementation of the proposals in the Hackitt Review. The Expert Panel's view is that building owners should not wait for regulatory changes to take action to ensure the immediate safety of residents.

2.3. It is a legal requirement for a responsible person (as defined within the Regulatory Reform (Fire Safety) Order 2005) to have an up-to-date fire risk assessment and to take general precautions for buildings within the scope of the Regulatory Reform (Fire Safety) Order 2005. 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.

2.4. Where the term 'residential building' is used in Expert Panel advice this is intended to cover all buildings that include more than one dwelling and all buildings that have a room for residential purposes as set out in the Building Regulations 2010. The Expert Panel's advice also applies to overnight patient accommodation (e.g. hospitals).

2.5. Where the advice provided below makes reference to height thresholds, the height of the top occupied storey should be measured as per Diagram D6 of Approved Document B 2019 edition.

2.6. This advice is not intended to be exhaustive and there will be other building safety matters that need consideration in respect of particular premises. Building owners should take appropriate steps to assess the building specific risks.

2.7. It is necessary to consider the risk from fire spread to health and safety in relation to a residential building regardless of height. When considering the risks building owners should consider the full range of risk factors. The Expert Panel's view is that the vulnerability of occupants is a significant factor in assessing this risk and, in some instances, may be more significant than building height.

2.8. Building owners or their appointed competent professional advisors(s) should check that the external wall systems on their buildings meet an acceptable

standard of safety and do not contribute to the external spread of fire, irrespective of building height. Spandrel panels (including window and infill panels) are also part of the external wall of the building and should be checked. Balconies, and risks arising from their construction materials, geometry and use, must also be considered.

2.9. Where building owners require further technical advice it must be provided by a competent person, as this is critical for ensuring that an appropriate level of safety is achieved. In some cases, the analysis needed may be straightforward, in which case a competent fire safety professional with adequate experience in fire safety and knowledge of external wall systems may be used. In others, it will be more complex and require advice from a qualified engineer with relevant experience in fire safety, including the fire testing of building products and systems, such as a Chartered Engineer registered with the UK Engineering Council by the Institution of Fire Engineers.

2.10. The Expert Panel is aware that the Royal Institution of Chartered Surveyors (RICS), The Building Societies Association (BSA), and UK Finance has developed a cross-industry approach to enable assessments of external wall systems in high rise blocks of flats to be undertaken for mortgage lending valuation purposes. Further information on this approach is available on the RICS website.

3. Reviewing the Safety of External Wall Systems

Introduction

3.1. Building owners are responsible for ensuring the safety of their buildings. Building owners should have an up to date fire risk assessment and understand the construction of external walls and the potential performance of those wall systems in the event of fire.

Understanding the construction external wall systems

3.2. Existing residential buildings which have external walls that contain combustible materials may not meet an appropriate standard of safety and could pose a significant risk to the health and safety of residents, other building users, people in the proximity of the building or firefighters. External walls of residential buildings should not assist the spread of fire, irrespective of height.

3.3. It is important therefore to understand both the materials used in the external wall construction and whether the entire system has been designed, installed, and, maintained appropriately. This is applicable to building owners of buildings irrespective of height.

3.4. Building owners should check their records for information about the external wall systems used on their buildings. 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. The potential that there may be incorrectly specified, or substituted products installed on tall residential buildings should not be ignored. If this information is not available, building owners may wish to contact the original construction contractor or architect and/or seek advice from a competent professional who will be able to advise further on what steps to undertake – as part of a comprehensive fire risk assessment for the building or as a more bespoke assessment of the external wall system where a recent fire risk assessment has not addressed this.

3.5. It should also be possible to obtain advice and information from the product manufacturers and/or contractors about the fire performance, correct installation and maintenance of materials used.

3.6. If building owners are unable to obtain written information on the external wall system, then they should seek the advice of a building surveyor or similar competent person with suitable experience of high-rise residential buildings. They can advise building owners on the construction of the external wall system of the building and the appropriate next steps.

3.7. Where building owners suspect they have an ACM (or other metal composite material cladding) with an unmodified polyethylene filler, they can make use of the government's free screening programme to confirm the category of the core material.

Understanding the risk posed by external wall systems

3.8. 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 follow the advice below. Building owners of residential buildings below 18m should consider whether they need to follow some or all of these steps to inform their fire risk assessment.

3.9. It is important to ensure that the external wall system installed on a residential building meets an acceptable standard of safety, irrespective of height. Building owners will want to satisfy themselves and their residents that buildings are safe. Diagram 1 below sets out a summary of the steps that should be followed in assessing the external wall construction of a multi-storey, multi-occupied residential building.

3.10. The Expert Panel's view is that the clearest way to demonstrate that materials in the external walls system do not present a risk of fire spread is to confirm that they are made using materials that achieve Class A2-s3,d2 or better, previously referred to as limited combustibility. Where this is the case building owners should still take reasonable steps to confirm that the system is installed and maintained appropriately, including the correct design and insulation of cavity barriers and fire stopping.

3.11. Building owners should seek professional advice when combustible materials have been identified in the external wall system. It may not always be necessary to replace some combustible materials within a wall system subject to the advice of a competent adviser, test evidence and the information provided in Regulation 7 of the Building Regulations.

3.12. The assessment of the external wall should consider the materials used, the building form, the geometry of the external wall and the overall design of the external wall system. This includes spandrel panels and infill wall panels (specific advice on this is in section 6 below). This should also give consideration to internal fire safety measures (i.e. whether adequate compartmentation is in place, means of suppression of fire, fire alarm systems, smoke control systems, etc.).

3.13. Assessments of the external wall should also include assessment of the potential impact of any attachments to the external wall. Particular attention should be paid to any risk of fire spread from balconies and other attachments containing combustible materials. Further advice on this is included in section 7 below.

3.14. Some products in existing residential buildings are likely to have achieved Class B-s3,d2 or Class 0. These classifications are not on their own evidence that a system is safe. The combustibility of the material beyond the direct surface of the product may contribute to fire spread of the external walls of buildings and therefore should be included in the assessment as a whole (such as the core materials of metal composite panels or sandwich panels). It may be appropriate, subject to expert advice and supported by test evidence, to retain cladding panels achieving class B-s3,d2 if any filler material within the products and any insulation material achieves Class A2-s3,d2 or better.

3.15. Where it has been determined that the external wall system does not meet an appropriate standard of safety, building owners should inform their local Fire and Rescue Service and put in place appropriate short-term interim measures as set out in section 11 on Interim Measures below. For the avoidance of doubt, the removal of unsafe material and action to remediate unsafe wall systems should be carried out as soon as possible.

Gathering information on test evidence

3.16. External wall systems on existing buildings may incorporate insulation products, filler material, etc. which do not meet Class A2-s3,d2 or better (previously referred to as limited combustibility) but which has been subjected to a successful BR135 classification following a BS 8414 test. External wall systems rely upon correct design detailing and construction of cavity barriers, fire stopping and in some cases external renders to inhibit fire spread. Building owners should seek professional advice on whether the external wall has been installed correctly, and as per the BS 8414 test, and maintained as recommended by the manufacturer/supplier.

3.17. BS 8414 tests that have led to a BR135 certification should be available from manufacturers and can sometimes be accessed via their websites. The Building Research Establishment (BRE) has published a list of BS 8414 tests it has conducted that have achieved BR135 certificates and this can be found here - www.bre.co.uk/regulatory-testing.

3.18. Building owners should seek the advice of a Chartered Engineer registered with the UK Engineering Council with suitable experience in the fire safety of high-rise residential buildings where a system that should have had a BR135 certificate prior to installation does not have one. They can advise on next steps; this may include carrying further large-scale tests or forming an opinion on the risk posed to occupants based on available evidence.

3.19. Where the system, or any product in the system, is to be assessed in lieu of carrying out a specific test, this should be carried out by a Chartered Engineer registered with the UK Engineering Council with suitable experience in the fire safety of high-rise residential buildings. The assessment should be conducted in accordance with the relevant standard for extended application for the test in question and in accordance with the principles set out in BS EN 15725. The assessment should include details of the test evidence that has been used to support the assessment. The assessment should consider both the thermo-dynamic and thermo-mechanical performance of the materials, products and system.

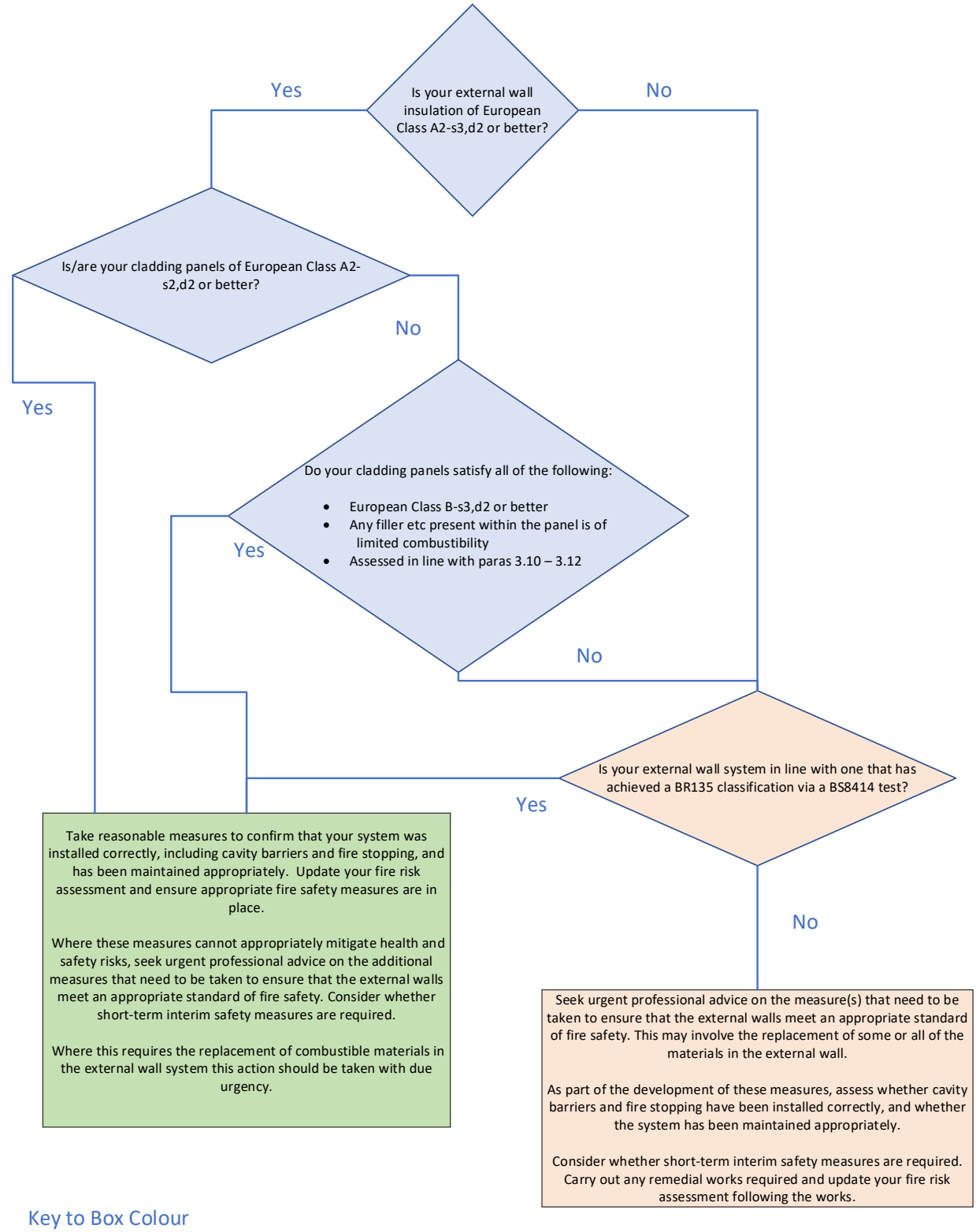
3.20. Further information on this can be found in the Passive Fire Protection Federation's Guide to undertaking technical assessments of the fire performance of construction products, 2019.

Where to find further information on the suitability of products

3.21. The government conducted several BS 8414 tests on ACM cladding in combination with different insulation systems in 2017. The results of the tests are set out in the section on ACM below and the test reports can be found on the government website. Advice specific to ACM cladding panels is provided in section 4. The government has also conducted a BS 8414 test on an HPL Class B panel with non-combustible insulation and specific guidance on HPL can be found in section 5 below.

3.22. 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.

Diagram 1 – Process chart for assessing external wall systems



Key to Box Colour

Can be carried out by a Building Surveyor with suitable experience of fire safety in high-rise residential buildings

Can be carried out by a Fire Safety Professional with suitable experience of the fire safety of high-rise residential buildings

Requires a Chartered Engineer with suitable experience of fire safety in high-rise residential buildings

4. Aluminium Composite Material Panels

4.1. In light of early concerns about the role cladding played in the Grenfell Tower fire, building owners were asked to identify residential tower blocks over 18 metres in height with Aluminium Composite Material (ACM) cladding. Initial screening tests were made available, at no cost to building owners, to identify whether cladding was of 'limited combustibility'.

4.2. Alongside initial screening tests, MHCLG issued advice on short-term interim fire safety measures building owners should take to ensure the short-term safety of their residents; in particular arranging a visit from the local fire and rescue services (FRS). These short-term measures were put in place to allow building owners to assess their external wall systems, and if required remove any unsafe materials and to take action to remediate unsafe external wall systems as soon as possible to ensure resident safety. The Expert Panel remain concerned over the length of time taken to remediate unsafe external wall systems and building owners should not be relying on short-term interim measures over an extended period of time.

4.3. On the basis of the screening test results, and on advice from the Expert Panel, the government commissioned a series of large-scale system tests in 2017, testing how different types of ACM panels behave in a fire with different types of insulation. The British Standard test used for the large-scale tests (BS 8414) is a way of demonstrating that a wall system meets Building Regulations guidance for residential buildings over 18m. Seven tests were undertaken in priority order, taking into consideration which systems were likely to present most risk, so urgent advice could be provided to building owners.

4.4. A summary of the results and advice for building owners is set out in this advice.

Key findings

4.5. The Expert Panel initially issued advice stating that:

4.5.1. ACM cladding with unmodified polyethylene filler (category 3) presents a significant fire hazard on residential buildings over 18m with any form of insulation.

4.6. We are now updating our advice, due to the increasing concerns that the industry is not acting with due haste to remediate buildings with category 3 ACM. The Expert Panel's advice is that:

4.6.1. 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.

4.7. The Expert Panel continues to believe that:

4.7.1. ACM cladding with fire retardant polyethylene filler (category 2): presents a notable fire hazard on residential buildings over 18m when used with rigid polymeric foam based on the evidence currently available.

4.7.2. 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.

4.7.3. 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.

4.8. In all instances where ACM is present in buildings above 18m, building owners have been advised that they should seek professional advice on what further steps to take with respect to their cladding system based on the specific circumstances of their building, and to satisfy themselves that their building is safe.

Advice for building owners on the ACM large-scale wall system tests

4.9. The government initially commissioned six tests on the advice of the Expert Panel, testing three types of ACM cladding with two commonly used types of insulation; and published the accompanying explanatory note on 20 July 2017. A seventh test was subsequently commissioned, to test one of the types of cladding with a third kind of insulation.

4.10. In all other respects, all tests were specified and constructed according to the guidance supporting the Building Regulations – including fire stopping between floors and the required cavity barriers in place. The detailed technical specification for each of the tests is available on the Building Safety Programme webpage.

4.11. Results of the seven tests, and accompanying advice for building owners, are available on the Building Safety Programme webpage, and are summarised in the table below.

Aluminium Composite Material (ACM) with…	Insulation		
	PIR Foam	Phenolic Foam	Stone Wool
Unmodified polyethylene filler (Cat. 3 in screening tests)	Test 1 failed Report	N/A	Test 2 failed Report
Fire retardant polyethylene filler (Cat. 2 in screening tests)	Test 3 failed Report	Test 7 failed Report	Test 4 passed Report
Limited combustibility filler (Cat. 1 in screening tests)	Test 5 passed Report	N/A	Test 6 passed Report

4.12. Based on the Test 1 and Test 2 results, the Expert Panel's advice is that they do not believe that any wall system containing an ACM category 3 cladding panel, even when combined with limited combustibility insulation material, would have met Building Regulations, and are not aware of any tests of such combinations meeting the standard set out in BR135. Wall systems with these materials therefore present a significant fire hazard on residential buildings of any height.

4.13. Tests 3 and 7 both failed the test, which means they did not resist the spread of fire over the wall to the standard set out in BR135. The Expert Panel's advice is that, based on these test results, and in the absence of any other large-scale test evidence, it is unlikely that any combination of ACM cladding with fire retardant polyethylene filler (category 2 in screening tests) and rigid polymeric foam insulation would pass the BS 8414 test. This combination of materials therefore presents a notable fire hazard on residential buildings over 18m. It is also necessary to consider the risk from fire spread of these wall systems to health and safety in relation to a residential building of any height.

4.14. Test 4 passed the test, which means the wall system resisted the spread of fire over the wall to the standard set out in BR135. The Expert Panel's advice is that this result shows one way in which compliance can be achieved and offers an indication of how remedial works could be specified for those buildings that have been found to have problems.

4.15. However, it is important to note that there are many different variants of this cladding and insulation and it is possible that products from different manufacturers may behave differently in a fire. The composition of ACM panels with fire retardant polyethylene filler can vary between manufacturers. The average of the calorific values of the fire retardant panels used in the test were 13.6 MJ/kg. Building owners with this combination of materials should consult their screening tests to check how their category 2 values compare. A higher value will indicate greater combustibility than the panel used, and vice versa.

4.16. Equally, it is important to note that materials may have been fitted or maintained differently, to how the tests were specified and constructed, which can affect the safety of the cladding system. Fixing details and the provision of cavity barriers and fire stopping are also very important and critical to the overall performance of the wall system. Building owners should seek professional advice that looks at the specific circumstances of their building.

4.17. The Test 5 and Test 6 wall systems both passed the test, which means they resisted the spread of fire over the wall to the standard set out in BR135. The Expert Panel's advice is that these results show two ways in which compliance can be achieved and offer an indication of how remedial works could be specified for those buildings that have been found to have problems. In particular, Test 6 reaffirms that one way to ensure that a cladding system adequately resists external fire spread is for all of the relevant elements of the wall to be of limited combustibility.

4.18. However, the composition of different products from different manufacturers will vary and it is possible that products from different manufacturers may behave differently in a fire. Equally, it is important to note that the materials used may have been fitted or maintained differently, to how the tests were specified and constructed, which can affect the safety of the cladding system.

Following the Grenfell fire, 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. We expect building owners who suspect they have ACM (or other metal composite material cladding) with an unmodified polyethylene filler to submit samples for testing. Further information on the screening programme can be found at https://www.gov.uk/government/publications/safety-checks-on-private-residential-blocks.

What should building owners do where they have wall systems which failed the ACM system tests

4.19. Firstly, and while building owners are considering as a matter of urgency further actions they should take, based on the advice from the Expert Panel, it is recommended that they ensure they implement, if they have not done so already, the short-term Interim Measures set out in section 11 of this advice and also undertake immediate measures to remediate their system. Fire and rescue services will continue to work with building owners to ensure any necessary mitigation short-term measures are in place. For the avoidance of doubt the removal of unsafe material and action to remediate unsafe wall systems should be carried out as soon as possible. As stated in 11.21, of section 11 of this advice; in the case of the most serious risk, consideration must be given to moving some or all residents out of the block until satisfactory remedial work has been completed. Interim measures are not a long-term solution and action to carry out remedial work should be taken as soon as possible.

4.20. Secondly, building owners should take professional advice on what further steps to take with respect to their cladding system. This professional advice may be obtained from a qualified chartered professional with relevant experience in fire safety, including fire testing of building products and systems, such as a chartered engineer or surveyor registered with the Engineering Council by the Institution of Fire Engineers or a chartered professional from another built environment profession specialising in fire safety consultancy. Professional assessment of system performance may be obtained from a test laboratory accredited by the United Kingdom Accreditation Service (UKAS) to carry out BS 8414 full-scale tests and classify results to BR135.

4.21. Based on advice from the Expert Panel, where building owners have wall systems that failed the tests, it is recommended that in conjunction with their own professional advice they should follow the steps set out below:

4.21.1. Take full professional advice on what remedial work is necessary to ensure the safety of their building. This may need to consider the combination of materials used in the cladding system, as well as whether the construction of their building meets the other provisions of the functional requirements of the Building Regulations, and supporting guidance, including fire stopping between floors and the required cavity barriers in place.

4.21.2. Building owners will need to take professional advice to ensure that any remedial work is undertaken safely (for example from an expert in cladding systems with relevant experience), and to ensure any replacement materials are safe.

4.21.3. Assure themselves that remedial work also complies with functional requirements of the Building Regulations, and supporting guidance, on how the system is designed and fitted – including provisions for fire breaks and cavity barriers.

4.21.4. Ensure that when any work is carried out, including removing cladding, care is taken to consider the impact that removal may have on the other wall elements, and therefore on the overall structural and fire integrity of the building as well as other Building Regulation requirements. In particular, care should be taken to ensure that insulation material is not exposed to the elements unnecessarily. (MHCLG has published a circular letter to building control bodies which sets out the planning and building control requirements that will need to be considered).

5. High Pressure Laminate Panels

5.1. High Pressure Laminate (HPL) panels can have a wide range of fire performance and it is important that building owners are aware of the fire performance of the panels that have been installed on their building(s).

High Pressure Laminate panels and how do they perform

5.2. HPL panels are usually available in a wide range of colours and finishes which makes them attractive as a way of bringing colour and different finishes to an external facade.

5.3. HPL panels are usually 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.

5.4. The fire classification of an HPL panel can vary depending on its material properties, thickness and whether or not it incorporates fire retardant chemicals. HPL panels with fire retardant chemicals added are sometimes referred to as “FR grade” and typically achieve Class B-s1,d0. Panels manufactured without fire retardant can be Class C or D, depending on the thickness and make-up of the panel (e.g. fibre and resin used).

5.5. Information on the fire performance of the HPL panel installed, if not provided in the information above, may be available from the manufacturer provided the building owner can provide information on the characteristics of the HPL panel installed (i.e. colour, width, thickness, identifying markings, etc.).

5.6. We are aware that there have been some cases of product substitution and where building owners are not confident that the panel specified has been installed. Building owners may wish to take additional steps to assure themselves that the panels which have been installed are the one available in the literature. This can be done by commissioning a competent professional adviser such as a competent building surveyor to remove and examine the panels that have been installed, this may include bench-scale testing. Where testing of the material is required, this should be carried out by a UKAS accredited testing laboratory.

5.7. The test MHCLG has conducted, based on the advice of the Expert Panel, is a large-scale BS 8414 test including HPL (FR) (Class B-s1,d0) panels with stone wool insulation. This combination was selected as MHCLG received feedback from industry that this type of HPL panel was commonly used on high-rise residential buildings. The Expert Panel also considered that this system was likely to be a good example of a system that was on the boundary of safety and the result of the test could therefore inform further advice on what systems could

be safe, if installed correctly.

5.8. The tested combination of HPL (FR) panels (Class B-s1,d0) with stone wool insulation successfully achieved the performance criteria set in BR135 and the test results are available on the government website.

Expert Panel advice

5.9. 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.

5.10. The Expert Panel's advice is that an external wall system 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 would not have met the functional requirements of the Building Regulations, or associated advice. Any such system presents a notable fire hazard on these buildings. Where these materials are identified, building owners should take immediate measures to remediate their system, in line with the advice in section 3 above.

5.11. 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.

5.12. The Expert Panel has not been presented with any evidence of an HPL panel of any class achieving the performance criteria set out in BRE135 when used in combination with combustible insulation. Where existing residential buildings have any HPL panels in combination with combustible insulation, they should immediately seek professional advice and take appropriate remedial action.

5.13. The view of the Expert Panel is that the level of risk from unsafe HPL systems is not as high a risk as unsafe systems using ACM Category 3 panels. Therefore, the Expert Panel remains clear that the immediate removal of unsafe systems using ACM Category 3 panels should be an absolute priority of focus for building owners who own multiple buildings and the sector as a whole, followed by immediate action to remediate unsafe HPL systems. For the avoidance of doubt both the removal of unsafe ACM Category 3 panels and action to remediate unsafe HPL systems should be carried out as soon as possible.

6. Spandrel panels

6.1. Spandrel panels (including window panels, infill panels, etc) are part of the external wall of the building. Therefore, the principles set out in the advice on external walls above apply.

6.2. Spandrel panels can be provided for both aesthetic and functional purposes. Like the rest of the external wall, the panels are generally required to meet acoustic, thermal, moisture, and fire performance requirements. Such panels are not normally load bearing but are often designed to account for wind loading.

6.3. The design and materials of panels varies between buildings; some are made of singular components such as cement particle board, other panels are composite products comprising outer facing materials bonded to an inner core which may include combustible insulation.

6.4. Building owners should check the materials used in the panels to ensure that they do not present a risk of fire spread over the wall. It may not be readily apparent what materials are present, particularly for composite products which can include inner combustible insulating cores.

6.5. Following any sampling, care should be taken to remediate any damage to the panels which would otherwise increase the fire risk (e.g. by exposing a combustible core).

7. Balconies

7.1. External walls of buildings, of any height, should not assist the spread of fire, in accordance with the functional Requirement B4 of Schedule 1 to the Building Regulations. Balconies made with combustible materials are a potential source of rapid fire spread on the external wall of residential buildings. It is the view of the Expert Panel that as a result the design of balconies should not assist fire spread along the external wall. Balconies including combustible materials may not meet an appropriate standard of safety and could pose a risk to the health and safety of residents and other building users.

7.2. Building owners should therefore ensure that they understand the materials used in the construction of balconies. This will enable them or their competent advisor to better understand the associated risk of external fire spread and take appropriate action to manage this risk.

7.3. The view of the Expert Panel is that the removal and replacement of any combustible material used in balcony construction is the clearest way to prevent external fire spread from balconies and therefore to meet the intention of building regulation requirements and this should occur as soon as practical.

7.4. There have been several incidents of balcony fires which have led to external fire spread. BRE Global published examples of this in their 2016 report "Fire safety issues with balconies" which can be accessed at: www.bre.co.uk/filelibrary/Fire and Security/FI---Fire-safety-and-balconies-July-16.pdf

7.5. The BRE report concluded that *"…managers and risk assessors all need to be mindful of the potential fire risk associated with fires on balconies from their incorporation in to the building…".* The Expert Panel supports this advice.

7.6. The BRE Global report quoted above also identifies that there are additional risks from materials used to prevent heat loss through thermal bridging that may increase fire spread.

7.7. Building owners should check that adequate appropriate measures are in place to manage the fire safety of external wall systems (in line with the principles set out in section 3 above). They should also ensure that any risks arising from balconies are considered as part of the fire risk assessment and information provided to residents.

7.8. Where there is doubt over the materials used, or risk presented, building owners should seek professional advice. Where combustible materials have been used and it is assessed that there is a notable risk of fire spread as a result, building owners should seek professional advice and take appropriate action to address that risk.

7.9. The fire risk on balconies can also be increased due to the use of balconies as storage. A significant number of balcony fires start from the unsafe disposal of smoking materials and the misuse of barbeques. Building owners may have existing policies in place as to what can and cannot be stored and used on balconies by residents and may wish to review these in the light of the materials used in the balcony construction. They may also wish to communicate with residents to develop their understanding of these risks.

8. External Wall Insulation (EWI) systems with a render or brick-slip finish

8.1. We are aware that External Wall Insulation (EWI) systems with either a render or brick-slip finish may in some circumstances be vulnerable to deterioration, resulting in parts of the EWI system falling from buildings.

8.2. All EWI systems need to be designed to resist pressure from predicted wind loads in the location and at the height that they are installed. The fixing system of the EWI system must be adequately designed to deal with predicted loads, including the weight of the system itself. Guidance on how to achieve this is provided in paragraphs 3.3-3.8 of Approved Document A: Structure of the Building Regulations. This includes undertaking suitable design calculations.

8.3. Design calculations for EWI systems typically include safety factors to ensure that even where an installation is not perfect, or in the event that unusual circumstances occur (such as high winds), the system will remain safe. This information should be available from system manufacturers. However, evidence submitted to government suggests that in some circumstances these safety factors are being eroded by inadequate design (structural calculation methodologies) and / or poor installation.

8.4. Where inadequate design and / or installation reduces safety factors, EWI systems are more vulnerable to: damage from high wind speeds; other installation defects such as poor water-tightness (which can lead to insulation becoming water-logged and heavier as a result); and variations in the design and installation quality of mechanical or adhesive fixings. These potential defects increase the risk of the EWI system becoming detached from the building and falling from height. This in turn poses risks to life safety. With render or brick-slip EWI systems there is a heightened risk of the render or brick-slip layer detaching from the insulation underneath where these defects are present.

8.5. It is good practice to periodically check the condition of any EWI system on any building of any height and all building owners should consider the need to undertake such checks as part of their regular maintenance and management plan.

8.6. Due to the nature of the problems that have been identified, this advice is particularly relevant for tall buildings subject to high wind loading due to high wind speeds. Specifically, this advice should be followed if you own a building which has an EWI system, particularly if it is over 18m tall or in an exposed location.

8.7. If not undertaken recently, building owners should consider an immediate audit

or review of the buildings for which they are responsible to identify their height, construction, location and wind exposure. It is likely that you will need to seek expert advice from a suitably qualified person such as a Chartered Structural Engineer or Chartered Building Surveyor.

8.8. There is no prescribed definition of an exposed location but typically this would include buildings in an elevated or hill-top location, sea side locations, areas where the surrounding terrain will not provide sheltering from wind, or a combination of these factors. In dense cities, funnelling will need to be considered which could increase the wind effect.

8.9. It is recommended that for relevant buildings, building owners should obtain design records, construction details, structural calculations, specifications, system certification for the EWI system, and appoint suitable professional advisers to assess the adequacy of the design and installation.

8.10. This is likely to require a visual recorded survey of EWI system condition, including checking that waterproofing is adequate and that the system is not absorbing moisture (which can increase risk of structural failure). EWI systems are likely to fail gradually rather than catastrophically, meaning that ongoing visual inspection will also be important in identifying any at risk EWI systems in the longer term.

8.11. On the basis of both of the professional advice, building owners should establish what further non-invasive or invasive investigations are needed to confirm that the EWI system is installed in a way which can safely resist all likely actions, including wind- loads and dead loads.

8.12. Building owners with an EWI system with a render or brick-slip finish also need to review procedures for making alterations or additions to walls where this involves fixing to or making holes in the surface. Maintenance manuals for EWI systems should provide further detail on specific considerations in relation to each type of system.

8.13. In general, wherever work is undertaken, care must be taken to ensure that fixings or penetrations (such as fixings for a satellite dish, hanging basket, washing line or penetrations for cables or pipes) are sealed with a durable finish and do not permit water to enter into the EWI system.

9. Smoke Control Systems

9.1. The Expert Panel believes that an appropriately designed, installed and maintained smoke control systems is essential to effectively managing fire safety risks in a residential building.

9.2. Smoke Control Systems play an important role in protecting escape routes in residential buildings in the event of fire. The primary objective being to protect the staircase enclosure, but the system may also provide some protection to the adjacent lobby or corridor.

9.3. Immediate action should be taken to remedy any defects in the operation of smoke control systems and the local Fire and Rescue Service should be informed if a smoke control system is not operating effectively.

9.4. Building owners should be aware of the type of smoke control system they have in place and how this is intended to control the spread of smoke in the event of fire. This should be available in original design information, but if it is not then building owners should seek professional advice to ascertain how it should function.

9.5. Depending on the number of stairs and the age of property, ventilation to remove smoke is normally installed in either the stair lobbies or corridors that form the common access area to the residential flats, as well as in the staircase enclosure itself. Simple smoke ventilation measures could comprise of manually or automatically opening windows, or in older buildings, permanently opening vents.

9.6. However, complex natural or mechanical smoke extraction systems can also be employed using smoke ventilation shafts or ‘chimneys’, particularly in more modern buildings. In some cases, where the building may only have one staircase, or where there are long common corridors, these can be mechanical single or two-speed smoke extract systems, with pressure sensors and manual override controls for fire fighters.

9.7. Where an automatic smoke control system is in place, in the event of heat and/or smoke entering the common parts it should vent that heat and smoke to allow the means of escape to continue to be safely used and to facilitate the fire-fighting activities within buildings.

9.8. In the case of an automatically opening system that relies on a smoke shaft, if smoke is detected the door/damper to the smoke shaft on that floor should open together with the vent at the top of the shaft. This creates a chimney effect, allowing the smoke to vent to open air. All other vents opening into the smoke shaft should remain closed in order to maintain the fire separation in the building,

prevent smoke spreading to other floors and avoid reducing the rate at which smoke is being vented from the affected floor.

9.9. The standards for the maintenance and testing of smoke control systems are set out in BS EN 12101 and BS 9999. Smoke control systems should be tested weekly by the building owner to ensure that they are operating effectively, with a full system inspection and test carried out by a suitably qualified person at least annually. If you are in any doubt as to the tests that should be carried out then you should contact the manufacturer or installer of the system for further information.

9.10. The Smoke Control Association provides advice on issues related to smoke control systems and have published a guide "Guidance on Smoke Control to Common Escape Routes in Apartment Buildings (Flats and Maisonettes)". This is available on their website, along with other specific advice at:

www.feta.co.uk/associations/hevac/specialist-groups/smoke-control-association

9.11. There have been issues with electromagnetic holding devices for vents which can have an unpredictable performance leading to failure under fire conditions. Such failure can occur due to a loss of power to the devices, or through the magnetic fields of the devices being weakened as temperatures in and around the smoke shaft increase. It is therefore recommended that the use of electromagnetic holding devices as part of any smoke ventilation shaft installation should be reviewed as part of the fire risk assessment with consideration being given to replacing these devices with a more robust form of vent actuator.

9.12. Where the repair cannot be carried out immediately, a review of the fire risk assessment should be carried out to determine whether mitigation measures should be put in place. The mitigation measures to be put in place will vary from building to building and you should seek professional advice from a suitably qualified fire engineer. The local Fire and Rescue Service should also be informed and consulted on the planned mitigation measures.

9.13. The building may have other fire safety risks in place and these will need to be considered in developing the mitigation measures (for example, leaving vents on external walls open to disperse smoke may risk fire spread where combustible cladding is present). Issues around compartmentation should also be considered as defects that were low priority to remedy with a functioning smoke control system, may now be urgent.

9.14. Mitigation measures should remain in place until the smoke control system is repaired and has been tested to evidence that it is functioning effectively.

10. Fire Doors

10.1. Flat entrance fire doors leading to a shared or communal area are required to provide fire and smoke protection and are part of layered approach to most fire strategies for residential buildings.

10.2. It is important that all fire doors, including the closers, are routinely maintained by a suitably qualified professional. Residents should be made aware of the significant importance of a working self-closing device on all fire doors.

10.3. Modern or replacement flat entrance fire doors will normally have test evidence demonstrating that they meet the performance requirement in Building Regulations guidance for fire resistance and smoke control from both sides.

10.4. Test evidence used should be carefully checked to ensure it is to the same specifications of the doorsets being installed.

10.5. Responsible persons should aim to replace existing flat entrance doorsets if they suspect they do not meet the fire or smoke resistance performance in the Local Government Association guide "Fire safety in purpose-built blocks of flats". They should use a risk assessment process to determine how urgently such doors should be replaced.

10.6. Annex A provides further advice to assist responsible persons to assess the risk, and remedies, relating to existing fire doors in residential buildings. This detailed advice is for the attention of anyone responsible for the fire safety of residential flats and who is concerned about the fire and smoke resistance of fire doors. The advice was developed by the Expert Panel in conjunction with industry experts. It has been developed to support those who want to replace their fire doors or review their performance, both where test evidence is and is not available.

10.7. Where responsible persons wish to be assured of the fire performance of doors, the doors should be replaced with those that meet the relevant current performance standards as outlined in the detailed advice in Annex A.

11. Short-Term Interim Measures

11.1. This advice relates to circumstances in which it has been confirmed that the external wall system on your building, does not meet an appropriate standard of safety for residents, other occupiers, people in the proximity of the building or firefighters.

11.2. In these circumstances, it is essential that you immediately implement the following short-term interim mitigating measures, if you have not previously done so, to address the fire hazard and so ensure the safety of residents, pending any remediation of the cladding system needed. Local fire and rescue services will continue to work with building owners to ensure necessary mitigation measures are in place. For the avoidance of doubt, the removal of unsafe material and action to remediate unsafe wall systems should be carried out as soon as possible.

11.3. If you have not already done so, you should inform your local fire and rescue service. Failure to do so may put fire-fighters as well as residents at risk. The fire and rescue service will carry out an urgent inspection with the Responsible Person to ensure that appropriate short-term interim measures have been identified and introduced, as set out below. The fire and rescue service will also carry out a further inspection once the short-term interim measures are in place.

11.4. Check that a suitable and sufficient fire risk assessment has been carried out within the previous 12 months and that the recommendations within the action plan of the assessment have been completed; and also, confirm that there have been no material changes (to the building, the fire safety measures or the occupancy) that could, potentially, undermine the validity of the fire risk assessment. If no fire risk assessment has been carried out, or you consider that material changes have taken place, you must immediately arrange for a fire risk assessment to be carried out by a competent person (e.g. by a person who is listed on a register of fire risk assessors operated by a professional body or certification body, or, preferably, by a company that is certificated by a third party certification body that is, itself, accredited by the UKAS to operate the certification scheme). Guidance on choosing a competent assessor is available here www.cfoa.org.uk/19532.

11.5. Engage with residents of the building to ensure that they fully understand the emergency fire procedures in the building. Ensure that fire procedure notices are updated, where necessary, and accurate. This is particularly important where a ‘stay put’ strategy is temporarily being changed to one of simultaneous evacuation, pending replacement of the cladding.

11.6. All residents must be surveyed in respect of their ability to evacuate the building without assistance.

11.7. Check there are no potential routes for fire spread from the interior of the building out onto, or into, the cladding system. This would include, for example, the presence and integrity of cavity barriers, and the risk of ignition to the external wall system via window surrounds and fitting details.

11.8. Check that, at ground level, or on any balconies, there are no combustible materials (e.g. storage of refuse) in the vicinity of the cladding system. Ensure that there are measures to prevent combustible materials in such locations (e.g. by temporary barriers or instructions to residents). Instruct residents that they must not have any barbecue, or smoke, on any balcony.

11.9. Close any car parks in which a vehicle fire could impinge on cladding.

11.10. Check that all flat entrance doors, and doors that open onto escape corridors and stairways, are fire-resisting and effectively self-closing against any resistance of a latch (or, for example, in the case of plant rooms or cupboards, are kept locked shut.) For guidance on these doors, consult the Local Government Association guidance on fire safety in purpose-built blocks of flats – www.local.gov.uk/fire-safety-purpose-built-flats. In general, doors that were deemed to be fire-resisting at the time of construction of the block will be satisfactory. Replace any non-fire-resisting doors (such as non- fire-resisting PVCu doors) immediately with doorsets that are third party certificated as providing at least 30 minutes' fire resistance.

11.11. Check all walls that separate flats, plant and store rooms, etc. from escape routes to ensure there are no obvious routes for fire or smoke spread (e.g. holes where services, such as pipes and cables, pass through walls).

11.12. Check that any smoke control systems, including associated fire detection systems, are operating correctly.

11.13. Check all facilities provided for fire-fighters, including fire-fighting lifts and dry or wet rising mains. If you have ANY concerns you should contact your local fire and rescue service, who will, if they have not already done so, carry out an inspection to ensure functionality.

11.14. Ensure that there is sufficient roadway access and hardstanding for firefighting vehicles attending incidents and are required to operate to fight any fire externally.

11.15. Residents must be advised to ensure all smoke alarms are present and working in their flat; to report concerns about fire safety measures in the building (e.g. presence of combustible materials in escape routes) to their landlord and,

understand the purpose and importance of any short-term interim measures being taken.

11.16. Co-operate with any commercial premises within the building to ensure they do not impose any significant risk.

11.17. Once you have completed the above, the competent person can assess whether a 'stay put' strategy is still appropriate for your building, in discussion with the local fire and rescue service. The competent person will need to take into account a number of factors, including (but not necessarily limited to) the following:

- 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.

11.18. The above assessment must be recorded so that it can be made available to the fire and rescue service. If the decision by the competent person is temporarily to change a stay-put strategy to one of simultaneous evacuation, then you must inform your local fire and rescue service so they can update their operational procedures.

11.19. Where simultaneous evacuation is adopted, it will need to be managed, should an evacuation be necessary in the event of a fire. This is likely to require the presence of a "waking watch" on a 24/7 basis. Even where a 'stay put' policy is to continue, a "waking watch" might still be appropriate. A simultaneous evacuation policy is also likely to necessitate some form of fire alarm system to alert residents of the need to evacuate, unless there are sufficient staff in the "waking watch" to detect fire and initiate an evacuation at an early stage of a fire in the building. Simultaneous evacuation guidance has been produced by the

National Fire Chiefs Council (NFCC) to assist building owners/responsible persons who need to adopt a temporary simultaneous evacuation strategy. This is available on the NFCC website at: www.nationalfirechiefs.org.uk/Grenfell-Tower

11.20. The NFCC supports the Fire Safety in Purpose-built Blocks of Flats guidance hosted on the LGA website and developed by a wide range of stakeholders. The guidance remains appropriate for all purpose-built blocks of flats. However, the unique circumstances following the Grenfell Tower fire mean that Section 19 in particular 'Stay Put policy', especially paragraphs 19.6 and 19.7, should be considered in the context of this additional and complementary NFCC guidance.

11.21. In the case of the most serious risk, consideration must be given to moving some or all residents out of the block until satisfactory remedial work has been done. Consideration needs to be given to whether a decanting of residents should apply to the whole block or only to residents of the uppermost floors. Partial decanting in particular will require careful management of access.

Annex A – Assurance and Assessment of Fire Doors

- Assurance and Assessment of Fire Doors