

# **Analysis of Responses for Building Standards (Fire Safety) Consultation on External Wall Systems**

January 2022



Scottish Government  
Riaghaltas na h-Alba  
gov.scot

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# Executive Summary

## Introduction

1. Optimal Economics has been appointed by the Building Standards Division (BSD) of the Scottish Government to undertake an analysis of the responses to the public consultation on a review of building standards relating to the fire safety of external wall systems to help ensure the safety of people in and around Scotland's buildings.
2. The aim of the consultation was to obtain the views and opinions of stakeholders on the proposed changes to the building standards which covered five main areas:
  - Part 1: Mandatory Standard 2.7 relating to fire spread on external walls.
  - Part 2: Definition and ban of category 3 metal composite materials (MCM).
  - Part 3: Large scale fire test BS 8414.
  - Part 4: Consequential matters – combustible exemptions.
  - Part 5: Impact assessments.

## Methodology

3. The analysis was undertaken in three main stages:
  - Stage 1 was a validation of responses to determine that they were relevant to this consultation, whether there were any duplicate responses or campaign responses and the development of a typology to reflect the respondents and their relationship to the building regulations.
  - Stage 2 was focused on establishing an appropriate framework for the analysis. The consultation combined quantitative and qualitative methods of data collection. For the open-ended questions, main themes were identified to enable further analysis of key issues.
  - Stage 3 was the full analysis and reporting of results which took account of client feedback at all stages of the research.
4. All responses to the “open” questions have been given an equal weighting, allowing every idea presented to be considered equally. Where possible we have used a number of simple bands to provide an indication of the frequency of an idea, although it is noted that this treats the response from an individual with the same weight as the response from a trade association which may have many members. Nevertheless, the following bands have been used to indicate the frequency with which a point was raised:

- Few: up to three responses.
- Several: four to nine responses.
- Many: ten or more responses.

5. The consultation received a total of 76 responses which are shown below by stakeholder category.

<b>Summary of Responses by Category</b>		
	<b>No.</b>	<b>%</b>
Construction Industry	6	7.9
Consultancy	7	9.3
Individuals	22	28.9
Local Authorities	8	10.5
Manufacturers	7	9.3
Other	9	11.8
Research Est./Fire Test Houses	2	2.6
Trade Associations	15	19.7
<b>Total</b>	<b>76</b>	<b>100.0</b>

### **Part 1: Mandatory Standard 2.7**

6. A summary of the quantitative responses to Question 1 is shown below.

<b>Q1: Do you agree or disagree with the proposal to remove the words “<i>is inhibited</i>” in the mandatory standard which is considered to be ambiguous and replace with the text “does not unduly promote fire spread taking into account the height and use of the building”</b>		
	<b>No.</b>	<b>% of those answering<sup>(1)</sup></b>
Strongly Agree	19	26
Agree	21	29
Neither Agree or Disagree	12	16
Disagree	12	16
Strongly Disagree	9	12
Not Answered	3	
<b>Total</b>	<b>76</b>	<b>100</b>
<b>(1) Percentages may not sum due to rounding</b>		

7. There was majority (55%) support for the proposed wording, primarily because it was felt to improve clarity. Respondents disagreeing with the proposed wording were often supportive of the intent of the change but felt that the proposed wording was just as vague or open to interpretation as the original wording. Respondents from both sides of the argument suggested alternative wording.

**Part 2: Definition and Ban of Category 3 Metal Composite Material (MCM)**

8. The consultation asked if respondents agreed or disagreed with the proposed definition of MCM category 3. A summary of the quantitative responses are shown below.

<b>Q2.1: Do you agree with the definition for MCM Category 3?</b>		
	<b>No.</b>	<b>% of those answering<sup>(1)</sup></b>
Strongly Agree	9	12
Agree	26	36
Neither Agree or Disagree	26	36
Disagree	7	10
Strongly Disagree	5	7
Not Answered	3	
<b>Total</b>	<b>76</b>	<b>100</b>
(1) Percentages may not sum due to rounding		

9. No one response category achieved a majority, but 48% of respondents provided support for the definition compared to 17% who did not support the proposed definition. Some 36% of respondents were undecided about the proposal. Those supporting the definition felt that it improves clarity. Some specific points were raised in relation to thickness and calorific value by both respondents agreeing and disagreeing with the proposed definition. Those disagreeing also felt the definition was too restrictive.
10. The consultation asked if respondents felt the ban on MCM category 3 should be in regulation or guidance. A summary of the quantitative responses are shown below.

**Q2.2: Do you think that the ban on MCM (Category 3) materials should be in guidance or regulation?**

	<b>No.</b>	<b>% of those answering<sup>(1)</sup></b>
Guidance	16	22
Regulation	43	60
Not Sure	13	18
Not Answered	4	
<b>Total</b>	<b>76</b>	<b>100</b>

(1) Percentages may not sum due to rounding

11. The majority of respondents (60%) felt that the ban should be in regulation. Those supporting the ban being in regulation felt that it provided a stronger statement than guidance and would discourage alternative solutions as guidance would be open to interpretation. Those supporting the ban being in guidance felt that guidance would be quicker to implement and change and would offer flexibility to change to a variety of situations and new innovative products.

**Part 3: Large Scale Fire Test, BS 8414**

12. The consultation set out in detail four options relating to large scale fire test BS 8414. These are summarised as follows:
- Option 1 – April 2021 Addendum: This option re-affirms the decision to remove reference to BS 8414/BR 135 from the Technical Handbook and to notify BSD when used as an alternative approach.
  - Option 2 – Managed Use of BS 8414 to Address Risk: This option will cite reference to BS 8414/BR 135 in the Technical Handbook with tighter controls on the use and height of the building.
  - Option 3 – Regulatory Ban: This option proposes a regulatory ban i.e. A1 or A2 only in regulation for residential buildings with any storey more than 18m.
  - Option 4 – Any Alternative Proposal: This provides the opportunity for respondents to suggest alternative proposals for the Scottish Government to consider.
13. The consultation asked which of the four options was their preferred choice. A summary of the quantitative responses are shown below.

<b>Q3: Which of the four options is your preferred choice?</b>		
	<b>No.</b>	<b>% of those answering<sup>(1)</sup></b>
Option 1	11	16
Option 2	17	24
Option 3	23	33
Option 4	19	27
Not Answered	6	
<b>Total</b>	<b>76</b>	<b>100</b>
(1) Percentages may not sum due to rounding		

14. Option 1 attracted the least support (16%), Options 2 and 4 had broadly similar levels of support (24% and 27% respectively with Option 3 attracting the most support (33%). Those favouring Option 1 felt that it was clearer and less complex than Options 2 and 3 and suggested that, while BS 8414 provides an idea of how external wall materials might react in a fire, it does not reflect real world construction practices.
15. Many respondents supporting Option 2 felt that there was a role for large scale system testing as it was the only way to establish whether the chosen components work together in their end use application. It was also suggested that this option enabled BS 8414 to be used but it should be assessed/controlled by verifiers or third parties.
16. Respondents supporting Option 3 felt that it would remove any ambiguity and provide the most clarity for buildings over 18m. An outright ban was suggested as being the only way that safer cladding could be achieved.
17. Those respondents supporting Option 4 provided a range of alternative proposals.

#### **Part 4: Consequential Matters – Combustible Exemptions**

18. Part 4 of the consultation was concerned with the current list of exemptions for reaction to fire and asked if respondents felt the current list should be amended to include other penetrations. A summary of the quantitative responses is provided below.



**Q4: Do you think that the current list of exemptions should be amended to include other penetrations e.g. cavity wall vents, boiler condensate pipes, drainage and overflow pipes, ventilation extract ducts, balanced flue liners?**

	<b>No.</b>	<b>% of those answering<sup>(1)</sup></b>
Yes	29	39
No	22	30
Unsure	23	31
Not Answered	2	
<b>Total</b>	<b>76</b>	<b>100</b>

(1) Percentages may not sum due to rounding

19. Respondents were broadly split across the three answers of yes, no and unsure. For those supporting an amended list, a number of suggestions were made in addition to changes to the wording of the existing list. Several respondents disagreeing with the proposal felt that increasing the list of exemptions could weaken the system and a few could offer conditional support in certain circumstances. For respondents unsure about the proposal, there was also some conditional support in specific circumstances and the suggestion that the list should only be expanded on the basis of suitable evidence.

### **Part 5: Impact Assessment**

20. The consultation asked two questions on the impact of the proposals on different groups in society. The first considers the impact on equality groups and the second considers the business and regulatory impact. The quantitative results are summarised below.

	<b>Q5.1: Equality Impact</b>		<b>Q5.2: Business &amp; Regulatory Impact</b>	
	<b>No.</b>	<b>% of those answering<sup>(1)</sup></b>	<b>No.</b>	<b>% of those answering<sup>(1)</sup></b>
Yes	6	9	31	45
No	47	67	28	41
Unsure	17	24	10	14
Not Answered	6		7	
<b>Total</b>	<b>76</b>	<b>100</b>	<b>76</b>	<b>100</b>

(1) Percentages may not sum due to rounding

21. The majority (67%) of respondents did not believe the proposals would have an impact on equality. Those who felt there could be an impact highlighted disabled/people with mobility issues (as possibly being affected in a positive way) and more vulnerable residents of high-rise buildings as possibly being adversely affected. For the 45% of respondents who felt there would be a business and regulatory impact, this was primarily a result of increased costs.

# 1. Introduction

## 1.1 Introduction

1.1.1 Following the fire at Grenfell Tower in June 2017, a Ministerial Working Group (MWG) was established to oversee a review of building and regulatory frameworks (and other matters) to help ensure that people are safe in Scotland's buildings. In 2018 the Building Standards (Fire Safety) Review Panel recommended strengthening the guidance in the Technical Handbooks. These changes were introduced in October 2019 and included:

- Lowering the height at which combustible cladding can be used from 18 metres to 11 metres to align with fire-fighting from the ground; and
- Tighter controls over the combustibility of cladding systems on hospitals, residential care buildings, entertainment and assembly buildings regardless of building height.

1.1.2 The Scottish building regulations set national, mandatory standards and these standards are supported by guidance in the Technical Handbooks on how the standards may be met. In September 2020 a panel of fire experts was convened to consider a ban on the highest risk cladding materials through building regulations and to review the role of the large-scale fire test (BS 8414) in supporting guidance.

1.1.3 Concerns have been raised about the use of BS 8414 in the Technical Handbooks, particularly the lack of control over the competence of designers, installers and verifiers when using and interpreting the results of BS 8414. The MWG adopted a cautionary approach in March 2021 on the highest risk cladding material and the use of large scale fire test results in new development. This resulted in interim changes to the Technical Handbooks in April 2021 including the need to avoid using category 3 metal composite material (MCM) cladding in new building work and the removal of reference to BS 8414<sup>1</sup> as alternative guidance.

## 1.2 The Consultation

1.2.1 A consultation ran between 16<sup>th</sup> July 2021 and 11<sup>th</sup> October 2021 to obtain the views and opinions of stakeholders on a review of building standards relating to the fire safety of cladding to help ensure the safety of people in and around Scotland's buildings. The consultation covered five main areas:

- Part 1: Mandatory Standard 2.7 relating to fire spread on external walls.
- Part 2: Definition and ban of category 3 MCM.
- Part 3: Large scale fire test, BS 8414.

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<sup>1</sup> Note that the height where BS 8414 can be used as a means of compliance has been reduced to 11 metres.

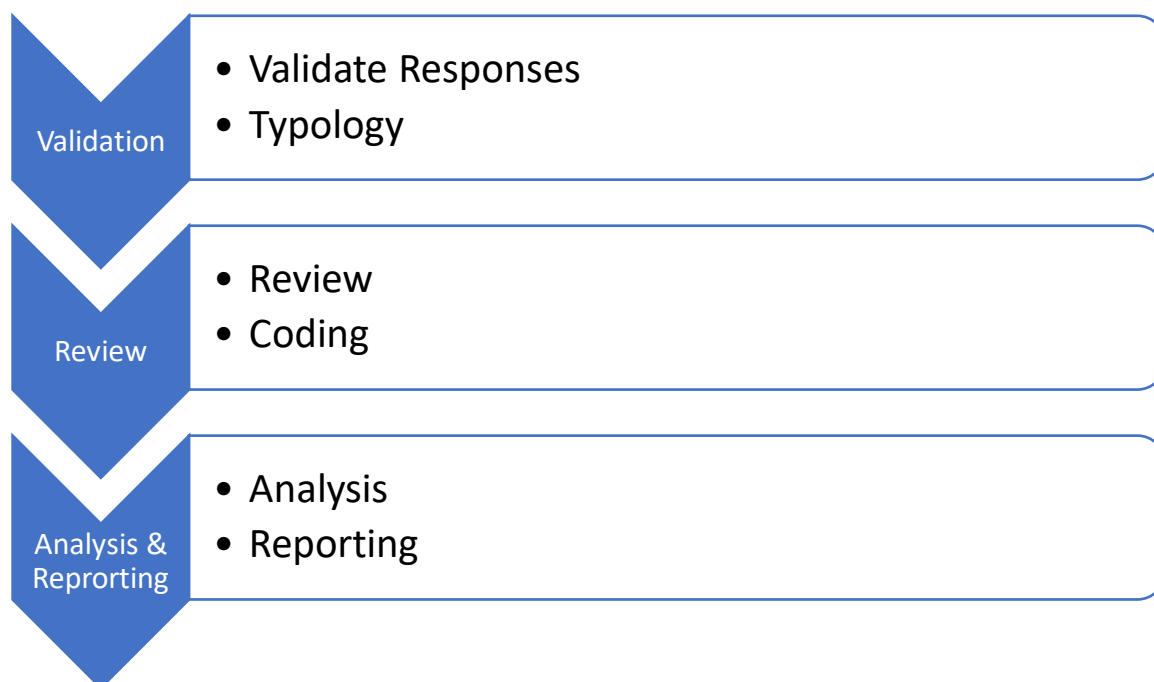
- Part 4: Consequential matters – combustible exemptions.
- Part 5: Impact assessments.

1.2.2 The proposed changes outlined in the consultation aim to improve fire safety for the design and construction of all buildings, in relation to external wall cladding systems, making them safer for those in and around buildings in the event of an outbreak of fire.

### 1.3 Methodology

1.3.1 The approach to the analysis is shown in Figure 1. The first stage of the review was to validate the responses to determine that they are relevant to the analysis and whether there were any duplicate responses or campaign responses. There were some responses to some questions where the comments were very similar to the comments of another organisation, but as there were slight differences, they are not being treated as campaign responses.

**Figure 1: Methodology**



1.3.2 The validation stage also developed a typology to reflect the respondent and their relationship to the building regulations. This is set out in paragraph 1.4.1 below.

1.3.3 Stage 2 was focused on establishing an appropriate framework for the analysis. The consultation combined quantitative and qualitative methods of data collection and while the quantitative responses provided a good overview of opinion, it was the qualitative comments that provided a far greater depth of response.

- 1.3.4 A coding framework was established of the main themes arising from the open-ended questions. The framework was kept under continuous review to ensure it was fit-for-purpose and that the responses mapped effectively on to it.
- 1.3.5 Stage 3 was the analysis of all questions and reporting of results which took account of client feedback at all stages of the reporting process. All “closed” questions are analysed by category of respondent.
- 1.3.6 All responses to the “open” questions have been given an equal weighting, allowing every idea presented to be considered equally. Where possible we have used a number of simple bands to provide an indication of the frequency of an idea, although it is noted that this treats the response from an individual with the same weight as the response from a professional body which may have many members. Nevertheless, the following bands have been used to indicate the frequency with which a point was raised:
- Few: up to 3 responses.
  - Several: 4 to 9 responses.
  - Many: 10 and over responses.

## **1.4 Overview of Responses**

- 1.4.1 At the close of the consultation period there were 76 responses which were categorised into the following groups:
- Construction Industry: organisations involved in the construction of homes and buildings.
  - Consultancy: organisations who offer consultancy services and advice.
  - Individuals: individual members of the public.
  - Local Authorities: local authorities who undertake the verification role in Scotland.
  - Manufacturers: manufacturers of products used in the construction of buildings.
  - Research Establishments/Fire Test Houses: organisations undertaking research and fire testing of products and systems.
  - Trade Associations: organisations representing contractors and companies involved in the manufacture, supply and installation of products used in the construction of buildings.
  - Other: organisations which did not fit readily into the categories above, including professional bodies.
- 1.4.2 A summary of the number of responses by category is shown in the Table 1 below with a list of respondents by category included in Appendix A.

<b>Table 1: Summary of Responses by Category</b>		
	<b>No.</b>	<b>%</b>
Construction Industry	6	7.9
Consultancy	7	9.3
Individuals	22	28.9
Local Authorities	8	10.5
Manufacturers	7	9.3
Other	9	11.8
Research Est./Fire Test Houses	2	2.6
Trade Associations	15	19.7
<b>Total</b>	<b>76</b>	<b>100.0</b>

## **1.5 Report Structure**

1.5.1 The remainder of the report is organised as follows:

- Section 2 presents the analysis for Part 1 of the consultation relating to Mandatory Standard 2.7.
- Section 3 sets out the analysis for Part 2 of the consultation covering the definition and ban of category 3 MCM.
- Section 4 analyses the results relating to Part 3 of the consultation on BS 8414 (large scale fire tests).
- Section 5 considers the results for Part 4 of the consultation on consequential matters.
- Section 6 sets out the analysis of the impact assessment (not included in this draft).

## 2. Part 1 – Mandatory Standard 2.7

### 2.1 Introduction

- 2.1.1 Following two meetings of the building standards (fire safety) review panel, it was suggested that changes are made to the wording of Mandatory Standard 2.7 (spread on external walls). The standard is shown in the quote below with the text to be deleted marked with a strikethrough and the proposed additional text shown in bold.

“ Every building must be designed and constructed in such a way that in the event of an outbreak of fire within the building, or from an external source, the spread of fire on the external walls of the building ~~is inhibited~~, **does not unduly promote fire spread taking into account the height and use of the building.**”

- 2.2 The purpose of the proposed change to the standard was to provide clarity of intent taking into account current guidance.

### 2.2 Question 1 – Change to Mandatory Standard 2.7

- 2.2.1 Question 1 asked respondents whether they agreed or disagreed with the proposal to remove the words “is inhibited” in the mandatory standard which is considered ambiguous and replace with the words in bold (in the quote above) to provide clarity of intent in the supporting guidance.
- 2.2.2 Table 2 below shows whether respondents agreed with the proposal to remove the words “is inhibited” and replace them with “does not unduly promote fire spread taking into account the height and use of the building” in the mandatory standard. The majority (55%) of responses were supportive of the proposal (agreeing or strongly agreeing) with 28% of respondents disagreeing or strongly disagreeing with the proposal. A further 16% of respondents were neutral on the proposal.
- 2.2.3 Taking agreement and strong agreement together, there was majority support for this proposal across all categories except for individuals and research establishments/fire test houses. Individuals were quite broadly split across agreement, disagreement and neutral. Research establishments/fire test houses disagreed with the proposal.

**Table 2: Summary of responses to Q1 on the removal of the words “is inhibited” and their replacement with “does not unduly promote fire spread taking into account the height and use of the building”?**

	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neither Agree or Disagree</b>	<b>Dis-Agree</b>	<b>Strongly Dis-Agree</b>	<b>Not Answered</b>	<b>Total</b>
Construction Ind.	2	2	2	-	-	-	6
Consultancy	2	2	1	-	2	-	7
Individuals	4	5	4	3	6	-	22
Local Authorities	4	1	-	2	1	-	8
Manufacturers	1	4	-	1	-	1	7
Other	3	2	3	1	-	-	9
Research Estab./ Fire Test House	-	-	-	2	-	-	2
Trade Association	3	5	2	3	-	2	15
<b>Total</b>	<b>19</b>	<b>21</b>	<b>12</b>	<b>12</b>	<b>9</b>	<b>3</b>	<b>76</b>
% respondents answering question	26	29	16	16	12		100

Note: Percentages may not sum due to rounding

2.2.4 There were 57 comments made in response to this question. Responses are considered separately for those agreeing and those disagreeing with the quantitative part of the question.

### **Agreeing with the Proposed Wording**

#### *Improves Clarity*

2.2.5 Many respondents from all categories except individuals and research establishments/fire test houses supported the proposed wording as they felt it provided greater clarity on the intention of the mandatory standard. The proposed wording was felt to address two key aspects which determine the fire safety of a building – height and use of the building. While there was general support for the reference to height and use, one respondent felt that reference to height and use should be removed as height and use of buildings are addressed elsewhere in the Technical Handbooks.

2.2.6 Several respondents also highlighted that the proposed wording aligns more closely with the functional requirements given in the Building Regulations for England and Wales.



### *Suggested Alternative Wording*

2.2.7 Although agreeing with the proposed wording of the mandatory standard, some respondents made comments on the wording including:

- The wording chosen becomes confused by the repeated use of “fire” and “spread”.
- “does not unduly promote” is weak as the word “unduly” is open to interpretation or at least is as ambiguous as “inhibited”. One respondent suggested deleting “unduly”.
- In contrast another respondent felt that “unduly” was appropriate as products used as cladding should not encourage vertical fire spread to a degree that would unduly impact on the safety of life.

2.2.8 A few respondents suggested alternative wording which is shown in bold in the quotes below:

“Every building must be designed and constructed in such a way that, in the event of an outbreak of fire within the building or from an external source, the spread of fire on the external walls of the building **is not unduly promoted**, taking into account the height and use of the building”

“Every building must be designed and constructed in such a way that, in the event of an outbreak of fire within the building, or from an external source, the spread of fire on the external walls of the building, **taking account of its height and use, is not unduly promoted**”

“Every building must be designed and constructed in such a way that, in the event of an outbreak of fire within the building, or from an external source, the spread of fire on the external walls of the building **should** not unduly promote fire spread taking into account the height and use of the building”

“Every building must be designed and constructed in such a way that, in the event of an outbreak of fire within the building, or from an external source, the spread of fire on the external walls of the building does not **unduly** promote fire spread taking into account the height and use of the building”

### General Points Supporting the Proposal

2.2.9 A couple of more general comments were made including:

- The need to “flag” a building with external combustibility for insurance and occupier safety reasons.
- The need to consider the wall build up. If the wall is a brick and block cavity insulation wall, there is negligible risk from having combustible insulation within the cavity. If the wall is externally insulated with a rain screen cladding system, the risk is higher depending on the height and use of the building.

## Disagreeing with Proposed Wording

### *No Less Ambiguous*

- 2.2.10 While respondents disagreeing with the proposed change were often supportive of the intent of the change, many respondents across all categories, excluding the construction industry, felt that the proposed wording was just as vague or open to interpretation as the original wording. Indeed, the original word “inhibited” was felt to be stronger by a few respondents. As one respondent stated:

“the new wording is of a lower standard than the existing regulation as the wording implies that the materials in the external wall may allow some degree of fire spread across the external wall construction whereas the existing wording implies that the external wall should act to limit spread of fire”.

- 2.2.11 The use of the words “unduly promote” were felt to be ambiguous. Several respondents suggested removing “unduly” from the proposed wording such that the sentence reads “...does not ~~unduly~~ promote fire spread...”. This point was also made by a respondents supporting the proposed wording (paragraph 2.2.7, second bullet point above).

- 2.2.12 Other alternative wording is shown in bold in the quotes below:

“Every building must be designed and constructed in such a way that in the event of an outbreak of fire within the building, or from an external source, **the external walls do not unduly promote fire spread** taking into account the height and use of the building”

“Every building must be designed and constructed in such a way that, in the event of an outbreak of fire within the building, or from an external source, the spread of fire on the external walls of the building **do not** unduly promote fire spread taking into account the height and use of the building”

“Every building must be designed and constructed in such a way that, in the event of an outbreak of fire within the building, or from an external source, the spread of fire on the external walls of the building **is slowed by the geometric arrangement of non-combustible and fire resisting construction in the external wall to provide sufficient time to ensure the Life Safety of occupants**”

- 2.2.13 The last suggested wording in paragraph 2.2.12 reflects a view that life safety would be better served if buildings were protected as an asset or as property<sup>2</sup>. This would require the mandatory standard to allow sufficient time for evacuation (self-

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<sup>2</sup> Note that the legislated purpose of the Building Regulations throughout the UK is Life Safety and buildings are not protected as an asset or as property.

evacuation through to rescue) by slowing fire spread to the adjacent fire resisting compartments on the external wall.

2.2.14 One respondent also provided some examples of wording of the performance requirements for external walls from other countries including:

■ **England-Building Regulations 2010 (as amended 2018):**

“B4. (1) 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 position of the building”

■ **Republic of Ireland- Building Regulations (Amendment) Regulations 2006:**

“The external walls and roof of a building shall be so designed and constructed that they afford adequate resistance to the spread of fire to and from neighbouring buildings.”

■ **Republic of Ireland- Technical Guidance Document B Reprinted edition 2020:**

“4.1.5 The external envelope of a building should not provide a medium for fire spread”

■ **Australia- Performance Requirement CP2 of NCC Volume One:**

“a) A building must have elements which will, to the degree necessary, avoid the spread of fire—

...

(iii) between buildings; and

(iv) in a building.”

■ **New Zealand- New Zealand Building Code -**

“C3—fire affecting areas beyond the fire source

Provisions

Functional requirement

....

c3.3 Buildings must be designed and constructed so that there is a low probability of fire spread to other property vertically or horizontally across a relevant boundary.”

■ **Canada- Division A Compliance, Objectives and Functional Statements Part 3 — Functional Statements**

"3.2.1. FUNCTIONAL STATEMENTS

3.2.1.1. Functional Statements

1) The objectives of this (Bylaw) are achieved by measures, such as those described in the acceptable solutions in Division B, that are intended to allow the building or its elements to perform the following functions (see Appendix A):

.....

F03 To retard the effects of fire on areas beyond its point of origin."

- 2.2.15 The examples show that the wording of the requirements of other countries all relate to the materials actively limiting the spread of fire rather than the material not unduly promoting the spread of fire.
- 2.2.16 Given the perceived ambiguity of "unduly promote", it was stated that the guidance in the Technical Handbook would have to provide the required clarity. However, it was suggested by one respondent that the guidance to which the new wording would apply is buildings over 11m in height, while the functional standard applies to buildings of any height. The standard would imply that all buildings should be constructed in a manner that does not promote fire spread, but buildings under 11m are permitted to have European Classification E which does not have a restrictive role in the spread of fire.

#### **Neither Agreeing or Disagreeing with Proposed Wording**

- 2.2.17 Several respondents who did not agree or disagree with the proposal felt the proposed wording was still ambiguous and that the proposed wording would not have a significant effect on the understanding of the mandatory standard. It was also suggested that further clarification could be provided in guidance if necessary, rather than through changes in legislation.

## 3. Part 2 – Definition and Ban of Category 3 Metal Composite Material (MCM)

### 3.1 Introduction

- 3.1.1 Given concerns about the use of the highest risk cladding materials and interpretation of data from large-scale fire test results in new developments, changes were made to Section 2 (fire) of the Technical Handbook in April 2021. As stated in paragraph 1.1.3, these changes include the need to avoid using category 3 MCM cladding in new building work and the removal of reference to BS 8414 as alternative guidance.
- 3.1.2 The expert review panel considered a number of options relating to the definition of category MCM. One option was to lower the threshold of calorific value of cladding material from 35 to 20 MJ/kg. However, widening the scope to all cladding material with a calorific value of 20 MJ/kg was not considered a practical solution.
- 3.1.3 The expert panel agreed the definition should be close to that used by the Ministry of Housing, Communities and Local Government (MHCLG)<sup>3</sup> as part of the aluminium composite material (ACM) panel screening test programme following the Grenfell Tower fire i.e. ACM (category 3) with a core material having a calorific value > 35 MJ/kg.
- 3.1.4 Thin MCM cladding panels are non-homogeneous products made from generally, aluminium, zinc or copper sheets around 0.5 mm thick bonded together with a variety of core materials with a range of calorific values. Question 2.1 of the consultation sought to establish if respondents agreed with the proposed definition of MCM category 3 which is shown below:

“Any panel or sheet, having a thickness of no more than 10mm, which is comprised of a number of layers, two or more of which are made of metal, alloy or metal compound and one or more substantial layer of which is made of a material having a gross calorific value of more than 35 MJ/kg when tested in accordance with BS EN ISO 1716:2018 entitled “Reaction to fire tests for products – Determination of the gross heat of combustion (calorific value)” published by the British standards institution in 2018 and for these purposes a substantial layer is one which is at least 1mm thick or has a mass per unit area of at least 1kg per m<sup>2</sup>”.

- 3.1.5 Market research has indicated that there are currently no MCM products on the market with an overall thickness of more than 7mm. However, markets can fluctuate and it is therefore important to decide for futureproofing if the ban on MCM should be

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<sup>3</sup> Note that MHCLG is now known the Department for Levelling Up, Housing and Communities (DLUHC)

within regulation (which is less practical to amend and requires parliamentary time) or be within guidance (which can be amended much quicker).

3.1.6 Question 2.2 sought to establish if the ban on MCM category 3 should be in guidance or regulation.

### 3.2 Question 2.1 -Do you agree with the definition for MCM (category 3)?

3.2.1 Question 2.1 asked respondents if they agreed with the definition for MCM (category 3) (see para 3.1.4 above) with Table 3 below providing the results. No one response category achieved a majority, but 48% of respondents 'strongly agreed' or 'agreed' with the definition. While only 17% of respondents 'disagreed' or 'strongly disagreed' with the definition, some 36% of responses were neutral.

3.2.2 A majority of respondents in the construction industry, local authority and other sectors supported (agreed or strongly agreed) the proposed definition. The majority of individuals and trade associations were neutral on the definition with all research establishments/fire test houses disagreeing with the proposal.

Table 3: Do you agree with the definition in paragraph 3.1.4 above for MCM (category 3)?							
	Strongly Agree	Agree	Neither Agree or Disagree	Dis-Agree	Strongly Dis-Agree	Not Answered	Total
Construction Ind.	1	4	1	-	-	-	6
Consultancy	1	2	1	1	2	-	7
Individuals	3	8	11	-	-	-	22
Local Authorities	2	4	-	1	1	-	8
Manufacturers	-	3	2	1	-	1	7
Other	2	5	1	1	-	-	9
Research Estab./ Fire Test House	-	-	-	1	1	-	2
Trade Association	-	-	10	2	1	2	15
<b>Total</b>	<b>9</b>	<b>26</b>	<b>26</b>	<b>7</b>	<b>5</b>	<b>3</b>	<b>76</b>
% answering question	12	36	36	10	7		100

Note: percentages may not sum due to rounding

3.2.3 There were 49 comments made in response to this question. Responses are considered separately for those agreeing and those disagreeing with the quantitative part of the question.

## Agreeing with the Proposed Definition

### Improves Clarity

- 3.2.4 Several respondents stated that the proposed definition was reasonable and described such materials clearly without ambiguity. The performance benchmark was also welcomed as a way to restrict the use of the highest risk cladding products.

### Specific Details related to Thickness and Calorific Value

- 3.2.5 Several respondents also made very specific comments on the proposed definition, particularly in relation to thickness and calorific value:
- **Thickness:** a few respondents questioned the upper limit of 10mm and suggested that this left the definition open to misuse and may permit systems of greater thickness to avoid the exclusions. One respondent recognised that the proposed thickness reflects current practice and may require review in the future while another felt that it will “future proof” other products which may be manufactured over 7mm thick.
  - **Calorific Value:** One respondent felt that reducing the calorific value to around 20 MJ/kg would significantly limit the availability of suitable products and inadvertently restrict use of many A2 rated products. Another felt that while there could be benefits in further reducing the calorific value, the technical standards provide sufficient guidance to ensure that any unsafe material would not be permitted as part of any external wall system. One further respondent felt that the details relating to calorific value could be difficult to interpret without expert input from a fire engineer and may leave them reliant on the manufacturer’s technical information and guidance.

### General Comments

- 3.2.6 A few respondents referred to similar definitions being discussed in England and it was suggested that it would be better to have agreement across the UK in order to facilitate the market.

- 3.2.7 One respondent felt the wording could be better and suggested

“...which comprises two layers of metal, alloy or metal compound, between which is located a substantial layer of material having...”

## Disagreeing with the Proposed Definition

### Specific Details related to Thickness and Calorific Value

- 3.2.8 Several respondents made very specific comments on the definition in relation to thickness and calorific value:

- **Thickness:** the rationale behind the decision to restrict or prohibit the use of thinner category 3 MCM panels was questioned as thicker panels may provide a higher fire load. It was suggested that “*having a thickness of no more than 10mm*” is deleted from the definition. One respondent also suggested that cladding product of any thickness should be limited by calorific value in MJ/kg, using established test and classification standards. They also stated that the requirement should apply to any homogenous material or composite product, regardless of the thickness of the composite.
- **Calorific Value:** lowering of the calorific value to at least 20 MJ/kg was supported by a few respondents. One respondent suggested that calorific value should be limited on the basis of unit area of cladding (to 35 MJ/m<sup>2</sup>) as opposed to bulk material mass as this was felt to be more representative of the actual fire load/risk involved and obviates the need to define “substantial layer”. It was also suggested that the choice of 35 MJ/kg as the limit for the gross calorific value for substantial layers of MCM panels is arbitrary and further analysis is required to determine the most relevant limit.

3.2.9 Related to the issues of thickness and calorific value, the issue of testing was raised by a few respondents. One respondent suggested that “cladding product of any thickness should be limited by calorific value in MJ/kg, using established test and classification standards” while another suggested that whether a product is ‘fit for purpose’ should be based on clear and unambiguous test certification, not a prescriptive ban. It was suggested that the threshold is “Cladding and Insulation product of Class A2-s1,d0 to BS EN 13501-1 at all heights and for all building use categories”. It was suggested that this threshold would encourage market innovation while recognising that some Class A1 and Class A2-s1,d0 MCM products are already on the market.

Definition too Restrictive

3.2.10 Several respondents felt that the definition was too limiting and allowed for loopholes to circumnavigate the requirements. For example, a new MCM product that was 10.1mm thick and having a substantial layer with a gross calorific value of more than 35 MJ/kg would not be covered by the definition as would a product which used something other than metal to form one of the faces of the product. One respondent suggested that a definition for a category 1, 2, or 3 should be given which would apply to current and future products.

3.2.11 A few respondents also felt that the definition was too restrictive in terms of the product that it was applied to. One respondent suggested that there are other products on the market that may have a similar calorific value and rapid flame spread (e.g. honeycomb aluminium panels encased in fibreglass coated adhesive) while another felt that “if it is the opinion of the panel that external surface products with a substantial layer with a gross calorific value of more than 35 MJ/kg pose a risk to the relevant person then it is recommended that this applies to any products and not just MCM panels”.



## General Points

- 3.2.12 One respondent also highlighted that there is much confusion about metal composite panels and insulated panels, with the latter capable of meeting large scale system tests such as BS 8414. It was suggested that the main concern should be the polyethylene content and not the metal composite panels which, with the correct filler, can achieve an A2 rating.

### **Neutral Responses regarding the Proposed Definition**

- 3.2.13 The issues raised by respondents neither agreeing or disagreeing with the proposal had also been raised by other respondents to the question. For example:
- Several respondents suggested that reference to the maximum overall thickness of the panel should be removed to prevent confusion and avoid potential abuse.
  - Several respondents suggested that the definition was consistent with the wider industry understanding of a MCM category 3 material. However, respondents questioned whether the definition would apply to other products with a polyethylene core between two non-metallic facings.
  - It was suggested that the research behind the lower limits on thickness and mass had not been referenced but it was “assumed that at less than  $1\text{kg/m}^2$  (less than  $35\text{ MJ/m}^2$ ) the science has shown that fire spread cannot be self fuelling”.

### **3.3 Part 2 Question 2.2 – Do you think that the ban on MCM (category 3) materials should be in guidance or regulation?**

- 3.3.1 Question 2.2 asked respondents if they thought that the ban on MCM (category 3) materials should be in guidance or regulation with Table 4 below providing the results. The majority (60%) of respondents felt that the ban should be in regulation with 22% of respondents supporting the ban being in guidance.
- 3.3.2 Respondents in the consultancy, individual and other categories clearly supported the ban being in regulation. The majority of local authority respondents supported the ban being in guidance with the other categories being more evenly spread across regulation, guidance and unsure.

**Table 4: Do you think that the ban on MCM category 3 materials should be in guidance or regulation?**

	Guidance	Regulation	Not Sure	Not Answered	Total
Construction Ind.	2	3	1	-	6
Consultancy	1	5	1	-	7
Individuals	3	19	-	-	22
Local Authorities	5	3	-	-	8
Manufacturers	1	3	2	1	7
Other	1	7	1	-	9
Research Estab./ Fire Test House	-	1	1	-	2
Trade Association	3	2	7	3	15
<b>Total</b>	<b>16</b>	<b>43</b>	<b>13</b>	<b>4</b>	<b>76</b>
% answering question	22	60	18		100

3.3.3 There were 54 comments made in response to this question. Responses are considered separately for those supporting the ban being in regulation, guidance and those who were unsure.

### **Ban in Regulation**

3.3.4 Of the respondents supporting the ban being included in regulation, there were many comments on the following two main themes:

- **Stronger statement:** many respondents felt that if a product is to be banned it must be in regulation. Regulation is much stronger than guidance, it is unambiguous and it provides a clear legal requirement that can be enforced.
- **Discourage alternative solutions:** many respondents also felt that if the ban was not in regulation, it would be open to interpretation and allow alternative approaches to justify the use of combustible products in external wall construction.

3.3.5 The following quotes provide a flavour of the comments on these two themes:

“By banning MCM (category 3) materials in regulation, the Scottish Government would provide the clarity needed on this issue to raise standards in the built environment”.

“The only way that we can see that ensures a ban is effective is through regulation. Guidance will not send the same message over their use and

therefore runs the risk of sending the wrong message when the intent is a ban of this specific type of material”.

“We cannot allow another situation like Grenfell and it would be better if MCM was banned. It should be written into legislation and there will be no confusion by anyone as to what can be installed on buildings over 11m in height”.

“Regulation could prevent or restrict any alternative engineered solutions being proposed for different building types”.

- 3.3.6 A few respondents highlighted that it is only regulation that will achieve compliance and that there is a need to back-up the regulation with clear and unambiguous guidance.

### **Ban in Guidance**

- 3.3.7 Of the respondents supporting the ban being included in guidance, there were several comments on two main themes:

- **Speed:** several respondents suggested that having the ban in guidance would be quicker to implement and change if necessary.
- **Flexibility:** several respondents felt that guidance would offer enough flexibility to change to a variety of situations and new innovative products.

- 3.3.8 The following quotes provide a flavour of the comments on these two themes:

“We believe that adopting a regulatory ban makes it much more challenging and time consuming to seek amendments, which is of particular concern should the Scottish Government choose to remove citation of BS 8414 and BR135 pending its formal review process”

“..any proposed revisions to definition (if necessary) could be updated in a more efficient manner”

“The definition should be placed within the guidance section of the standards to allow quicker reaction to any future changes in products, manufacturing, research findings or other incidents”.

“..the limits and description need to be easily changed as new information and new products become available. This will be better facilitated through guidance than regulation. It will also mean that it is possible to negotiate around unintended and unreasonable consequences should they arise”.

“A regulatory ban provides no alternative routes to compliance and, as has been seen the following the ban of combustible materials in the external walls of buildings in England, has the potential to cause unintended consequences and hardship for homeowners who find themselves in a building containing a banned cladding material”.

3.3.9 A few respondents also raised the issue of performance-based standards. One respondent felt that “the preferred route to exclude any construction product is via minimum performance criteria (based on large scale system testing performance) and provided by guidance within the Technical Handbooks rather than as a prescriptive ban at the product level which may have definitional issues”.

### **Unsure of whether the Ban should be in Regulation or Guidance**

3.3.10 For those respondents who answered “unsure” to the question, the comments were focused on three themes:

- **Disagree with ban:** a few respondents felt that the question was biased as there was no option to say that a ban is not considered the appropriate course of action.
- **Definition:** a few respondents questioned the definition and felt it should be expanded to ensure a clear understanding of which materials are included and excluded. It was suggested that it should be applicable to all materials/products that fall into a defined category with a defined unacceptable performance level.
- **Prescriptive ban:** a few respondents did not support a prescriptive ban believing that the restriction to use of any material should be enforced through the application of the mandatory standards and the guidance within the Technical Handbooks as an extension of system performance rather than as a prescriptive ban.

3.3.11 The following quotes illustrate some of these themes:

“If a ban was to be considered, it should be applicable to all materials and/or products that fall out with a clearly defined performance category which is considered acceptable. This approach of defining an acceptable performance criteria would cover future materials and/or products and not just existing ones”.

“The need for products to meet the functional criteria and guidance in the Technical Handbooks should be maintained so that any product can prove its integrity as part of a system through large-scale testing”

## 4. Part 3 - Large Scale Fire Test, BS 8414

### 4.1 Introduction

4.1.1 Following the interim change to the Technical Handbook in April 2021 to remove reference to BS 8414 (and associated BR135) as alternative guidance, BSD have requested notification from local authority verifiers under Section 34 of the Building (Scotland) Act 2003 where BS 8414 (and associated BR 135) and extended field of application assessments (BS 9414) have been used to demonstrate compliance with the mandatory building standards.

4.1.2 The consultation set out four options relating to large scale fire test BS 8414 as follows:

- Option 1 – April 2021 Addendum: This option re-affirms the decision to remove reference to BS 8414/BR 135 from the Technical Handbook and to notify BSD when used as an alternative approach.
- Option 2 – Managed Use of BS 8414 to Address Risk: This option will cite reference to BS 8414/BR 135 in the Technical Handbook with tighter controls on the use and height of the building.
- Option 3 – Regulatory Ban: This option proposes a regulatory ban i.e. A1 or A2 only in regulation for residential buildings with any storey more than 18m.
- Option 4 – Any Alternative Proposal: This provides the opportunity for respondents to suggest alternative proposals for the Scottish Government to consider.

4.1.3 Table 5 provides a summary of the details of Options 1-3. The following points should be noted when interpreting the options:

- Any reference to storey height means the height of the topmost storey above the adjoining ground.
- For the purposes of this consultation ignore rules of measurement around sloping sites and topmost storeys consisting solely of plant rooms.
- Reference to European classification A1, A2, B, C, D and E means reaction to fire classification as set out in BS EN 13501-1.
- Supplementary guidance on the competence of designers, installers and verifiers of cladding systems as well as interpretation and use of fire test results will form part of a future consultation on compliance and contained within a new compliance handbook.
- The options exclude proposals for the ban on MCM (Category 3) as this is covered in Part 2 of this consultation.

**Table 5: Summary of Options Relating to Large Scale Fire Test, BS 8414**

	Option 1		Option 2		Option 3	
	Performance <sup>2</sup>	Commentary	Performance <sup>5</sup>	Commentary	Performance <sup>5</sup>	Commentary
<b>Domestic Buildings<sup>1</sup></b>						
Any storey at a height of not more than 11m	B, C, D or E	Status quo	B, C, D and E	Status quo	B, C, D or E	Status quo
Any storey at a height of more than 11m	A1 or A2 or FSE approach <sup>3</sup>	Supplementary guidance in compliance h'bk				
Any storey at a height of more than 11m and not more than 18m			A1 or A2 or BS 8414/BR135 or FSE approach <sup>3</sup>	Supplementary guidance in compliance h'bk	A1 or A2 or BS 8414/BR135 or FSE approach <sup>3</sup>	Supplementary guidance in compliance h'bk
Any storey at a height of more than 18m			A1 or A2 or FSE approach <sup>3</sup>	Supplementary guidance in compliance h'bk	A1 or A2 only (in regulation)	Supplementary guidance in compliance h'bk. No assessments in lieu of tests (AILOT) and/or FSE approach <sup>3</sup>
<b>Entertainment, Assembly Buildings, Residential Care Buildings &amp; Hospitals<sup>1</sup></b>						
All buildings regardless of height <sup>4</sup>	A1 or A2 of FSE approach <sup>3</sup>	Supplementary guidance in compliance h'bk	A1 or A2 of FSE approach <sup>3</sup>	Supplementary guidance in compliance h'bk		
Any storey at a height of not more than 18m					A1 or A2 or BS 8414/BR135 or FSE approach <sup>3</sup>	Supplementary guidance in compliance h'bk
Any storey at a height of more than 18m					A1 or A2 only (in regulation) <sup>6</sup>	Supplementary guidance in compliance h'bk. No assessments in lieu of tests (AILOT) and/or FSE approach <sup>3</sup>

**Table 5: Summary of Options Relating to Large Scale Fire Test, BS 8414**

	Option 1		Option 2		Option 3	
	Performance <sup>2</sup>	Commentary	Performance <sup>5</sup>	Commentary	Performance <sup>5</sup>	Commentary
<b>All Non-Domestic Buildings<sup>1</sup> (Other than Entertainment, Assembly, Residential Care &amp; Hospitals<sup>1</sup>)</b>						
Any storey at a height of not more than 11m	B, C, D or E	Status quo	B, C, D and E	Status quo	B, C, D or E	Status quo
Any storey at a height of more than 11m	A1 or A2 or FSE approach <sup>3</sup>	Supplementary guidance in compliance h'bk				
Any storey at a height of more than 11m and not more than 18m			A1 or A2 or BS 8414/BR135 or FSE approach <sup>3</sup>	Supplementary guidance in compliance h'bk	A1 or A2 or BS 8414/BR135 or FSE approach <sup>3</sup>	Supplementary guidance in compliance h'bk
Any storey at a height of more than 18m			A1 or A2 or FSE approach <sup>3</sup>	Supplementary guidance in compliance h'bk	A1 or A2 or FSE approach <sup>3</sup>	Supplementary guidance in compliance h'bk

**Notes:**

- 1 Assume building more than 1m from boundary i.e. if < 1m to boundary cladding should achieve European classification A1 or A2 in accordance with BS EN 13501-1.
- 2 Any reference to A1 or A2 or FSE approach assumes that supplementary guidance will be provided in the new compliance handbook (to be developed).
- 3 Alternative FSE approach from first principles using BS 7974 or International fire engineering guidelines (IFEG). guidance in compliance handbook to restrict use of this approach to chartered / incorporated engineer registered with engineering council having skills, knowledge and [experience/expertise] of façade fire testing and construction.
- 4 Excludes small buildings as defined in the Non-Domestic Technical Handbook (NDTH) provided no storey more than 11m.
- 5 Any reference to A1 or A2 or BS 8414/BR 135 assumes that supplementary guidance will be provided in the new compliance handbook (to be developed).
- 6 May be extended to other residential buildings including hotels





## 4.2 Question 3 – Which of the Four Options is your Preferred Choice?

4.2.1 Question 3 asked respondents which of the options shown in Table 5 above was their preferred choice. Respondents could only select one option. Table 6 shows the results. Option 1 was favoured by 16% of respondents, but this option attracted the least support. Options 2 and 4 were preferred by 24% and 27% of respondents with Option 3 garnering the greatest support (33% of respondents).

4.2.2 Table 6 shows that support for the different options is broadly split across the different respondent categories. The main observations include:

- A slight majority (57%) of respondents from the consultancy category favoured Option 4.
- Half (50%) of individual and local authority respondents favoured Option 3.
- A slight majority (53%) of respondents from trade associations favoured Option 2.
- There was no clear support for one specific option across the other categories.

<b>Table 6: Which of the Four Options is your Preferred Choice?</b>						
	<b>Opt. 1</b>	<b>Opt. 2</b>	<b>Opt. 3</b>	<b>Opt.4</b>	<b>Not Answered</b>	<b>Total</b>
Construction Industry	1	2	2	1	-	6
Consultancy	1	-	2	4	-	7
Individuals	1	5	11	5	-	22
Local Authorities	3	-	4	1	-	8
Manufacturers	1	2	1	2	1	7
Other	3	-	3	2	1	9
Research Estab./Fire Test House	-	-	-	1	1	2
Trade Association	1	8	-	3	3	15
<b>Total</b>	<b>11</b>	<b>17</b>	<b>23</b>	<b>19</b>	<b>6</b>	<b>76</b>
% respondents answering question	16	24	33	27		100

4.2.3 There were 56 comments made in response to this question. Comments are presented separately for each individual option.

## **Option 1 – April 2021 Addendum**

- 4.2.4 Option 1 re-affirms the decision to remove reference to BS 8414 and BR135 from the Technical Handbook and to notify BSD when used as an alternative approach. It was preferred by eleven respondents from all categories except research establishments/fire test houses.
- 4.2.5 A few respondents favoured this option as it was felt to be clearer and less complex than Options 2 and 3. It was stated that Option 1 provides clear height related standards and clear cladding performance options whereas Options 2 and 3 re-introduce separate guidance for buildings with a storey height over 18m. One respondent felt that Options 2 and 3 had some merits<sup>4</sup> but also some adverse effects<sup>5</sup> and, as a compromise, Option 1 was the best solution.
- 4.2.6 A few respondents also referred to BS 8414 and the negative perceptions and lack of confidence in the test. It was suggested that while BS 8414 provides an idea of how external wall materials might react in a fire, testing perfectly constructed samples does not reflect real world construction practices. Given the reservations about the application and efficacy of the test and classification methodologies, one respondent suggested there was an ongoing need for greater control over the use of BS 8414 and BR135 as an alternative approach at this time.
- 4.2.7 One respondent felt there was a need to “differentiate between any genuine technical pointers for improvements in the effectiveness of the test and classifications, and criticism of the test and classification that may have been encouraged/influenced by the alleged gaming of the test and classification rules”. It was suggested that excluding system testing for reaction to fire was contrary to the wish for assemblies to be considered holistically rather than individual product testing and BS 8414 should be retained with any improvements to the test and classifications from the BSi review committees.

## **Option 2 – Managed Use of BS 8414 to Address Risk**

- 4.2.8 Option 2 would cite reference to BS 8414 and BR135 in the Technical Handbook with tighter controls depending on the use and height of the building and was favoured by 17 respondents. The majority of respondents preferring this option were trade associations and individuals.
- 4.2.9 Many of the respondents supporting this option felt that there was a role for large scale system testing as it was the only way to establish whether the chosen components work together in their end use application. The following quotes illustrate the points raised:

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<sup>4</sup> Benefit of considering BS 8414 test results and greater clarity and ease of confirming conformance.

<sup>5</sup> Unforeseen impacts and less able to be adapted to changing technologies and practices.

“..it is important that we look at the testing of any building materials and their performance based on how they are used and perform in a built-up system. Test evidence can demonstrate combustible materials used in external wall systems can perform and meet the desired performance. Large scale testing should always be preferred over just specifying a non-combustible material”.

“..the best way to achieve this [fire safe design] is through the use of large-scale system testing to establish both the performance of the materials to be used and the configuration in which they are to be used. Relying on a simple material classification based largely on small scale tests is unhelpful and does not guarantee a good level of fire safety, whatever the type or height of building involved. Instead, it could lead to a dangerous level of complacency and over-reliance on the fact that materials are classed as A1/A2 to compensate for poor building design and construction”.

“..a ban on the use of combustible materials in external wall systems brings no guarantees that buildings will be safer. Instead a regime where whole systems are tested to an agreed methodology to give assured performance is the more appropriate approach. We would advocate the use of BS 8414/BR135 test as the best route to ensure such compliance. There is no advantage in testing individual materials in isolation, since their behaviour when combined with other products can be quite different”.

4.2.10 A number of respondents provided links to articles or studies of large scale tests and real life case studies, including:

- The MHCLG<sup>6</sup> tests<sup>7</sup> in England on various façade systems in the large-scale BS 8414 test rig which provided an indication of what was acceptable and unacceptable performance and related compliance.
- A Tenos report<sup>8</sup> which considers whether data from real fires suggests there is a need to review reliance on BS 8414/BR 135.
- Case studies<sup>9</sup> analysing the performance of insulated panels.

4.2.11 Several respondents felt that this option enabled BS 8414 to be used but that it should be assessed/controlled by local authority building standards verifiers or third parties. It would allow the use of different materials in appropriate situations.

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<sup>6</sup> Now DLUHC (see footnote 3, page 21)

<sup>7</sup> <https://www.gov.uk/government/collections/building-safety-independent-expert-advisory-panel>

<sup>8</sup> <https://insulationmanufacturers.org.uk/wp-content/uploads/2018/09/Tenos-BS8414-Review.pdf>

<sup>9</sup> <https://www.epic.uk.com/fire-research-case-studies/fire-research-case-studies/>

- 4.2.12 A few respondents clarified that they understood that Option 2 would still allow BS 8414 for buildings over 18m, but that this would be under the current managed approach via notification to BSD. This was supported as it provides an added layer of verification for high-risk buildings. It was also suggested (by a few respondents) that this position is clarified in the Technical Handbook with links to supplementary guidance for advice on the process.

### **Option 3 – Regulatory Ban**

- 4.2.13 Option 3 proposes a regulatory ban (i.e. A1 or A2 only in regulation) for residential buildings with any storey more than 18m and was favoured by 23 respondents. Support for this option came from all categories except trade associations and research establishments/fire test houses.
- 4.2.14 Several respondents felt that this option removed any ambiguity and provided the greatest clarity for buildings over 18m. An outright ban was suggested to be the only way that safer cladding could be achieved. Without a ban one respondent stated that “there are too many things that can go wrong in relation to the specification of this type of material i.e. testing of the product, promotion of the product by industry, not actually knowing what the fire test data will show and confusion by the verifier as to what is actually allowed”.
- 4.2.15 A few respondents emphasised some of the points from Part 2 (paragraphs 3.3.4 – 3.3.5 above) in terms of a regulatory ban being a stronger option and one respondent highlighted that Option 3 would allow a move towards consistency with England.
- 4.2.16 One respondent suggested that fire risk considerations should include a wide range of factors beyond height e.g. building use and the vulnerability of those using the building. Buildings over 11m were identified as being particularly challenging for evacuation and adequate fire-fighting. Related to the last point, a further respondent highlighted that ground access to the elevation of a building was not taken into account in the event of a fire and suggested that where a podium/lower level building abuts the elevation and prevents direct access for fire fighting and evacuation of occupants, the full elevation should be non-combustible A1 or A2 material. Although the regulations mention distance from boundary, they do not take account of the approximation of other buildings, limited access due to sloping land, rivers and other obstacles.

### **Option 4 – Any Alternative Proposal**

- 4.2.17 Option 4 provided the opportunity for respondents to suggest any other alternative proposals and was supported by 19 respondents across all categories.
- 4.2.18 As expected from an option that asks for “any alternative proposal”, there were many suggestions made. The analysis has tried to group the suggestions into similar themes.

## Building Categories and Associated Risk

- 4.2.19 A few respondents proposed an alternative option which creates three distinct categories of buildings based on their particular risk. The alternative proposal was:
- 1. Domestic buildings and hotels**
    - a. No taller than 11m: performance B-s1, d0 or better
    - b. Taller than 11m: performance A2-s1, d0 or better (with regulatory ban)
  - 2. Entertainment and assembly buildings, residential care buildings and hospitals; and schools**
    - a. Of any height: performance A2-s1, d0 or better (with regulatory ban)
  - 3. All other buildings**
    - a. No taller than 11m: performance B-s1, d0 or better
    - b. Taller than 11m: performance A2-s1, d0 or better (with regulatory ban)
- 4.2.20 This proposal was made on the basis that “BS 8414 and the associated BR135 classification criteria do not provide information that can be relied upon to either assure or inform the fire safety of real-life buildings. We therefore consider that BS 8414 testing and/or any likely, related FSE are unfit for use as a route to compliance for high-rise and other high-risk buildings”.
- 4.2.21 A few respondents proposed that there is a statutory ban on the use of combustible products (products not classified A2-s1, d0 or better) in the external walls of all buildings taller than 11m (or having more than three storeys) and high-risk buildings such as hospitals, schools etc. of any height.
- 4.2.22 Reasons were provided to support this proposal including:
- Regulations being well within the fire-fighting capabilities rather than being at the outer limits of fire service capacity.
  - The extended time it takes occupants to evacuate tall buildings, regardless of the mobility of the occupant.
  - The vulnerability of high-risk buildings due to their size, function and the make-up and density of their occupants.
- 4.2.23 It was also suggested that this proposal should be amended to reduce the potentially fatal risk posed by the development of smoke and toxic gases during a façade fire. The proposal to ban the use of combustible products in the façade of high rise and other high-risk buildings substantially addresses concerns around both the spread of fire and the potential development of smoke and toxic fire gases.

## Modifications of Other Options in the Consultation

4.2.24 Several respondents identified a number of proposals which could be considered as modifications of some of the options presented in Table 5 above. These are:

- Option 1 with regulatory ban on combustible cladding on domestic based buildings over 18m.
- Option 1 with a regulatory requirement for A1 or A2 performance for new buildings with sleeping accommodation on a storey exceeding 18m.
- Option 1 with a ban on FSE on high-rise buildings (top storey at a height greater than 18m) where there is a sleeping risk e.g. domestic buildings, hotels, residential care, hospitals.
- Option 1 where footnote 4 is removed or clarified<sup>10</sup>.

## Technical Handbook Proposals

4.2.25 A few respondents suggested proposals which referenced the Technical Handbook:

- Return to the 1 October 2019 Technical Handbook where BS 8414/BR135 were acceptable as options anywhere. The respondent considered BS 8414 to be an aggressive test which allows comparison between one product and another in a repeatable and reproducible manner.
- Retain the current presentation in the Technical Handbook and add a statement “no FSE approach is permitted for any domestic building at a height of more than 18m”.

## Other Proposals

4.2.26 There were also some other proposals including:

- BS 8414 plus testing which includes combustibility of components and smoke and toxicity testing.
- Insist universally on Class A2-s1, d0 and suspend the acceptability of BS 8414 testing until its technical deficiencies have been resolved.

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<sup>10</sup> Footnote 4 in the consultation states “Excludes small buildings as defined in non-domestic technical handbook (NDTH) provided no storey more than 11m.” The respondent stated that the footnote is not clear and there are several references to small buildings in the NDTH, but none of them appear in the guidance to Section 2 or seem relevant within the context of this consultation.

- 4.2.27 The latter point reflects the view that BS 8414 in both Parts 1 or 2 is not an acceptable alternative approach. A couple of studies were referenced to support this point<sup>11</sup>. The respondent suggested the technical deficiencies of BS 8414 should be resolved by a programme of research across the four devolved nations (or Scotland if that were not acceptable to other administrations). Another respondent would also welcome parity across the devolved administrations and encourage co-operative research and a consistent approach for those applying the regulations across the UK.
- 4.2.28 One respondent felt there should be no allowance for alternative approaches that would justify the use of combustible products in external wall construction and suggested a phased proposal:
- Short-term: Retain Option 1 which still allows for a fire engineering approach for buildings with a storey more than 18m above ground.
  - Medium-term: establish a technical advisory review group of special advisors who can comment/review fire safety engineering/ alternative approaches.
  - Long-term: Invest in an independent scientific group to undertake/collaborate on research into long terms improvements in building safety.

#### Other Comments

- 4.2.29 A few respondents also stated that the terminology “FSE approach” is not clear. Respondents questioned what this approach would involve as they were not aware of any approach which would allow for a “fully fire engineered design” for an external wall. It was suggested that a fire engineer would require detailed understanding of material and system behaviour and experience of large-scale testing. As such it was felt that a fully fire engineered approach was not credible given the competence available in the fire engineering field.
- 4.2.30 It was also suggested that the footnote to FSE in Table 5 was counterproductive. All fire safety engineering work should be carried out by competent professional with appropriate skills, knowledge and experience, but the footnote suggests that other (i.e. not related to the performance of external walls) alternative fire engineering solutions would not need to be carried out by someone with appropriate skills, knowledge and experience.

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<sup>11</sup> <https://www.abi.org.uk/globalassets/files/publications/public/property/2018/04/abi-cladding-systems-research-report-2018-04-19.pdf>

<https://link.springer.com/article/10.1007/s10694-020-00993-z>

### **4.3 General Points**

- 4.3.1 One respondent made a point about Class F not being referred to in the Technical Handbook which means that these materials cannot be accepted in Scotland. The respondent was looking for clarity on why Class F is not included in the Technical Handbook.
  
- 4.3.2 One respondent had reservations about the use of reaction-to-fire classification systems such as BS EN 13501-1 as a tool for determining compliance/ non-compliance of construction products. It was suggested that BS EN 13501 is not designed or intended to be used in isolation for the purposes of determining fire risk/safety. It enables products to be ranked under specific small scale fire conditions and provides experts with information for further analysis. Large scale system tests (e.g. BS 8414) are the logical route for evaluating complete structures.



## 5. Part 4 - Consequential Matters – Combustible Exemptions

### 5.1 Introduction

5.1.1 The Technical Handbook annexes provide a list of A1 and A2 exemptions for reaction to fire. Indeed, in buildings where external wall cladding systems achieve a European Classification A1 or A2, the following products, where used as part of such a wall, need not achieve the same classification:

- cavity tray
- any part of a roof (other than a part of a roof pitched at an angle of 70° or more to the horizontal) if that part is connected to an external wall
- door frames and doors
- electrical installations
- insulation and water proofing materials used below ground level
- intumescent and fire stopping materials where the inclusion of the materials is necessary for compliance with the standards in Section 2 (Fire)
- membranes
- seals, gaskets, fixings, sealants and backer rods
- thermal break materials where the inclusion of the materials is necessary for compliance with the standards in Section 6 (Energy), or
- window frames and glass.

5.1.2 This list had raised questions about the combustibility of other penetrations through the external wall that are not included e.g. balanced flue liners, drainage and overflow pipes, ventilation extract ducts etc.

### 5.2 Question 4 – Amendment to List of Exemptions

5.2.1 Question 4 was concerned with the current list of exemptions and asked if the list should be amended to include other penetrations e.g. cavity wall vents, boiler condensate pipes, drainage and overflow pipes, ventilation extract ducts, balanced flue liners etc.

5.2.2 Table 7 below shows whether respondents agreed with the proposal to amend the current list of exemptions to include other penetrations. Responses were broadly split across the three answers of yes, no and unsure, with slightly more respondents (29 respondents or 39%) supporting the proposal than disagreeing with the proposal (22 respondents or 30%). There was also a relatively large proportion of respondents (31%) who were unsure about the proposal.

5.2.3 The proposal was supported by respondents across all categories with the majority of consultancy and local authority respondents agreeing with the proposal. Respondents in the other categories were more evenly distributed across the different answers.

**Table 7: Do you think that the current list of exemptions above should be amended to include other penetrations e.g. cavity wall vents, boiler condensate pipes, drainage and overflow pipes, ventilation extract ducts, balanced flue liners?**

	Yes	No	Unsure	Not Answered	Total
Construction Industry	3	1	2	-	6
Consultancy	4	1	2	-	7
Individuals	7	10	5	-	22
Local Authorities	5	1	2	-	8
Manufacturers	2	2	3	-	7
Other	3	3	3	-	9
Research Estab./Fire Test House	1	-	1	-	2
Trade Association	4	4	5	2	15
<b>Total</b>	<b>29</b>	<b>22</b>	<b>23</b>	<b>2</b>	<b>76</b>
% respondents answering question	39	30	31		100

5.2.4 There were 56 comments made in response to this question. Responses are considered separately for those agreeing and those disagreeing with the quantitative part of the question.

### **Agreeing with the Proposal**

Examples to be Included in the List of Exemptions

5.2.5 Many respondents agreeing with the proposal offered suggestions on the products which should be included in the list of exemptions. Suggestions were made by all response categories (except manufacturers) and include:

- Combustible materials used for weep ventilation, vent ducts, flues etc. Weep vents are usually required with the cavity tray and should be included with the cavity tray.
- Openings such as cavity wall vents and single ducts that penetrate the non-combustible wall should be allowed as they pose a limited risk to the overall system.

- Laminated glass as it is exempt<sup>12</sup> and commonly used on balconies and spandrel panels.
- Combustible rain guards as they pose a limited risk to the overall system.
- Flue liners, drainage and overflow pipes, ventilation extract ducts and outlet terminals were mentioned by a few respondents.
- Insect meshes (installed at the top of openings in external walls) as they usually present a low fire risk due to the small quantity of combustible material and there is no wall above for fire to spread vertically.
- Cavity wall vents and subfloor vents as the industry standard solution is made from combustible material. Cavity wall vents were identified by a few respondents as unlikely to increase fire risk. However, it was suggested there could be challenges based on their design such that these exemptions should be subject to review by following a fire safety engineered approach i.e. a fire risk assessment should be conducted by a competent fire engineer at the time of the design phase and during the construction phase.
- Soil stack and overflow pipes providing that fire stopping is used where required in the technical handbooks.
- Ventilation extract ducts with fire stopping used where required in the technical handbooks.
- Plastic air bricks as they contribute relatively little to the heat output or surface spread of flame in the event of a fire in an external wall.
- Fan and duct covers for the same reason as plastic air bricks above.

5.2.6 It was suggested that it would be practical to put limits on the maximum dimensions of these service penetrations going through the external envelope, particularly for items which can vary significantly in size e.g. ventilation extract ducts. Also products such as drainage pipes that run the height of the building should not be exempt.

5.2.7 A few respondents suggested changes to the wording of the existing list of exemptions which are shown in bold below:

- “seals, gaskets, fixings, sealants and backer rods **and similar materials**”
- “Insulation and water proofing materials used below ground level” should be adjusted to “**below damp-proof course (DPC) level**” as many A1 or A2 mineral wool type insulations are not suitable for use below DPC line.

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<sup>12</sup> Decision of 4 October 1996 establishing the list of products belonging to Classes A “no contribution to fire”

## Policy and Clarity

- 5.2.8 Several comments were received which related to the clarity of policy and guidance. One comment questioned whether there needs to be an exhaustive list of exemptions or whether clarity on policy intent or application is required. Specific reference was made about the clarity of intent of the guidance for certain heating industry products whilst ensuring safety and a proportionate, risk-based approach.
- 5.2.9 One comment related to the clarity of the consultation proposal with the respondent believing that some products were already exempt (e.g. flue liners) within the context of the consultation (i.e. buildings greater than 11m with external wall cladding systems attracting requirements for A1/A2 classification or the BS 8414 test alternative).
- 5.2.10 While one response felt the proposal removed any ambiguity and appeared to cover all possible penetrations to an external wall, another suggested that there are other features which may be better defined in an exclusion list i.e., more definition of exempted products and possible situation of use.
- 5.2.11 Clarity was also requested around very specific examples:
- Further guidance around “membranes” would be helpful as this is a relatively broad term. Does this cover ethylene propylene diene terpolymer (EPDM) or other heavier waterproofing membranes in addition to breather and vapour control membranes.
  - One respondent felt that there were no grounds for solar shading products that extend and retract to meet the A1 or A2 classification criteria and that the components that assist in the operation of these products should be exempt as they are integral to the operation of the device e.g. nylon brushes, cabling to motors etc. The exemption list already includes fixings, seals and sealants and there should be greater clarity as to what components in a shading system are already exempt from BS EN 13501 classification A2-s1, d0 or A1.
  - A respondent also questioned why certain components enjoy an exemption when there are non-combustible alternatives e.g. PVC window frames versus aluminium window frames.

## General Comments

- 5.2.12 There were a number of general comments relating to an expanded list including:
- The need for any penetrations that do not meet the fire resistance of the external wall to at least meet the minimum fire resistance of the external cladding. This would apply to all service penetrations of any type or size.
  - There should be a caveat that every product needs to be fire risk assessed.

- The precautionary principle should always operate as people's lives are at stake.

## **Disagreeing with Proposal**

### Weaken the System

- 5.2.13 Several respondents referred to the potential of an increase in the list of exemptions to lessen the chance of the product being able to act as A1 or A2 and hence, weakening the system. Related to this, it was suggested that penetrations through cladding should be fire resistant and that the use of the non-fire rated materials should be minimised.

### Conditional Support

- 5.2.14 A few respondents drew attention to some research<sup>13</sup> which highlights the critical risk from fire of combustible vents, ducts, pipes etc. that breach the external cladding system. However, although disagreeing with the proposals, these respondents could offer conditional support for the addition of some exemptions where the cladding system comprises products classified as A2-s1, d0 or better and the penetrations are appropriately sleeved with cavity barriers, where a cavity is present. The exemptions include:

- Cavity wall vents
- Boiler condensate pipes
- Drainage and overflow pipes
- Ventilation extract ducts
- Balanced flue liners etc.

### General Comments

- 5.2.15 A number of general comments were also made including:

- The majority of cases should be covered by the current list with a project specific assessment undertaken where additional penetrations are proposed.
- The primary reason for exemptions should be where a product with the necessary reaction to fire classification is not available in the marketplace. Where a product is available, there should be no exemptions.

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<sup>13</sup> ABI "Cladding Approvals – A review and investigation of [potential shortcomings of the BS8414 standard for the approval of cladding systems such as those commonly used on tall buildings]"

- Such a list will never be complete and is open to abuse, particularly around definitions. For example, would a wooden panel with window and door openings cut into it be considered a “frame”? Are adhesives included only when they are also a sealant or could they count as a “fixing”? To address this issue it was suggested that it would be better to specify an overall limit on the amount of non-A1/A2 material that could be used.
- A prescriptive approach is dangerous, open to interpretation, ineffective and requires constant review to allow for product developments, innovation and changes in construction methods.

5.2.16 One respondent also suggested adding some clarification to the listing of “insulation and water proofing materials used belowground level” by including “**accepting their use to below the DPC rather than below ground level**”. This would avoid technical issues and was also raised by a respondent agreeing with the proposal (para 5.2.7 above).

### **Respondents who were Unsure about the Proposal**

#### Qualified Support

5.2.17 Several respondents felt that there could be an expanded list of exemptions, but that there were qualifications to the list. Some of the qualifications included:

- The list could include cavity wall vents, boiler condensate pipes, drainage and overflow pipes, but there was concern about ventilation extract ducts and balanced flue liners.
- It depends on the situation in which the additional exemptions are used. For example, in the case of pipes, it would depend on the type (material) and the extent of the pipes. Full height plastic pipes within the external wall would be quite different to a pipe allowing venting through the wall. A respondent suggested that additional text could be added to enable any concerns to be raised regarding the type and extent of materials used. For example “*Any penetration exceeding 10% of wall area which may adversely affect the fire performance of the external wall should be carefully considered*”.
- The list does not recognise that the closures used are as important for building safety as the penetrations themselves.

#### Evidence Based

5.2.18 Several respondents felt that the list should only be expanded on the basis of suitable evidence that it will not contribute to the combustibility of the external wall. The more penetrations that are contained in the external wall, the greater the potential to compromise the cladding.

5.2.19 A few respondents suggested that any amendments should be advised in consultation with technical specialists. One respondent suggested that the list should be amended following Scottish Government engagement with relevant bodies (i.e. fire safety specialists, façade engineers and building standards) to determine the components that are not included in the exemptions list but where there is no product available that can achieve the A1 or A2 performance. This list should be subject to further review by a technical advisory group.

Not Exhaustive

5.2.20 A few respondents felt that the list can never be exhaustive and adding items appears reasonable. However, it should be made clear that each item within the construction of external walls should be considered in terms of the risk it poses on a case-by-case basis. One respondent also agreed that it is not possible to provide an exhaustive list but felt that the current list provides sufficient information.

General Points

5.2.21 As with points made by respondents above (paragraphs 5.2.7 and 5.2.17) it was suggested that the wording of the existing exemption relating to insulation and waterproofing be amended to “**insulation and waterproofing materials used below DPC**”. The reason being that the DPC is often at least 150mm above ground level and more usually the DPC is at least 150mm above finished ground floor level, which is itself at least 150mm above external ground level. The commonly available A1 insulants are not suitable for use below DPC.

5.2.22 A number of other general points were made including:

- Inconsistency about laminated glass. There is inconsistency with the current list of exemptions regarding curtain walling, specifically in relation to the treatment of glazing in spandrel areas. It was stated that laminated glass is unlikely to achieve class A1 or A2, but based on the current list it would still be permitted for use in curtain wall façade in all areas apart from spandrel areas.
- For the existing exemptions for roofs and for thermal break materials, guidance would be helpful on upstands for roofing systems where the waterproofing system is dressed up the wall.
- A few respondents made reference to the need for clarity on the definitions of balconies and terraces and requested that reference to BS 8579 “Guide to the design of balconies and terraces” is included in the Technical Handbook. One respondent stated that this British Standard defines a terrace as a roof, which has implications on the application of the second exemption listed in paragraph 5.1.1.
- There is potential to “game” the system.

### **5.3 General Points**

- 5.3.1 A concern was raised about the definition of solar shading provided in Section 2.7 of the Technical Handbooks. Solar shading is defined as “..devices attached to an external wall to reduce heat gain within a building by deflecting sunlight”, but this definition was felt not to cover all the reasons for installing these products e.g. to reduced light ingress, privacy, to create usable outdoor space with protection from wind, rain and sun.



## 6. Part 5 - Impact Assessment

### 6.1 Introduction

6.1.1 The consultation includes two questions on the impact of the proposals on different groups in society. The first considers the impact on equality groups and the second considers the business and regulatory impact assessment.

### 6.2 Equality Impact Assessment

6.2.1 Part 5 of the consultation asked for comments on the impact of the proposals on particular groups of people in respect of their age, disability, gender reassignment, race, religion, sex or sexual orientation, being pregnant or on maternity leave and children's rights and wellbeing.

6.2.2 Table 8 below shows whether respondents agreed that any of the proposals in the consultation could impact or have implications on equality groups. The majority of responses (67%) did not consider that the proposals would have an impact on equality groups. A small proportion of respondents (9%) felt there would be an impact on equality groups and 24% of respondents were unsure.

6.2.3 The majority of respondents in all groups except trade associations did not think there would be an impact on equality groups. Responses from trade associations were more evenly split across all possible answers.

**Table 8: Are there any proposals in this consultation which you consider to impact or have implications on equality groups?**

	Yes	No	Unsure	Not Answered	Total
Construction Industry	-	4	1	1	6
Consultancy	1	4	2	-	7
Individuals	1	18	3	-	22
Local Authorities	-	8	-	-	8
Manufacturers	-	4	2	1	7
Other	1	5	3	-	9
Research Estab./Fire Test House	1	-	-	1	2
Trade Association	2	4	6	3	15
<b>Total</b>	<b>6</b>	<b>47</b>	<b>17</b>	<b>6</b>	<b>76</b>
% respondents answering question	9	67	24		100

6.2.4 There were 22 comments made in response to this question. Responses are considered separately for the different answers to the question.

### **Yes - There Could be an Impact on Equality Groups**

6.2.5 In terms of the equality groups identified as being affected by the consultation proposals, disabled/those with mobility issues and more vulnerable residents of high-rise buildings were identified. The points included:

- Disabled/limited mobility: Improved regulations will offer the opportunity of greater safety of those within the building which will support escape strategies. However, it was suggested that unless this Mandatory Standard 2.7 is defined in terms of time for life safety, there will be no clear relationship between the requirement to slow external fire spread and the longer time required for evacuation of those who require assistance. The standard should take a view of the likely mobility of occupants.
- Vulnerable residents: one respondent raised the issue of financial hardship in relation to the cost of replacing cladding following Grenfell and the problems some residents were having e.g. cladding not replaced, increased fuel costs etc. and suggested that further restrictions will exacerbate these problems. It was suggested that the proposed changes will affect the refurbishment market and potentially some of the most vulnerable residents living in high-rise buildings.

6.2.6 A respondent also identified that there would be costs attached to any measures which could impact on other aspects of performance of the products and hence, building performance. This would occur at a time of on-going material shortages and increased costs being passed on through the supply chain.

### **Unsure – There Could be an Impact on Equality Groups**

6.2.7 Several comments were made by those respondents who had selected “unsure” as their response to the quantitative component of the question. Some respondents identified the potential for the proposals to increase building costs which could eventually be passed onto the occupiers of the buildings. This could impact on the affordability of housing for some groups within society. The following quotes highlight the flavour of the comments:

“It is likely that a ban on MCM cladding will have a greater impact on blocks of flats which are often occupied by lower income families, couples or individuals”

“...consideration should be given to whether any of the potential changes following this consultation could impact on means of escape provisions for those with mobility impairment or the safety of fire and rescue service personnel.”

### 6.3 Business and Regulatory Impact Assessment

- 6.3.1 Part 5 of the consultation also asked if the proposals in the consultation would lead to increased costs and/or impact on resources for respondents or their business.
- 6.3.2 Table 9 below shows that views were broadly split on whether the proposals would have a financial, regulatory or resource implication for either themselves or their business. There were 31 respondents answering 'yes' (45%) and 28 answering 'no' (41%) with ten respondents 'unsure'.
- 6.3.3 Trade associations and manufacturers were the only respondent groups where there was a clear majority of respondents believing the proposals would have a financial, regulatory or resource implication for them. The majority of local authority respondents did not believe there would be any financial, regulatory or resources implication from the proposals with the other stakeholder groups having a broad range of views.

**Table 9: Do you think that any of the proposals in this consultation have any financial, regulatory or resource implications for you and/or your business (if applicable)?**

	Yes	No	Unsure	Not Answered	Total
Construction Industry	2	1	2	1	6
Consultancy	3	4	-	-	7
Individuals	9	10	2	1	22
Local Authorities	2	6	-	-	8
Manufacturers	4	1	1	1	7
Other	2	3	4	-	9
Research Estab./Fire Test House	-	-	-	2	2
Trade Association	9	3	1	2	15
<b>Total</b>	<b>31</b>	<b>28</b>	<b>10</b>	<b>7</b>	<b>76</b>
% respondents answering question	45	41	14		100

- 6.3.4 There were 36 comments made in response to this question. Responses are considered separately for the three different answers to the question.

## **Yes - There Could be a Financial, Regulatory or Resource Impact**

### Increased Costs

- 6.3.5 Many respondents across all stakeholder groups (excluding research establishments/fire test houses) felt that the proposals in the consultation could lead to increased costs. The increased costs could arise through a number of channels including:
- Greater costs at the design stage due to greater attention to specification and detailing.
  - Increased product costs and potential issues with availability.
  - Additional costs associated with Fire Engineers for certain cladding situations.
  - Verifiers may require additional resources to evaluate proposed FSE approaches.
  - Costs associated with additional training and further education.

### Prescriptive Ban

- 6.3.6 Several respondents (primarily trade associations) raised concerns about Option 3 of Part 3 which referred to a regulatory ban. While noting there could be a negative financial impact on their members, respondents felt a ban would also limit choice of construction products for architects/designers which could lead to increased costs and possibly reduce building performance.
- 6.3.7 It was suggested that buildings have to perform in a variety of ways (e.g. fire performance, energy efficiency, ventilation and air quality, sound proofing etc) and a regulatory ban on some products could result in compromising one standard for the sake of another. The net zero carbon targets may be adversely impacted as designers would not have full access to the materials best suited to meet this target.
- 6.3.8 One respondent suggested that a regulatory ban could be seen as being contrary to the ethos of building standards which are considered to be performance based standards rather than prescriptive standards.

### Other Comments

- 6.3.9 A couple of other points were made including:
- A concern that there will not be sufficient experienced fire engineers to meet demand, which would have implications for costs and time delays to projects.
  - Producers of non-combustible products could face increased competition as the ban on combustible façade materials in England in 2018 led to new market entrants.

## **Unsure - There Could be a Financial, Regulatory or Resource Impact**

- 6.3.10 A couple of points raised by “unsure” respondents were covered by some of the respondents who answered “yes”. In particular, the potential impact on the construction industry and, hence on the supply of new housing, of a regulatory ban regarding the large-scale fire test BS 8418. Removal of this could affect the ability of the industry and supply chain to innovate, especially with regard to developing and utilising new lower carbon products which are required to deliver the net zero targets.
- 6.3.11 There was also a concern that if large scale testing was not allowed to prove a products worth, there could be adverse financial effects on certain manufacturers (e.g. wood based panels) and a removal of some carbon negative products.
- 6.3.12 The quotes below highlight the range of other comments made:

“Safety should not be assessed by financial implications. The increased costs will assist in sustainability and longer life of the building and safety measures in the event of a fire will help to save lives and reduce pollution for the actual fire event.”

“They will however, have a negative impact financially on many building owners particularly as anecdotally we have been informed of buildings no longer being able to get insurance cover”

“Any changes to policy should be fully funded to ensure they can be embedded...”

## **Annex A Respondents by Category**

## List of Respondents by Category

Category	Organisation
Construction Industry	Barratt plc Cruden Homes (East) Ltd Homes for Scotland National House-Building Council (NHBC) Sanderson Borland Architects Scottish Property Federation
Consultancy	Astute Fire Engineering Ltd Fairhurst (Civil & Structural Design Consultancy) Fire Risk Assessment (Scotland) Ltd ND Consulting OFR Consultants Ove Arup and Partners Ltd UL
Individuals <sup>14</sup>	Christopher Barlow Ian Taylor Reid Ian Wall Adrian Fletcher Colin Todd Eu Jin Teh Ben Sharp
Local Authorities	Aberdeen City Council Argyll and Bute Council Falkirk Council Building Standards Glasgow City Council Building Standards Orkney Islands Council Scottish Borders Council South Ayrshire Council South Lanarkshire Council

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<sup>14</sup> Note that only individuals selecting “publish response with name” are listed in this table.

Category	Organisation
Manufacturers <sup>15</sup>	Kingspan Recticel Insulation Rockwool Ltd Siderise Insultation Limited Titon
Research Establishments/Fire Test Houses	BRE Fire Protection Association
Other	AXA UK Fire Sector Federation Institution of Fire Engineers – Scotland Branch National Fire Chiefs Council Propertymark RICS Scottish Fire and Rescue Service Scottish Tenants Association University of Glasgow
Trade Association	British Blind and Shutter Association (BBSA) British Plastics Federation Engineered Panels in Construction (T/A EPIC) European Phenolic Foam Association (EPFA) Federation of Environmental Trade Associations Fire Safe Europe Insulation Manufacturers Association Mineral Wool Insulation Manufacturers Association (MIMA) Modern Building Alliance (MBA) Modular & Portable Building Association MPA The Concrete Centre Single Ply Roofing Association (SPRA) Structural Timber Association (STA) The Heating & Hotwater Industry Council (HHIC) Wood Panel Industries Federation

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<sup>15</sup> Excludes two respondents





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Any enquiries regarding this publication should be sent to us at

The Scottish Government  
St Andrew's House  
Edinburgh  
EH1 3DG

ISBN: 978-1-80201-896-7 (web only)

Published by The Scottish Government, January 2022

Produced for The Scottish Government by APS Group Scotland, 21 Tennant Street, Edinburgh EH6 5NA  
PPDAS1002478 (01/22)

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