



**BUSINESS AND REGULATORY IMPACT
ASSESSMENT**

**THE BUILDING SCOTLAND (AMENDMENT)
REGULATIONS 2022**

**Final Regulatory Impact Assessment –
changes on fire safety of
external wall cladding systems**

BUILDING STANDARDS DIVISION

April 2022

Final Business and Regulatory Impact Assessment

1.0 Title of Proposal

Amendments to the Building (Scotland) Regulations 2004 and Technical Handbook Guidance to introduce changes on fire safety of external wall cladding systems

2.0 Purpose and Intended Effect

2.1 Background

Following the tragic events at Grenfell Tower, London in June 2017 a Ministerial Working Group (MWG) was set up to oversee a review of building and fire regulatory frameworks and any other relevant matters, to help ensure that people are safe in Scotland's buildings, and make any recommendations for improvement as required.

In 2018, the Building Standards (Fire Safety) Review Panel recommended to Ministers that the building regulations relating to external fire spread (Standard 2.7) did not require to be amended, but it did recommend that the supporting guidance in the technical handbooks could be strengthened. The key changes introduced on 1 October 2019 included:

- lowering the height limit below which combustible cladding can be used from 18 metres to 11 metres to align with fire-fighting capability from the ground;
- tighter controls over the combustibility of cladding systems on hospitals, residential care buildings, entertainment and assembly buildings regardless of building height; and
- introducing evacuation sound alerts, floor and dwelling indicator signs and two escape stairs in all new high rise domestic buildings to assist the fire and rescue service in the unlikely event of a partial or full evacuation of the building.

The Housing (Scotland) Act 1987 (Tolerable Standard) (Extension of Criterion) Order 2019 (as amended) introduced a new minimum standard on 1 February 2022 for smoke and fire alarms extending the high standard currently required in private rented housing to all existing homes to ensure everyone has the highest level of protection.

A mandatory requirement to install automatic fire suppression systems in all new build: flats and maisonettes; shared multi-occupancy residential buildings and social housing dwellings came into force from 1 March 2021.

Kevin Stewart, the then Minister for Local Government, Housing and Planning announced at the Local Government and Communities Committee meeting on 4 September 2020 that a panel of fire experts would be convened to consider a ban on the highest risk cladding materials and the

ongoing role of BS 8414 in supporting guidance. The Panel comprised representation from academia, industry experts, professional institutions, local authority building standards, fire testing, research and consultancy, Scottish Fire and Rescue Service, the National Health Service and officials from the Scottish Government. The UK Government, Welsh Government, Northern Ireland Executive and the Government of Ireland attended meetings as observers. Minutes of meetings are published on the Scottish Government website at [Building Standards \(Fire Safety\) Review Panel 2021-2022 - gov.scot \(www.gov.scot\)](https://www.gov.scot/Information/BuildingStandards/FireSafety/ReviewPanel2021-2022).

Public consultation¹ was undertaken over a 12 week period from July to October 2021. 76 responses to the consultation were received and independent analysis published in January 2022.

The building regulations apply to new buildings and to existing buildings being converted, altered or extended. Scottish building regulations are devolved to the Scottish Parliament, therefore, there is no alternative framework in place which deals with Scottish building regulations and mandatory building standards.

2.2 Objective

Buildings have significant implications for health, safety, the environment and our communities. Through the appropriate application of minimum building standards, set by regulations, the design and construction of Scotland's built environment can benefit all owners, users and people in and around our buildings.

This Business and Regulatory Impact Assessment (BRIA) forms part of a building regulations review, specifically amendments to schedule 3 of regulation 5, regulation 8 and paragraph 2.7 of schedule 5. Supporting guidance is provided in both the Domestic and Non-Domestic Building Standards Technical Handbooks (TH).

The principle aims and objectives of the proposals support the Government's strategic objectives of a healthier and safer Scotland. This is achieved through the principles of better regulation by:

- Banning highly combustible metal composite material cladding panels;
- Banning combustible materials in external wall cladding systems of relevant buildings;
- Controlling the use of combustible materials used in the replacement of external wall cladding systems, other than minor repairs; and

¹ [Building standards - \(fire safety\) external wall systems: consultation analysis - gov.scot \(www.gov.scot\)](https://www.gov.scot/Information/BuildingStandards/FireSafety/ConsultationAnalysis)

- amending building standard 2.7 relating to the spread of fire on external walls.

2.3 Rationale for Government intervention

The Scottish Government has set out an ambitious programme of work in ‘Protecting Scotland, Renewing Scotland: the Government’s programme for Scotland 2020-2021’.

The Government has already implemented actions recommended by the [Building and Fire Safety Ministerial Working Group](#) established following the tragic fire at Grenfell Tower in London.

This review will further strengthen and enhance key aspects of the Scottish Building Standards system including implementing a ban on the highest risk cladding materials.

Grenfell Tower Fire, 14 June 2017

The tragic fire that occurred on 14 June at Grenfell Tower in North Kensington, London resulted in the deaths of 72 people. Although the police investigation and public inquiry have still to be concluded, it is clear from the evidence presented to date, that the combustible materials used in the external wall cladding system was the key contributory factor to the rapid fire spread over the façade of the building.

This review, considers building regulations and associated building standards in relation to external wall cladding systems on all building types and is not limited to high rise domestic buildings.

This work stream links to the objectives of the National Performance Framework, in particular, that people in Scotland live in “communities that are inclusive, empowered, resilient and safe”. There is a need to ensure that not only do people feel safe in their homes and places of work or entertainment but they actually are as safe as possible from the risk of external fire spread. The proposed amendments should not be considered in isolation, and if fire does occur, there are measures in place to enable the occupants to escape safely and fire fighters to deal with fire safety and effectively.

3.0 Consultation

3.1 Within Government

The following divisions were consulted through the Building and Fire Safety Ministerial Working Group:

- Safer Communities Division;
- Better Homes Division;
- More Homes Division;
- HM Fire Service Inspectorate;

- Health Finance Division; and
- Health Facilities Scotland.

3.2 Public Consultation

A full public consultation commenced on 16 July 2021 and closed on 11 October 2021. The consultation package was published in different accessible formats on the Scottish Government website [Building standards \(fire safety\) - a consultation on external wall systems - Scottish Government - Citizen Space](#).

The consultation covered five main areas:

- the wording of mandatory standard 2.7 - Spread on external walls;
- consideration of a definition and ban on the highest risk Metal Composite Material (MCM) cladding panels;
- consideration of options to improving standards and guidance on cladding systems, including the continued role of large scale fire test BS 8414;
- consequential matters – exemptions for certain penetrations and openings; and
- impact assessments.

The consultation sought views and opinions on options together with comments on draft regulations/standards and/or guidance developed in conjunction with the review panel.

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.

Breakdown of consultation options by % support:

- Regulatory ban on combustible materials (similar to the rest of the UK) – 33%
- Alternative approaches (as proposed by respondents) – 27%
- Reintroduce BS 8414 into the Technical Handbooks – 24%
- Continue with the 1 April 2021 Technical Handbook guidance – 16%.

After the public consultation exercise was concluded, a need to amend schedule 3 to Regulation 5 of the Building (Scotland) Regulations 2004 was identified by Scottish Government in relation to replacement external wall cladding systems. In December 2021, Ministers agreed to carry out a targeted consultation exercise with key stakeholders to seek views on requiring a building warrant application for replacement cladding systems other than where minor repairs are carried out. Views were sought from

manufacturers, designers, installers and local authority verifiers. Industry were supportive of the regulatory change to schedule 3 and suggested that clients would demand compliance with current standards regardless if a building warrant was required. Industry flagged potential delays to construction work due to the warrant process.

Views were also sought from Local Authority Building Standards Scotland (LABSS) the organisation representing the interests of the 32 local authority verifiers who administer the building standards system in Scotland.

LABSS were generally supportive of the change, recognising that calling for a building warrant for replacement external wall cladding systems aligned with broader action to improve fire safety, and specifically fire spread, on buildings.

While a building warrant is not currently required for replacement cladding, some local authorities informed that building warrants were occasionally being submitted for such work where other work is being carried out. Since the Grenfell Tower fire, applicants have been seeking assurance that the proposed work would meet the building regulations. However, the majority of local authorities confirmed they do not receive building warrant applications for replacement wall cladding.

Island Communities were also consulted on the impact of proposed changes See Island Communities Impact Assessment at [Building standards \(fire safety\) - a consultation on external wall systems - Scottish Government - Citizen Space](#).

3.3 Business consultation

The public consultation engaged with businesses that have a potential to be impacted by the proposals. The table below provides a summary of responses to the consultation by category.

Table 1 – summary of responses to consultation by category

Category of Respondent	Number	Percentage
Construction Industry	6	7.9
Consultancy	7	9.3
Individuals	22	28.9
Local Authorities	8	10.5
Manufacturers	7	9.3
Research Est./Fire Test Houses	2	2.6
Trade Associations	15	19.7
Others	9	11.8
Total	76	100.0

4.0 Options

In considering how best to address the range of objectives identified in clause 2.2 above, two possible options have been considered:

Option 1: Do nothing

Option 2: Amendment to the building regulations

- a) A ban on the highest risk cladding comprising:
 - i. highly combustible metal composite material panels on all buildings of any height (inside and outside) and
 - ii. a ban on combustible (non-Euro Class A) external wall cladding systems (or specified attachments) of relevant buildings.
- b) An amendment to the wording of mandatory standard 2.7 (spread on external walls) to improve clarity of intent.
- c) An amendment to Schedule 3 of the building regulations to make it explicit when a building warrant should be obtained.

4.1 Sectors and groups affected

Sectors and groups affected include:

- Building users – people living in or using the building should benefit from a safer building environment arising from proposed changes and not be subject to loss of amenity and facilities as a consequence of the amended regulations;
- Building designers/constructors – All those involved with building design and construction would have to familiarise themselves with the new/amended standards and guidance through training etc.;
- Building procurement – Persons or companies procuring new buildings or building work may incur additional costs;
- Verification – Local authority verifiers would have to train staff in relevant areas of the amended building regulations / standards and associated guidance;
- Product manufacturers – Companies manufacturing or supplying materials would require to ensure their products comply with relevant regulations / standards.

5.0 Costs

5.1 Option 1:

Under this option, there would be no change to the building regulations regarding the use of combustible materials. There would be no improvements to buildings undergoing work to ensure the safety of occupants in the event of a fire. Although there would be no costs associated

with this option, there would also be no benefits and it would not address the safety issues arising from the review of fire safety following the Grenfell Tower fire.

5.2 Option 2:

Each component of Option 2 is discussed below.

a i) Ban on highly combustible metal composite material

Since the Grenfell Tower fire in 2017, highly combustible metal composite material panels have not been frequently used. Hence, any costs associated with this change are expected to be minimal and not quantified in the analysis.

a ii) Ban on combustible external wall cladding systems

The costs associated with the ban on combustible external wall systems will fall on the following groups:

- Companies manufacturing or supplying materials will have to ensure that their products comply with the new standards
- Building owners/developers will incur costs in using European Class A1 or A2 products used in external wall systems in new buildings, buildings being refurbished or conversions.
- Local authority verifiers will incur training and development costs associated with familiarising themselves with the new regulations / standards and associated guidance.
- Building designers will incur training and development costs associated with familiarising themselves with the new regulations / standards and guidance.

For companies manufacturing or supplying materials for external wall systems, there could be costs associated with ensuring their products comply with the new regulations/ standards and guidance. Given that these companies will be supplying the whole UK market and, there is already a ban on combustible materials in England, Wales and Northern Ireland, suppliers of these products already have to meet the regulations in these other countries. Hence, these costs would be incurred, regardless of the proposed changes in Scotland, and are not considered further in this assessment.

The total additional cost of introducing the ban on combustible materials on the other groups affected is shown in Table 2. These costs are discounted using the Green Book discount rate of 3.5% over 10 years and are split into two components – costs on owners/developers and transitional costs.

Table 2 – Costs of introducing ban on combustible materials, £ Million

Cost Elements	Present Value - Central Case	Present Value - Range
Owners/developers - New Build/Refurbish	8.32	4.05 – 14.08
Owners/developers - Conversions	5.76	2.88 – 8.63
Total	14.08	6.93 – 21.01
Equivalent Annual Cost (per annum)	1.7	
Transition - Verifiers	0.013	0.013 - 0.026
Transition - Building Designers	0.134	0.134 - 0.268
Total	0.147	0.147 - 0.294
Equivalent Annual Cost (per annum)	0.02	

The costs on building owners reflect the cost of using European Class A1 or A2 rated products in the construction/refurbishment and conversion of buildings over 11m in height. Over 10 years, the present value of discounted costs is estimated to be £14 million (or £1.7 million per annum), with a potential range of £7 million to £21 million. Details of the assumptions underpinning the analysis are contained in **Annex A** with the sensitivity tests which have been undertaken.

The transitional costs reflect the additional time required by local authority verifiers and building designers to understand the change in policy that would be incurred in the first year following the change to the regulations. The present value of these costs is estimated to be £0.15 million (or £0.02 million per annum).

The transitional costs are subject to one sensitivity relating to the length of time an individual would spend familiarising themselves with the changes. The analysis assumes one hour, but a worst-case scenario would be to double that to two hours. This is the upper end of the range in Table 2.

b) Amendment to Mandatory Standard 2.7 (Spread on external walls)

The proposed change is an amendment to the wording of the mandatory standard to improve clarity of intent. It is therefore assumed that this change will not incur any specific costs.

c) Amendment to Schedule 3

The costs associated with the amendment to Schedule 3 will fall on building owners who will incur the following costs with the change in regulations:

- Additional cost associated with using Euro Class A1 or A2 rated products.
- The cost a building warrant.
- The cost of preparing the building warrant

The total cost of introducing the amendments to Schedule 3 are shown in Table 3 for the central case. The Table also shows the potential range of costs from the sensitivity analysis undertaken. Assumptions for the central case and sensitivities are set out in **Annex A**. The additional costs related to materials are only the costs of using Euro Class A1 or A2 rated products as any other costs (e.g. preliminaries) are assumed to arise regardless of the change to the regulations.

Table 3: Costs of Introducing Schedule 3 Amendments, £ Million

Cost to building owners	Present Value – Central Case	Present Value - Range
Cost of fire-rated materials	2.64	1.32 – 6.59
Building warrant fees	0.30	0.15 – 0.51
Preparation of building warrant application	0.80	0.40 – 1.73
Total	3.74	1.87 – 8.83

Over a ten year period the total present value of costs for building owners of having to use Euro Class A1 or A2 products is £3.7 million. This is equivalent to £0.4 million per annum. These costs are dominated by the cost of using the A-rated products which are estimated to be £2.6 million.

5.3 Benefits

All of the topics involved in the review relate to the amendment to the building regulations / standards and supporting guidance. When assessing the effectiveness of the two options to achieve the desired objectives in Section 2.2, the following observations are made.

Option 1: It is possible with Option 1 some developers would voluntarily move to using non-combustible materials for relevant building over 11m in height. However, this could not be guaranteed and the potential benefits associated with Option 2 would be foregone.

Option 2: Option 2 will clarify the regulations which should make routes to compliance clearer and it will improve the safety of occupants in buildings by reducing the risk of fire and, where a fire does occur, by restricting the growth of the fire and smoke to enable safe escape. In particular, it will:

- Reduce the possibility of the rapid fire spread on the external façade of relevant buildings.

- Provide enhanced safety to firefighters tackling a fire on the external façade.
- Reduce the possibility of fire spread on an external façade re-entering a building and affecting occupants or users in other compartments or separate spaces.

By reducing the severity of fires there will also be indirect benefits including:

- Reduced costs of firefighting including associated environmental costs (e.g. reduced water run-off).
- Reduced number of occupants requiring decanting and reduced remedial costs. The cost of re-housing occupants is often one of the largest components of the costs of major fires.

The amended building regulations / standards and supporting guidance will be applied by building owners and developers through the building warrant process and monitored and enforced by local authorities.

6.0 Scottish Firms Impact Test

Impact on small businesses

The Scottish firms' impact test regards all firms with fewer than 50 full time employees as being small businesses. The majority of small firms have fewer than 10 employees and guidelines state that a concerted effort should be made to consult them over policy proposals.

Opinions from contactors specialising in the manufacture and installation of external wall cladding systems were sought. It was noted that, with respect to the building types and risk situations which are addressed by the propose changes, the manufacture, design and installation of external wall cladding systems is almost exclusively undertaken by larger organisations, operating at a UK or wider level.

The exception to this was the proposal to address the replacement of cladding through amendment of schedule 3. This would require works (other than minor replacement) to comply with regulations and be approved through the building warrant process. For smaller projects such work being more likely undertaken by smaller firms.

A targeted consultation exercise with key stakeholders, including small and micro businesses, sought views on this. Manufacturers, designers, installers and local authority verifiers were supportive of the regulatory change to schedule 3, suggested that clients would seek compliance with current standards in any case. Industry bodies flagged potential delays to construction work due to the warrant process. It was noted that this will incur attendant costs, with these costs accruing primarily to the owner, not to the businesses involved in undertaking the work.

With respect to schedule 3 changes and replacement cladding at a small scale, some concern was expressed on replacement work in remote, rural and island communities, due to the proportion of small firms delivering development in such locations being higher.

Based upon engagement, it was determined that the impact of costs on small and micro businesses would not disproportionately affect small businesses.

Technical Barriers to Trade

An assessment of the impact of these proposals was undertaken on impacts to international trade and also in respect of trade within the UK. The measures proposed relate to the function or performance of construction work. They do not prescribe measures which:

- have the potential to affect imports or exports of a specific good or service, or groups of goods or services
- affect trade flows with one or more countries?
- include different requirements for domestic and foreign businesses.

The proposals do not define technical regulations or conformity assessment procedures for which a relevant standard does not exist. Accordingly, proposals do not require submission of a TBT notification to the WTO.

7.0 Competition Assessment

As the changes will form part of national building regulations they will be implemented uniformly throughout the country. Having reviewed the four competition questions provided within the Competition and Market Authority guidelines for policy makers on competition assessment, it is likely that the changes to the building regulations will have a minimal impact on competition within the market place.

Companies that manufacture metal composite material panels have a range of panels having a core material with a calorific value of less than 35 MJ/kg. This includes panels that meet European Class A2 (limited combustibility) and hence meet the amended Regulation 8. Therefore, a ban on highly combustible metal composite material panels will have a minimal impact on competition between companies. The Grenfell Inquiry has clearly shown the risks associated with the highly combustible core material. As a result, and as a precautionary measure, the ban has been extended to internal linings should the core be exposed in the growth phase of a fire within a compartment.

Since the Grenfell Tower fire, there is a current industry ban on combustible external wall cladding systems through building regulations already in force in England, Wales and Northern Ireland. Whilst the ban in Scotland applies to relevant buildings having a storey at a height of 11m or more above the ground, this more onerous requirement than the rest of the UK is considered

to have minimal impact since guidance in the technical handbooks was introduced in Scotland from 1 October 2019. There have been no Section 34 notifications to the Scottish Government since a precautionary interim measure was taken to remove reference to the large scale façade test BS 8414 in the technical handbooks from 1 April 2021.

A specific question (5.2) relating to impacts on business was included in the consultation and independent analysis is provided at [Building standards - \(fire safety\) external wall systems: consultation analysis - gov.scot \(www.gov.scot\)](https://www.gov.scot/publications/building-standards-fire-safety-external-wall-systems-consultation-analysis/pages/10-external-wall-systems-consultation-analysis.aspx).

8.0 Consumer Assessment

Certain aspects of the proposals may have an adverse impact on consumers as they may result in increased build costs, which the developer will, in all likelihood, pass some or all on to the purchaser or tenant/leaser of the building.

With regard to dwellings, the actual amount of additional costs is dependent on many factors, such as the specification of products used and the number of units in the building. Economies of scale would also have a part to play in determining additional costs per unit. Assuming six flats per storey, each with a floor area of 80 m² and additional costs were divided equally across all flats, the approximate costings would be:

- c. £600 per flat for non-combustible cladding systems in buildings with a storey height over 11 m above ground level. This is based on A2 MCM as opposed to PE MCM, however, costs will vary considerably depending on what cladding was desired and there may be a zero cost impact in a more prestigious building;

It is not so straight-forward to determine increased costs for non-domestic buildings as the size, height, floor area and footprint all vary significantly. However, installing cladding systems with A2 MCM as opposed to PE MCM would add in the region of £10 – 15 / m² to the build costs. As with domestic buildings, there may be no cost impact if the desired cladding material achieves an A1 or A2 European classification.

9.0 Test Run of Business Forms

No new forms will be introduced as a result of this policy.

10.0 Digital Impact Test

It is not considered that there will be any intended or unintended consequences from technological advances.

11.0 Legal Aid Impact Test

It is not envisaged that there will be any greater demands placed on the legal system by this proposal. Accordingly, it is not considered that there will be

any effect on individuals' rights of access to justice through availability of legal aid or possible expenditure from the legal aid fund.

12.0 Enforcement, Sanctions and Monitoring

12.1 Background

The changes will amend the Building (Scotland) Regulations 2004 and the supporting Scottish Building Standards Technical Handbooks (TH).

All matters relating to enforcement, sanctions and monitoring will be carried out under the existing processes that form part of the building standards system in Scotland, as set out under the Building (Scotland) Act 2003 (the Act). Parties responsible for operation of this system are the 32 Scottish local authorities, appointed as verifiers under the Act and the Building Standards Division of the Scottish Government.

12.2 Enforcement and sanctions

Generally, work subject to the Building (Scotland) Regulations 2004 requires to be the subject of a building warrant before work commences and to have a completion certificate accepted once works are complete. Exclusions are set out under Schedule 3 to Regulations 5 of the Building (Scotland) Regulations 2004.

Where a building warrant is required, proposals are subject to the scrutiny of verifiers who have enforcement powers under the Act to ensure compliance with the Building (Scotland) Regulations 2004.

12.3 Monitoring

The objective of this exercise is to deliver improvements to the fire safety of buildings through amended requirements for external wall cladding systems through changes to building regulations. Building regulations are applied within a legislative framework summarised above. In line with Scottish Government policy, any implemented changes which address this issue should be subject to review within a 10 year period. Any such review shall be accompanied by a further Impact Assessment.

13.0 Implementation and Delivery Plan

13.1 Dissemination

In general, it is anticipated that the changes will be "absorbed" as part of the overall Building Standards system. This will involve written notifications to local authority verifier, posts on the Scottish Government Building Standards website and social media to highlight the changes. Dissemination events will also be organised by the Building Standards Division (BSD).

13.2 Post-implementation review

Review will be carried out by the BSD considering the implementation of the legislative changes made to Regulation 8, schedule 3 and para 2.7 of

schedule. This review will monitor the effectiveness of the changes and ensure that subsequent reviews can be made on an informed basis. This will be done on a regular basis through usual contacts with bodies representing trades, designers, verifiers and the industry in general. The implemented changes will be subject to a review within a ten year period. This review may be earlier when the recommendations of the Grenfell Inquiry are published.

14.0 Summary and Recommendations

The majority of responses to the consultation supported the regulatory ban of highly combustible metal composite material panels and combustible external wall systems of residential and high risk buildings above 11m.

Table 4 - Summary Costs and Benefits

Option	Total benefit per annum: - economic, environmental, social	Total cost per annum: - economic, environmental, social - policy and administrative
1 – Do nothing	No benefits. It would not address the safety issues arising from the review of fire safety following the Grenfell Tower fire.	No cost implications for those involved in the design or procurement of affected buildings.
2 – Amendment to the building regulations	<p>Overall the proposals will improve the safety of occupants of the affected buildings in the unlikely event of a fire in a building getting out of control.</p> <p>From an environmental perspective, a regulatory ban of combustible cladding will reduce the impact of, fire incidents spreading on the outer façade of a building and hence reduce environmental pollution.</p> <p>It will also reduce the number of occupants requiring alternative accommodation which is a major component of the cost of major fires.</p>	<p>The present value of the costs of introducing a ban on combustible materials is £14 million for owners/developers and £0.15 million in transition costs (central case). This is equivalent to an annual cost of £1.7 million per annum for owners/developers and £0.02 million per annum for transition costs.</p> <p>The present value of the costs of introducing the Schedule 3 amendments is £3.7 million (central case). This is equivalent to an annual cost of £0,4 million per annum.</p>

14.1 Recommendation

It is recommended that Option 2 is confirmed, noting further that this comprises the following key changes to current provisions:

- Amending regulation 8 to ban highly combustible metal composite material cladding panels used as cladding or as internal linings;
- Amending regulation 8 to ban combustible materials in external wall cladding systems of dwellings and other relevant buildings with a storey at a height of 11m or more.
- Amend schedule 3 to control the use of combustible materials in the replacement of external wall cladding systems, other than minor repairs; and
- amending building standard 2.7 relating to the spread of fire on external walls to clarify intent.

15.0 Declaration and Publication

I have read the Business and Regulatory Impact Assessment and I am satisfied that (a) it represents a fair and reasonable view of the expected costs, benefits and impact of the policy, and (b) that the benefits justify the costs. I am satisfied that business impact has been assessed with the support of businesses in Scotland.

Signed by the accountable Minister . . . Patrick Harvie

Patrick Harvie, Minister for Zero Carbon Buildings, Active Travel and Tenants' Rights

Date: 20 April 2022

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Annex A: Assumptions and Sensitivity Analysis - Ban on Combustible Materials on Buildings >11m

The central case analysis is based on the following assumptions and data:

- The number of buildings affected by the policy change:
 - New build – 16
 - Refurbishment – 57
 - Conversions - 10
- Some of these projects are expected to use A-rated materials without any change in regulations, such that only 25% of new build and refurbishment projects are assumed to be affected.
- Specific attachments to buildings are also covered by the proposed changes so 25% of new build properties are assumed to have balconies.
- The cost of moving from non A-rated material to A-rated material will vary according to the construction type. It is assumed that 70% of new builds have brick cladding and 30% have other cladding systems.
- The cost of using A rated material will vary by the height of the building. The costs adopted are shown in Table A1.

Table A1: Additional Cost per Building of using A-Rated Material, £ 2021 prices

Element	Low Building (8 Storeys)	Medium Building (15 Storeys)	High Building (21 Storeys)
New build – brick cladding	42,100	110,300	162,100
New build – other cladding	21,600	55,100	81,000
Refurb – cladding system	20,500	21,700 ¹	30,400 ¹

Based on data supporting the analysis for The Building (Amendment) (Wales) Regulations 2019, with an adjustment to update the price base to 2021

Notes:

1. Uses some data supporting the Ban on Combustible Materials in External Wall Systems. Building (Amendment) Regulations 2018 SI2018/1230
- For conversions, it is assumed that 70% of projects are affected by the change and that 60% are brick and 40% are rainscreen projects. The additional cost² of using A-rated material is estimated to be £99,900 and £89,000 per building for brick and rainscreen projects respectively.
 - The cost of A-rated balconies are shown in Table A2. Balcony costs vary depending on the material used (e.g. galvanised steel or concrete) or whether

²² Based on data on the MHCLG “Final Impact Assessment: Ban on Combustible Materials in External Wall Systems. Building (Amendment) Regulations 2018 SI2018/1230” November 2018 with an adjustment to update the price base to 2021

they are recessed or projected. The analysis adopts the costs for projected steel balconies.

Table A2: Additional Cost per Building of Balconies using A-Rated Material, £ 2021 prices

Element	Low Building (8 Storeys)	Medium Building (15 Storeys)	High Building (21 Storeys)
Recessed galvanised steel	102,100	141,100	205,200
Projected galvanised steel	98,800	136,600	198,600
Recessed concrete	42,800	59,200	86,100

Based on data supporting the analysis for The Building (Amendment) (Wales) Regulations 2019, with an adjustment to update the price base to 2021.

Sensitivity Tests

The sensitivity of the results to changes in some of the key variables has been tested:

- Sensitivity 1: The number of buildings in scope is increased by 50%.
- Sensitivity 2: The number of buildings in scope is reduced by 50%.
- Sensitivity 3: The proportion of projects having to achieve A-rating is increased from 25% to 50%.
- Sensitivity 4: The cost per building for conversion projects is reduced by 25% to reflect potential changes in the price of A-rated material that may have occurred since the ban on combustible material was introduced in England.

Table A3 sets out the results of the sensitivities.

Table A3: Sensitivity Results, Present Value, £ million

Costs	Test 1	Test 2	Test 3	Test 4
New/refurbishment	12.38	4.05	14.08	8.32
Conversions	8.63	2.88	6.02	4.51
Total - Owners/Developers	21.01	6.92	20.01	12.83

Amendments to Schedule 3

The central case analysis is based on the following assumptions and data:

- There are 300 projects affected by the change in regulations
- The distribution of projects by height of building is:
 - Small (2 storeys) – 80%
 - Medium (8 storeys) – 10%
 - High (15 storeys) – 10%
- 50% of the projects are assumed to use A-rated material and 50% will now have to upgrade to A-rated materials.

- There is no requirement for small (2 storey) buildings to change to A-rated materials.
- The extent of the external wall affected by the regulations is 20%
- The material cost of the repairs is £13.5 per sqm.
- The material cost is assumed to be 40% of the total value of the project.
- The value of work per project is used to determine the building warrant fee.
- The cost of preparing the building warrant application is assumed to be 10% of the value of work.

Sensitivity Tests

The sensitivity of the results to changes in some of the key variables has been tested:

- Sensitivity 1: the number of projects is increased to 500
- Sensitivity 2: the number of projects is reduced to 150
- Sensitivity 3: the distribution of projects by height of building is changed to:
 - Small (2 storeys) – 50%
 - Medium (8 storeys) – 25%
 - High (15 storeys) – 25%
- Sensitivity 4: the proportion of projects having to move to A-rated material is increased to 75%
- Sensitivity 5: the cost per sqm is increased to £16.2.
- Sensitivity 6: the distribution of projects by height of building is changed to:
 - Small (2 storeys) – 77.5%
 - Medium (8 storeys) - 10%
 - High (15 storeys) – 10%
 - Very High (26 storeys) – 2.5%

Table A4 sets out the results of the sensitivities.

Table A4: Sensitivity Results – Schedule 3, Present Value, £ million

Costs	Test 1	Test 2	Test 3	Test 4	Test 5	Test 6
Cost of fire-rated materials	4.39	1.32	6.59	3.95	3.16	3.42
Building warrant fees	0.51	0.15	0.34	0.45	0.32	0.32
Preparation of building warrant application	1.33	0.40	1.73	1.20	0.96	0.99
Total Owner Cost	6.23	1.87	8.67	5.61	4.45	4.72