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The professional voice of the
UK Fire & Rescue Service

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Banning the use of combustible materials in the
external walls of high-rise residential buildings
Ministry of Housing, Communities and Local Government
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United Kingdom

Sent via email to: buildingregsteam@communities.gsi.gov.uk

14 August 2018

To the Ministry of Housing, Communities and Local Government,

Please find attached the National Fire Chiefs Council (NFCC) response to the consultation paper *'Banning the use of combustible materials in the external walls of high-rise residential buildings'*

The NFCC is the professional voice of the UK fire and rescue services, and is comprised of a council of UK Chief Fire Officers. This submission was put together through the NFCC's Protection and Business Safety Committee, which I Chair. The Committee is comprised of protection and fire safety specialists from across the UK. All fire and rescue services in the UK have been consulted on this response.

In the wake of the fire at Grenfell Tower, it is vital that we use this time to reflect and examine the shortcomings that contributed to the terrible events of 14 June. In principle, the NFCC supports a ban on combustible materials in external wall systems, however we urge caution in ensuring that a ban does not create complacency that issues identified by Dame Judith have been fixed. There is much more to be done to ensure the safety of building occupants, now and in the future.

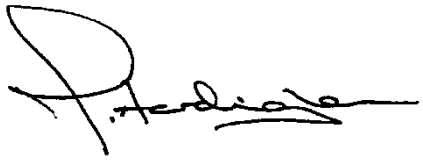
A ban also requires careful consideration to ensure it can be practically implemented, and to ensure there are not unintended consequences. Regardless of what a ban covers, or if it applies retrospectively, the focus should be on making people safe and ensuring that they feel safe, and there must be a plan in place to achieve this.

Whilst we are broadly in agreement with the aims, we are suggesting some refinements and measures which would be needed to support such a ban. For instance:

- further refining the acceptable categories (classifications) of products; and
- extending the scope so that fire spread is appropriately restricted for buildings below 18 metres; and
- extending the scope to incorporate all occupancy groups, in particular those who are the most vulnerable.

We trust that the attached submission is helpful, and would welcome further discussions with the Ministry following the outcome of the consultation.

Yours sincerely,



Mark Hardingham

NFCC Protection and Business Safety Committee Chair

NFCC National Fire Chiefs Council

The professional voice of the UK Fire & Rescue Service

Banning the use of combustible materials in the external walls of high-rise residential buildings – Consultation response

Executive summary

In principle, the National Fire Chiefs Council (NFCC) supports a ban on combustible materials in external wall systems, however we urge caution in ensuring that a ban does not create complacency that the broader issues identified by Dame Judith Hackitt have been fixed. There is much more to be done to ensure the safety of building occupants, now and in the future.

A ban also requires careful consideration to ensure it can be practically implemented, and to avoid unintended consequences. Regardless of what a ban covers, or if it applies retrospectively, the focus should be on making people safe and ensuring that they feel safe, and there must be a plan in place to achieve this.

Whilst we are supportive, such a ban would affect a significant number of buildings in some way, and therefore a significant number of residents. Those residents may either be in buildings which still have materials on them and would in the future be covered by a ban, or they might be marginally outside the scope of a ban and feeling concerned for their safety.

Based on the experience of our members to date, fire and rescue services will not have the capacity to manage the support and reassurance required from the public. We therefore suggest that any ban requires significant central resourcing to support and reassure the public.

The proposed ban, as it is suggested, appears to be:

- retaining the same acceptable categories (classifications) of products as an indication of combustibility;
- retaining the same height threshold;
- instigating this through a change in the Building Regulations – so not relying on guidance, as is the case at present.

And in doing so it is:

- removing one of the methods of showing compliance in AD-B (the BS 8414 tests); and
- removing another method of compliance which has been used from other external guidance (the assessment in lieu of test –'desktop studies'); but
- applying the changes to residential buildings only.

Whilst we are broadly in agreement with the aims, we have concerns regarding some of the proposals, and are therefore suggesting some refinements and measures which would be needed to support such a ban. For instance:

- further refining the acceptable categories (classifications) of products; and
- addressing the potential for rapid external fire spread in buildings below 18m in addition to what is currently proposed; and
- extending the scope of the ban to incorporate all occupancy groups, in particular those who are the most vulnerable.

The ban does not solve all the issues (Questions 3, 7)

Dame Judith Hackitt described the design and build process as a 'broken system'. There were many necessary solutions identified, and banning combustible items should not be considered 'job done'. Whilst we agree that a ban would have obvious immediate benefits, there remains the possibility of complacency.

Some within the industry may consider a ban sufficiently addresses the issues, therefore the more difficult issues to address such as competency throughout the system, the complexity of the system itself and unhelpful and overlapping legislation may receive less attention as a result. As Dame Judith has underlined, banning things is no guarantee that people will follow the rules, and this is supported by the NFCC view that much of the cladding on the side of buildings is already banned under the current regime.

The focus must be on ensuring people are safe, and feel safe (Question 9)

Notwithstanding our comments above, we support a ban, and we suggest further extending it so that:

- fire spread is appropriately restricted for buildings below 18 metres and
- for all occupancy types.

Regardless as to whether these suggestions are incorporated or not, subjecting products to a ban might suggest that regardless of what analysis (e.g. a BS 8414/BR 135 test/classification) took place, the products still pose an immediate fire risk.

We understand there are many examples of residents seeking advice and reassurance from our members directly relating to the cladding and whether they are 'safe' within their homes. We therefore recommend further thought be given to how it can be demonstrated to occupants that either their building is safe because:

- it is under a particular threshold, or
- it was built or refurbished prior to a ban being implemented regardless of what justification or analysis took place.

We suggest existing buildings with systems that have previously passed a full scale test (BS8414/BR 135 classification) should not be required to make alterations.

Limitations on FRS resources (Question 8)

We recognise if our recommendations are incorporated and applied retrospectively, this may impact many buildings across the country. Any changes need to be accompanied by a carefully scoped implementation plan, taking account of supply chain considerations as well as the impact on residents. However, the number of buildings affected should not in itself be a barrier to applying the correct standard required to ensure people are safe.

If the ban is applied retrospectively it should apply to buildings where work has started, and on a risk assessment basis for existing buildings. We also suggest existing buildings with systems that have previously passed a full scale test (BS8414/BR 135 classification) should not be required to make alterations.

Specific support is likely to be needed for those affected, and for those in buildings with similar materials but for which the ban has not been applied. FRSs have been very active since Grenfell, inspecting buildings which have had combustible Aluminium Composite Materials (ACM). There is a legislative limitation on enforcement options available to FRS specifically related to external walls, so visits have been limited to checking existing general fire precautions[1], and encouraging owners or those in control to follow central Government advice in terms of interim measures required to support continued occupation of the buildings.

Alongside this, local FRSs have provided support and guidance to residents and owners to ensure they feel safe. Whilst they have undertaken that role, with the limited resources of current Fire and Rescue Services, that level of interaction, given the potential large increase of affected buildings, is not sustainable. It is therefore vital that any changes are supported by sufficient resources for implementation.

The appropriate classification (Question 5)

We welcome that the proposed ban goes further than just ACM products. It is more appropriate to ban all combustible products (with some itemised exceptions such as fixings) rather than just ACM. If a single product only was banned, it is possible this combustible product might be replaced with an alternative combustible product if caution isn't applied.

However, the category including A2 might be too broad. The European classification system set out in BS EN 13501 has sub categories A1 and A2 and then has additional classifications for smoke production (s1, s2 or s3) and flaming droplets (d0, d1 or d2).

[1] General fire precautions are those defined by the Regulatory Reform (fire safety) Order 2005

Setting the threshold at A2 implies the least stringent A2, s3, d2 (and which is the current classification suggested by Approved Document B (AD-B). Whilst this assumes little contribution to fire, it offers no restriction on smoke production or flaming droplets. As is highlighted both in real fires and in large scale testing, the smoke production and flaming droplets present a hazard, and we think these should be controlled. We believe the classification of the materials warrants much closer scrutiny with regard to both smoke production and flaming droplets.

Whilst we have made suggestions in terms of smoke and flaming droplet classifications we further recommend that any classification chosen is subjected to a programme of large scale testing to ensure that the classification is appropriate.

<u>The 18 metre threshold (Questions 4,8, 9)</u>

We note the intention is to introduce a ban for residential building over 18 metres. Whilst we agree with the principle, we feel that other types of buildings, and buildings below 18 metres should also be considered.

Whilst an 18 metre threshold aligns with current guidance (AD-B and British Standards) in respect of areas such as firefighting shafts, it is a historical height which does not reflect modern firefighting equipment and practices. 18 metres could be considered at best out of date, but perhaps more appropriately, an arbitrary threshold.

Therefore, it may be more appropriate to either:

1. adopt a threshold of 11m which aligns with current operational equipment carried on front line fire appliances, or
2. to consider banning combustible items for any building of any height.

We have recommended the latter (implement the ban at any height for any building) on the basis that:

- Recent experience has shown anything other than a binary approach lends itself to being misinterpreted or misused. This is supported by the review which highlights a culture of monopolising loopholes. Banning combustible items on any height building will be the least risky option, at least until systemic and cultural change within the industry is achieved and trust is rebuilt.

- Our members have also reported it is common to receive designs that are intentionally as close to a threshold as possible, to avoid fire safety measures. In some cases, designs are presented explicitly on that basis. The same thinking would be applied to the proposed 18m threshold.

We see no justification why fire spread below 18 metres should not be restricted or controlled. The functional requirements of the Building Regulations are about the external walls of the building adequately resisting the spread of fire. Those functional requirements are not limited to building height, and we are of the opinion that nor should any solutions adopted (by either law or guidance).

If the threshold (of 18m, or a more appropriate one) is retained, then we suggest some control over combustible items on buildings below this height should be instigated. An option to achieve this might be to require items below the threshold to undergo large scale testing in accordance with BS 8414/BR 135 and make amendments to that testing/classification to incorporate measures for smoke production and flaming droplets.

What buildings should be covered? (Questions 4, 9)

We recommend a ban should apply more widely than just purpose built residential occupancy. There are several sleeping risks not covered by the proposed occupancy (for example hotels, student accommodation and residential care homes). It is acknowledged these occupancies have a different evacuation strategy than the usual stay put applied to a purpose built residential, and in most tall buildings they will have access to more than one stair. However, persons will still be at risk from a fire which has the potential to rapidly involve large portions of the exterior of the building.

Similarly, there are some very tall office blocks in which the evacuation is on a phased basis by which some floors (which are not the floor of fire origin) are not immediately evacuated. In a phased evacuation building the stair size has been calculated on the occupants from a limited number of floors evacuating at any one time. This is an appropriate strategy for a tall office building however it is not intended to account for a fire spreading rapidly up the outside of a building and affecting multiple floors. In many cases a building designed for phased evacuation will not have sufficient staircase capacity to simultaneously evacuate all the building's occupants.

We therefore recommend that either the ban is applied to all building occupancies, or it is at least applied to consider vulnerable persons in occupancy types other than purpose built blocks of flats (for example care homes or hospitals).

Other items we suggest could be included in the ban (Question 6)

We strongly support the suggestion to include areas not traditionally considered to be part of the 'wall' but which contribute to rapid external fire spread. Balconies are a good example and we see these involved in fires which spread from floor to floor rapidly, and into flats above the original fire flat. There is currently little guidance on the construction of balconies in purpose built blocks of flats, and in some cases these are built themselves from combustible materials.

In addition, green/living walls should be considered as we have seen these contribute to rapid fire spread. We suspect designers may consider them to be separate from the traditional 'wall' and therefore not in need of protection against rapid external fire spread.

Our members have also reported an emerging trend of incorporating solar panels on the outside wall of buildings rather than the traditional roof location. In some cases, these run the entire height of the building. Energy saving should not be detrimental to

the appropriate fire performance of the building. The potential for fire spread via these vertically located solar panels should be considered as part of this consultation.

Questions

Respondent Details

Question 1	**Respondent details**
Name	Mark Hardingham
Position (if applicable)	Protection and Business Safety Committee Chair
Organisation (if applicable)	National Fire Chiefs Council
Address (including postcode)	99 Vauxhall Road, Birmingham, B7 4HW
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Telephone number	07827 281979
Please state whether you are responding on behalf of yourself or the organisation stated above	Responding on behalf of the National Fire Chiefs Council (NFCC)

Question 2	**Select one**
Please indicate whether you are applying to this consultation as:	
• Other interested party (please specify) The National Fire Chiefs Council is the professional voice of the UK fire and rescue services, and is comprised of a council of UK Chief Fire Officers.	

Question 3	**Yes/No/Don't Know**
a. Do you agree that combustible materials in cladding systems should be banned?	Yes (because they are already restricted or controlled at 18m and above in guidance such as AD-B, and we would support this position being strengthened; please also refer to 3 c. below)
b. Should the ban be implemented through changes to the law?	Yes
c. If no, how else could the ban be achieved?	Whilst we have answered yes above, we also note that in our opinion the functional requirements of the Building Regulations are clear, and the associated guidance supports appropriate means to achieve the functional requirements. However, that the use of combustible materials has been shown to be so prevalent suggests other interpretations have been reached, or that the options

	provided by guidance have been misused. Therefore, a clarification in the law may be an effective means of ensuring people do not take other interpretations. We caution however that a ban should not be considered 'job done' and that this should not distract industry and government from the other vital work identified by the Hackitt review.

Question 4	**Yes/No/Don't Know**
Do you agree that the ban should apply:	
a. to buildings 18m or over in height?	No (because we do not agree that buildings below 18m should continue to be afforded no protection against rapid external fire spread; please refer to 4 e. below)
b. throughout the entire height of the wall, i.e. both below and above 18m?	Yes
c. to high-rise residential buildings only?	No
d. to all high-rise, non-residential buildings e.g. offices and other buildings, as well as residential buildings?	Yes
e. Please provide any further information in relation to your answers above.	We suggest that consideration should be given to how appropriate the 18m height threshold is. In our experience there are many blocks built with the uppermost occupied floor being just under 18m (sometimes heights such as 17.96m), principally to save cost on the increased fire safety provisions expected above that 18m threshold. It is therefore anticipated that this will continue, or may even increase, to avoid the combustibility limitations proposed. Notwithstanding that we question if 18m is the most appropriate threshold. This is largely a historical figure which correlated with firefighting equipment which has not been in service for many years. On the basis that there is concern over these products, it might be equally

	appropriate to consider them unsuitable for a building of any height. Regardless of the consideration of building height we feel the ban should also apply to all other building occupancies. If this inclusion of all occupancies is not adopted, we suggest that the ban at the very least should apply to where vulnerable people reside and sleep such as Hospitals and Care Homes. In our view this should apply to all external walls no matter what the height in these cases.

Question 5	**Yes/No/Don't Know**
a. Do you agree that the European classification system should be used and do you consider that Class A2 or better is the correct classification for materials to be used in wall construction?	No
b. If no, what class should be allowed in wall construction and why?	We are of the opinion that A2 should be further refined than the current AD-B expectation of A2-s3, d2 or better. This classification allows for high smoke production and flaming droplets and we recommend that these aspects should be further controlled. We recommend consideration is given to restricting to A2-s1, d0. Whilst we are recommending A2-s1, d0, we do so on the basis that we also recommend that the proposed rating is subjected to large scale testing and analysis. This is to ensure it is suitably robust in achieving the aim of restricting fire spread and therefore is an appropriate standard to adopt. If this refinement of the classification is not adopted, we suggest that the route to compliance should also require a test in accordance with BS 8414/BR 135 (if an A2 material is used) and that the testing regime should be amended to include pass/fail criteria which

	specifically account for smoke production and flaming droplets.

Question 6	**Yes/No/Don't Know**
a. Do you agree that a ban should cover the entire wall construction?	Yes (please also refer to 6 d. and Q7 below)
b. If no, what aspects of the wall should it cover?	N/a
c. Should a ban also cover window spandrels, balconies, brise soleil, and similar building elements?	Yes
d. Please provide any further information in relation to your answers above.	Whilst we are of the opinion that all principle elements of the wall construction should be covered, therefore we agree with the description of the 'entire wall' as covered in point 23 in the consultation documentation, we are also of the opinion that there should be exceptions which will not contribute to fire spread – see Q7 below. Notwithstanding the expectation that the structural frame is not included, the interaction between the frame and the wall system may require consideration – for example in timber framed construction. Whilst we agree that the entire wall should be considered, the discussion around items such as brise soleil and balconies are not usually considered to be part of the 'wall'. We have seen items such as those listed in 6 c. above contribute to rapid fire spread in real fires and therefore we agree that these should be considered as requiring control in terms of their contribution to rapid external fire spread. Therefore, the wording of such a vehicle to 'ban' combustible items might need to extend further in definition than what is traditionally considered the 'wall'.

	Other examples of items attached to a wall which we think are worthy of consideration are: • we have seen items such as 'green wall' or 'living wall' components have which have contributed to rapid fire spread; and • we also have concerns regarding extensive use of solar panels attached to the outside of a building. In some cases these are the full height of a tall residential tower and we suggest these should be considered as materials requiring control as well.

Question 7	**Yes/No/Don't Know**
a. Do you agree that a limited number of wall system components should, by exception, be exempted from the proposed ban?	Yes
b. If yes, what components should be included on an exemption list and what conditions should be imposed on their use?	Fixings, membranes (as long as it can be demonstrated that these will not contribute to fire spread).
c. Would you recommend an alternative way of achieving the policy aims stated above?	Whilst, in principle, enacting the proposals from the Hackitt review should prevent combustible items on buildings by addressing the issue at source; this is subject to correcting the systemic issues, achieving competency throughout the industry, preventing 'gaming' of the system and convenient interpretations – all of which will take time to correct or implement. We therefore understand the want to 'ban' combustible items as an immediate solution. However, as mentioned in Q1 above, care should be taken in order to ensure that a ban on combustible items does not dilute the effort or focus required to fix what Dame Hackitt has described as a 'broken system'.

Question 8	Yes/No/Don't Know
Do you agree that:	
a. a risk-based approach is appropriate for existing buildings?	Yes (though this needs to be unambiguously communicated to ensure everyone is assessing the risk in the same way)
b. the ban should apply to alterations to existing buildings, including over-cladding?	Yes
c. the ban should extend to projects that have been notified before the ban takes effect but work has not begun on site?	Yes
d. the ban should not affect projects where building work has already begun?	No (all projects should be considered).
e. Please provide any further information in relation to your answers above.	Whilst we appreciate our answers to c. and d. above suggest retrospectively applying any proposed legislation change to projects already underway, we understand it is within Parliament's gift to do so. We suggest existing buildings with systems that have previously passed a full scale test (BS8414/BR 135 classification) should not be required to make alterations. For existing buildings, we suggest the risk based approach should consider both the building itself (for example buildings with a single stair) and the vulnerability of residents (for example a care home). This is sector risk well understood by fire and rescue services so we would be prepared to assist in the development of any risk based approach.

Question 9	Free text answer
a. Which wall elements are likely to be affected by the proposed change – i.e. where they would pass as part of a cladding system in a BS8414 test but would not meet the proposed Class A2 or better requirement (e.g. sheathing boards or vapour barriers)?	NFCC is not best placed to answer this question so those with more experience and knowledge in this area will be able to provide more comprehensive detail. However, one material we do recommend is considered is timber

	items such as timber cavity barriers, and timber framed windows in which the frame itself forms the closure around windows. These are used in some designs at the moment and careful consideration should be given to if these are intended to be banned or will be so unintentionally.
b. We understand that since the Grenfell tower fire, a high proportion of relevant building work is already using elements which meet Class A2 or better. How frequently are elements which do not meet the proposed requirement, as identified in question 3, currently being used on buildings in scope?	NFCC is not best placed to answer this question so we will leave to those with more information than ourselves.
c. What the impact of removing access to the BS8414 for those buildings affected by the ban test is likely to be?	NFCC is not best placed to answer this question so we will leave to those with more information than ourselves.
d. What types of buildings 18m or over are likely to be affected by this change (e.g. hotels, residential, student accommodation)? What proportion of each type would likely be affected by the proposed change?	As per our answer to 4 c. above we consider that this should apply to all occupancy types.
e. How much extra cost would typically be involved in meeting the proposed new requirements over and against a building which meets the current requirements? (Please provide any further details.)	NFCC is not best placed to answer this question so we will leave to those with more information than ourselves.
f. Please provide any further comments on the likely impact of this change for construction (e.g. supply chains)	We suggest consideration should be given to both how safe occupants of these buildings are, but also how safe they feel. For example, if the ban was applied to an 18m threshold, how do occupants perceive their safety at 18.1m with the ban in place, against 17.9m with combustible facades allowed by virtue of not being within the scope of the ban. This applies to both new and existing buildings. Similarly, consideration should be given to not creating undue concern to the occupants of existing buildings with items of the type which might be subject

	to this ban, yet have previously passed a BS 8414/BR135 assessment. Furthermore, whilst we are suggesting the risk assessed approach, this will require careful consideration so that occupants feel safe in their buildings whilst these products remain in situ. There might be several thousands of buildings which have some form of combustible items in the external wall system. Even with keeping with the 18m height threshold this will remove the application of BS 8414 tests (as the ban is currently proposed), and remove the use of assessments in lieu of tests. Whilst that will reduce one potential bottleneck in the supply chain, the proposed ban will obviously have an effect on other areas of the supply chain. Notwithstanding our suggestion that the building height threshold is further considered, alongside that, attention might also be given to how any such ban will influence property values for individuals with properties either side of any threshold. Safety has got to be the primary factor, but government should also be cognisant of how to minimise any unintended impacts, in particular on potentially impacted residents.