

14 August 2018

Subject

Banning the use of combustibile materials in the external walls of high-rise residential buildings: a consultation paper

Organisation

Ministry of Housing, Communities and Local Government (MHCLG)

Introduction

London Fire Brigade (LFB) is London's fire and rescue service - one of the largest firefighting and rescue organisations in the world and we are here to make London a safer city. Decisions are made either by the London Fire Commissioner (the statutory fire and rescue authority for Greater London), the Mayor of London or the Deputy Mayor for Fire and Resilience. A Fire, Resilience and Emergency Planning Committee of the London Assembly holds the Commissioner, Mayor and Deputy Mayor to account.

Executive summary

In principle, LFB is supportive of an initial ban on combustibile materials in external wall systems, however we urge caution in ensuring this is not seen by some as the primary solution, or the solution which will address all the issues raised in Dame Judith Hackitt's Independent Review of Building Regulations and Fire Safety ("The Independent Review"). We see the banning of combustibile materials as treating the symptoms but not providing the cure, and there is much more to be done to ensure the safety of building occupants now and in the future.

We also caution that such a ban requires careful consideration 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 alongside a ban.

We wish to highlight that such a ban will affect a significant number of buildings in some way and therefore a significant number of residents. Those residents may either live in buildings might now be covered by a ban, or in buildings just outside the scope of a ban and still feeling concerned for their safety. Significant resource from central Government is needed to support and reassure the public about the implementation of a ban, whatever its scope.

LFB understands that the proposed ban would:

- retain the same acceptable categories (classifications) of products as an indication of combustibility;
- retain the same height threshold;

- instigate this through a change in the Building Regulations - so not relying on guidance, as is the case now.

And in doing so it is:

- removing one of the methods of showing compliance with Approved Document B (AD-B) specifically 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'); and
- applying the changes to residential buildings only.

We would like to see these changes to the proposed ban:

- further refining the acceptable categories (classifications) of products; and
- acknowledging 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.

Preface

While we are broadly in agreement with the aim of banning combustible materials we have concerns about some of the proposals in this consultation. LFB believes that there are some refinements and additional measures needed to support the ban.

The ban only addresses a small part of the problem (Questions 3 and7)

As identified by The Independent Review, there are problems with fire safety and building regulations which are systemic - Dame Judith Hackitt described the design and build process as a 'broken system'.¹ There were many required solutions and we reiterate that banning combustible items should not be considered 'job done'. While we agree a ban has obvious benefits as a short term solution, there remains the possibility of dangerous long term complacency. Some within the industry may consider a ban sufficient to addresses the immediate issues, and the more difficult issues to address (e.g. competency throughout the entire system, the complexity of the system itself and unhelpful and overlapping legislation) may receive less attention impetus as a result.

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 18m and for all occupancy types. Introducing a ban could give the impression that regardless of what testing has taken place, all products still pose an immediate fire risk. It is unclear how it can be demonstrated to occupants that either their building is safe because it is under a particular height threshold or that it is safe because it was built or refurbished prior to a ban being implemented, regardless of what justification or analysis has taken place. This is a matter warranting serious consideration as we know that the public are worried - we have extensive evidence of residents seeking advice and reassurance from LFB about cladding and whether they are safe within their homes.

Limitations on fire brigade resources (Question 8)

While we suggest the ban should be applied retrospectively to buildings where work has started, and on a risk assessment basis to existing ones, we recognise that this will apply to many more buildings.

¹ Building a Safer Future – Independent Review of Building Regulations and Fire Safety: Final Report

If our recommendations (in terms of building occupancy and building height) are incorporated, this may number in the many thousands of buildings across the country. However, the number of buildings affected should not, in itself, be a barrier to applying the appropriate standard required to ensure people are safe from a rapidly spreading external fire.

What this highlights is the need for specific support for residents of buildings to which the ban would apply, or for those in buildings with similar materials but for which the ban has not been applied. Fire and Rescue Services (FRS) across the country have been very active since the fire at Grenfell Tower, inspecting buildings which have been identified as having combustible Aluminium Composite Materials (ACM) as part of their external walls. There are limited enforcement options available to FRSs specifically related to external walls, so our remit has been limited to checking existing general fire precautions², and encouraging owners or those in control to follow Government advice in terms of interim measures required to support continued occupation of the buildings.

Alongside this we have provided support and guidance to residents and owners to ensure they feel safe. That level of interaction for a potentially very large number of affected buildings that would come under the ban is not possible within existing resources. It is vital that the Government assigns sufficient resources to implement and support such a ban without relying on FRSs to provide that reassurance and support to owners and residents.

The appropriate classification (Question 5)

We welcome that the proposed ban goes further than some previous discussions that were focused only on ACM. In our opinion 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 which is not a desirable result.

However, in our opinion the category including A2 might be too broad. As is discussed in the consultation documentation, 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). Setting the threshold at A2 implies the least stringent version of that - A2, s3, d2 (which is the current classification suggested by AD-B). While 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 therefore believe that the classification of the materials warrants much closer scrutiny with particular attention being made to both the smoke production and flaming droplets.

While 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 it is appropriate.

The 18 metre threshold (Questions 4, 8 and 9)

We note the intention to introduce a ban to control the combustible items in a wall system on a residential building over 18m. While we agree with the principle, we would urge that buildings of use other than residential, and buildings below 18m should also be considered.

In terms of the threshold itself, we are suggesting further consideration is given to how appropriate the proposed 18 metre threshold is. While this aligns with current guidance (AD-B and British

² General fire precautions are those defined by the Regulatory Reform (Fire Safety) Order 2005

Standards) in respect of areas such as firefighting shafts, it is an historical height which does not reflect modern firefighting equipment and practices. Therefore 18m could be considered, at best, to be out of date, but perhaps more appropriately an arbitrary threshold.

It may be more appropriate to either adopt a threshold of 11m which aligns with current operational equipment carried on front line fire appliances, or to consider banning combustible items for any building of any height. We have recommend the latter (implement the ban at any height for any building) on the basis that:

- recent experience has shown that anything other than a binary approach where something is either appropriate or not appropriate lends itself to being misinterpreted or misused. This is supported by The Independent Review's report which references a systemic failure and a culture of monopolising loopholes in a system. In our opinion a proposal to ban combustible items on any height building will be the least risky option in this respect, at least until systemic and cultural change within the industry is achieved and the trust is rebuilt.
- it is also common for LFB we see a design which has been intentionally as close to a threshold as possible to avoid fire safety measures required above that threshold. In some cases this has been presented to us explicitly with fire strategies setting out that the building height is 17.96m to avoid the need for additional fire safety measures. We have little reason to doubt that same thinking would be applied to the proposed 18m threshold for combustible products.

We see no justification for controlling or restricting fire spread on buildings above 18m, yet providing no control or restriction for buildings below that threshold. It should be remembered that 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 we suggest that some control over combustible items on buildings below this height is should be instigated. An option to achieve this may 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 and 9)

Similar to our thoughts on the height threshold proposed, we are concerned that limiting a ban to high rise blocks of flats is too limiting.

While there is an appropriate argument to suggest that people are most at risk from fire while they are sleeping, there are several sleeping risks not covered by this proposal. For example hotels, student accommodation and residential care homes are not within the proposed scope. It is acknowledged that these occupancies have a different evacuation strategy than the usual 'stay put' policy applied to a purpose built residential, and in most tall buildings they will also have access to more than one stairway. However, people will still be at risk from a fire which has the potential to involve large portions of the exterior of the building by spreading rapidly.

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 is unlikely to 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 people in occupancy types other than purpose built blocks of flats (e.g. care homes and 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 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 constructed using combustible materials.

In addition we also think that green/living walls should be considered as we have seen these contribute to rapid fire spread in several recent fires. We suspect this might be as the designers are considering them to be separate from the traditional 'wall' and therefore not in need of protection against rapid external fire spread.

We have also noted an emerging design 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. This should not be detrimental to the appropriate fire performance of the building. We are of the opinion that the potential for fire spread via these vertically located solar panels should be considered as part of this consultation.

Introduction

The following paragraphs provide the LFB opinion and commentary about each of the questions raised in the consultation. These are summarised in the executive summary above.

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?	While 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, the use of combustible materials has been shown to be so prevalent which 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 Independent 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

	<p>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. We question if 18m is the most appropriate threshold if there is to be one. This is largely a historical figure which correlated with firefighting equipment which has not been in service for many years.</p> <p>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.</p> <p>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.</p>
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Question 5	Yes/No/Don't Know
<p>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?</p>	<p>No</p>
<p>b. If no, what class should be allowed in wall construction and why?</p>	<p>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.</p> <p>While 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.</p> <p>If this refinement of the classification is not</p>

	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.
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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.	<p>While 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.</p> <p>The interaction between the frame and the wall system may require consideration – for example in timber framed construction.</p> <p>While 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'.</p> <p>Other examples of items attached to a wall which we think are worthy of consideration are:</p> <ul style="list-style-type: none"> • we have seen items such as 'green wall' or 'living wall' components which have contributed to rapid fire spread;

	<p>and</p> <ul style="list-style-type: none"> we also have concerns regarding extensive use of solar panels attached to the outside of a building. In some cases these are running the full height of a tall residential tower and we suggest these should be considered as materials requiring control as well.
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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.
c. Would you recommend an alternative way of achieving the policy aims stated above?	<p>While in principle enacting the proposals from The Independent Review should prevent combustible items on buildings by addressing the issue at source; this is subject to correcting the systematic issues, achieving competency throughout the industry, preventing 'gaming' of the system and convenient interpretations – all of which will take time to correct or implement.</p> <p>We therefore understand the desire 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 Judith Hackitt has described as a 'broken system'.</p>

Question 8	Yes/No/Don't Know
Do you agree that:	
a. a risk-based approach is appropriate for existing buildings?	Yes
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
e. Please provide any further information in	We suggest existing buildings with systems

<p>relation to your answers above.</p>	<p>that have previously passed a full scale test (BS8414/BR 135 classification) should not be required to make alternations.</p> <p>For existing buildings we suggest the risk based approach should consider both the building itself (e.g. buildings with a single stair) and the vulnerability of residents (e.g. a care home). This is sector risk well understood by fire and rescue services so we may be able to assist in the development of a risk based approach.</p>
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Question 9	Free text answer
<p>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)?</p>	<p>LFB 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.</p> <p>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 and careful consideration should be given to if these are intended to be banned or will be so unintentionally.</p>
<p>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?</p>	<p>LFB is not best placed to answer this question.</p>
<p>c. What the impact of removing access to the BS8414 for those buildings affected by the ban test is likely to be?</p>	<p>LFB is not best placed to answer this question.</p>
<p>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?</p>	<p>As per our answer to 4 c. above we consider that this should apply to all occupancy types.</p>
<p>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.)</p>	<p>LFB is not best placed to answer this question.</p>

<p>f. Please provide any further comments on the likely impact of this change for construction (e.g. supply chains)</p>	<p>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.</p> <p>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.</p> <p>Furthermore, while we are suggesting the risk assessed approach, this will require careful consideration so that occupants feel safe in their buildings while these products remain in situ. There might be several thousands of buildings which have some form of combustible items in the external wall system.</p> <p>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. While 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.</p> <p>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 of 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.</p>
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