

# **Consultation on banning the use of combustible materials in the external walls of high-rise residential buildings**

## **CIBSE Response**

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### **Question 1**

Response submitted by Dr Hywel Davies, Technical Director, on behalf of the Chartered Institution of Building Services Engineers, 222 Balham High Road, London SW12 9BS

[hdavies@cibse.org](mailto:hdavies@cibse.org) Tel. 0208 772 3629

### **Question 2**

The Chartered Institution of Building Services Engineers, CIBSE, is the professional engineering institution that exists to 'support the Science, Art and Practice of building services engineering, by providing our members and the public with first class information'

CIBSE members are engineers who design, install, operate, maintain and refurbish life safety and energy using systems installed in buildings. CIBSE members include specialists in fire safety systems and fire engineering. Others, who are belong to the Society of Façade Engineering, a Division of CIBSE, specialise in the design and installation of cladding systems.

CIBSE is unusual amongst built environment professional bodies because it embraces design professionals and also installers and manufacturers and those who operate and maintain engineering systems in buildings, with an interest throughout the life cycle of buildings.

CIBSE has over 20,000 members, with around 75% operating in the UK and many of the remainder in the Gulf, Hong Kong and Australasia. CIBSE is the sixth largest professional engineering Institution, and along with the Institution of Structural Engineers is the largest dedicated to engineering in the built environment. Our members have international experience and knowledge of life safety requirements in many other jurisdictions. We also have members working in London Underground, with considerable experience in the regulations governing sub-surface stations, which are heavily influenced by the requirements introduced following the Kings Cross fire in 1987.

CIBSE publishes Guidance and Codes providing best practice advice and internationally recognised as authoritative. The CIBSE Knowledge Portal makes our Guidance available online to all CIBSE members, and is the leading systematic engineering resource for the building services sector. It is used regularly by our members to access the latest guidance material for the profession. Currently we have users in over 170 countries, demonstrating the world leading position of UK engineering expertise in this field.

### Question 3

#### **a. Do you agree that combustible materials in cladding systems should be banned? (yes or no/ don't know answer)**

Whilst we appreciate that the intention here is to address the major components and materials, since there is then a proposal for some exemptions, set out in Question 7 which implies that use of combustible materials in cladding systems is being significantly restricted, not banned. We would therefore answer your question, as asked, no, whilst noting that we support the general approach of restricting use of combustible materials in cladding.

Such a further restrictions should be subject to a further review as findings emerge from the Public Inquiry into the Grenfell Tower Fire, responses to the Independent Review and as testing regimes develop over time. The industry is also putting in place measures to improve competency of professionals and tradespeople working on higher-risk buildings. In time, a more competent construction workforce could also merit a change to this proposed prescriptive approach, which may well be anomalous to a more performance-based approach to fire and life safety.

Requirement B4 of the Building Regulations already limits the materials that may be used on the external face of a building, so this is a proposal to extend the scope of an existing ban.

#### **b. Should the ban be implemented through changes to the law? (yes or no/ don't know)**

Yes – through changes to the Building Regulations. As noted in the consultation paper, a ban can only be delivered by legislation, otherwise it is guidance. As noted in answer 3a, use of combustible materials for external surfaces is already “banned” by requirement B4. However, as the government has acknowledged, over 450 buildings are clad in material that is not permitted, i.e. banned, already. That has occurred because of significant differences of interpretation between professionals over the guidance that is supposed to support the application of requirement B4 but has in practice confused. Just changing the scope of what is banned alone will not solve the problems – as Dame Judith Hackitt finds in her report, there is a need for much more wide ranging change in the sector for the proposed ban to be effective, and there needs to be absolute clarity over what is “banned” in future.

#### **c. If no, how else could the ban be achieved?**

There is no other mechanism that is appropriate – a ban requires legislation.

### Question 4

#### **Do you agree that the ban should apply (a-d, yes/no/don't know)**

##### **a. to buildings 18m or over in height?**

Yes.

##### **b. throughout the entire height of the wall, i.e. both below and above 18m?**

Yes, the ban should apply to the entire height of the wall.

**c. to high-rise residential buildings only?**

No, it needs to be wider than this, see notes below.

**d. to all high-rise, non-residential buildings, e.g., offices and other buildings, as well as residential buildings?**

Yes.

Reasons for answers to 4c & 4d include the following considerations;

1) Why should people be asked to work in an office or other non-residential building that is clad in material that would not be allowed if it was a residential building? How will that be presented to the public and how will it help to rebuild public confidence?

2) What if the building is subject to a change of use to residential? Given the past year's experience with identifying cladding on existing buildings, it is almost certain that people will then find themselves living in a tower clad in the wrong sort of cladding for a residential building. This scenario demonstrates the importance of Chapter 8 of Building a Safer Future, which calls for full digital records of buildings. Such records will, if adopted and if they require sufficient detail, provide information about the materials used to construct key elements for future reference, but at present there is no system for capturing such information.

3) Requirement B4, which covers prevention of external spread of fire, does not allow it already, and as noted under Q3, this is effectively a proposal to expand the scope of what is already banned under requirement B4.

4) If the office tower is close to a residential tower then there must be consideration to the potential for spread of fire from one building to the other

**e. Please provide any further information in relation to your answers above [free text]**

Consideration should also be given to the use, or banning, of combustible cladding on any building above one storey where there is likely to be a gathering of vulnerable people. This includes care homes, schools, hospitals, places of worship, some leisure and recreational buildings, and certain mixed-use developments. Our rationale for this is that vulnerable people do not necessarily have the same capacity to escape as those that are more able.

Further work is required to establish whether the 18m height, which is an historic level, is still the appropriate height to impose tighter restrictions. There does not seem to be any rationale for this 18m in terms of modern firefighting practices. There needs to be a proper assessment in conjunction with the Fire Services.

The ban should also be applied to any building where the cladding short circuits a fire floor or a fire wall, although this is arguably already covered by requirement B4.

**Question 5**

**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? [yes/no/don't know]**

Yes, we agree with the use of the European Classification as the classification system for this purpose. We support adopting a requirement for A2 or better.

**b. If no, what class should be allowed in wall construction and why? [free text]**

#### **Question 6**

**a. Do you agree that a ban should cover the entire wall construction? [yes/no/don't know]**

We probably agree, although the term “entire wall construction” is not defined. Does it include internal finishes? This may not be technically necessary, and it is almost certainly unenforceable on residential property, as it would require control of internal decoration! This will need real clarity over what is covered by the term “entire wall construction”, and cross referencing to existing documents such as AD B para 6.2 and Diagram 12, for example.

**b. If no, what aspects of the wall should it cover? [yes/no/don't know]**

**c. Should a ban also cover window spandrels, balconies, brises soleil and similar building elements? [yes/no/don't know?]**

Yes, the ban should cover the building elements listed.

**d. Please provide any further information in relation to your answers above [free text]**

#### **Question 7**

**a. Do you agree that a limited number of wall system components should, by exception, be exempted from the proposed ban? Yes/No/Don't Know**

Yes, we agree there should be exemptions for a limited number of wall system components.

It would be highly impractical for an outright ban on the use of all combustible materials in all elements. Our proposed approach at this point would be for the regulations to have a prescribed list of elements where combustible materials are considered acceptable.

This list will need to be drawn up on the basis of an assessment of current knowledge and will, effectively, be “an assessment in lieu of test”, and so its development will need to be undertaken with great care in the light of the recent proposals to restrict such assessments.

**b. If yes, what components should be included on an exemption list and what conditions should be imposed on their use?**

We recommend exemptions for elements for which there is no practical alternative to using materials that are not Class A1 and A2. In our view, this would include elements such as double glazing, gaskets, sealants, internal wallpaper and paint.

Also, where the risk of external fire spread caused by the use of combustible materials would be so minimal that it would be disproportionate to ban their use, such as thin narrow members or small discrete non structural fixings or fixing caps.

**c. Would you recommend an alternative way of achieving the policy aims stated above?**

**Yes/No/Don't Know**

We recommend that the list of exempted elements needs to be exhaustive and as far as possible not open to interpretation. The policy and detailed list will need to be reviewed and updated regularly to allow for innovation.

There is a strong case for retaining the use of the BS8414 full scale test regime as a means to demonstrate that the inclusion or introduction of an exempted product or component on the list is safe under prescribed circumstances.

There has to be evidence to support the inclusion of ANY item on an exemption list. Evidence requires testing, and whilst BS 8414 has its detractors, it is adopted outside the UK and it is currently undergoing a technical review, so that those who do have technical concerns now have an opportunity to influence the improvement of the testing regime.

**Question 8**

**Answer 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 overcladding?**

Yes - if work on an existing building falls within the scope of a material alteration as defined by regulations, then the ban should apply. However, it is essential to have clarity on what is meant by 'alteration'. It should not cover minor maintenance, where it would run the risk of discouraging repairs in order to avoid a major cost and project, or it would just be flouted.

Any application to existing buildings should be realistic and enforceable, and should work with current triggers for building control intervention.

**c. the ban should extend to projects that have been notified before the ban takes effect but work has not begun on site? See below**

This question cannot be answered simply without a clear definition of "notified". If the project is using local authority building control and falls within scope of the Regulatory

Reform Order, then full plans must be deposited and approved: is this “notification”? However, if an Approved Inspector is engaged, then a Building Notice will be used. This means that a building in scope of the ban and the RRO which is being controlled by the LABC service will have to have the full external wall specification checked, but if it is being controlled by an AI there is no formal check, and in the terms of “Building a Safer Future” this looks like self-policing. Is that what is intended? Will it reinforce public confidence?

This also means that there is no unique trigger point for a ban to apply, as a building notice can be submitted well before a detailed specification of the external walls is developed.

When any ban comes into force it should apply to all new buildings that have yet to start on site in the same way. Under current rules that is not feasible for the reasons set out above. It could be argued that buildings over 18m should no longer be allowed to proceed on the basis of a building notice, but that is a regulatory change and would require consultation, and may not be considered to be the most appropriate answer. But there is no current mechanism for requiring an Approved Inspector to submit full plans. So it would appear that if a ban is adopted, then the impact will depend on the Building Control route being used.

For any building project that is near to starting on site, for which the question “has this project been notified before the ban takes effect” is relevant, there is a high probability, bordering on certainty, that Building Control arrangements and contracts are already in place, and costs agreed. A ban would therefore have an impact on those arrangements.

If the objective is for everyone concerned to be assured that buildings in scope of any ban and being constructed after the date of the ban coming into effect do not use combustible materials in the external wall, as currently proposed, then it must be rational for all such buildings in scope to undergo the same level of scrutiny to confirm that they comply. This is evidently necessary since we have over 450 buildings with ACM cladding which does not meet Requirement B4 but has been installed. The drafting of the transitional arrangements for the coming into force of any ban will be difficult. However, the test that might be considered is “is there a good reason why this project should be allowed to proceed in contravention of the ban coming into force”?

MHCLG needs to be mindful that building design has a long gestation period, sometimes years. Some decisions that will influence the external wall construction may be taken at a very early stage. In particular, use of systems such as cross laminated timber will be a very early decision. The adoption of the ban may have the effect of terminating projects which are at the design stage using CLT. This will require serious attention.

Changing the design of a cladding system on a building after it has been designed will result in considerable reworking, as replacing like for like is not always a viable solution. Again, it may well be that the ban flushes out practices which are not really allowed under the current regulations, but the critical question is not “what is banned” but “can the ban be effectively enforced so that the public can have confidence that it is effective”. This is not addressed in the consultation. It may also be one reason why Dame Judith Hackitt was reluctant to recommend further prohibitions on materials used in external wall construction, knowing that there are such issues as enforcement (and sanctions) to be

addressed if the ban is to work any more effectively than the regulatory limitations on the use of ACM materials has worked to date.

**d. the ban should not affect projects where building work has already begun?**

We need to be very clear what “start” means. It cannot mean a site fence is erected or piece of machinery parked on site or “a shovel in the ground”. The test should be to ask whether there is any good reason why the ban should not apply.

If we believe that the extension of what is already banned is going to make buildings safer, then every building that is allowed to proceed without compliance with the new rules is, on that argument, less safe. Allowing that to happen requires a justification, which should be based on a third party assessment of what is being proposed. It should be treated in the same way as existing buildings which have inappropriate cladding on them, where a building by building, risk based professional assessment is required.

**e. Please provide any further information in relation to your answers above. [Free text answer]**

A ban is the relatively easy part. Formulating robust transitional arrangements and having robust enforcement and compliance and sanctions in place for those who are determined to try not to comply will be far more challenging.

**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)?**

The whole system needs to pass the test and the whole system but be identical to that installed on site. Any changes would be deemed as a non compliance. BS 9414 may, subject to the detail, be relevant here too.

**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?**

CIBSE does not have evidence. However, we do know how many buildings have cladding which does not satisfy requirement B4. MHCLG must be aware of the stance of private building owners of buildings with this cladding.

**c. What the impact of removing access to the BS8414 for those buildings affected by the ban test is likely to be?**

BS 8414 is under review, so it may not be appropriate to comment. As with compliance with B4, it is one thing to have a BS8414 compliant system, it is another for that system to be

installed in such a way as to be BS 8414 compliant on site. Evidence from the removal of non compliant cladding is giving some cause for concern about installation standards on these projects.

**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?**

See earlier remarks about the 18m limit. The question should be more widely framed to address all buildings where combustible materials short circuit fire compartments or have large numbers of people or vulnerable occupants.

**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.)**

We cannot offer information on this.

**f. Please provide any further comments on the likely impact of this change for construction (e.g. supply chains)**

We have no further comment.