



## Addendum

**Report:** Fire Hazards of Exterior Wall Assemblies Containing Combustible Components, June 2014

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### 3. Changes to England and Wales regulation and reference standards

#### 3.1 Reviews and enquiries post Grenfell Tower fire

In response to the Grenfell Tower fires that occurred in June of 2017, an independent review of the current state of the Building Regulatory environment was undertaken and a final report was published on May 2018 (Hackitt) available at:

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/707785/Building\\_a\\_Safer\\_Future\\_-\\_web.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/707785/Building_a_Safer_Future_-_web.pdf)

The report identified issues and challenges facing both UK's and international regulatory frameworks and listed several recommendations for reform.

The Grenfell tower inquiry is currently ongoing. Information from the inquiry is available here:

<https://www.grenfelltowerinquiry.org.uk/>

#### 3.2 Regulation changes

The fire safety legislation in the UK is changing with Approved Document B revised on May 2020 which comes into effect in November 2020. The existing 2019 edition of Approved Document B Volumes 1 and 2 came into effect from 30 August 2019 in England only; Wales has, since 2016 its own version of the Approved Documents.

Key changes with the amendments of Approved Document B since 2013 include:

- The design of blocks of flats has moved from Volume 2 to Volume 1
- Introduction of Regulation 7, which applies to buildings with an effective height of 18 m or more which have a residential or institution (hospital, aged care or the like with sleeping accommodation) component, requires the external wall and certain attachments to achieve European Classification A2-s1, d0 or Class A1, with some limited exemptions noted in the regulations; the new regulations no longer permit other materials including systems which meet the performance criteria given in BRE report BR 135 for external walls using full-scale test data from BS 8414-1 or BS 8414-2.
- Approved Document B (2019) Volume 1 Section 10 and Volume 2 Section 12 provide guidance requirements for external wall fire spread as summarised below:

#### Regulation 7

- Regulation 7 applies to “relevant buildings” which are buildings with a storey at least 18m above ground level and which contains one or more dwellings; an institution; or a room for residential purposes (excluding any room in a hostel, hotel or a boarding house). This includes student accommodation, care homes, sheltered housing, hospitals and dormitories in boarding schools.
- It requires that all materials (other than exempted materials) which become part of an external wall or specified attachment achieve class A2-s1, d0 or class A1.

- Exempted materials include membranes, seals, gaskets, fixings, backer rods, thermal break materials, window frames and glass, door frames and doors, electrical installations etc.
- Systems which fail to achieve class A2-s1, d0 but meet the performance criteria of BR 135 using full-scale test data from BS 8414-1 or BS 8414-2 are not permitted for ‘relevant buildings’.

Additional guidance is provided in AD B section 12.16 for thermal break materials, which should not span two compartments and should be limited in size to be the minimum required to restrict thermal bridging, and for membranes used as part of external wall construction which should achieve a minimum European classification of B,s3-d0.

For buildings other than those prescribed as ‘relevant buildings’ in Regulation 7, external walls must either: a. meet the following requirements for:

- external surfaces.
- materials and products.
- cavities and cavity barriers.

b. meet the performance criteria of BR 135 using full-scale test data from BS 8414-1 or BS 8414-2

#### External surfaces

The external surfaces (i.e. outermost external material) of external walls must comply with table below.

**Table 1. Reaction to fire requirements for external surface of walls, taken from Approved Document B Volume 1 2019, Table 10.1**

Building type	Building height	Less than 1000mm from the relevant boundary	1000mm or more from the relevant boundary
‘Relevant buildings’ as defined in regulation 7		Class A2-s1, d0 <sup>(1)</sup> or better	Class A2-s1, d0 <sup>(1)</sup> or better
Assembly and recreation	More than 18m	Class B-s3, d2 <sup>(2)</sup> or better	From ground level to 18m: class C-s3, d2 <sup>(3)</sup> or better  From 18m in height and above: class B-s3, d2 <sup>(2)</sup> or better
	18m or less	Class B-s3, d2 <sup>(2)</sup> or better	Up to 10m above ground level: class C-s3, d2 <sup>(3)</sup> or better  Up to 10m above a roof or any part of the building to which the public have access: class C-s3, d2 <sup>(3)</sup> or better <sup>(4)</sup>  From 10m in height and above: no minimum performance
Any other building	More than 18m	Class B-s3, d2 <sup>(2)</sup> or better	From ground level to 18m: class C-s3, d2 <sup>(3)</sup> or better  From 18m in height and above: class B-s3, d2 <sup>(2)</sup> or better
	18m or less	Class B-s3, d2 <sup>(2)</sup> or better	No Provisions

Numbered Table Notes:

1. The restrictions for these buildings apply to all the materials used in the external wall and specified attachments

2. Profiled or flat steel sheet at least 0.5 mm thick with an organic coating of no more than 0.2mm thickness is also acceptable.
3. Timber cladding at least 9mm thick is also acceptable.
4. 10m is measured from the top surface of the roof.

General Table notes

- Class refers to classification in accordance with EN 13501-1.

Materials and Products

In a building with a storey 18m or more in height any insulation product, filler material (such as the core materials of metal composite panels, sandwich panels and window spandrel panels but not including gaskets, sealants and similar) etc. used in the construction of an external wall should be class A2-s3, d2 or better (this restriction does not apply to masonry cavity walls compliant with other specific requirements).

“External wall” is defined as follows in Appendix A: Key Terms of Approved Document B”

The external wall of a building includes all of the following.

- Anything located within any space forming part of the wall.
- Any decoration or other finish applied to any external (but not internal) surface forming part of the wall.
- Any windows and doors in the wall.
- Any part of a roof pitched at an angle of more than 70 degrees to the horizontal if that part of the roof adjoins a space within the building to which persons have access, but not access only for the purpose of carrying out repairs or maintenance.

Cavities and cavity barriers

Cavity barriers are required in external walls at:

- the edges of cavities, including around openings (such as windows, doors and exit/entry points for services).
- the junction between an external cavity wall and every compartment floor and compartment wall.

Cavity barriers must provide 30 minutes fire resistance integrity and 15 minutes fire resistance insulation. However, cavity barriers formed around openings may be formed of any of the following (and not necessarily achieve the above fire resistance):

- Steel, a minimum of 0.5mm thick.
- Timber, a minimum of 38mm thick.
- Polythene-sleeved mineral wool, or mineral wool slab, under compression when installed in the cavity.
- Calcium silicate, cement-based or gypsum-based boards, a minimum of 12mm thick.
- Cavity barriers provided around openings may be formed by the window or door frame if the frame is constructed of steel or timber of the above minimum thickness.

**3.3 Changes relating to BS8414 full scale façade fire testing**

- BS 8414-1:2020 is the current version of this standard.
- BS 8414-2:2020 is the current version of this standard.
- “BS 9414:2019 - Fire performance of external cladding systems. The application of results from BS 8414-1 and BS 8414-2 tests” has been released. This standard provides industry with guidance on assessments for variations to systems which have been tested to BS 8414-1 or BS 8414-2.

**Issue date:** November 10, 2020

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