GATEHOUSE CHAMBERS

# Behind the Façade

## Introduction: The key regulations

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# Behind the Façade Webinar Programme

- Series of seminars covering
  - Construction disputes
  - Property disputes
  - Professional negligence
  - The practicalities of evidence
  - Updates on changes and developments

# Context

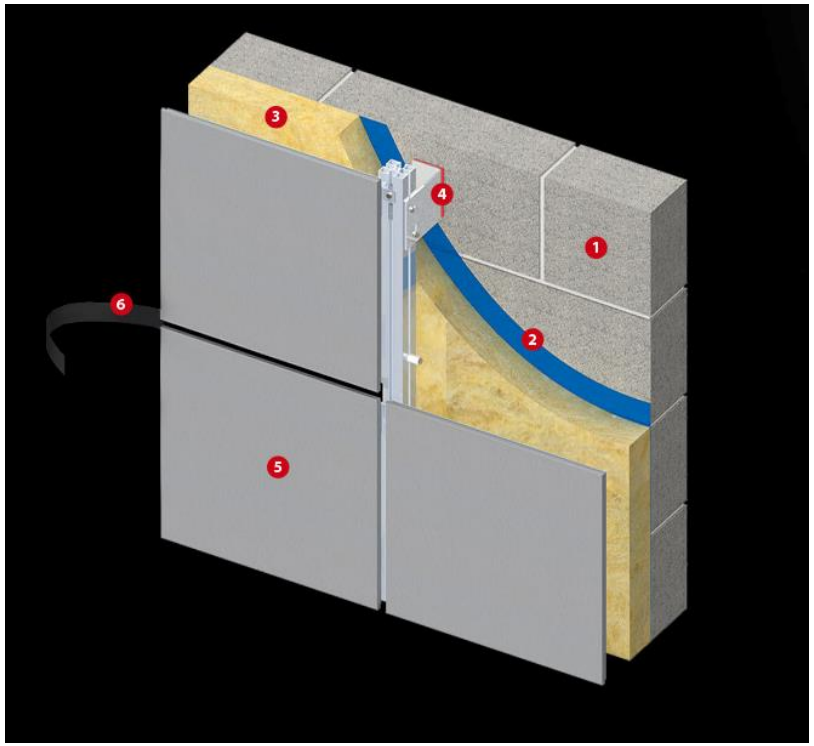
- Grenfell Tower Fire
- Phase 1 Grenfell Tower Inquiry:
  - Tower did not meet Building Regulations;
  - External walls actively promoted fire spread

- Changes
  - Legislation
  - Regulatory
  - Standards
  - Industry?

Picture credit: The Guardian
https://www.theguardian.com/uk-news/2019/dec/06/too-little-has-been-done-since-the-grenfell-tower-fire

# "Cladding"?

- Rainscreen façade comprised of
  - Backing wall
  - Vapour control layer
  - Insulation
  - Panel fixing system
  - Panels
- Also consider
  - Cavity barriers
  - Apertures, eg windows




Picture credit: Proteus Facades: https://proteusfacades.com/technical/rainscreen-cladding/

# Legislative and regulatory framework

- Building Act 1984
- Building Regulations 2000 / 2010
- Regulatory Reform (Fire Safety) Order 2005

(and other Health and Safety, CDM instruments)

Upcoming changes

- Fire Safety Bill/Fire Safety Act
- Building Safety Bill

# Building Regulations

- Regulation 3: Definition of Building Work

- Regulation 4(1): Building Work to be carried out such that it complies with applicable Regulations in the Schedule

# Building Regulations – Schedule 1

- Part A – Structure
- Part B – Fire safety
- Part C – Site preparation and resistance to contaminants and moisture
- Part D – Toxic substances
- Part E – Resistance to the passage of sound
- Part F – Ventilation
- Part G – Sanitation, hot water safety and water efficiency
- Part H – Drainage and waste disposal

Part J – Combustion appliances and fuel storage systems

Part K – Protection from falling, collision and impact

Part L – Conservation of fuel and power

Part M – Access to and use of buildings

Part N – Glazing – safety in relation to impact, opening and cleaning

Part P – Electrical safety

Part Q - Security

# Functional Requirements - Structure

| *Requirement* | *Limits on application* |
|---|---|
| **PART A STRUCTURE** | |
| **Loading** | |
| **A1.**—(1) The building shall be constructed so that the combined dead, imposed and wind loads are sustained and transmitted by it to the ground—<br>(a)<br>safely; and<br>(b)<br>without causing such deflection or deformation of any part of the building, or such movement of the ground, as will impair the stability of any part of another building. | |

| *Requirement* | *Limits on application* |
|---|---|
| (2) In assessing whether a building complies with sub-paragraph (1) regard shall be had to the imposed and wind loads to which it is likely to be subjected in the ordinary course of its use for the purpose for which it is intended. | |

# Functional Requirements – Fire (B3)

| **Internal fire spread (structure)** | |
|---|---|
| **B3.**—(1) The building shall be designed and constructed so that, in the event of fire, its stability will be maintained for a reasonable period. | |
| (2) A wall common to two or more buildings shall be designed and constructed so that it adequately resists the spread of fire between those buildings. For the purposes of this sub-paragraph a house in a terrace and a semi-detached house are each to be treated as a separate building. | |
| (3) Where reasonably necessary to inhibit the spread of fire within the building, measures shall be taken, to an extend appropriate to the size and intended use of the building, comprising either or both of the following—<br>(a) sub-division of the building with fire-resisting construction;<br>(b) installation of suitable automatic fire suppression systems. | Requirement B3(3) does not apply to material alterations to any prison provided under section 33 of the Prison Act 1952. |
| (4) The building shall be designed and constructed so that the unseen spread of fire and smoke within concealed spaces in its structure and fabric is inhibited. | |

# Functional Requirements – Fire (B4)

**External fire spread**

**B4.** (1) The external walls of the building shall adequately resist the spread of fire over the walls and from one building to another, having regard to the height, use and position of the building.

(2) The roof of the building shall adequately resist the spread of fire over the roof and from one building to another, having regard to the use and position of the building.

# Approved Documents – Building Act 1984

- Section 7

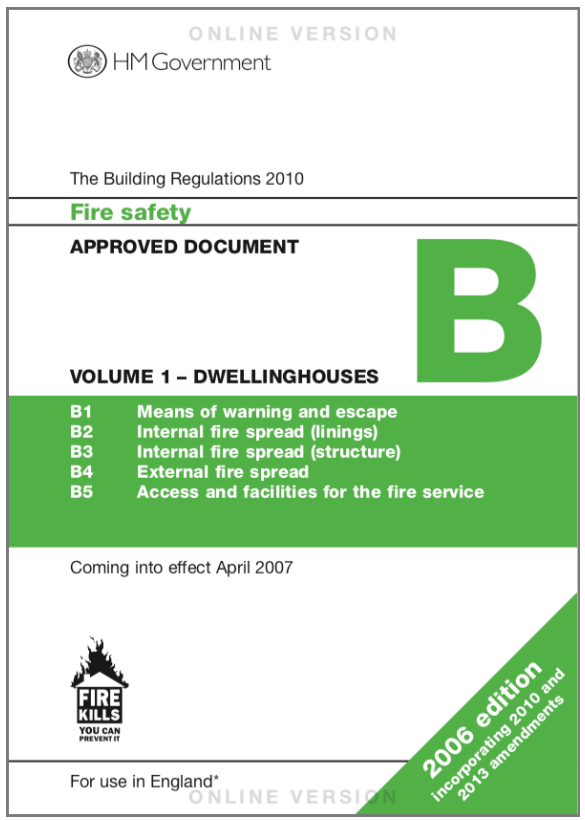
**7.— Compliance or non-compliance with approved documents.**

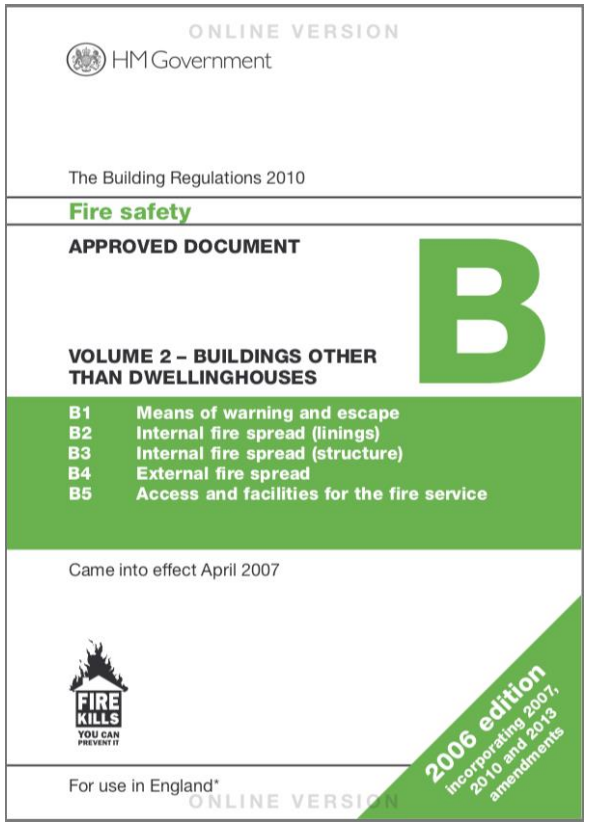
(1) A failure on the part of a person to comply with an approved document does not of itself render him liable to any civil or criminal proceedings; but if, in any proceedings whether civil or criminal, it is alleged that a person has at any time contravened a provision of building regulations—

(a) a failure to comply with a document that at that time was approved for the purposes of that provision may be relied upon as tending to establish liability, and

(b) proof of compliance with such a document may be relied on as tending to negative liability.

# Approved Document B (2013) (superseded)



# Approved Document B (2013) (superseded)

- Paragraph 12.5: Routes to compliance for external facades

**External wall construction**

**12.5** The external envelope of a building should not provide a medium for fire spread if it is likely to be a risk to health or safety. The use of combustible materials in the cladding system and extensive cavities may present such a risk in tall buildings.

Externall walls should either meet the guidance given in paragraphs 12.6 to 12.9 or meet the performance criteria given in the BRE Report *Fire performance of external thermal insulation for walls of multi storey buildings* (BR 135) for cladding systems using full scale test data from BS 8414-1:2002 or BS 8414-2:2005.

"Linear route" ←

→ Full scale test / Desk top study route

# ABD2 (2013) – Linear route

## s. 12.6 - External surfaces

**External surfaces**

**12.6** The external surfaces of walls should meet the provisions in Diagram 40. Where a mixed use building includes Assembly and Recreation Purpose Group(s) accommodation, the external surfaces of walls should meet the provisions in Diagram 40c.

Eg:

Diagram 40 (buildings over 18m) :

- Euro Class B-s3,d2 (EN13501) or
- British Class 0 (BS 476 parts 6 & 7)

## s. 12.7 – Insulation

**Insulation Materials/Products**

**12.7** In a building with a storey 18m or more above ground level any insulation product, filler material (not including gaskets, sealants and similar) etc. used in the external wall construction should be of limited combustibility (see Appendix A). This restriction does not apply to masonry cavity wall construction which complies with Diagram 34 in Section 9.

Eg:

Appendix A Table A7 - ”Limited Combustibility”:

- Euro class A2-s3,d0 (EN13501), or
- Achieves values under BS 476 part 11 test

# Diagram 40

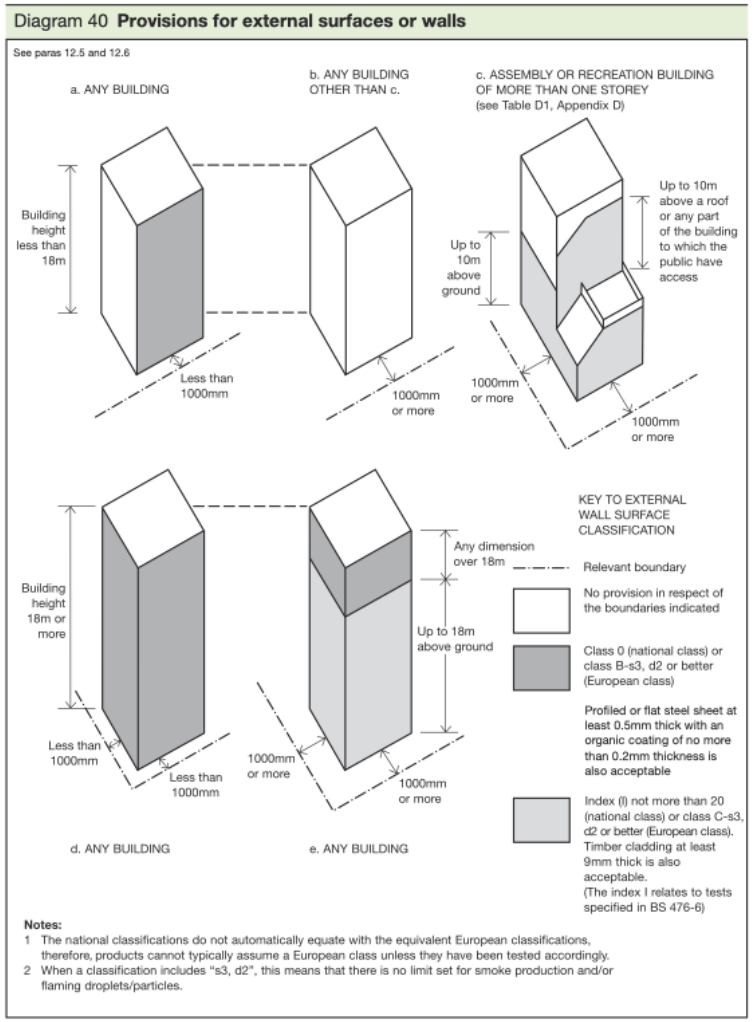


Diagram 40 Provisions for external surfaces or walls
See paras 12.5 and 12.6
a. ANY BUILDING
b. ANY BUILDING OTHER THAN c.
c. ASSEMBLY OR RECREATION BUILDING OF MORE THAN ONE STOREY (see Table D1, Appendix D)
Building height less than 18m
Less than 1000mm
1000mm or more
Up to 10m above ground
Up to 10m above a roof or any part of the building to which the public have access
1000mm or more
1000mm or more
Building height 18m or more
Less than 1000mm
Less than 1000mm
Any dimension over 18m
Up to 18m above ground
1000mm or more
1000mm or more
d. ANY BUILDING
e. ANY BUILDING
KEY TO EXTERNAL WALL SURFACE CLASSIFICATION
Relevant boundary
No provision in respect of the boundaries indicated
Class 0 (national class) or class B-s3, d2 or better (European class)
Profiled or flat steel sheet at least 0.5mm thick with an organic coating of no more than 0.2mm thickness is also acceptable
Index (I) not more than 20 (national class) or class C-s3, d2 or better (European class). Timber cladding at least 9mm thick is also acceptable.
(The index I relates to tests specified in BS 476-6)
Notes:
1 The national classifications do not automatically equate with the equivalent European classifications, therefore, products cannot typically assume a European class unless they have been tested accordingly.
2 When a classification includes "s3, d2", this means that there is no limit set for smoke production and/or flaming droplets/particles.

# Table A7

**Table A7 Use and definitions of materials of limited combustibility**

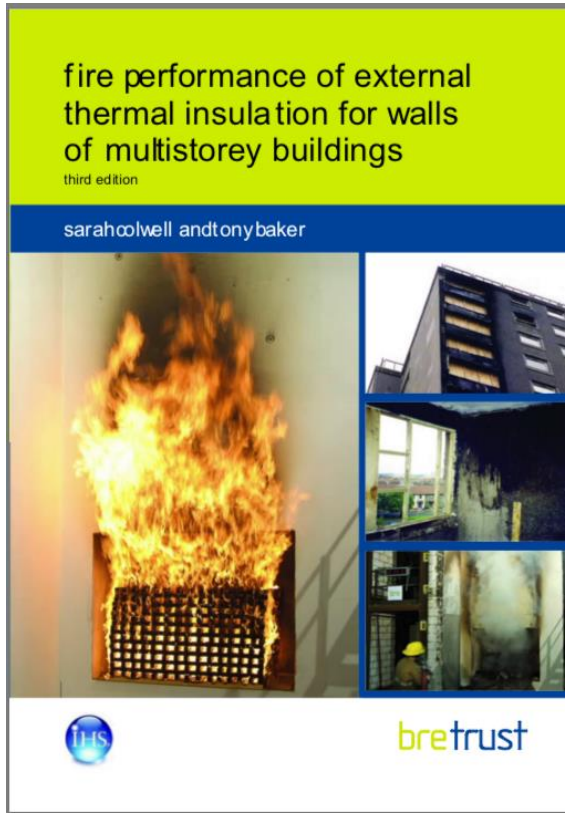
| References in AD B guidance to situations where such materials should be used | Definitions of materials of limited combustibility | |
|---|---|---|
| | National class | European class |
| 1. stairs where there is provision in the guidance to B1 for them to be constructed of materials of limited combustibility (see 5.19).<br>2. materials above a suspended ceiling meeting the provisions in the guidance to B3, paragraph 9.12.<br>3. reinforcement/support for fire-stopping referred to in the guidance to B3, see 10.18.<br>4. roof coverings meeting provisions:<br>a. in the guidance to B3, paragraph 8.29; or<br>b. in the guidance to B4, Table 16 or<br>c. in the guidance to B4, Diagram 47.<br>5. roof deck meeting the provisions of the guidance to B3, Diagram 30a.<br>6. class 0 materials meeting the provisions in Appendix A, paragraph 13(a).<br>7. ceiling tiles or panels of any fire protecting suspended ceiling (Type Z) in Table A3. | a. Any non-combustible material listed in Table A6.<br>b. Any material of density 300/kg/m³ or more, which when tested to BS 476-11:1982, does not flame and the rise in temperature on the furnace thermocouple is not more than 20°C.<br>c. Any material with a non-combustible core at least 8mm thick having combustible facings (on one or both sides) not more than 0.5mm thick. (Where a flame spread rating is specified, these materials must also meet the appropriate test requirements). | a. Any material listed in Table A6.<br>b. Any material/product classified as Class A2-s3, d2 or better in accordance with BS EN 13501-1:2002 *Fire classification of construction products and building elements*, Part 1 – *Classification using data from reaction to fire tests*. |
| 8. insulation material in external wall construction referred to in paragraph 12.7.<br>9. insulation above any fire-protecting suspended ceiling (Type Z) in Table A3. | Any of the materials (a), (b) or (c) above, or:<br>d. Any material of density less than 300kg/m³, which when tested to BS 476-11:1982, does not flame for more than 10 seconds and the rise in temperature on the centre (specimen) thermocouple is not more than 35°C and on the furnace thermocouple is not more than 25°C. | Any of the materials/products (a) or (b) above. |

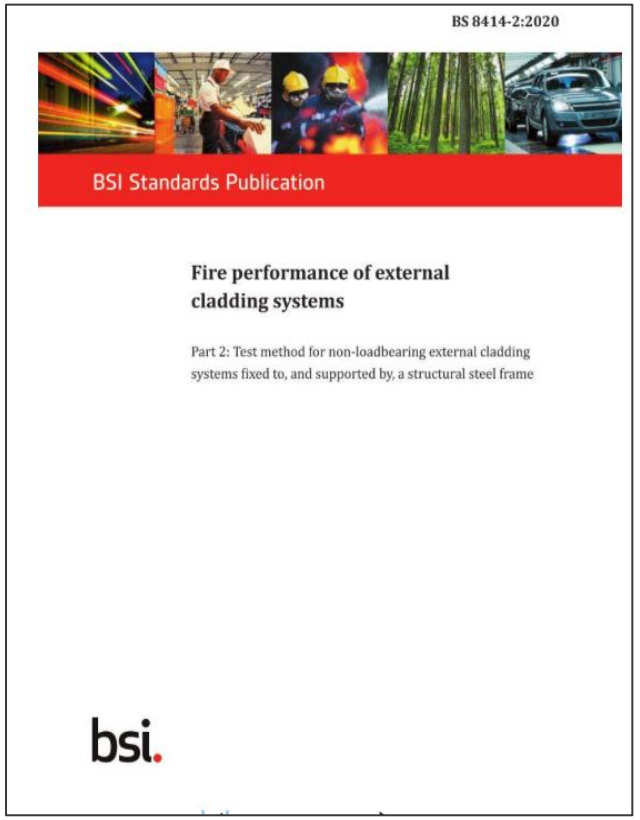
**Note:**

1. The National classifications do not automatically equate with the equivalent classifications in the European column; therefore, products cannot typically assume a European class unless they have been tested accordingly.
2. When a classification includes "s3, d2", this means that there is no limit set for smoke production and/or flaming droplets/particles.

# ADB2 (2013) - BR 135

- Full scale tests to BS 8414
- Desk top studies based on data from full scale tests



# Post-fire changes: Building Regulations 2010 (1)

## Regulation 2(6)

[ (6) In these Regulations—

(a) any reference to an "external wall" of a building includes a reference to—

(i) anything located within any space forming part of the wall;

(ii) any decoration or other finish applied to any external (but not internal) surface forming part of the wall;

(iii) any windows and doors in the wall; and

(iv) 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; and

(b) "specified attachment" means—

(i) a balcony attached to an external wall; or

(ii) a solar panel attached to an external wall.

# Post-fire changes: Building Regulations 2010 (2)

## Regulation 7(2)

(2) Subject to paragraph (3), building work must be carried out so that materials which become part of an external wall, or specified attachment, of a relevant building are of a minimum European Classification A2-s1, d0 or A1, classified in accordance with BS EN 13501-1:2018 entitled "Fire classification of construction products and building elements. Classification using test data from reaction to fire tests" (ISBN 978 0 580 95726 0) published by the British Standards Institution on 14th January 2019.

# Post-fire changes: Building Regulations 2010 (3)

## Regulation 7(4)

(4) In this regulation—

(a) a "relevant building" means a building with a storey (not including roof-top plant areas or any storey consisting exclusively of plant rooms) at least 18 metres above ground level and which—

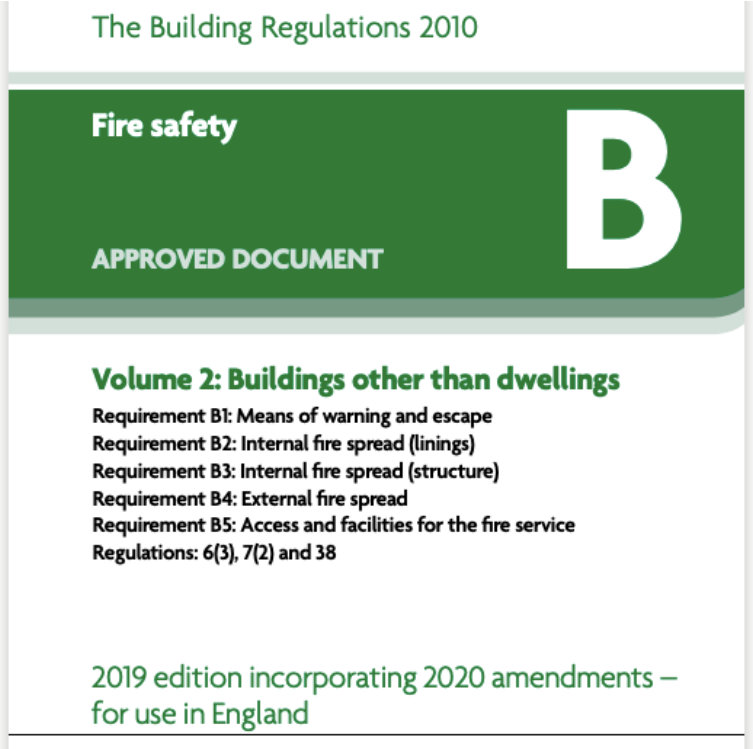
(i) contains one or more dwellings;

(ii) contains an institution; or

(iii) contains a room for residential purposes (excluding any room in a hostel, hotel or boarding house);

(b) "above ground level" in relation to a storey means above ground level when measured from the lowest ground level adjoining the outside of a building to the top of the floor surface of the storey.

# Post-Fire Changes: Approved Document B v2



The Building Regulations 2010

Fire safety

B

APPROVED DOCUMENT

Volume 2: Buildings other than dwellings

Requirement B1: Means of warning and escape
Requirement B2: Internal fire spread (linings)
Requirement B3: Internal fire spread (structure)
Requirement B4: External fire spread
Requirement B5: Access and facilities for the fire service
Regulations: 6(3), 7(2) and 38

2019 edition incorporating 2020 amendments – for use in England

- Regulation 7(2) - 7(4)
- Other buildings' routes to compliance
- Resistance / Reaction to fire - s.12.2
- The meaning of "filler"

**Materials and products**

**12.6** In a building with a storey 18m or more in height (see Diagram D6 in Appendix D) 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 (see Appendix B). This restriction does not apply to masonry cavity wall construction which complies with Diagram 9.2 in Section 9. Where regulation 7(2) applies, that regulation prevails over all the provisions in this paragraph.

# Post-Fire Changes: Desktop Studies

- **September 2019** – BS 9414:2019 Fire performance of external cladding systems
- **October 2020** – Kingspan letter to BRE, withdrawing some K15 data
- **March 2021** – MHCLG letter advising that fire safety professionals / building control bodies to assess buildings with K15

# Regulatory Reform (Fire Safety) Order 2005

- Responsible person: employer or person in control of a premises, to the extent of their control (art 3)
- Responsible person must take such fire precautions as reasonably required to ensure premises are safe for occupants and people in its vicinity (art 5, 8-14)
- Applies to multi-occupancy buildings to extent parts are in responsible person's control (arts 6 and 31(10))
- Enforcing Authority (eg the local fire service) must enforce (arts 25-27)

# Fire Safety Act 2021

- Amended Regulatory Reform (Fire Safety) Order 2005
- In force from 1 October 2021
- Article 6(1A):

> [ (1A) Where a building contains two or more sets of domestic premises, the things to which this order applies include—
>
> (a) the building's structure and external walls and any common parts;
>
> (b) all doors between the domestic premises and common parts (so far as not falling within sub-paragraph (a)).
>
> (1B) The reference to external walls includes—
>
> (a) doors or windows in those walls, and
>
> (b) anything attached to the exterior of those walls (including balconies).

# Building Safety Bill

- Currently in Committee Stage
- Intended to provide a safety framework for "higher risk buildings" –
    - over 18m or seven stories, and
    - with at least two residential units or is a care home
- Key points:
    - Building Safety Regulator
    - Accountable Person (and a Principal Accountable Person)
    - Extended time limit for claims under the Defective Premises Act 1972
    - Building owners must explore ways to meet remediaton costs before seeking them from leaseholders

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# Thank you!

Any questions?

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