Second Panel: Compliance with Building Regulations

The Building Regulations and Combustible Cladding

Jonathan Carrington

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Introduction

- Brief history of Building Regulations and Class 0
- An overview of the current legislative scheme
- Building Act 1984
- Building Regulations
- Approved Documents
- Other/non-statutory guidance
- Combustible cladding banned

The first National Building Regulation concerning the use of combustible material?

"No man whatsoever shal presume to erect any House or Building, great or smal, **but of Brick or Stone**, and if any man shal do the contrary, the next Magistrate shal forthwith cause it to be pulled down…all other eminent and notorious Streets, shal be of such a breadth, as may with Gods blessing prevent the mischief that one side may suffer if the other be on fire"

King Charles II's declaration in 1666 after the Great Fire of London

1965 – first National Building Regulations

- **Prescriptive** and set out requirements in great technical detail
- Due to the opposition of MPs and others acting in the interests of building board manufacturers the regulations **did not control the combustibility of the material of which walls are covered but only the surface spread of flame on them.**
- The Regulations therefore **allowed for combustible cladding** provided they had a suitable flame retardant finish or lining.
- **Class 0** introduced as the highest class of resistance to spread of flame
- Concerned with the spread of flame over the surface of a wall based on **British Standard BS 476** (1953) which used the expression 'surface spread of flame'.

Class 0

- Introduced in 1965 to **allow for the use of combustible materials**.
- **Measured through a combination of test results from BS 476**: **Part 6**: 1989 (test for fire propagation) **and BS 476: Part 7**: 1987 (test for surface spread of flame)- which are **small scale tests** of materials.
- It is **not a measure or indicator of a material's combustibility – BS 476:Part 4** is the National test for non-combustible material and **BS 476: Part 11** is the National test for limited combustibility.
- **Class 0 only measures the spread of flame over the surface of a composite product so an Aluminum Composite Material (ACM) cladding panel with a combustible core and a non-combustible lining can achieve a Class 0 classification.**

1976 Building Regulations

- Background to amendments: 1973 oil crisis/1979 energy crisis
- **Increased cost of oil led to greater interest in energy conservation through better insulation**
- Introduction of **Part F** which regulated **thermal insulation** and set maximum u-values (i.e. the rate of heat transfer through a structure) for walls, floors and roofs.
- **Increased use of plastic materials and cladding on buildings** – i.e. buildings wrapped in thermal/plastic insulation.
- **Part E 15 permitted the use of certain plastic cladding material** if the surface of the material was **Class 0**

The push for deregulation during the Thatcher years (1979-80s) led to a new legislative/ regulatory framework in 1984/5

- **Building Act 1984** – gave the Secretary of State the **power to make Building Regulations** and to approve **‘Approved Documents’**
- **Building Regulations1985**
- **Approved Documents** – first edition published in**1985** for Parts B2 (Internal fire spread (surfaces), B3 (Internal fire spread(structure)) and B4 (External fire spread).
- **Building (Approved Inspector etc.) Regulations 1985** – privatized system of building control by Approved Inspectors.

Part 1 of the Building Act 1984 introduces ‘Approved Documents’

- **Section 6** – enables the Secretary of State to **approve documents ‘providing practical guidance** with respect to the requirements of any provision of building regulations’- the so-called ‘**Approved Documents**’.
- **Section 7 – a failure to comply with the guidance in an Approved Document does <u>not</u> of itself render you liable to any civil or criminal proceedings.**
- But **s7** of the Act creates a **statutory presumption** that in any civil or criminal proceedings where it is alleged that a person has at any time contravened a provision of building regulations, failure to comply with an approved document may be relied on as **‘tending to establish liability’ and** proof of compliance with an approved document may be relied on as **‘tending to negative liability’.**

Part 1 of the Building Act 1984 also sets out what constitutes evidence of compliance with Building Regulations

- **Section 17 (4)** - a completion certificate issued by a local authority is evidence (**but not conclusive evidence)** that the requirements specified in the certificate have been complied with.

- **Section 51** – a final certificate issued by an Approved Inspector is evidence **(but not conclusive evidence)** of compliance with Building Regulations.

Building Act 1984
Enforcement of Building Regulations

- **Section 91 (2) –** It is the function of **local authorities** to **enforce building regulations** in their areas.
- **Section 35** – there are **penalties/fines** for contravening building regulations
- **Section 36** – Local authorities have **enforcement powers** and may issue **enforcement notice** requiring the building owner to pull down or remove the work or they may apply for an injunction for the removal or alteration of work. **But** a s36 notice **may not be given after the expiration of 12 months** from the date on which the work was completed, **or if the local authority passed the plans** and the work has been carried out in accordance with the deposited plans. **Section 78** – local authorities may take steps if a building is **dangerous**.
- **Approved Inspectors** do not have any formal enforcement powers.

Building Act 1984
Civil Liability – Is a breach of the building regulations actionable in damages?

- Section 38 (1) provides that a breach of a duty imposed by building regulations is actionable so far as it causes damages.
- However, **Parliament has not brought s.38 into force**.
- There is therefore no ‘freestanding regime for any civil liability’ or civil remedy for damages for a breach of building regulations.

The Building Regulations 1985
Functional Requirements

- New approach to regulation: **functional requirements** or **performance based regulation** instead of prescriptive regulation
- The '**Requirements**' are set out in **Schedule 1 to the Regulations** and are short functional requirements and contain no technical detail
- They set out the required **outcomes** and leave it to builders to determine how they achieve them – based on the idea of **self regulation** with more room/freedom for **innovation (and/or 'value engineering')**

Current Building Regulations -The Building Regulations 2010 – 5 fire safety requirements

Requirement B4 (Fire Safety)

- B1 – Means of warning and escape
- B2- Internal fire spread (linings)
- B3- Internal fire spread (structure)
- B4- **External Fire Spread**
- B5 – Access and facilities for the fire service

Requirement B4 (1)

The principal building regulation requirement in relation to the external walls of buildings is requirement B4 (1) which provides:

‘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’.

This has been the Requirement for ‘External Fire Spread’ since 1985 and is still the ‘only’ Requirement – except in the 1991 amendments to Regulations when the word ‘adequately’ was (mistakenly?) omitted.

Regulation 7

Materials and workmanship

7. Building work shall be carried out-

(a) with **adequate** and **proper** materials which-

(i) are appropriate for the circumstances in which they are used,

(ii) are adequately mixed or prepared, and

(ii) are applied, used or fixed so as adequately to perform the functions for which they are designed; and

(b) in a workmanlike manner.

Regulation 8: Limitation on requirements (and the purpose of the Regulations)

- ‘Part B(1) does not require anything to be done except for the purpose of **securing reasonable standards of health and safety** for persons in or about buildings (and any others who may be affected by buildings, or matters connected with buildings.’
- This limitation is repeated in the Approved Document B (0.18):
- ‘Building Regulations **are intended to ensure that a reasonable standard of life safety is provided, in case of fire.** The protection of property, including the building itself, may require additional measures, and insurers will in general seek their own higher standards, before accepting insurance risk’ – in other words, the purpose is not the protection of buildings/property.

Approved Document B (Fire Safety)

- **Statutory/practical guidance with respect to Requirement B4 (Fire Safety)**
- Two Volumes:
  - **Volume 1- Dwellinghouses**
  - **Volume 2- Buildings other than dwellinghouses (incl. high rise buildings)**
- First edition of volume 2 published in August 1985 with further editions in 2000 and 2006 and amendments in 2007, 2010, 2013 and (as a result of Grenfell) 2018.

Approved Document B (Fire Safety)

- **Not mandatory -** “Intended to provide guidance for some of the more common building situations. However, **there may be alternative ways of achieving compliance** with the requirements. Thus there is **no obligation to adopt any particular solution** contained in an Approved Document if you prefer to meet the relevant requirement in some other way”
- **May rely on** “**Independent certification schemes**…There are many UK product certification schemes. Such schemes certify compliance with the requirements of a recognised document which is appropriate to the purpose for which the product is to be used. Products which are not so certified may still conform to a relevant standard…“**Building Control Bodies may accept the certification of products, components, materials or structures under such schemes as evidence of compliance with the relevant standard.”**

Approved Document B (Fire Safety) Section 12: Construction of external walls

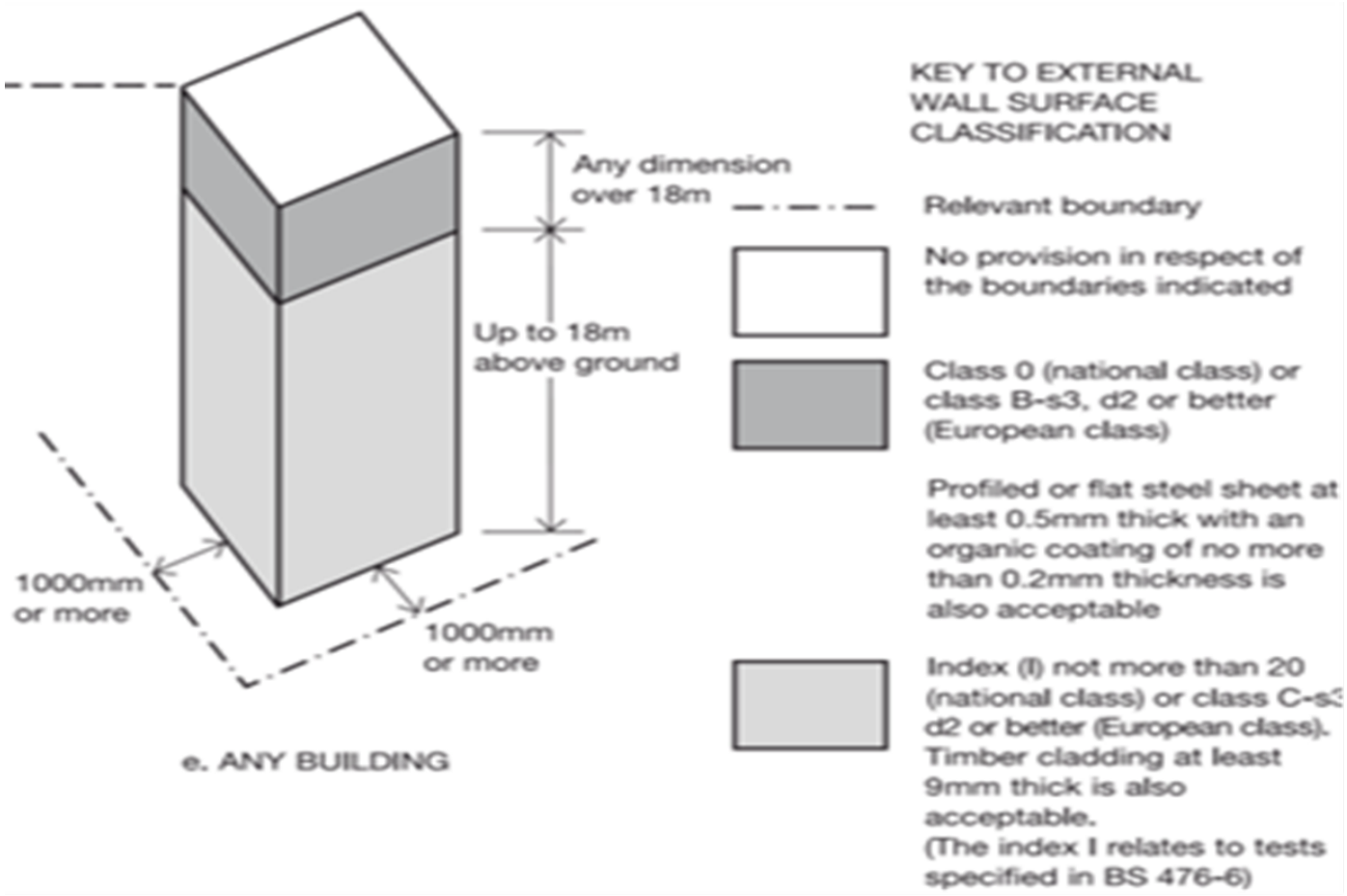
- **12.5 - External wall construction**
- The **external envelope** of a building should **not provide a medium for fire spread** if it is likely to be a risk to health or safety. **The use of combustible materials in the cladding system and extensive cavities may present such a risk in tall buildings.**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

Approved Document B (Fire Safety)
Section 12: Construction of external walls

12.6 External surfaces

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.

Approved Document B (Fire Safety) Section 12: Construction of external walls Diagram 40



Approved Document B (Fire Safety) Section 12: Construction of external walls

Class 0 is defined at paragraph 13 of ADB (Volume 2) as:

‘The highest National product performance classification for lining materials is Class 0. This is achieved if **a material** or **the surface of a composite product** is either:

a. Composed throughout of materials of limited combustibility; or

b. A Class 1 material which has a fire propagation index (I) of not more than 12 and sub-index (i1) of not more than 6.

Note: Class 0 is not a classification identified in any British Standard test.’

Approved Document B (Fire Safety) Section 12: Construction of external walls

12.7 Insulation Materials/Products

- 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.

Approved Document B (Fire Safety) Section 12: Construction of external walls

Cavity barriers

12.8 Cavity barriers should be provided in accordance with Section 9.

12.9 In the case of an external wall construction, of a building which, by virtue of paragraph 9.10d (external cladding system with a masonry or concrete inner leaf), is not subject to the provisions of Table 13 Maximum dimensions of cavities in non-domestic buildings, the surfaces which face into cavities should also meet the provisions of Diagram 40.

Other guidance
BS 9991- Fire safety in the design, management and use of residential buildings – Code of Practice

- Published in **2011** and in **2015**
- The **2011** version recommended that **combustible materials should not be used in cladding systems**
- The **2015** version (which is still current) however no longer recommends that combustible material should not be used in cladding.
- But it recommends any **cladding and insulation material used above 18m should be of limited combustibility**.

Other guidance
Building Control Alliance (BCA) Technical Note 18

- Published on **18 June 2015**
- Recommend **four routes** or **options** for compliance with Approved Document B

Option 1

- **The use of materials of limited combustibility for all elements of the cladding system both above and below 18m.** This includes the insulation, internal lining board and the external facing material. Smaller gasket parts and similar low-risk items can be excluded from this requirement. The definition of a MOLC is stated in Table A7 of AD B2.

Other guidance
Building Control Alliance (BCA) Technical Note 18

Option 2:

Carry out **large scale fire test** in accordance with **BS8414** and submit evidence to the Building Control Body that the complete proposed external cladding system has been assessed according to the acceptance criteria in BR135 - Fire Performance of External Thermal Insulation for Walls of Multistorey Buildings.

Other guidance
Building Control Alliance (BCA) Technical Note 18

Option 3

If no actual fire test data exists for a particular system, the client may instead submit **a desktop study report** from a suitably qualified fire specialist stating whether, in their opinion, BR135 criteria would be met with the proposed system. The report should be **supported by test data** from a suitable independent UKAS accredited testing body (BRE, Chiltern Fire or Warrington Fire) and so this option may not be of benefit if the products have not already been tested in multiple situations / arrangements. The report should also specifically reference the tests which have been carried out on the product. Also called **‘Assessment in lieu of tests.’**

Other guidance
Building Control Alliance (BCA) Technical Note 18

Option 4

If none of the above options are suitable, the client may consider addressing his issue via a **holistic fire engineered approach** taking into account the building geometry, ignition risk, factors restricting fire spread etc. Such an approach could be expected to follow a recognized design code such as the BS 7974 **application of fire safety engineering principles** to the design of buildings suite of documents and be supported with quantitative analyses here appropriate.”

Guidance published after Grenfell

The Centre for Window and Cladding Technology, in their updated Technical Note 98

Published **19 June 2017**

“Combustibility of materials

“Limits on combustibility of materials are given in Clause 12.7 of ADB. Clause 12.7 specifically refers to insulation materials and filler **materials but is now being interpreted more generally** (see BCA Guidance note 18). Therefore where a building has a storey 18m or more above ground level all significant materials should be of limited combustibility (Class A2 in accordance with EN 13501-1). This includes, but is not limited to rainscreen panels…”

Guidance published after Grenfell

- On **22 June 2017** the Department for Communities and Local Government (**DCLG**) wrote to all local authorities and updated them on safety checks that they would have to carry out following Grenfell and in a **footnote** to the letter said **the core (filler) within an Aluminum Composite Material (ACM) is an 'insulation material/product, and/or 'filler material' for purposes of Paragraph 12.7 of Approved Document B, and had to be a material of limited combustibility if used above 18m**

Guidance published after Grenfell

- On **14 July 2017** the DCLG issued circular **07/2017** to all building control bodies in England in relation to the recladding of tall buildings and advised:

  “Each element of the cladding system including any insulation product, filler material etc. should be of limited combustibility (as defined in table A7 – e.g. Class A2 to BS EN 13501-1).”

- RIBA, the Metal Cladding and Roofing Manufacturers Association and others do not agree with the DCLG’s interpretation.

The Housing, Communities and Local Government Committee's independent review of Building Regulations and Fire Safety

"**We are unconvinced that Approved Document B bans the use of combustible materials as an external surface.** Notwithstanding steps to ban the use of combustible materials on high-rise buildings, and its wider plans for the revision of Approved Document B, the Government must urgently revise Sections 12.5 to 12.7 of Approved Document B to provide much-needed clarity to the guidance as to what is, and what is not, acceptable." (paragraph 45 of report published on **18 July 2018**)

Dame Judith Hackitt's Independent Review of Building Regulations and Fire Safety

- Interim report published on 18 December 2017
- Final report published on 17 May 2018.
- Does not recommend the banning of combustible material.
- Followed by public uproar.

Government bans combustible cladding
by amending Regulation 7 and issuing new Approved Document B

- On 21 December 2018 The Building (Amendment) Regulations 2018 came into force.
- **New Regulation 7 (2)** which **requires all materials which become part of an external wall on a building above 18m to be of limited combustibility** (i.e. **European Class A2-s3,d2** (same as BS 476-11)
- **New Approved Document B** published on 5 July 2019 which requires:
- 12.6 “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…”i.e. of limited combustibility.

New Approved Document B 2019

Two ways that external walls above 18m can comply with Building Regulation requirements for resisting fire spread:

1. Each **individual component** of the wall (insulation, filler, etc.) to meet the required standard for combustibility (**i.e. limited combustibility** according to European Standards); **or**
2. Ensure that **all the combined elements of the wall, when tested as a whole installed system**, adequately resist the spread of fire to meet a set standard

- Assessments in lieu of tests ('**desk top studies**') cannot be used to demonstrate compliance with the new Regulation 7(2) **(i.e. that materials used above 18m are of limited combustibility).**

New Approved Document B 2019

- The new Regulation and Approved Document B use European classification system/tests for reaction to fire; not National classifications.
- Class 0 disappears after 54 years of use.

Conclusion

‘Building codes make buildings legal, they do not make them safe’

Frank Brannigan

(Fire expert)