

# Commercial Buildings

## The Building Regulations

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## Commercial Buildings

### Current requirement of The Building Regulations 2010 (as amended)

### MHCLG planned amendments

### The use of CLT and timber facades

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## Commercial Buildings

Where you are making material alterations to a building, eg fitting out for a restaurant, we need to assess whether you are adversely affecting any relevant requirements, such as Part B (Fire Safety) and Part M (Access)

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## Commercial Buildings

In these instances, you are not required to meet the current guidance within the Approved Documents, ensuring that existing provisions are made any worse, eg extending travel distances, removing accessible WC facilities





**Fire Safety**

**Approved Document B Volume 2**

**British Standard 9999: 2017**

**Fire Safety Engineering**

**The Fire Safety Bill**

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## Fire Safety

The concept behind the development of 9999 and 7974 is that technical guidance on fire safety is now provided at three levels;

- a) General approach: Approved Document B
- b) Advanced approach: BS 9999: 2017
- c) Fire safety engineering: BS 7974: 2019





## Fire Safety

Following Grenfell  
MHCLG have been  
consulting on  
changes to Fire  
Safety in dwellings

## Building a Safer Future

Independent Review of Building  
Regulations and Fire Safety:  
**Final Report**

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## Fire Safety

**Revised Approved Document B Volume 1  
released 27<sup>th</sup> May 2020 with a coming into  
force date of 26<sup>th</sup> November 2020**

**Significant improvements for dwellings**

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**Fire Safety**

**No changes for Commercial Buildings**

**Fire loss statistics in Commercial use**

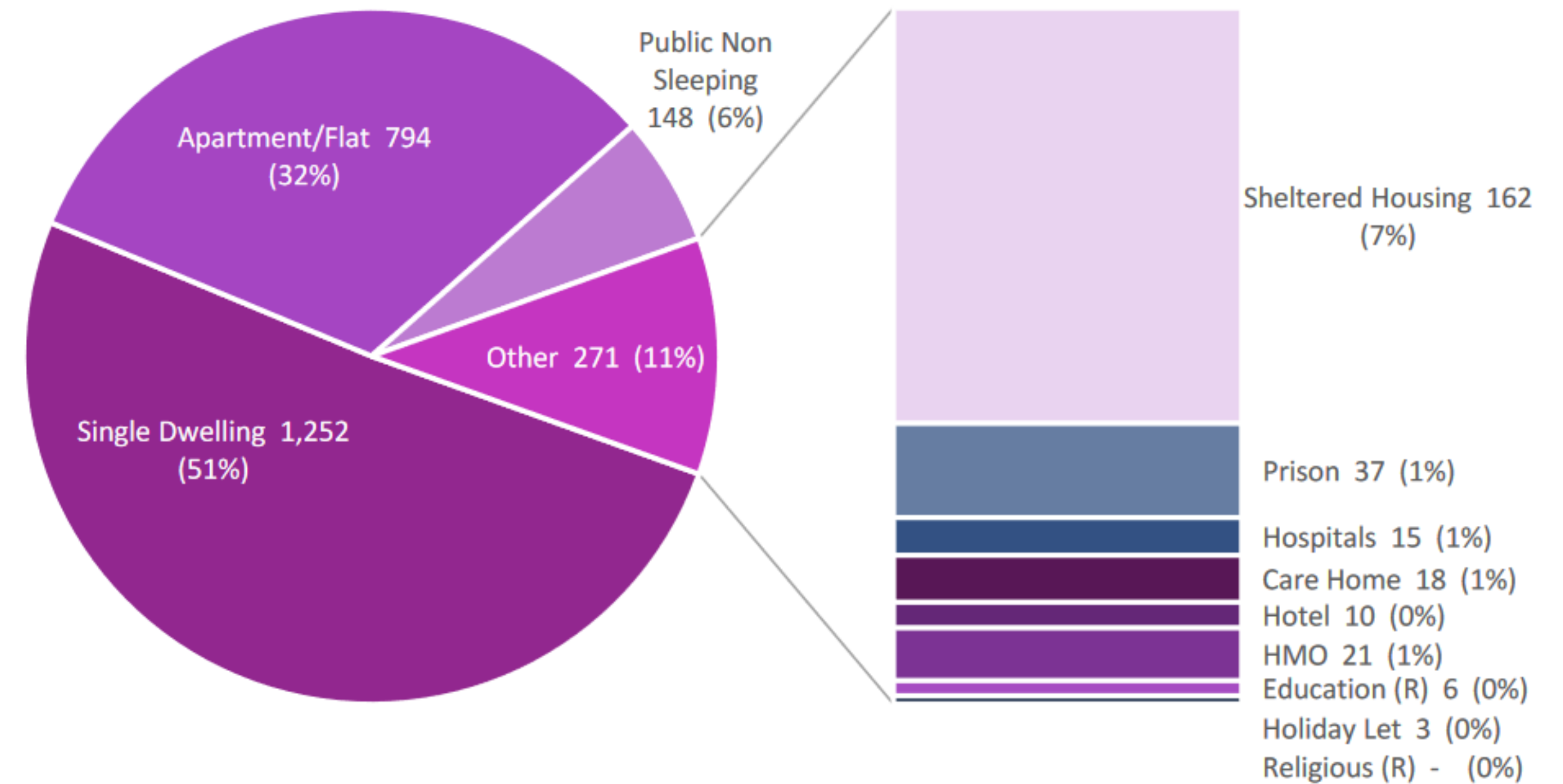
**Material change of use**

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**Chart 2: Fires involving a fatality or casualty requiring hospital treatment by property type for the combined years ending September 2012 to September 2018**







## Fire Safety

### Cross laminated Timber (CLT)

Regulation 7(2) restricts the materials in external facades to A2-s1, d0 or A1 for relevant buildings (residential) with a floor in excess of 18m above ground level





# Fire Safety

## Approved Document B Volume 2

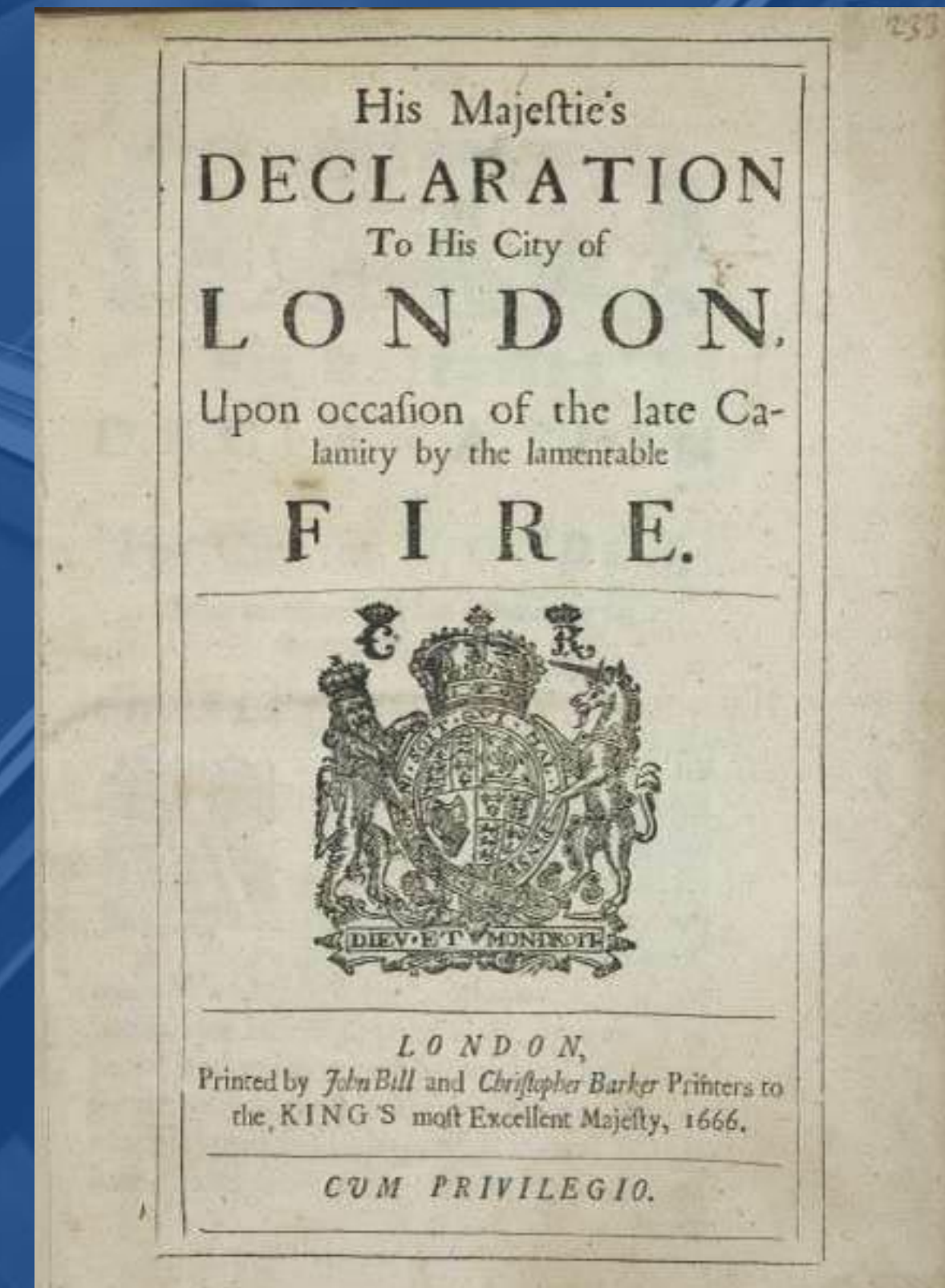
### Historic guidance







# Fire Safety Approved Document B Vol 2 ‘Stable door’ legislation



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# AD B Vol 2

## B1

### Evacuation times

Table 2 Limitations on travel distance

Purpose group	Use of the premises or part of the premises	Maximum travel distance <sup>(1)</sup> where travel is possible in:	
		One direction only (m)	More than one direction (m)
2(a)	Institutional	9	18
2(b)	Other residential:		
	a. in bedrooms <sup>(2)</sup>	9	18
	b. in bedroom corridors	9	35
	c. elsewhere	18	35
3	Office	18	45
4	Shop and commercial <sup>(3)</sup>	18 <sup>(4)</sup>	45
5	Assembly and recreation:		
	a. buildings primarily for disabled people	9	18
	b. areas with seating in rows	15	32
	c. elsewhere	18	45
6	Industrial <sup>(5)</sup>	Normal Hazard	25
		Higher Hazard	12
7	Storage and other non-residential <sup>(6)</sup>	Normal Hazard	25
		Higher Hazard	12
2-7	Place of special fire hazard <sup>(7)</sup>	9 <sup>(8)</sup>	18 <sup>(8)</sup>
2-7	Plant room or rooftop plant:		
		a. distance within the room	9
		b. escape route not in open air (overall travel distance)	18
	c. escape route in open air (overall travel distance)	60	100

Notes:

1. The dimensions in the Table are travel distances. If the internal layout of partitions, fittings, etc is not known when plans are deposited, direct distances may be used for assessment. The direct distance is taken as 2/3rds of the travel distance.
2. Maximum part of travel distance within the room. (This limit applies within the bedroom (and any associated dressing room, bathroom or sitting room, etc) and is measured to the door to the protected corridor serving the room or suite. Sub-item (b) applies from that point along the bedroom corridor to a storey exit.)
3. Maximum travel distances within shopping malls are given in BS 5588: Part 10. Guidance on associated smoke control measures is given in a BRE report *Design methodologies for smoke and heat exhaust ventilation* (BR 366).
4. BS 5588: Part 10 applies more restrictive provisions to units with only one exit in covered shopping complexes.
5. In industrial and storage buildings the appropriate travel distance depends on the level of fire hazard associated with the processes and materials being used. Higher hazard includes manufacturing, processing or storage of significant amounts of hazardous goods or materials, including: any compressed, liquefied or dissolved gas, any substance which becomes dangerous by interaction with either air or water, any liquid substance with a flash point below 65°C including whisky or other spirituous liquor, any corrosive substance, any oxidising agent, any substance liable to spontaneous combustion, any substance that changes or decomposes readily giving out heat when doing so, any combustible solid substance with a flash point less than 120° Celsius, any substance likely to spread fire by flowing from one part of a building to another.
6. Places of special fire hazard are listed in the definitions in Appendix E.

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## AD B Vol 2

**B2 Internal fire spread  
(linings)**

**Classification of linings  
to walls and ceilings**

**Previously known as  
Class 0, 1 & 3**

**European class B-s3,  
d2, C-s3,d2, and D-s3,d2**







# Fire Safety A D B Vol 2

## B3 Internal Fire Spread (Structure)

Structural Fire Resistance  
Separating walls  
Compartmentation  
Cavity barriers  
Fire Dampers

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## Fire Safety A D B Vol 2

**B4 External Fire Spread**  
The ability of a building to prevent fire  
spread to adjacent buildings  
Unprotected areas  
Combustible materials  
Roof coverings

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## Fire Safety A D B Vol 2

**B5 Access for Fire Fighting  
Vehicle Access, Pump or High Reach  
appliance, depending on building height  
Fire fighting shafts  
Dry or wet rising mains**

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# Fire Safety BS 9999: 2017

Second tier of guidance

Code compliant solutions



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## Fire Safety BS 9999: 2017

### Creating a Risk Profile

A1 least risk, through to C4, highest risk  
Occupancy characteristic (Table 2)  
Fire growth rate (Table 3)  
Risk profile (Table 4)



## Fire Safety BS 9999: 2017. Table 2



Occupancy characteristic	Description	Examples
A	Occupants who are awake and familiar with the building	Office and industrial premises
B	Occupants who are awake and unfamiliar with the building	Shops, exhibitions, museums, leisure centres, other assembly buildings, etc.
C	Occupants who are likely to be asleep:	
Ci	• Long-term individual occupancy	Individual flats without 24 h maintenance and management control on site
Cii	• Long-term managed occupancy	Serviced flats, halls of residence, sleeping areas or boarding schools
Ciii	• Short-term occupancy	Hotels
D <sup>A)</sup>	Occupants receiving medical care	Hospitals, residential care facilities <sup>B)</sup>
E <sup>C)</sup>	Occupants in transit	Railway stations, airports



## Fire Safety BS 9999: 2017. Table 3



Table 3 Fire growth rates

Category	Fire growth rate	Examples	Fire growth parameter <sup>A)</sup> kJ/s <sup>3</sup>
1	Slow	Banking hall, limited combustible materials	0.002 9
2	Medium	Stacked cardboard boxes, wooden pallets	0.012
3	Fast	Baled thermoplastic chips, stacked plastic products, baled clothing	0.047
4	Ultra-fast	Flammable liquids, expanded cellular plastics and foam	0.188

<sup>A)</sup> This is discussed in PD 7974-1.





# Fire Safety

## BS 9999 Table 4

### Risk profiles

Occupancy characteristic (from Table 2)	Fire growth rate		Risk profile
<b>A</b> (Occupants who are awake and familiar with the building)	1	Slow	A1
	2	Medium	A2
	3	Fast	A3
	4	Ultra-fast	A4 <sup>A)</sup>
<b>B</b> (Occupants who are awake and unfamiliar with the building)	1	Slow	B1
	2	Medium	B2
	3	Fast	B3
	4	Ultra-fast	B4 <sup>A)</sup>
<b>C</b> (Occupants who are likely to be asleep)	1	Slow	C1 <sup>B)</sup>
	2	Medium	C2 <sup>B)</sup>
	3	Fast	C3 <sup>B), C)</sup>
	4	Ultra-fast	C4 <sup>A), B)</sup>





Table 5 Examples of typical risk profiles

Occupancy	Risk profile	Occupancy	Risk profile
Administration office	A2	Indoor games/training rooms in schools	B2
Amusement arcade	B2	Kitchen	A3
Archive/library reading area	B3	Licensed betting office (public area)	B1
Art gallery	B1/B2	Lobbies	B1
Assembly hall	B2	Lounge (other than dwelling)	B2
Banking hall	B1	Machine/printing room	A3
Bar	B2	Mechanical plant room	A4 <sup>A)</sup>
Bazaar	B2/B3	Meeting room	B2
Bedroom/study bedroom	Cii2	Museum	B2
Bed-sitting room	Cii2	Office (closed-plan or office less than 60 m <sup>2</sup> )	B2
Billiards or snooker room	B2	Office (open-plan exceeding 60 m <sup>2</sup> )	A2
Bingo hall	B2	Reading room	B2
Bowling alley	B2	Reception area	B1
Business centre	B2	Restaurant	B2





## Fire Safety BS 9999: 2017

Travel distances, and door widths, can be varied up to the limits in Tables 17 & 18, eg;  
Risk profile A1, 90m for two-way travel  
How can we achieve this?

Automatic fire detection  
Management  
Effect of ceiling heights



# Fire Safety BS 9999: 2017



## Maximum travel distances when additional fire protection measures are provided

Risk profile	Maximum permissible travel distance	
	Two-way travel m	One-way travel m
A1	90	30
A2	75	24
A3	60	22
A4 <sup>A)</sup>	Not applicable <sup>A)</sup>	Not applicable <sup>A)</sup>
B1	90	28
B2	75	24
B3	60	20
B4 <sup>A)</sup>	Not applicable <sup>A)</sup>	Not applicable <sup>A)</sup>
C1	37	18
C2	27	13
C3 <sup>A)</sup>	18	9
C4 <sup>A)</sup>	Not applicable <sup>A)</sup>	Not applicable <sup>A)</sup>





# Fire Safety Fire safety Engineering

## BS 7974: 2019



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## Fire Safety Fire Safety Bill 2019-21



A Bill to make provision about the application of the Regulatory Reform (Fire Safety) Order 2005, is now being considered by a Public Bill Committee which is expected to report to the House by Thursday 25 June 2020

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## Fire Safety Fire Safety Bill 2019-21



The Bill will also amend the primary legislation to The Building Regulations 2010 (The Building Act 1984) to introduce the Fire Safety Regulator role which will be the responsibility of the HSE

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## The Regulatory Reform (Fire Safety) Order 2005

The bill will amend the Order to clarify that the responsible person or duty-holder for multi-occupied, residential buildings must manage and reduce the risk of fire for the structure and external walls of the building, including cladding, balconies and windows, entrance doors to individual flats that open into common parts. This clarification will empower fire and rescue services to take enforcement action and hold building owners to account if they are not compliant.





## Access and Use

## Part M Volume 2

Originally introduced in 1985  
as Access and Facilities for  
Disabled People

DDA/Equalities Act







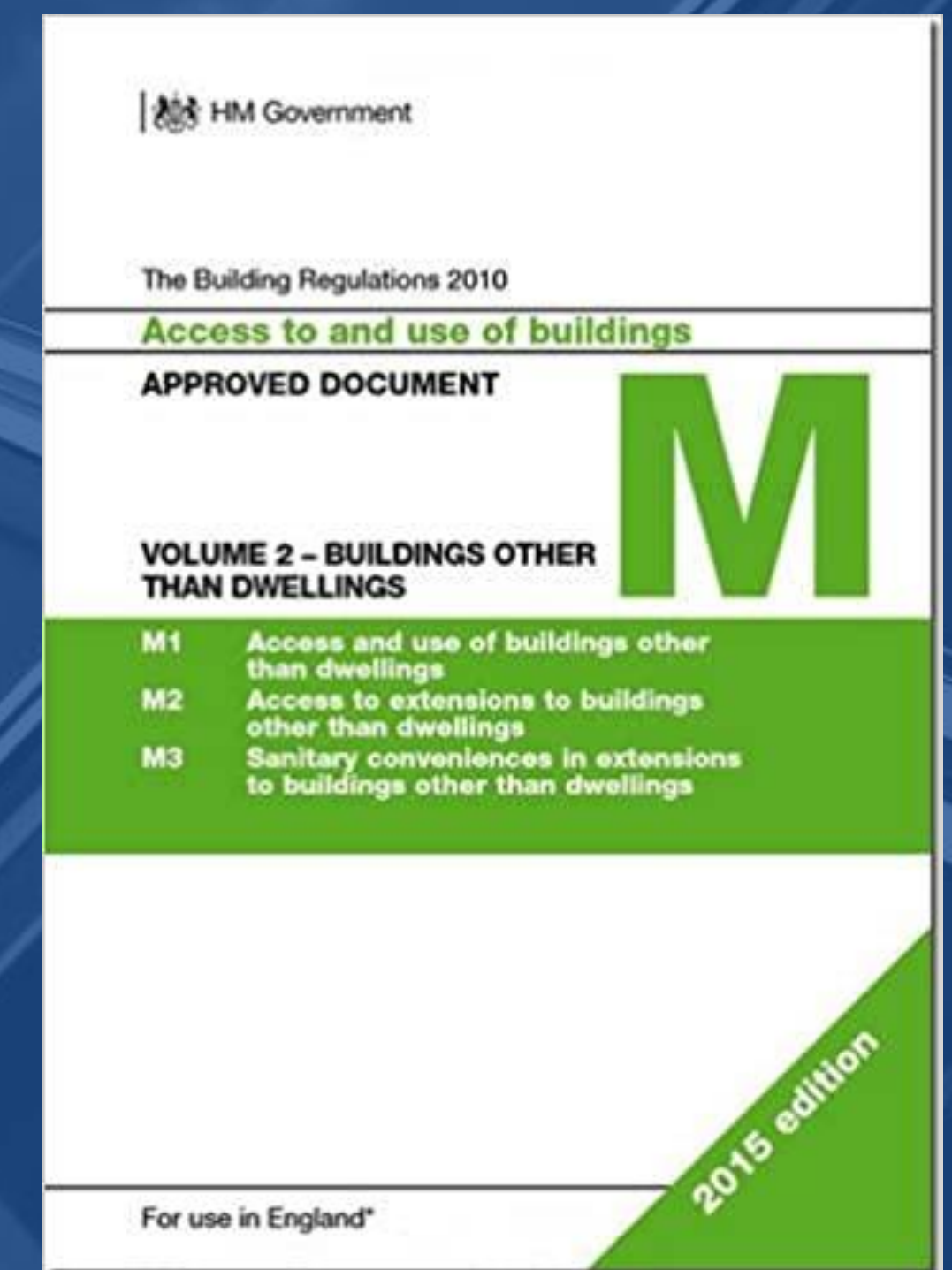
Access and Use

Part M Volume 2

Sensory Impairments

Access to the building

Access Strategies



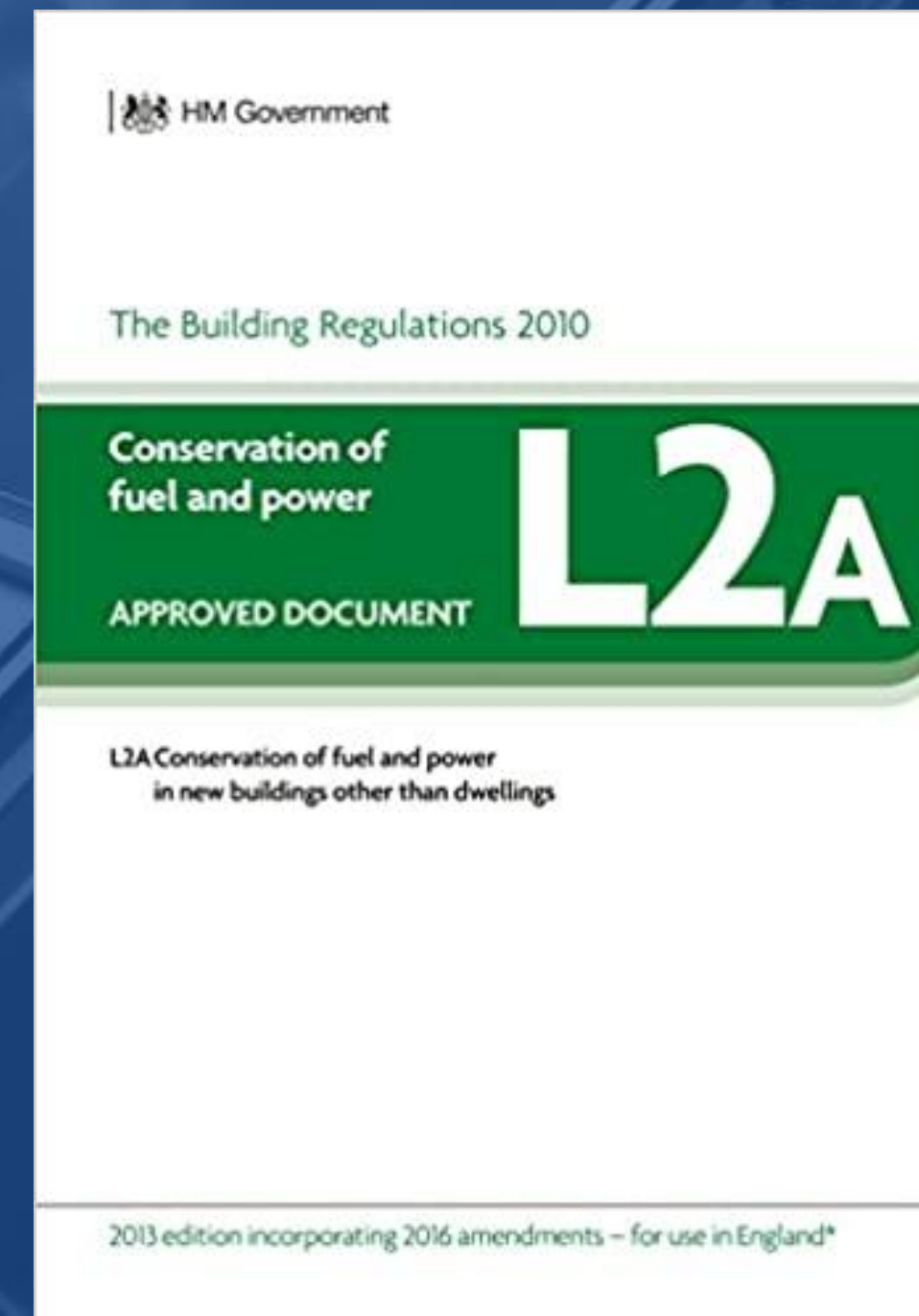




# Conservation of Fuel and Power

## Part L2A

Revisions to L1 (Residential)  
in 2020 with L2 (Other than  
dwellings) to follow





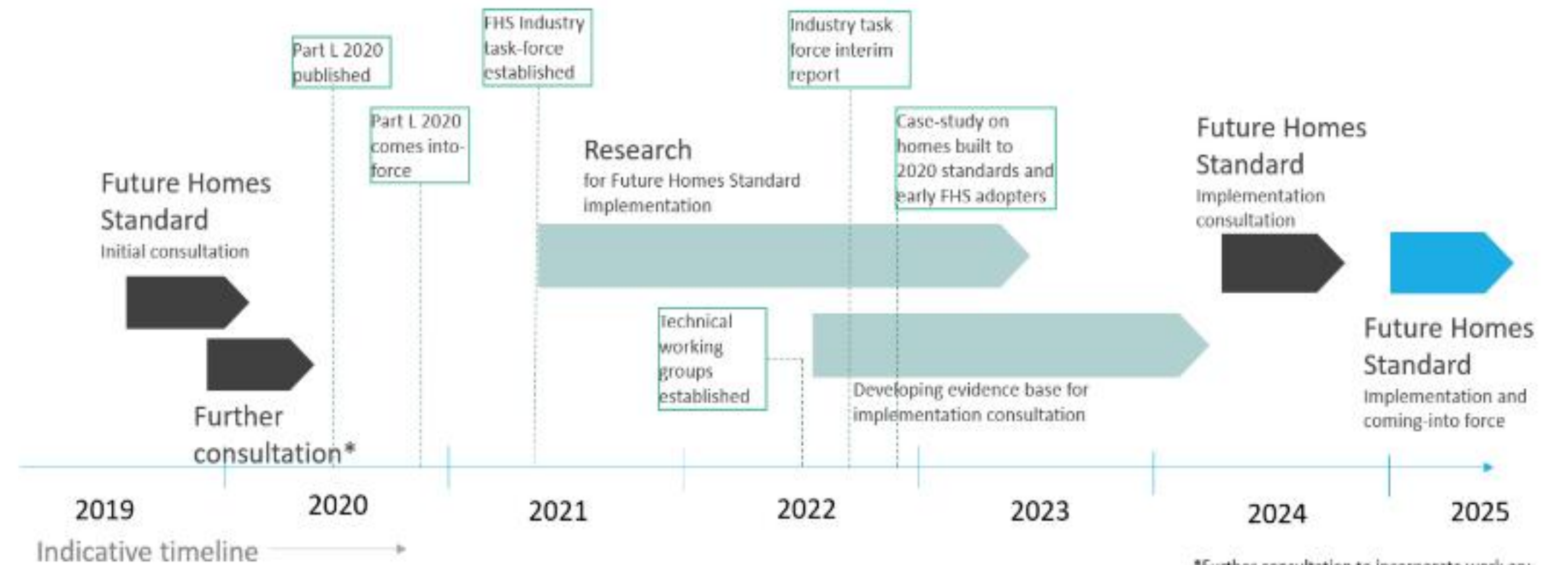


The UK has set in law in target to bring all its greenhouse gas emissions to net zero by 2050 – one of the most ambitious targets in the world. Homes – both new and existing – accounts for 20% of emissions. Despite progress reducing emissions from homes, we need to go much further. New homes being built now and in the next 5-10 years will still exist in 2050 and therefore we must ensure that the energy efficiency standards we set for them put us on track to meet the 2050 target.





## Roadmap to the Future Homes Standard



\*Further consultation to incorporate work on:

- Work to existing buildings
- Overheating in new dwellings
- New non-domestic buildings

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# Thank you for listening

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