

High Rise Fire Safety

Guidance Documents

Introduction

Prior to 1991, the guidance for fire safety in blocks of flats was provided by CP3 Chapter 4, first published in 1948 and based on Post War Building Studies 1946. After the war it was acceptable for residential blocks of flats to be served by a single protected stairway. The individual flats were also provided with an 'escape balcony' and, provided that the balcony was no higher than 14 yards above ground level (the height of fire brigade ladders), the corridors giving access to the flats from the single stair could be over 12m in length. In practice, single direction corridors of 24m were not uncommon.

In the 1950s and 1960s blocks of flats became taller and taller without a great deal of change to the internal layout. It is for this reason that the internal design for Lakanal House included corridors of 24m from a single escape stair – with escape balconies for each flat, including the 15th floor flats. At the time, architects questioned the wisdom of this venture, but at that time the codes of practice were guidelines only, and did not have the same power as formal regulations.

The CP3 guidance document was revisited and in 1975 it gave firmer guidelines with regards to blocks of flats, very similar to the guidance that we know today.

In 1985 the first Building Regulations Approved Document B was published. This had greater power because it was linked to formal regulations, but unfortunately it did not cover blocks of flats.

In 1990 BS 5588:Part 1 was published. This document picked up on the essential elements of CP3 Chapter 4 and formalised them as a British Standard in order to promote consistence of standards within the UK.

In 1991 the AD B was reviewed, and on this occasion it copied and pasted the 1975 edition of CP3 and included it completely without amendment.

The Approved Document was modified further in 2002, and again in 2007. The 2002 edition did not change the guidance with regards to the common areas of blocks of flats, and nor did the latest edition. The only change that the 2007 edition made is with regards to fire alarm systems within the dwellings themselves.

The CLG 'Sleeping Guide' recognises the 1991 edition of AD B as the benchmark. It directs the reader to assess the risk and provide appropriate levels of fire protection. It goes on to outline the general principles of

protection expected for a 'normal' risk premises. It does not differ greatly from AD B in many areas, but it requires a fire alarm system in the common areas to compensate for the areas in which it does differ.

The Local Authorities Coordinating Office on Regulatory Services (LACORS) also recognises the 1991 edition of AD B as the benchmark for flats. It recognises that not all flats have been built with fire resisting floors, and are not suitably covered by ADB or the 'Sleeping Guide'. It therefore offers alternatives to address these shortfalls.

All four guides seek to provide the same level of safety as that originally intended in the 1975 edition of CP3, which appears for the most part to have stood the test of time.

The BS 5588 series has been superseded by BS 9999 for the most part, with the exception of Part 1. BS 5588: Part 1 is still referred to within AD B, and the contents have not been mapped across to the new BS. It is understood that the British Standards Institute is seeking to re-badge this part under a new number so that it continues to stand alone. Whether the re-badging takes place or not, the standard is still very useful to inspectors. Not only does it provide the requirements to meet the standards, but also gives the rationale behind those requirements.

The purpose of this paper is to look at the standards required to protect the common areas in blocks of flats, and to assist inspectors in understanding how the guidance documents work to achieve a similar standard.

	Approved Document B			BS 5588: Part 1	CLG Sleeping Guide	Lacors - 6 Storey
Compartmentation:	<18m	18-30m	>30m			
Between Dwellings	60	90	120	60 minutes	Maintained to AD B	30 minutes
Between Dwellings and Means of Escape	60	90	120	60 minutes	If lower than AD B, basement floors should be at least 60 mins FR and upper sleeping floors should be separated by at least 30 minutes FR.	30 minutes
Between Floors	60	90	120	60 minutes		30 minutes – alternate floors (incl. basement)
Refuse Storage Chamber	60	90	120	60 minutes		Not Discussed
Enclosing Means of Escape	30 minutes			30 minutes	30 minutes	30 minutes
Enclosing Lift Shaft	30 minutes (or within protected stair)			30 minutes (or within protected stair)	30 minutes (or within protected stair)	Not Discussed
Enclosing Service Shafts	30 minutes			30 minutes	30 minutes	Not Discussed
Fire Doors						
Dwelling Entrance	FD30 S			FD30 S	FD30 S	FD30 S
Enclosing Means of Escape	FD30 S			FD30 S	FD30 S	FD30 S
Cross Corridor Doors	FD20 S			FD20 S	FD20 S	Not Discussed
Hold Open Devices	Not restricted if door is considered a hindrance			Cross-Corridor doors only	Not restricted if door is considered a hindrance	Not Discussed
Letter Openings	Not Discussed			To be avoided if possible. If unavoidable – 1.1m from floor (within the neutral plane)	Not Discussed	Not Discussed

Fire Alarm				
Common Area	Unnecessary and Undesirable	Unnecessary and Undesirable	Grade A LD2 if premises not to AD B Standard	Grade A LD2
Operation of AOV	Smoke detector in vent area	Smoke detector in vent area	Smoke detector in vent area	Not Discussed
Operation of electro magnetic door holder	Smoke Detector either side of door	Smoke Detector either side of door	Smoke Detector either side of door	Not Discussed
Travel Distance from Dwelling to Stair				
Single Direction	7.5m from dwelling door to protected stair	7.5m from dwelling door to protected stair	18m incl. flat interior 7.5m max in corridor	Must not be excessive
Alternatives Available	30m from dwelling door to protected stair	30m from dwelling door to protected stair	35m including flat interior	Must not be excessive
Ventilation				
Dead End	AOV – 1.5m ² <i>or Pressurisation</i>	AOV – 1.5m ² <i>or Pressurisation</i>	AOV	Not Discussed
Alternative Routes Available	OV – 1.0m ² <i>or Pressurisation</i>	OV – 1.0m ² <i>or Pressurisation</i>	OV	Not Discussed
Stairways	OV – 1.0m ² <i>or Pressurisation</i>	OV – 1.0m ² <i>or Pressurisation</i>	OV	Not Discussed
Stairways				
Minimum Width	1.0m	1.0m	1.05m	Not Discussed
Min Width if Fire-fighting Shaft	1.1m	1.1m	Not Specified	N/A
External Openings in Stairway	1.8m Rule	1.8m Rule	1.8m Rule	1.8m Rule
Stores Opening Onto Stairway	Not Permitted	Not Permitted	Not Discussed	Acceptable if Fire Resisting Construction

Single Stairway	Cannot serve Basement or Ancillary Parts	Cannot serve Basement or Ancillary Parts	Cannot serve Basement	Ancillary parts separated by 60 mins FR
Multiple Stairs	1x Cannot serve basement. Cannot serve ancillary parts on same floor as dwelling	1x Cannot serve Basement. None can serve Ancillary Parts	Should not serve basement	Ancillary parts separated by 60 mins FR
Building Height >18m	At least 1x FF Shaft and Dry Rising Main	At least 1x FF Shaft and Dry Rising Main	At least 1x FF Shaft and Dry Rising Main	N/A
Building Height >60m	Wet Rising Main	Wet Rising Main	Not Specified	N/A
Escape Lighting				
	Required in all common escape routes	Where Necessary	Where Necessary	Where Necessary
Fire Fighting Equipment				
	Not discussed	Yes – if free from vandalism	Open to interpretation. Advice from D Stotesbury	Simple multi-purpose extinguisher on each floor