

BDM02 Fire protection of buildings – Core Document – Compartmentation and Sprinkler Rules

Revision 2 – 2022

Purpose Group Table Part 1 of 3

Purpose Group in ADB Table 0.1	Consider the Location	Use Overall Dimension	Unsprinklered and Systems not to LPC Sprinkler Rules			Sprinklered to LPC Sprinkler Rules with Exceptions			Sprinklered to LPC Sprinkler Rules in Full									
			Insurers tend to disregard:			Defined TB 206 Table T2			Defined TB 206 Table T1									
			BS EN 12845 Sprinklers BS 9251 Residential Sprinklers BS 8458 Residential Mist BS 8489 Industrial Mist BS EN 14972-1 Water Mist			Overall Height to include enclosed Plant Rooms 4.2.1 Permitted exceptions 4.2.2 Necessary exceptions			Allowance for the alternative suppression systems based on the risk assessment of identified fire Hazards in the building									
		Method of Measurement	Minimum (REI) Fire Resistance (Minutes)		Maximum Floor Area of Compartment (m ²)	Minimum (REI) Fire Resistance (Minutes)		Maximum Floor Area of Compartment (m ²)	Minimum (REI) Fire Resistance (Minutes)		Maximum Floor Area of Compartment (m ²)							
			Floor	Wall		Floor	Wall		Floor	Wall								
Residential (Dwellings) Flat [2, 3, 8] with Car Parking as 7(b) OH1 [18, 19]	1(a)	Basement ^[1]	>10 m deep	90 ^[4,5]	90 ^[5]	Each Floor and the Dwelling up to 250 ^[6]	90 ^[4,5]	90 ^[5]	Each Floor and the Dwelling up to 250 ^[6]	90 ^[4,5]	90 ^[5]	Each Floor and the Dwelling up to 250 ^[6]						
			<10 m deep															
		Ground and above	≤5 m			Not permitted												
			≤11 m															
			≤18 m															
		>30 m					120	120										
		>30 m							120	120								
Residential (Dwellings) Dwellinghouse >4.5m [7, 8] LH [17, 19]	1(b)	Basement ^[1]	>10 m deep	Not covered by ADB		Each Dwelling up to 250 ^[6]	Not recommended ^[6]		Not recommended ^[6]		Not recommended ^[6]							
			<10 m deep	30	60 ^[16]		30	60 ^[16]	30	60 ^[16]	30	60 ^[16]	Each Dwelling up to 250 ^[6]					
		Ground and above	≤5 m			Not covered by ADB	Not recommended ^[6]	Not recommended ^[6]	Not recommended ^[6]	Not recommended ^[6]	Not recommended ^[6]	Not recommended ^[6]	Not recommended ^[6]					
			≤18 m	60	60									60	60	60	60	60
			≤30 m															
		>30 m																
Residential (Dwellings) Dwellinghouse <4.5m [7, 8, 9] LH [17, 19]	1(c)	Basement ^[1]	>10 m deep	Not covered by ADB		Each Dwelling up to 250 ^[6]	Not recommended ^[6]		Not recommended ^[6]		Not recommended ^[6]							
			<10 m deep	30	60 ^[16]		30	60 ^[16]	30	60 ^[16]	30	60 ^[16]	Each Dwelling up to 250 ^[6]					
		Ground and above	≤5 m			Not in the Purpose Group	Not in the Purpose Group	Not in the Purpose Group	Not in the Purpose Group	Not in the Purpose Group	Not in the Purpose Group	Not in the Purpose Group	Not in the Purpose Group					
			≤18 m															
			≤30 m															
		>30 m																
Residential (Institutional) OH1 [18, 19] except Prisons as LH [17]	2(a)	Basement ^[1]	>10 m deep	90	90	Each Floor up to 500	90	90	Each Floor up to 1000	90	90	Each Floor up to 1000						
			<10 m deep	60	60		60	60		60	60							
		Ground and above	≤5 m			Not permitted	180	180	180	180	180	180	180					
			≤18 m	90	90									90	90	90	90	
			≤30 m	120	120									120	120	120	120	
		>30 m																
Residential (Other) OH [18, 19]	2(b)	Basement ^[1]	>10 m deep	90	90	Each Floor up to 500	90	90	Each Floor up to 1000	90	90	Each Floor up to 1000						
			<10 m deep	60	60		60	60		60	60							
		Ground and above	≤5 m			Not permitted	180	180	180	180	180	180	180					
			≤18 m	90	90									90	90	90	90	
			≤30 m	120	120									120	120	120	120	
		>30 m																
Office OH1 [18, 19] only reduced to LH [17] when small [20]	3	Basement ^[1]	>10 m deep	120	120	126 when small ^[20] and all other cases	90	90	126 when small ^[20] and all other cases	60	60	126 when small ^[20] and all other cases						
			<10 m deep	90	90		60	60		60	60							
		Ground and above	≤5 m	60	60	4000 Multi 4000 Single	90	90	No limit Multi No limit Single	30	60 ^[16]	No limit Multi No limit Single						
			≤11 m	90	90					60	60							
			≤18 m							90	90		90	90				
			≤30 m	Not recommended ^[10]						120	120		120	120				
		>30 m	Not permitted Fully Sprinklered required		Not permitted Fully Sprinklered required		120 ^[15]	120 ^[15]	120 ^[15]									
Shop and Commercial other than 4(b) OH3 [18]	4(a)	Basement ^[1]	>10 m deep	120	120	2000 Multi 2000 Single	120	120	4000 Multi 8000 Single	90	90	4000 Multi 8000 Single						
			<10 m deep															
		Ground and above	≤5 m			Not recommended ^[10]	Not permitted Fully Sprinklered required	Not permitted Fully Sprinklered required	Not permitted Fully Sprinklered required	120 ^[15]	120 ^[15]	120 ^[15]	120 ^[15]					
			≤18 m															
			≤30 m															
		>30 m	Not permitted Fully Sprinklered required		Not permitted Fully Sprinklered required		120 ^[15]	120 ^[15]	120 ^[15]									
Large Retail Warehouse or Superstore in which stock is on display OH3 [18]	4(b)	Basement ^[1]	>10 m deep	120	120	2000 Multi 2000 Single	120	120	4000 Multi 8000 Single	120	120	4000 Multi 8000 Single						
			<10 m deep															
		Ground and above	≤5 m			Not permitted Fully Sprinklered required	Not permitted Fully Sprinklered required	Not permitted Fully Sprinklered required	Not permitted Fully Sprinklered required	120 ^[15]	120 ^[15]	120 ^[15]	120 ^[15]					
			≤18 m															
			≤30 m															
		>30 m	Not permitted Fully Sprinklered required		Not permitted Fully Sprinklered required		120 ^[15]	120 ^[15]	120 ^[15]									

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Purpose Group in ADB Table 0.1	Consider the Location	Use Overall Dimension	Unsprinklered and Systems not to LPC Sprinkler Rules			Sprinklered to LPC Sprinkler Rules with Exceptions			Sprinklered to LPC Sprinkler Rules in Full				
			Insurers tend to disregard:			Defined TB 206 Table T2			Defined TB 206 Table T1				
			BS EN 12845 Sprinklers BS 9251 Residential Sprinklers BS 8458 Residential Mist BS 8489 Industrial Mist BS EN 14972-1 Water Mist			Overall Height to include enclosed Plant Rooms 4.2.1 Permitted exceptions 4.2.2 Necessary exceptions			Allowance for the alternative suppression systems based on the risk assessment of identified fire Hazards in the building				
Groups 5 to 7 Hazard classes are identified in Annex A of BS EN 12845: LH – Light Hazard OH – Ordinary Hazard HH – High Hazard, as: HHP – Process HHS – Storage	Refer to Scope in BDM02 Section 2 Basements to be considered separately to Storeys above Ground Level with Mixed Use resolved at each Storey	Method of Measurement ADB adopts Height of Top Storey while LPC Sprinkler Rules adopt the Overall Height (m) of the building	Minimum (REI) Fire Resistance (Minutes)		Maximum Floor Area of Compartment (m ²)	Minimum (REI) Fire Resistance (Minutes)		Maximum Floor Area of Compartment (m ²)	Minimum (REI) Fire Resistance (Minutes)		Maximum Floor Area of Compartment (m ²)		
			Floor	Wall		Floor	Wall		Floor	Wall			
Assembly and Recreation OH1 to OH4 as Table A.2 ^[18, 19] but Schools as LH ^[17] when small ^[20]	5	Basement ^[1]	>10 m deep	120	120	126 when small ^[20] and all other cases	90	90	126 when small ^[20] and all other cases	60	60	126 when small ^[20] and all other cases	
			<10 m deep	90	90		60	60		30	60 ^[16]		
		Ground and above	≤5 m			2000 Multi 4000 Single	90	90	4000 Multi 8000 Single	60	60	4000 Multi 8000 Single	
			≤18 m	120	120		120	120					
			≤30 m										
>30 m	Not permitted Fully Sprinklered required			Not permitted Fully Sprinklered required			120 ^[15]	120 ^[15]					
Industrial ^[11] OH1 to OH2 as Table A.2 ^[18, 19]	6(a)	Basement ^[1]	>10 m deep	120	120	7000 Multi 7000 Single	120	120	14000 Multi 14000 Single	90	90	14000 Multi 14000 Single	
			<10 m deep										
		Ground and above	≤5 m										
			≤18 m										
			≤30 m	Not recommended Fully Sprinklered advised			Not recommended Fully Sprinklered advised					4000 Multi 4000 Single	
>30 m	Not permitted Fully Sprinklered required			Not permitted Fully Sprinklered required			180	180					
Industrial ^[11] OH3 to OH4 as Table A.2 ^[18, 19] and HHP as Table A.3	6(b)	Basement ^[1]	>10 m deep	240	240	7000 Multi 7000 Single	240	240	14000 Multi 14000 Single	120	120	14000 Multi 14000 Single	
			<10 m deep										
		Ground and above	≤5 m										
			≤18 m										
			≤30 m	Not recommended Fully Sprinklered advised			Not recommended Fully Sprinklered advised					4000 Multi 4000 Single	
>30 m	Not permitted Fully Sprinklered required			Not permitted Fully Sprinklered required			180	180					
Storage ^[11, 12] Categorised as TB217 ^[18, 19] and HHS subject to storage risk	7(a)	Basement ^[1]	>10 m deep	240	240	4000 Multi 4000 Single	240	240	8000 Multi 8000 Single	120	120	8000 Multi 8000 Single	
			<10 m deep										
		Ground and above	≤5 m										
			≤18 m										
			≤30 m	Not recommended Fully Sprinklered advised			Not recommended Fully Sprinklered advised						
>30 m	Not permitted Fully Sprinklered required			Not permitted Fully Sprinklered required			120 ^[15]	120 ^[15]					
Car Parking for light vehicles HHP as Table A.3 ^[18, 21] to allow for electric light vehicles	7(b)	Ground and above	≤5 m	60 ^[13, 14]	60 ^[13, 14]	No limit Multi No limit Single	60 ^[13, 14]	60 ^[13, 14]	No limit Multi No limit Single	60 ^[13, 14]	60 ^[13, 14]	No limit Multi No limit Single	
			≤18 m										
			≤30 m										
		Open sided	>30 m	60	60		60	60		60	60		
		Basement ^[1]	>10 m deep	90	90		90	90		90	90		
			<10 m deep	60	60		60	60		60	60		
		Ground and above	Closed sided	≤5 m	60 ^[13, 14]	60 ^[13, 14]		60 ^[13, 14]	60 ^[13, 14]		60 ^[13, 14]	60 ^[13, 14]	
				≤18 m	60	60		60	60		60	60	
			≤30 m	90	90		90	90		90	90		
>30 m	120 ^[15]		120 ^[15]		120 ^[15]	120 ^[15]		120 ^[15]	120 ^[15]				

LPC Rules for Automatic Sprinkler Installations 2015 incorporating BS EN 12845:2015+A1:2019 Fixed firefighting systems. Automatic sprinkler systems. Design, installation and maintenance provides the two Insurer supported options for augmenting BS EN 1284:2015+A1:2019 for property protection

<https://www.thefpa.co.uk/shop/lpc-sprinkler-rules>

The LPC Sprinkler Rules include Technical Bulletin TB206: 2020 Rev 1 *Passive fire protection of sprinklered buildings*, which replaces BS EN 12845:2015+A1:2019 clauses 5.1, 5.2 and 5.3. This document BDM02 refers to TB 206 Tables T1 and T2 as the two Insurer supported options for property protection.

<https://www.riscauthority.co.uk/member-download/39>

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Notes to Table

- 1 The compartment floor over a basement, or if there is more than one basement the floor over the topmost basement, should meet the provisions for the ground floor and upper Storeys if the fire resistance for compartmentation is higher. [This is the same principle as Note * in ADB Table B4]
- 2 Purpose Group 1(a) Flats includes live/work units that meet the provisions of Paragraph 3.24. [This is the same principle as Note 1 in ADB (2019 as amended 2020) Table 0.1 Purpose Groups]
- 3 Purpose Group 1(a) Flats provided with compartment floors and walls to ADB Volume 1 (2019 as amended 2020) Paragraph 7.1 as follows:
 - a. Any floor and wall separating a Flat from another part of the building.
 - b. Any wall enclosing a refuse storage chamber.
 - c. Any wall common to two or more buildings.
- 4 Purpose Group 1(a) Flats to provide 90 Minutes compartment floors between different tenancies, as an enhancement since Insurer ADB (2015) when ADB (2013) Table A1 provided 60 Minutes or deferred to Table A2. Reduced to 30 Minutes for non-compartment floors that do not contribute to the support of the building within a Flat of single tenancy of more than one Storey. [This is an enhancement on Note + in ADB (2019 as amended 2020) Table B4]
- 5 Purpose Group 1(a) Flats converted from Dwellinghouses in Purpose Groups 1(b) and 1(c) to consider the acceptability of Paragraphs 6.5 to 6.7 for compartment floors or walls of 30 Minutes. Some existing buildings are unsuitable for conversion into Flats when enhanced compartmentation is considered necessary. For all other conversions of buildings to Flats provide compartment floors and walls between different tenancies of 90 Minutes. [This is an enhancement on Note § in ADB (2019 as amended 2020) Table B4]
- 6 Purpose Group 1(a) Flats or Dwellinghouses in Purpose Groups 1(b) and 1(c) with compartments larger than 250 m² or other unusual risks are outside the scope of the guidance in this Insurer ADB. A fire engineering approach should be adopted. Assessment of risk should be carried out in early consultation with the Insurer [This is an enhancement on Note 4 in ADB (2019 as amended 2020) Table B4]
- 7 Purpose Groups 1(b) and 1(c) Dwellinghouses include surgeries, consulting rooms, offices or other accommodation that is:
 - a. No more than 50 m² internal floor area in total;
 - b. Part of a Dwellinghouse; and
 - c. Used by an occupant of the Dwellinghouse in a professional or business capacity.
 [This is the same principle as Note 2 in ADB (2019 as amended 2020) Table 0.1 Purpose Groups]
- 8 Purpose Groups 1(b) and 1(c) includes Garages attached to or forming an integral part of Dwellinghouses to be separated as a compartment from the living accommodation by 30 Minute fire resisting construction to meet the provisions of Diagram 5.1. This provision also applies to Flats converted from Dwellinghouses as Note 5 of this Table.
- 9 Purpose Group 1(c) Dwellinghouses with no Storey >4.5m includes the following:
 - a. A detached garage of maximum 40 m² in area.
 - b. A detached open carport of maximum 40 m² in area.
 - c. A detached building that consists of a garage and open carport, each a maximum of 40 m² in area.
 [This is the same principle as Note 4 in ADB (2019 as amended 2020) Table 0.1 Purpose Groups]
- 10 Purpose Group 3 Offices and Purpose Group 4(a) Shops and Commercial buildings with an Overall Height of more than 18m and less than 30m may be provided with enhanced non-combustibility and fire resistance of construction instead of an installation of Sprinklers to the LPC Sprinkler Rules, but this is not recommended. Assessment of risk should be carried out in early consultation with the Insurer.
- 11 Purpose Groups 6(a) and 6(b) Industrial Process buildings and Purpose Group 7(a) Storage buildings are subject to other legislation where fuels and combustible chemicals or materials are present. They shall have further limitations on floor area and additional sprinkler provisions. Assessment of risk should be carried out in early consultation with the Insurer using the LPC Sprinkler Rules with reference to a minimum Hazard class OH3 as Note 19 of this Table. [This is the same principle as Note 3 in ADB Volume 2 (2019 as amended 2020) Table 8.1]
- 12 Purpose Group 7(a) Storage buildings should not have compartment heights exceeding 18m measured from finished floor level to the underside of the roof or fire resisting ceiling. [This is the same principle as Note 5 in ADB Volume 2 (2019 as amended 2020) Table 8.1]
- 13 Purpose Group 7(b) Open or Closed sided Car Parks for light vehicles to provide 60 Minutes for parking decks and compartment walls protecting the means of escape. [This is an enhancement on Note # in ADB (2019 as amended 2020) Table B4]
- 14 Purpose Group 7(b) Open sided Car Parks for light vehicles are approved by Note 8 in ADB (2019 as amended 2020) Table B4 to be constructed of the following steel elements deemed to have satisfied 15 Minutes when tested to the European test method referred to in BS EN 1993-1-2:2005 *Eurocode 3. Design of steel structures - General rules - Structural fire design*, with National Annex:
 - i) Beams supporting concrete floors, maximum Hp/A = 230/m operating under full design load.
 - ii) Free standing columns, maximum Hp/A = 180/m operating under full design load.
 - iii) Wind bracing and struts, maximum Hp/A = 210/m operating under full design load.
 15 Minutes is insufficient fire resistance for property protection of Open sided Car Parks for light vehicles, whatever the primary structural material. Electric light vehicles involve additional risks, particularly when in proximity to liquid or gas fuelled light vehicles. Assessment of risk in in Open or Closed sided Car Parks for light vehicles as Purpose Group 7(b) should be carried out in early consultation with the Insurer when considering a reduction in fire resistance to 30 Minutes for parking decks and walls not protecting the means of escape as Note 13 of this Table. [This is an enhancement on Note 8 in ADB (2019 as amended 2020) Table B4]
- 15 Reduced to 90 Minutes for non-loadbearing compartment walls not associated with firefighting shafts and any compartment floor that does not contribute to the support of the building. [This is the same principle as Note ‡ in ADB (2019 as amended 2020) Table B4]
- 16 Reduced to 30 Minutes for walls that are not compartment walls separating buildings. [This is the same principle as Note † and 5 in ADB (2019 as amended 2020) Table B4]
- 17 Sprinkler protection in concealed spaces shall be to LH only when the occupancy Hazard class is LH as Paragraph 5.4 in BS EN 12845:2015+A1:2019.
- 18 Sprinkler protection in concealed spaces shall be to OH1 for all OH and HH occupancy Hazard classes as Paragraph 5.4 in BS EN 12845:2015+A1:2019.
- 19 Where a Plant Room or any Storage is integral to the building the Hazard class for the whole building shall be increased to OH3 as Table A.2 of BS EN 12845:2015+A1:2019. LPC Sprinkler Rules for Storage are provided in Technical Bulletin TB217: 2018: Rev 1 – *Categorisation of goods in storage*, which relates to Clause 6 and Annex B and C of BS EN 12845:2015+A1:2019.
<https://www.riscauthority.co.uk/member-download/48>
- 20 Where none of the compartments in a building exceed a floor area of 126 m² and there is a minimum fire resistance for walls and floors of 30 Minutes the Hazard class may be reduced to LH. If Storage or Plant Rooms are present the Hazard class shall instead be increased to OH3 as Note 19 of this Table.
- 21 TB206:2020 Rev 1 *Passive fire protection of sprinklered buildings* stated OH2 but the LPC Sprinkler Rule requirement has been subsequently increased to HH subject to vehicle risk by the RISCAuthority Sprinkler Work Group.

This extracted Table is to be read with BDM02 Fire protection of buildings – Core Document – Compartmentation and Sprinkler Rules Revision 2 – 2022