

## FIRE RATING REQUIREMENTS FOR USE OF ROOFLIGHTS IN BUILDINGS – NORTHERN IRELAND

The Building Regulations Northern Ireland 2012, Technical Booklet E: Fire Safety defines the fire safety requirements for buildings in Northern Ireland. This is the tier one guidance document to prove compliance with the statutory requirements, although alternative routes to compliance are also available.

Technical Booklet E is split into 6 basic sections:

- Section 1 – General
- Section 2 – Means of Escape
- Section 3 – Internal Fire Spread (linings)
- Section 4 – Internal Fire Spread (structure)
- Section 5 – External Fire Spread
- Section 6 – Access and Facilities for the Fire Service

With respect to Rooflights, Sections 3, 4 and 5 applies.

The following is a brief overview of the Technical Booklet requirements, however there may be more considerations pertinent to any project and therefore the designer should refer to the current version of the relevant Technical Document.

**Please note:** it is the responsibility of the designer to ensure that the rooflight products specified meet full compliance with the fire rating requirements outlined in Technical Booklet E.



## Section 3 - Internal Fire Spread (linings)

This Section applies to the linings of both the roof and walls of buildings to ensure that spread of fire within the building is inhibited.

The surface linings of walls and ceilings should meet the classification in the *Surface Classifications for walls and ceilings* table 3.1:

Table 3.1 Surface classifications for walls and ceilings			
Type of building	Room or circulation space	Surface class for both walls and ceilings	
		National Class	European Class
Purpose groups 1 and 2	Rooms not exceeding 4m <sup>2</sup>	3	D-s3,d2
	Domestic garages not exceeding 40m <sup>2</sup>	3	D-s3,d2
	All other rooms (including garages exceeding 40m <sup>2</sup> )	1	C-s3,d2
	Circulation spaces (with a dwelling)	1	C-s3,d2
	Circulation spaces (common areas)	0	B-s3,d2 or higher
All other purpose groups	Rooms not exceeding 30m <sup>2</sup>	3	D-s3,d2
	All other rooms	1	C-s3,d2
	Circulation spaces	0	B-s3,d2 or higher

All types of rooflights should meet the relevant classification defined in appropriate *Surface classification for walls and ceilings* table.

The reaction to fire classifications are in line with either BS EN 13501-1 (European Classifications) or BS 476-7 (National Classifications) are still permissible for existing products, see 3.4 and 3.7.

There is an additional allowance for thermoplastic rooflights that cannot meet the relevant classification (in the *Classification of linings* table) to be a minimum of Class 3 when used in line with the limitations defined in 3.14, table 3.2 and diagram 3.1.

Where TP(a) and TP(b) thermoplastic type rooflights that cannot be tested in accordance with BS476-7 are to be used, then reference should be made to 3.14 & Table 3.2.

## Section 4 – Internal Fire Spread (Structure)

This guidance in this section is to ensure buildings will remain stable for a reasonable amount of time in the event of a fire. Of particular relevance to rooflights is the junction of compartment walls where they meet a roof, the concern being that a fire could breach the wall or cause the wall to collapse if the rooflights are too close or have insufficient performance.

The guidance states that within 1500mm of the compartment wall the roof covering should be classified AA, AB or AC over a substrate or deck of a material of limited combustibility; although thermoplastic rooflights regarded as having an AA or B<sub>ROOF</sub>(t4) classification are not suitable for use as a roof covering within 1500mm of the compartment wall.

It is therefore recommended that rooflights should not be used within the 1500mm zone of a compartment wall.

## Section 5 – External fire Spread

This section applies to external covering of the building to limit combustibility of external roofs (and walls) to ensure fire cannot spread easily around the outside of the building, or to adjacent buildings.

The limitations of roof coverings should meet the classifications in the *Limitations on roof coverings* table 5.7:

Table 5.7 Limitations on roof coverings					
Designation of covering of roof or part of roof		Minimum distance from any point on relevant boundary			
National Class	European Class	Less than 6m	At least 6m	At least 12m	At least 20m
AA, AB or AC	B <sub>ROOF</sub> (t4)	●	●	●	●
BA, BB or BC	C <sub>ROOF</sub> (t4)	○	●	●	●
CA, CB, or CC	D <sub>ROOF</sub> (t4)	○	●	●	●
AD, BD or CD	E <sub>ROOF</sub> (t4)	○	●	●	●
DA, DB, DC or DD	F <sub>ROOF</sub> (t4)	○	○	○	●

All types of rooflights should meet the relevant classification defined in appropriate *Limitations on roof coverings* table.

The reaction to fire classifications are in line with either BS EN 13501-5 or BS 476-3, see 5.21 and 5.22.

When used in rooflights, unwired glass at least 4mm thick can be regarded as having a AA (National class) or B<sub>ROOF</sub>(t4) (European class) designation, see 5.23.