

FIRE RATING REQUIREMENTS FOR USE OF ROOFLIGHTS IN BUILDINGS – ENGLAND

The Building Regulations England 2010, Approved Document B Fire: Safety, volumes 1 (dwellings) and volume 2 (buildings other than dwellings) defines the fire safety requirements for buildings in England. These are the tier one guidance documents to prove compliance with the statutory requirements, although alternative routes to compliance are also available.

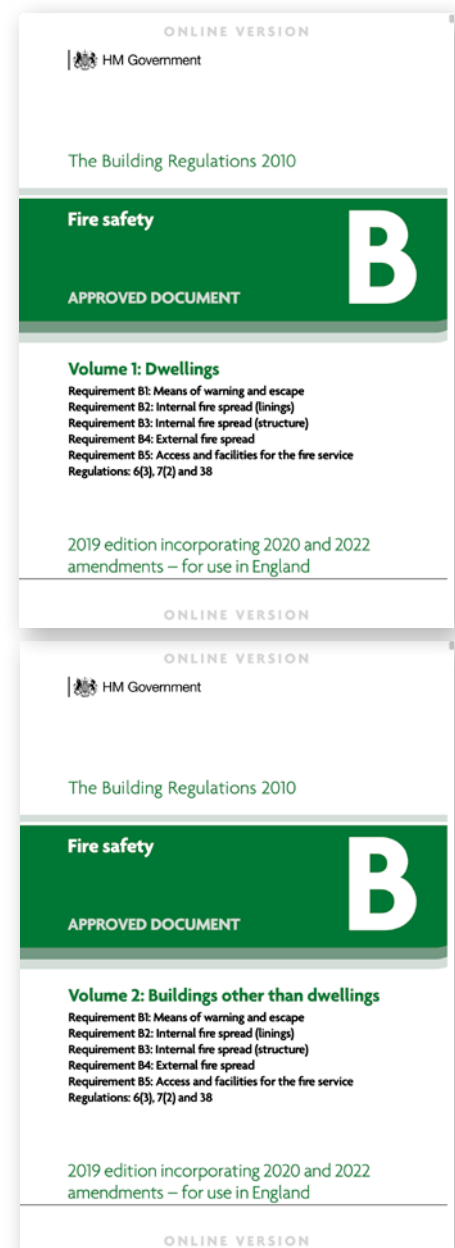
Approved Document B (volumes 1 and 2) are split into 5 basic sections:

- 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

With respect to Rooflights, Sections B2, B3 and B4 apply.

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



Section B2 - 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 *Classification of linings* table (volume 1 table 4.1, volume 2 table 6.1):

Classification of linings			
Dwellings (Volume 1 – Table 4.1)	Buildings other than dwellings (Volume 2 – Table 6.1)	European Class	National Class*
Small rooms of maximum internal floor area of 4m ² Garages (as part of a dwellinghouse) of maximum internal floor area of 40m ²	Small rooms of area not more than: a. 4m ² in residential accommodation b. 30m ² in non-residential accommodation	D-s3,d2	3
Other rooms (including garages) Circulation spaces within a dwelling	Other rooms (including garages)	C-s3,d2	1
Other Circulation spaces (including the common areas of blocks of flats)	Other circulation spaces	B-s3,d1	0

All types of rooflights should meet the relevant classification defined in appropriate *Classification of linings* table.

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 D-s3,d2 when used in line with the limitations defined in Table 4.2 & Table 12.2 (volume 1) and Table 6.2 & Table 14.2 (volume 2).

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 Clause 6.15 and Diagram 6.2.

*European and National Classifications

In general, these are reaction to fire classifications are in line with BS EN 13501-1 (known as European Classifications), although rating to BS 476-7 (known as National Classifications) are still permissible for existing products, via the transposition table to nation class ratings in appendix B, table B1.

Section B3 – 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 as B_{ROOF(t4)} over a liner or deck classified at least A2-s3,d2; although thermoplastic rooflights regarded as having an AA or B_{ROOF(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 B4 – 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 (volumes 1 table 12.1, volume 2 table 14.2):

Limitations on roof coverings (Volume 1 - Table 12.1; Volume 2 - Table 14.1)

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

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

*European and National Classifications

In general, these are reaction to fire classifications are in line with BS EN 13501-5, although rating to BS 476-3 is still permissible for existing products, via the transposition table to nation class ratings in appendix B, table B2.

When used in rooflights, unwired glass at least 4mm thick can be regarded as having a B_{ROOF(t4)} classification.