

### Regulations for fire safety in buildings - England

Building Regulations Approved Document B: Fire Safety, Volume 2 - Buildings other than dwellings (2019 edition, amended May 2020) sets out the fire safety rules for buildings other than dwellings, which can be met by achieving specific European class fire ratings to European standard BS EN 13501.

#### B2 - Internal fire spread (linings)

This section covers internal fire spread and applies to the inner linings of both roof and wall.

Paragraph 6.1 & table 6.1 summarise the fire rating requirement by location within a building. The inner skin of a ceiling or wall for typical industrial applications should be:

- **C-s3,d2** (to EN13501 part 1)

For the purposes of this requirement, walls or ceilings do not include the frames of windows or rooflights and frames in which glazing is fitted (paragraph 6.3 & 6.6).

#### B4 - External fire spread

##### Roofs

Table 14.1 summarises the fire rating requirements for roofs in relation to distance from any point on a relevant boundary. There are no restrictions on the position of rooflights with outer sheets rated:

- **B<sub>ROOF</sub>(t4)** (to EN13501 part 5)

Please note paragraph 14.7: polycarbonate rooflights that achieve a minimum rating of C-s3,d2 by test may be regarded as having a **B<sub>ROOF</sub>(t4)** classification.

#### B4 - External fire spread

##### Walls

Table 12.1 summarises the fire rating requirement for external walls in relation to distance from relevant boundary, building height and building type:

- There are no requirements for external walls which are below 18m in height and more than 1m from the boundary in non-residential applications where the building is not used for assembly or recreation.
- For applications where the wall is within 1m of the boundary, or is over 18m high, or is a building for assembly and recreation, some areas of the wall will be required to meet either **B-s3,d2** or **C-s3,d2** (to EN13501 part 1).
- For applications where the building is classed as 'relevant' (as defined in regulation 7(4)), primarily residential properties with a storey at least 18m above ground level (see paragraph 12.11), products rated A2-s1,d0 (or better) are required on all walls. Polycarbonate products are not appropriate for these applications.

##### Single Skin Sheet

If the roof or wall construction is single skin without a separate liner panel, the single skin sheet must meet the requirements for both the lining and the outer sheet.

### Polycarbonate Rooflight fire ratings

We are able to supply glazing products using polycarbonate materials that have been tested to EN 13501 pt1 and can be regarded as meeting the EN13501 pt5 designation, as follows:

Polycarbonate Type	EN13501 pt1	EN13501 pt 5 or deemed by Approval Document B	Product uses and applications
Marlon CS	B-s1,d0	B <sub>ROOF</sub> (t4)*	Corrugated sheet for industrial applications
Marlon ST Longlife	B-s2,d0**	B <sub>ROOF</sub> (t4)*	Multiwall panels, used in assembled glazing systems
Marlon FSX 2-6mm	B-s1,d0	B <sub>ROOF</sub> (t4)*	Formed sheet used in Mardomes and Marvaults
Marlon Clickfix 1040	B-s1,d0	B <sub>ROOF</sub> (t4)*	Modular glazing system with interlocking panels

\*Can be regarded as being B<sub>ROOF</sub>(t4) if a minimum rating of C-s3,d2 to EN13501 pt1 is achieved (Approved Document B paragraph 14.7)

\*\*Minimum value, some configurations achieve B-s1,d0

### B3 Section 8: Compartmentation/sprinklers

Paragraph 8.26 and Diagram 8.2(a) specify the requirements at the junction of a compartment wall with the roof. For a distance of 1500mm either side of the wall, the roof should have an outer covering classified as B<sub>ROOF</sub>(t4) and inner liner (or deck) classified at least A2-s3,d2.

Polycarbonate cannot achieve a rating of A2-s3,d2, and it is stated that materials regarded as having a B<sub>ROOF</sub>(t4) rating because of paragraph 14.7 are not suitable for the external covering within this zone. It is therefore not permitted to use any polycarbonate products internally or externally in this zone

**Marlon****TB413****Fire Rating of Polycarbonate Rooflights****Ratings Tp(a) and Tp(b)**

There is difficulty testing some thermoplastic materials as the material typically melts during the testing, and do not meet the standard fire rating classifications in Table 6.1 and Table 14.1.

There is a concession to allow use of thermoplastic materials which are rated Tp(a) or Tp(b) with limitations: as rooflight liners as defined in Table 6.2 and external rooflights as defined in Table 14.3. Thermoplastic materials can be tested to BS2782 and given ratings of Tp(a) or Tp(b), or can be rated Tp(a) if rated Class 1 to BS476 part 7.

Brett Martin Polycarbonate products satisfy the main EN13501 rating requirements and therefore do not need to use the concession for materials rated Tp(a) or Tp(b).