



FIRE - ROOF APPLICATION: SCOTLAND

Filon Products Ltd manufacture three Fire Grades to meet the requirements of Scotland Non-domestic Technical Handbook 2024.

Filon sheets are tested and classified in accordance with the following standards:

BS EN 13501 Part 5 - Classification using data from external fire exposure to roofs tests.

BS 2782-0 Annex B Method 508A - Classification for TP(a) assessment rating of plastics.

BS 476 Part 3 - Classification and method of test for external fire exposure to roofs.

BS 476 Part 6 - Method of test for fire propagation of products.

BS 476 Part 7 - Method of test to determine the classification of the surface spread of flame of products.

Filon fire grades and test ratings are as follows:

- Grade 300 -** B_{ROOF}(t4) to BS EN 13501 Part 5
SAB to BS 476 Part 3
Class 3 to BS 476 Part 7
- Grade 104 -** B_{ROOF}(t4) to BS EN 13501 Part 5
TP(a) to BS 2782-0 Method 508A
SAA to BS 476 Part 3
Class 1 to BS 476 Part 7
- Grade 101 -** B_{ROOF}(t4) to BS EN 13501 Part 5
TP(a) to BS 2782-0 Method 508A
SAA to BS 476 Part 3
Class 1 to BS 476 Part 7
Class 0 to BS 476 Part 6

Our recommendations are provided in good faith, but approval from the appropriate local government authority may be required in certain circumstances or if there is any uncertainty regarding the correct material to use. The following references are taken from the above document.

Internal Liners and Single Skin

Section 2.5: *Internal linings* - Sub-section 2.5.1 - Table 2.4 provides classifications to BS EN 13501 Part 1 and lists the level of risk for various building types and room size. The requirements for buildings other than residential care buildings, hospitals and shops that include industrial and other non-residential buildings are listed in the column headed all other buildings.

The following recommendations apply:

Class 3 - Filon Grade 300 for rooms not more than 30m²

Class 1 - Filon Grade 104 for a room more than 30m² or an unprotected zone

Class 0 - Filon Grade 101 for a protected zone such as part of an escape route within a building or a fire-fighting shaft

(Appendix A defines a protected zone as: '*part of an escape route which is within a building, but not within a room, and to which access is only by way of a protected door and from which there is an exit directly to a place of safety*'). There are certain restrictions in section 2.5 for thermoplastic rooflights; these restrictions do not apply to Filon rooflights of the appropriate fire grade.

Note that GRP roof liners and single skin sheets **must not** be used within 1.7m of a compartment wall.

Please refer to Composites UK Technical Advice Note CUK TAN 2021/001, August 2023: Use of British Standard spread of flame tests to demonstrate compliance with Scottish Building Standards Regulatory Requirement for fire spread on thermoset plastic rooflights. Available on request from Filon's Technical Department.

External Roofs

Section 2.8, *Spread from neighbouring buildings*, provides guidance for external roof fire performance. Clause 2.8.1 lists the requirements for roof coverings dependent upon proximity to a boundary.

The roof of a building including rooflights that are up to 6m from the boundary have a **low vulnerability**.

When proximity to the boundary is between 6m and 24m, the roof has a **low or medium vulnerability**.

When proximity to the boundary is more than 24m, the roof including materials of a **high vulnerability** may be constructed from any material.

All Filon fire grades have a B_{ROOF}(t4) rating and satisfy the requirements of low, medium and high vulnerability.

External Walls

Section 2.7, sub-section 2.7.1: *External wall cladding systems*, provides guidance for external wall cladding.

Wall cladding is given a level of vulnerability as described in Annex 2.E Reaction to fire classification. Clause 2.7.1, table 2.9 provides the maximum level of vulnerability for various building types.

The requirements for buildings other than entertainment and assembly buildings that have a maximum storey area of 500m², residential care buildings and hospitals that include industrial and other non-residential buildings are listed in table 2.9: Reaction to fire of external wall cladding more than 1m from boundary under 'Any other building'.

The following recommendations apply for any other buildings:

Filon Grade 300, 104 or 101 for a height no more than 11m above the ground.

For a height more than 11m above the ground - A1 or A2 European Classification is required, GRP **must not** be used. It is strongly recommended that Building Control approval is sought if there is any concern or doubt regarding the correct use of materials.

External Wall Surfaces

Distance From Boundary	Building Height	Required Filon Fire Grade
Less than 1m	Less than 11m	GRP is not suitable
Less than 1m	More than 11m	GRP is not suitable
More than 1m	Less than 11m	Grade 300, 104 or 101 can be used
More than 1m	More than 11m	GRP is not suitable

Summary

Liners and Single Skin: In almost all circumstances the inner surface of a liner or single skin sheet should be **Filon Grade 104**. When higher performance is required, **Filon Grade 101** may be used.

External Roofs: Any Filon Fire Grade may be used for an external roof covering. Common practice for rooflights is to use a **Filon Grade 300** outer sheet with a **Filon Grade 104** liner.

External Walls: For the building types mentioned above, **Filon Grades 300, 104 and 101** can be used when the wall is less than 11m high above the ground and is more than 1m from the boundary. GRP is **not** permitted in any other wall application.