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**THE GRO FIRE
PERFORMANCE
OF GREEN ROOFS
BEST PRACTICE GUIDE**
JUNE 2025

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INTRODUCTION

This guidance document has been published by the **Green Roof Organisation (GRO)** following discussions between senior representatives of the Building Safety Regulator (BSR), who stated that this is the type of specialist guidance it would like Trade Associations and members of the GRO Regulatory Fire Compliance Working Group to produce.

The guidance builds upon the content of the Department of Communities and Local Government (DCLG) publication, 'Fire Performance of Green Roofs and Walls' which has provided best practice fire performance compliance guidance since August 2013 but is both out of date in places and inconsistent and unclear in others.

The Green Roof Organisation (GRO) represents the Green, Blue and Biosolar roofing industry on BSI committee FSH/22/-/8 *Fire resistance tests for external fire exposure for roofs* and the UK on European Committee CEN TC 127 Working Group 5 *Test methods for external fire exposure to roofs*.

Through that work and the collective knowledge within the GRO Technical Committee the Organisation has produced this guidance to clarify how to achieve compliance with the fire performance requirements for buildings within the United Kingdom.

The executive summary in **Section 1** of this guidance summarises the main clarification points related to compliance. All GRO Best Practice Guidance is on a green background.

Section 2 of this document breaks down the recommendations in DCLG Fire Performance of Green Roofs and Walls by paragraph, providing guidance on each paragraph and stating the minimum requirement of GRO members. All GRO Best Practice Guidance is in **green text**.



Image: Eco Green Roofs

REGULATORY REQUIREMENT

The 4 Nations of the United Kingdom publish statutory instruments (legal requirements) for the construction of dwellings (homes) and non-dwellings. These documents set the minimum legal requirements for life safety. Those documents are:

- England = The Building Regulations
- Scotland = The Building (Scotland) Regulations
- Wales = The Building Regulations
- Northern Ireland = Building Regulations (Northern Ireland).

These regulatory documents are broken down into two building group types:

1. dwellings – such as flats, apartments, houses etc.

2. non-dwellings – such as hospitals, care homes, schools, hotels, boarding houses, residential colleges, hall of residence, hostels, offices, shops, commercial buildings, warehouses, factories, bingo halls, broadcasting/recording/film studios open to the public, casinos, dance halls, entertainment/conference/exhibition/leisure centres, funfairs and amusement arcades, museums and art galleries, non-residential clubs, theatres, cinemas, concert halls, educational establishments, dancing schools, gymnasia, swimming pool buildings, riding schools, skating rinks, sports pavilions, sports stadia, law courts, churches and other buildings of worship, crematoria, libraries open to the public, non-residential day centres, clinics, health centres and surgeries, passenger stations and termini for air, rail, road or sea travel, public toilets, zoos and menageries.

To assist with achieving compliance the Regulators of England, Wales and Northern Ireland publish a series of Approved Documents with Document B Volume 1 Dwellings and 2 Volume 2 Buildings other than dwellings providing guidance on one method of complying with the Statutory (legal) minimum requirements of the Building Regulations. In Scotland the Regulator publishes Technical Handbooks titled Domestic and Non-Domestic to serve the same purpose.

For Green Roofing each of these National Government documents point to the Department of Communities and Local Government (DCLG) August 2013 document, 'Fire Performance of Green Roofs and Walls' for best practice guidance on achieving a fire compliant green roof. Reference to DCLG Fire Performance of Green Roofs and Walls is contained within the Approved Documents for England, Wales and Northern Ireland, and the Technical Handbooks for Scotland.

1 | COMPLIANCE UPDATE SUMMARY

1.1 Regulation B3 Internal Fire Spread (structure)

The guidance in DCLG Fire Performance of Green Roofs and Walls states *'Whilst fire spread to a green roof via penetrations such as roof lights, pipes or vents in the roof is not in itself a breach of requirements B1 to B5, it is recommended that fire breaks are provided around such penetrations so that basic maintenance procedures can be carried out.'* The guidance also recommends that *'fire breaks should consist of paving slabs or non-vegetated strips of pebbles with a depth of 75mm and diameter between 20 and 50mm for a width of 500mm*. Larger pebble sizes are preferred as this leads to less vegetative growth'*.

**It may be possible to reduce the dimension of 500mm depending on the type of vegetation used and the climatic conditions however further investigation and evidence would be required to support any reduction from the recommended 500mm fire break.*

The DCLG guidance is clear that a) fire breaks **are not required** on a green roof for fire performance compliance purposes, b) gravel margins are recommended against vertical abutments only and c) gravel margins are recommended for maintenance purposes. However, GRO recognises the contribution gravel margins make to fire risk management and maintenance as well as performing the function of wind breaks and are therefore an important element of ensuring the green roof remains on the roof.

From discussions and research GRO also believes the recommended diameter of between 20 and 50mm is a typing error as the most common diameter available (and used historically) is between 20 and 40mm.

GRO therefore recommend that gravel margins are included on a green roof in accordance with the guidance below.

GRO Best Practice Guidance

A **500mm wide margin** consisting of either a minimum 75mm deep 20 to 40mm rounded gravel or cast stone or mineral slabs of at least 40 mm thickness;

- non-combustible (class A2, s1-d0 or better) external wall with opening windows.
- combustible external wall with opening windows and/or non-opening windows.
- opening rooflight.

A **300mm wide margin** consisting of either a minimum 75mm deep 20 to 40mm rounded gravel or cast stone or mineral slabs of at least 40mm thickness;

- non-combustible (class A2, s1-d0 or better) external wall with non-opening windows.
- parapet wall.
- combustible external wall with non-opening opening windows.
- non-opening rooflight.
- fire sealed roof penetration such as a soil pipe, rainwater outlet or fall arrest post.
- roof step (above and below the step).
- All roof penetrations should be fire-stopped in accordance with the building fire strategy.

1 | COMPLIANCE UPDATE SUMMARY (CONTINUED)

GRO Best Practice Guidance (continued)

Where there is no vertical abutment at a perimeter i.e. at the roof edge of a flat or pitched roof a gravel margin is not required for fire performance purposes but may be required for wind scour resistance and/or maintenance. In these circumstances the manufacturers advice should be followed with regards to the installation of:

- a 300mm wide margin consisting of a minimum 75mm deep 20 to 40mm rounded gravel, or;
- a 300mm wide margin consisting of cast stone or mineral slabs of at least 40 mm thickness, or;
- a proprietary roof edge solution to resist wind uplift

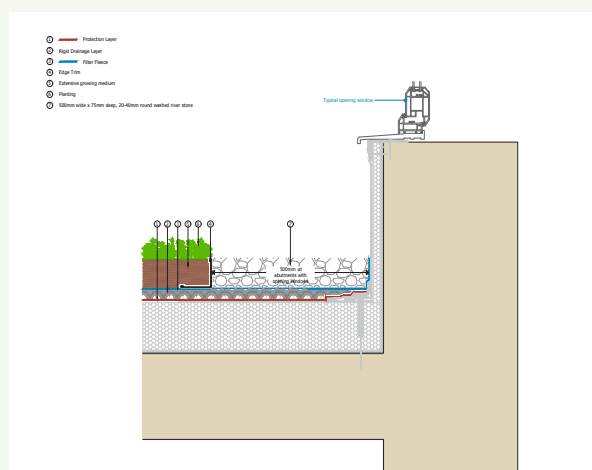
If the gravel margin is installed within an internal gutter the gutter infill is included in the above advice. Note that the drainage rates will be affected by the gravel infill and need to be recalculated.

If there is any doubt as to whether a 300mm wide margin is compliant with this guidance default to 500mm gravel width.

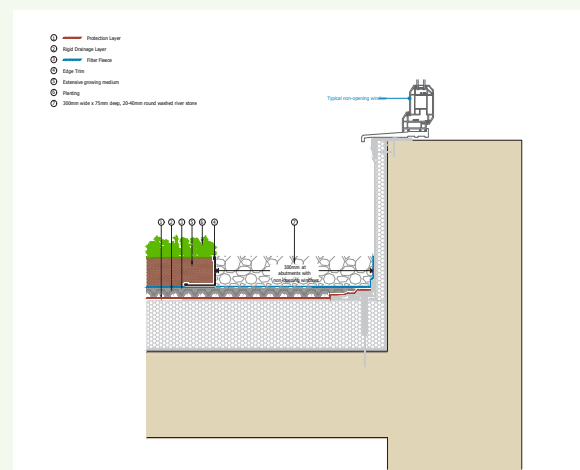
Where wind load calculations demonstrate a requirement for a ballast load greater than 80 kg/m² the gravel depth or paving thickness should be increased as required. On High Rise Buildings it may be necessary to use a larger diameter gravel ballast to resist wind scour and wind uplift.

Fire breaks are to be installed in 1m strips every 40m across extensive green roofs, such fire breaks consisting of cast stone or mineral slabs of at least 40 mm thickness, or non-vegetated strips of pebbles with a depth of 75mm and diameter between 20 and 40mm.

Note: Always consider the action of wind uplift on buildings, which may require larger diameter/higher ballast weight of gravel, heavier paving slabs of a wider margin to prevent wind scour of the green roof growing media.



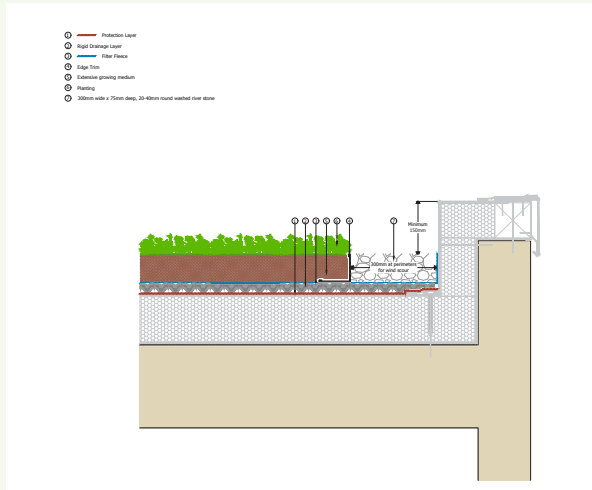
Opening window in abutment wall gravel margin



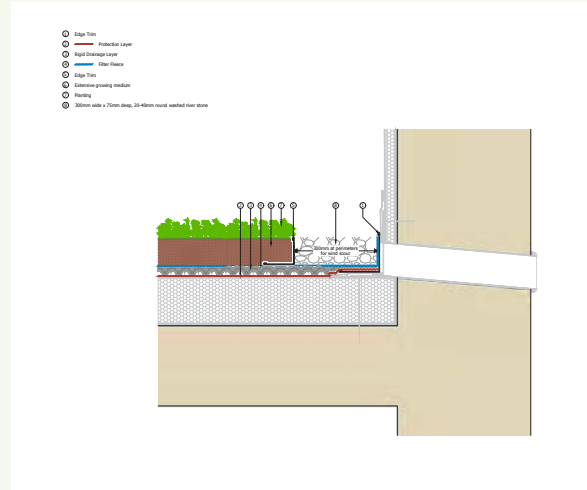
Non-opening window in abutment wall gravel margin

1 | COMPLIANCE UPDATE SUMMARY (CONTINUED)

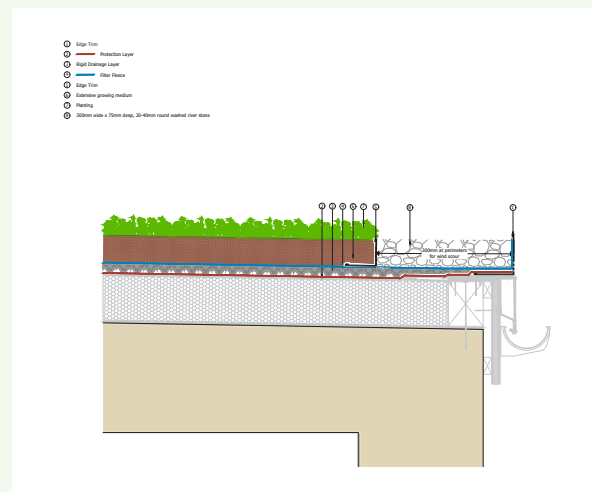
GRO Best Practice Guidance (continued)



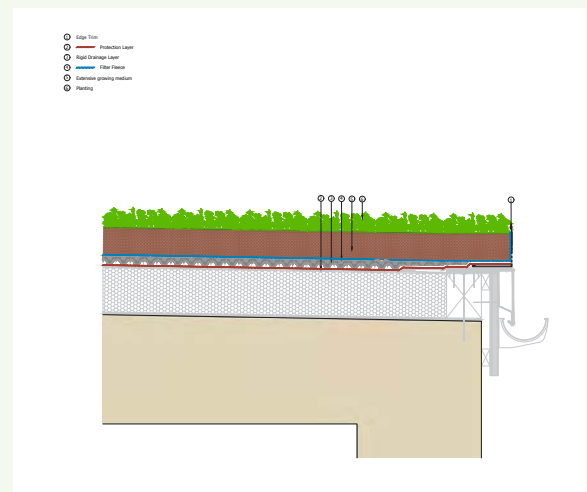
Parapet wall gravel margin



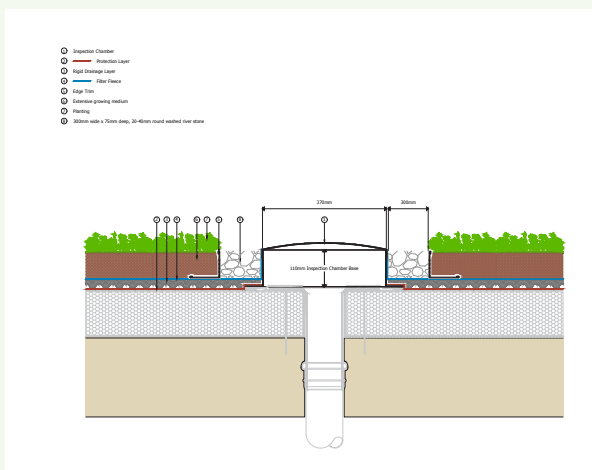
Parapet wall drainage gravel margin



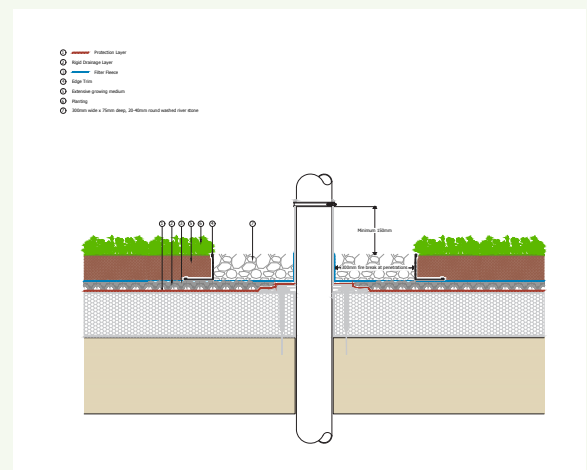
Perimeter drip edge with gravel margin



**Perimeter drip edge without gravel margin
(consider potential wind scour)**



Rainwater outlet gravel margin



SVP gravel margin

2 | ANALYSIS AND COMMENTARY

This **GRO Fire Performance Best Practice Guidance** updates the August 2013 document DCLG 'Fire Performance of Green Roofs and Walls' and should be read in conjunction with the current Building Regulations Approved Document B.

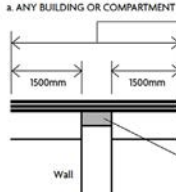
The table below reproduces the recommendations from the DCLG publication

and adds GRO clarification of the requirements. At the time of publication GRO are engaging with MHCLG to seek to develop further testing and guidance for green roof systems.

DCLG 'Fire Performance of Green Roofs and Walls' can be downloaded for free at <https://www.gov.uk/government/publications/fire-safety-approved-document-b>.

2.1 Regulation B3 Internal Fire Spread (structure)

Section 4.5.1 Compliance with requirement B3 (P = Paragraph)

P	DCLG Guidance Extract	GRO Guidance & GRO Membership Requirements
1	In order to comply with this requirement there should be adequate provisions to prevent a fire in the top floor of a building from breaking through the ceiling into the green roof, then spreading horizontally over a compartment wall and back down into an adjacent compartment.	The roof deck and any penetrations through the deck must achieve the requirements within building regulations. Achieving compliance is not the responsibility of the green roof system supplier or contractor.
2	Approved Document B recommends that where compartment walls meet the underside of a roof deck they should be fire-stopped and a zone of the roof 1500mm wide on either side of the wall should have a covering designation AA, AB or AC on a substrate or deck of a material of limited combustibility. If these requirements are complied with then it is considered unnecessary to provide a fire break above a compartment wall.	However there is a Special Application for purpose groups Dwellings, Residential (excluding Institutional) where any compartment wall meets the underside of the roof deck fire stopping must be provided at the junction of the compartment wall and roof deck. Additionally, above the compartment wall, a 1500mm wide band is required on either side of the compartment wall consisting of a roof deck of limited combustibility (class A2-s3, d2 to BS EN 13501-1 or better) with a roof covering designated BROOF(t4) to BS EN 13501-5. Achieving compliance is not the responsibility of the green roof system supplier or contractor. See paras S12 to S15  a. ANY BUILDING OR COMPARTMENT Roof covering over this distance to be designated BROOF(t4) rated on deck of material of class A2-s3, d2 or better. Roof covering and deck could be composite structure, e.g. profiled steel cladding. Double-skinned insulated roof sheeting should incorporate a band of material rated class A2-s3, d2 or better, a minimum of 300mm in width, centred over the wall. If roof support members pass through the wall, fire protection to these members for a distance of 1500mm on either side of the wall may be needed to delay distortion at the junction (see paragraph 5.9). Fire-stopping to be carried up to underside of roof covering, e.g. roof tiles.

2.1 Regulation B3 Internal fire spread (structure) (continued)

Section 4.5.1 Compliance with requirement B3

P	DCLG Guidance Extract	GRO Guidance & GRO Membership Requirements
3	If the structural base of the roof is designated AA or BROOF(t4) in accordance with Table A5 of Approved Document B, then the risk of a fire spreading up into the green roof and then down on the other side of a compartment wall is low.	Table A5 was removed from both volumes of Approved Document B in the 2019 update. The assumption would be that the requirements in paragraph 2 should therefore be met i.e., a structural roof deck of limited combustibility (class A2-s3, d2 to BS EN 13501-1 or better) with a roof covering designated B_{ROOF}(t4) to BS EN 13501-5. However there is a Special Application for purpose groups Dwellings, Residential (excluding Institutional), Office or Assembly and recreation where if the roof is not more than 15m high it allows materials rated class B3-s3, d2 or worse e.g. timber or plywood, as a roof deck to the roof covering. Achieving compliance is not the responsibility of the green roof system supplier or contractor.
4	If the structural base of the roof is not listed in Table A5 or is of a lower designation, (e.g. timber) then a non-combustible strip should be provided, as described above.	Compliance is based on following the guidance in 2 and 3 above.
5	Provided that the above recommendations are incorporated into the design of the roof structure then the presence of the green roof will not increase the risk of fire spread above a compartment wall.	A green roof system creates no additional fire risk if the above guidance is followed. Achieving compliance is not the responsibility of the green roof system supplier or contractor.
6	The existing design standards and guidance recommend the use of fire breaks around all openings and vertical elements on all types of green roofs. The guidance recommends that the fire breaks should consist of paving slabs or non-vegetated strips of pebbles with a depth of 75mm and diameter between 20 and 50mm for a width of 500mm*. Larger pebble sizes are preferred as this leads to less vegetative growth. *It may be possible to reduce the dimension of 500mm depending on the type of vegetation used and the climatic conditions however further investigation and evidence would be required to support any reduction from the recommended 500mm fire break.	This statement contradicts statement 7 below. GRO recommend that fire break/wind/vegetation breaks are installed around all openings (roof lights, pipes or vents) and at junctions with vertical elements (external and parapet walls) on all types of green roofs. Such fire breaks are to consist of cast stone or mineral slabs of at least 40 mm thickness or non-vegetated strips of pebbles with a minimum depth of 75mm and diameter between 20 and 40mm for a width as stated in the on Table 1 of this document.
7	Whilst fire spread to a green roof via penetrations such as roof lights, pipes or vents in the roof is not in itself a breach of requirements B1 to B5, it is recommended that fire breaks are provided around such penetrations so that basic maintenance procedures can be carried out.	This statement clarifies that fire breaks are NOT required to prevent the spread of fire to the green roof, they are recommended to aid basic maintenance. However, GRO support the contribution a gravel margin can make to minimise fire risk on a green roof and therefore recommend the inclusion of gravel margins as stated in Table 1 of this document.

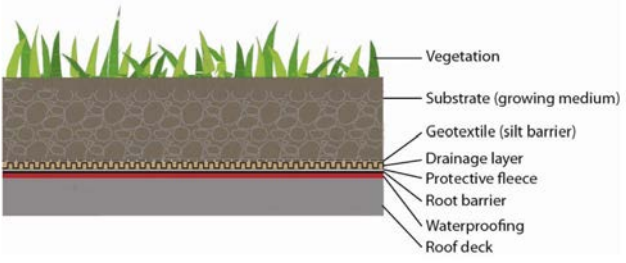
2.1 Regulation B3 Internal fire spread (structure) (continued)

Section 4.5.1 Compliance with requirement B3

P	DCLG Guidance Extract	GRO Guidance & GRO Membership Requirements
8	Testing carried out on the growing media using the cone calorimeter showed that for substrates using leaf mould as the organic material ignition occurred at concentrations greater than 50%. The sample containing 100% leaf mould when completely dried was very flammable, which could be seen to represent the fire spread and growth conditions in a forest fire. This however is considered an extreme situation as it is highly unlikely, given the climate in the United Kingdom, that a green roof which has not been maintained and irrigated for a significant amount of time would have dried out to such an extent. Furthermore it is also highly unlikely that the growing media would ever consist entirely of leaf mould.	The limited testing carried out for DCLG demonstrated that 100% organic content growing media presents a fire risk if allowed to dry out completely. However, the clarifications in Appendix A, section A.3 Large Scale Testing clarify that whilst the 100% dried leaf mould reached 218°C at the lowest point measured the layers below the have a pilot ignition point greater than 218°C and it is therefore unlikely that ignition of green roof growing media would occur. This guidance suggests that in addition to the guidance for Extensive Green Roofs in paragraph 8 Intensive Green Roof growing media with greater depths, higher percentage organic content and permanent irrigation pose no significant fire risk. A.3 Large scale testing Large scale tests were carried out on the growing media used for green roofs using DD CEN/TS 1187. These tests reviewed a similar range of factors and also assessed the depth of the organic layer. The intention of this test was to determine whether a fire impacting on the surface of the roof, for example due to burning brands from an adjacent building, could cause fire spread down through the layer into the building below. All tests were carried out at an angle of 20° to the horizontal. Tests were initially carried out on 80mm thick samples, which is the minimum thickness recommended. Further testing (at 120mm and 150mm depths) would only be carried out if the tests for the depth of 80mm samples indicated ignition. The purpose of the test was to determine whether the temperature rise at the base of the sample would be sufficient to cause ignition of any of the layers below. Four thermocouples were placed in each specimen in order to measure the temperature variation with depth. For all of the samples tested some smoking did occur and glowing was observed on the surface of the samples however after 60 minutes there was no fire penetration at the base of the sample. The temperatures measured at the lowest point in the substrate were generally less than 100°C except for the sample that consisted entirely of 100% completely dried out leaf mould, which gave a temperature of 218°C at the lowest point. It should be noted however that the materials used in green roof systems below the growing layer are typically polymers and the piloted ignition temperature of these polymers is greater than 218°C therefore it is unlikely that even in the most onerous case, where a substrate consisted of completely dried leaf mould, that ignition of the green roof substrate would occur. <i>BS 8616:2019: Specification for performance parameters and test methods for green roof growing medias provides guidance on how to test a green roof growing media to demonstrate the organic content, however, this is not a classification standard that a growing media can be certified against. Certification to FLL Guidelines is also an acceptable method to demonstrate the organic content of a growing medium.</i>
9	Nevertheless it is recommended that the recommendations of the existing guidance are followed and that fire breaks are provided in 1m strips every 40m across extensive green roofs.	GRO concurs with the advice to install gravel margins as fire breaks in 1m strips every 40m across extensive green roofs, such fire breaks to consist of cast stone or mineral slabs of at least 40 mm thickness with gaps of 4 – 8mm vertical gaps for drainage; or with non-vegetated strips of pebbles with a minimum depth of 75mm and diameter between 20 and 40mm.

2.2 Regulation B4 External Fire Spread compliance

Section 4.5.2 - Compliance with requirement B4

P	DCLG Guidance Extract	GRO Guidance & GRO Membership Requirements
1	In order to comply with this requirement there should be adequate provisions in place so that a fire in an adjacent building which causes burning brands and/or radiation onto an adjacent building with a green roof will not result in fire spread through the green roof and into the building.	The Building Regulations require that <i>The roof of the building shall adequately resist the spread of fire over the roof and from one building to another, having regard to the use and position of the building.</i> This Paragraph is restating that requirement as a precursor to clarifying green roof construction and how to achieve compliance with the requirement.
2	As illustrated in Figure 1 a green roof system consists of a number of layers above between the structural deck and the growth media.	As illustrated in <i>Figure 1</i> a green roof system consists of a number of layers between the structural deck and the growth media. The inclusion of 'above' is a typographical error. 
3	It is considered that if a fire in a green roof only involved the vegetation, for example a bush in an intensive roof or local charring of vegetation, then the risk was negligible as it would be no different from similar vegetation in a normal garden. However if the fire penetrated the growing layer and broke through the roof into the storey below then this would be a breach of Regulation B4.	Vegetation is not used as part of the fire testing samples as they are not considered a significant fire risk. GRO would highlight that the typical vegetation on a green roof is succulents and small plants not bushes unless the roof is of an intensive design. GRO would advise green roof owners to conduct regular maintenance to remove dead organic matter as you would in a garden. In addition to ensuring the health and aesthetic of the green roof this will prevent an increase in the organic percentage of the growing media over time.
4	The large scale testing carried out in this project determined whether there was any fire penetration through the growing media. The European standard DD CEN/TS 1187 was used and this is described in further detail in Appendix A. The test also measured the temperatures at different depths in the growing media to assess whether the temperatures would be high enough to cause ignition of the layers below.	This is the test method used to assess all roofing systems with test methods for both flat and pitched roofing. However the testing carried out for the DCLG guidance went further with the introduction of four thermocouples within the 80mm growing media depth to assess whether the temperature rise at the base of the growing media would be sufficient to cause ignition of any of the layers below (which it was not).

2.2 Regulation B4 External Fire Spread compliance (continued)

Section 4.5.2 - Compliance with requirement B4

P	DCLG Guidance Extract	GRO Guidance & GRO Membership Requirements
5	Large scale tests using the European standard DD CEN/TS 1187 were carried out on the growing media used in green roof systems with different concentrations of organic matter. Further details of the test and results are given in Appendix A.3. The test determined whether there was any fire penetration through the growing media and also measured the temperatures at different depths in the growing media to assess whether the temperatures would be high enough to cause ignition of the layers below.	Testing was carried out with an 80mm depth of growing media at 20° pitch. The testing established that with radiant heat and a naked flame applied some smoking did occur and glowing was observed on the surface of the samples. However, after 60 minutes there was no fire penetration at the base of the sample. The temperatures measured at the lowest point in the growing media were generally less than 100°C. Appendix A.4. states that <i>"In general the growing medium used in both green roofs and green walls cannot be ignited and flame spread does not occur. Furthermore, the temperatures obtained at the lowest point in the green roof growing media are not high enough to result in ignition of the materials used below the growing layer."</i>
6	The test did not consider flame spread as there was no vegetation and only the completely dried growing media was used. In the first instance the minimum substrate depth of 80mm was considered.	Vegetation requires moisture/water to stay alive. Given the purpose of a green roof is to maintain plant life GRO members design green roofs subject to maintenance to sustain plant life which will reduce fire risk.
7	The tests on the growing media showed that for the most onerous (albeit unlikely) case of a growing medium consisting of 100% leaf mould the temperature at the lowest point in the substrate was not sufficient to ignite the materials used in the layers between the growing media and the roof deck. Consequently a fire on the green roof would not penetrate the layers beneath the growing media and it is highly unlikely that it would penetrate the structural deck below.	Following the DCLG guidance in Paragraph 8 below and Section 4.5.1 above will ensure compliance with the guidance within Approved Documents B and Scottish Technical Handbooks.
8	In order for green roofs to comply with requirement B4 it is recommended that for all types of green roof the depth of the growing layer should be a minimum of 80mm and the organic content should not exceed 50%.	This statement creates a roof covering which can be considered to fulfil all of the requirements for the performance characteristic 'external fire performance' without the need for testing, i.e. it achieves B_{ROOF}(t4)) for any green roof build-ups that utilise a growing layer (growing medium/substrate) that is a minimum 80mm deep (settled depth) with less than 50% (by volume) of organic matter. Green roof build-ups with less than 80mm deep growing media and/or with more than 50% organic matter can demonstrate compliance through testing to DD CEN/TS 1187:2012 Test Methods for External Fire Exposure to Roofs (Test 4) and classification to BS EN 13501-5:2016 (Test 4).

2.2 Regulation B4 External Fire Spread compliance (continued)

Section 4.5.2 - Compliance with requirement B4

P	DCLG Guidance Extract	GRO Guidance & GRO Membership Requirements
9	In accordance with Table 16 of Approved Document B roof coverings with the designation AA, AB or AC are permitted on buildings where the minimum distance from any point on the relevant boundary is less than 6m.	A green roof build-up demonstrating compliance through Paragraph 8 above does not impact boundary conditions.
10	Provided that the structural roof deck complies with requirement B3, i.e. the roof covering has the designation AA, AB or AC (National class) or B _{roof} (t4) (European class) then the testing has shown that the presence of a green roof above the roof covering should not affect the designation and the minimum distances from the relevant boundary given in Table 16 of Approved Document B are still applicable.	This text is clarifying that the ‘<i>Compliant Without Further Testing</i>’ rule established in paragraph 8 above demonstrate compliance with the boundary rules in Table 12.1 of ADB V1 and Table 14.1 of ADB V2 (with 2022 amendments). This statement does not create a rule that installing a B_{roof}(t4) classified system above another B_{roof}(t4) classified system provides a B_{roof}(t4) classification.

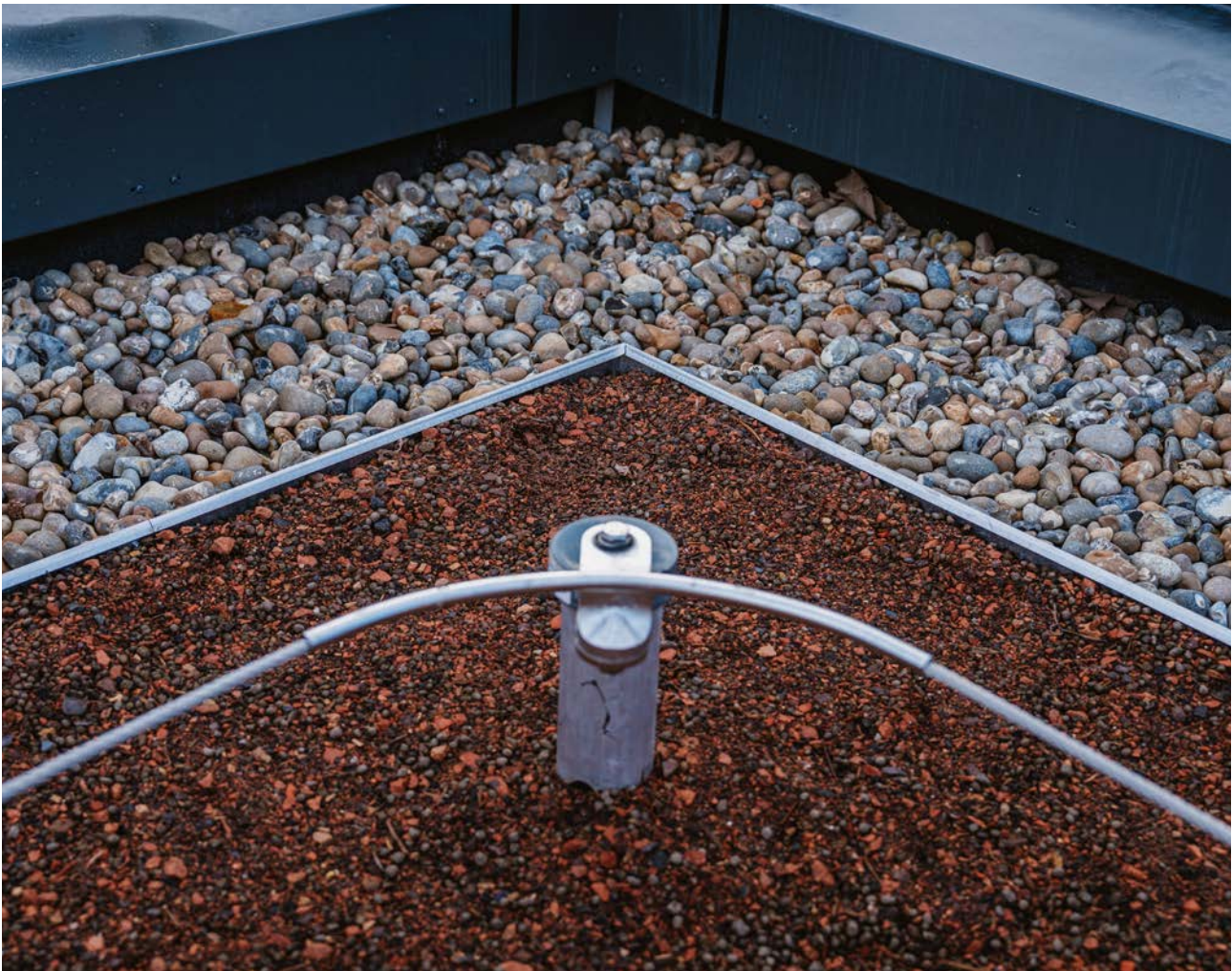


Image: Eco Green Roofs

3 | PURPOSE GROUPS

Building uses are classified within different purpose groups, which represent different levels of hazard, and are shown in Table 0.1 in Approved Documents B and are repeated below. The below should be cross referenced with the text within the Approved Document. A purpose group can apply to a whole building or a compartment within the building, and should relate to the main use of the building or compartment.

Where a building or compartment has more than one use, it is appropriate to assign each different use to its own purpose group in the following situations.

- a. If the ancillary use is a flat.
- b. If both of the following apply.
 - i. The building or compartment has an area of more than 280m².
 - ii. The ancillary use relates to an area that is more than one-fifth of the total floor area of the building or compartment.
- c. In 'shop and commercial' (purpose group 4) buildings or compartments, if the ancillary use is storage and both of the following apply.
 - i. The building or compartment has an area of more than 280m².
 - ii. The storage area comprises more than one-third of the total floor area of the building or compartment.

Where there are multiple main uses that are not ancillary to one another (for example, shops with independent offices above), each use should be assigned to a purpose group

in its own right. Where there is doubt as to which purpose group is appropriate, the more onerous guidance should be applied. In sheltered housing, the guidance in Approved Document B Volume 2 should be consulted for the design of communal facilities, such as a common lounge.

In Scotland the Technical Handbook provides some exemptions from these purpose groups and should be consulted for clarification.

GRO believe that the fire performance requirements for all purpose groups (1 to 7 inclusive) are met by following the guidance within this document.

Approved Document B Volume 1 Dwellings Purpose groups

- 1(a) Flats
- 1(b) Dwellinghouse
- 1(c) Dwellinghouse
- 2(a) Residential (institutional)
- 2(b) Residential (other)

Approved Document B Volume 2, Buildings other than dwellings Purpose groups

- 3 Office
- 4 Shop and commercial
- 5 Assembly and recreation
- 6 Industrial
- 7(a) Storage and other non-residential
- 7(b) Car parks



Image: ZinCo

Other GRO Publications

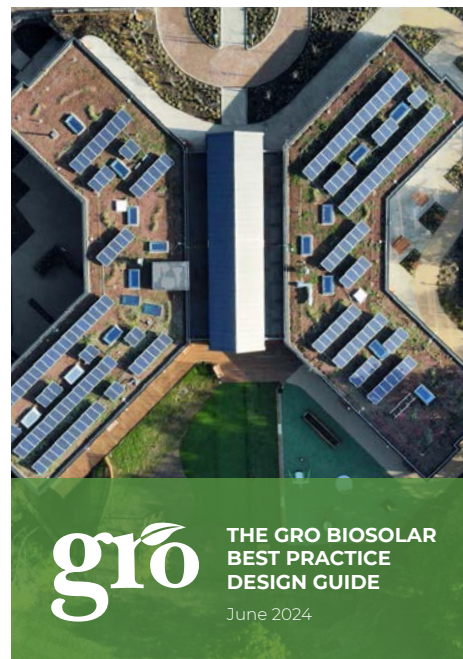
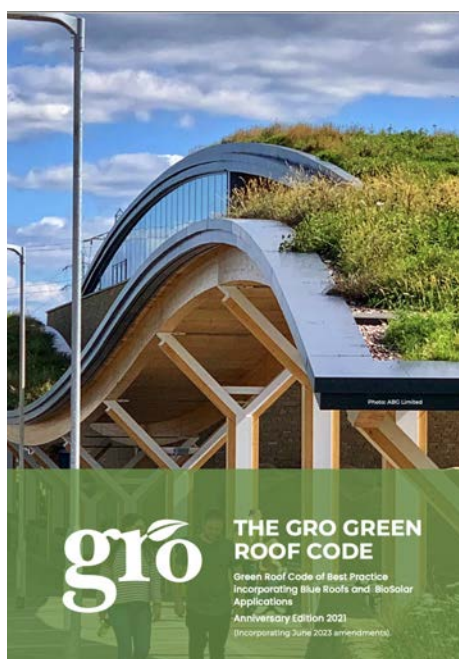




Image: Axter



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THE GRO FIRE PERFORMANCE OF GREEN ROOFS BEST PRACTICE GUIDE JUNE 2025

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