Smartscape

Living Walls

Fire Performance

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Scotscape's Fytotextile™ Living Wall system

Delivers performance rating Euroclass B-s2d0

Smartscape

Urban Greening Solutions

Scotscape Smartscape Limited
Ditton Nurseries
Summerfield Lane
Surbiton, KT6 5DZ

enquiries@scotscape.co.uk
+44 (0)20 8254 5000

scotscape.co.uk

Part of theScotscape group:

Scotscape

01 Living Wall fire performance guidelines

A review of the current guideline documents available has been generated by the Department for Communities and Local Government Paper (copyright 2013) to ensure safe building practices in the retro-greening market regarding the fire rating compliance of green roofs and living walls. These guidelines outline the fire retardancy requirements for the installation of Living Walls on buildings.

The full report can be read by clicking the links below:

20th August 2013
https://www.gov.uk/government/publications/fire-performance-of-green-roofs-and-walls

Updated 19th September 2019
https://www.gov.uk/government/publications/fire-safety-approved-document-b

02 Scotscape Living Wall Fire Testing

In March 2017, the Scotscape Fytotextile™ Living Wall system was Tested with the method UNE-EN ISO 11925-2:2011 and UNE-EN 13823:2012+A1:2016, and classified compliant with the procedures provided in Standard UNE-EN 13501- :2007+A1:2010: "Fire classification of construction products and building elements. Part 1: Classification using data from reaction to fire tests".

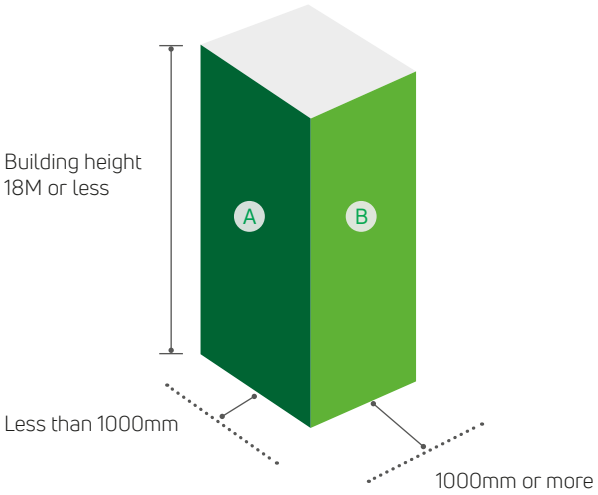
CLASSIFICATIONS

Euroclass		Classification for smoke or droplets	
A1	Non-combustible	S1	No smoke
A2	Limited combistibility	**S2**	**Limited smoke production and smoke increase**
B	**Very difficult to ignite**	S3	No limitation on smoke production required
C	Moderately flammable		
D	Flammable	**d0**	**No droplets**
E	Highly flammable	d1	No droplets for longer than certain time given
F	Extremely flammable	d2	No limitation on droplets required

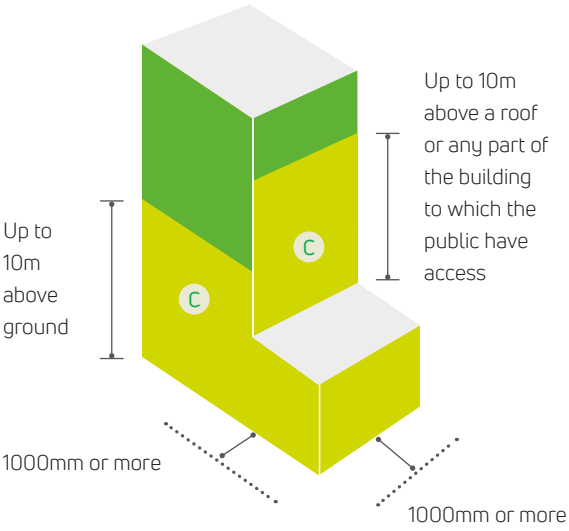
This test has delivered a performance rating to Euroclass B-s2, d0

03 Provisions for external walls

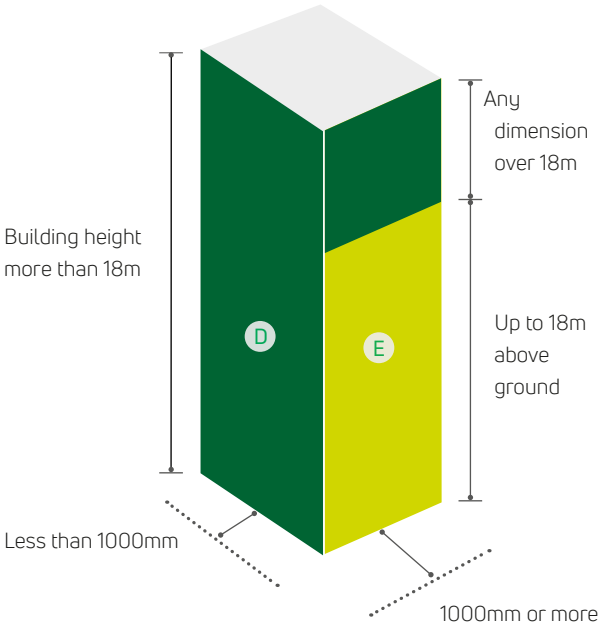
Any building



Assembly as recreational building of more than one storey



Any building



Relevant boundary

No provision in respect of the boundaries indicated

Class B-s3-d2 or better (European class)
*Where regulation 7(2) applies, it prevails over the provisions in this diagram. See item D on page 4

Index (I) not more than 20 (national class) or class C-s3-d2 or better (European class).(The index I relates to test specified in BS 476-6)

The above diagrams have been extracted from guidelines generated by the Department for Communities and Local government documentation (copyright 2013) regarding the fire rating compliance of green roofs and living walls. Figure 2. Approved Document B Diagram 40 - Provisions for external surfaces or walls.

Scotscape's Fytotextile™ Living Wall system

Wall A

For a building 18m or less in height above ground level and a boundary less than 1000mm, Living Walls used in the external wall construction should have a minimum fire rating of Euroclass B-s3,d2. **Scotscape Living Wall system exceeds this requirement as it has been accredited a Euroclass B-s2,d0**

Wall B

For a building 18m or less in height above ground level and a boundary of 1000mm or more, Living Walls used in the external wall construction are not required to have a fire rating

Wall C

In assembly and recreation buildings with more than one storey up to a height of 10m with a boundary of 1000mm or more, the Living Walls should have a minimum fire rating of Euroclass C-s3 d2. **Scotscape Living Wall system exceeds this requirement as it has been accredited a Euroclass B-s2,d0**

Wall D

For a building with storeys more than 18m above ground level and a boundary of less than 1000 mm, Living Walls used in any external wall construction should have an accreditation of Euroclass B-s3,d2 or better*. **Scotscape Living Wall system exceeds this requirement as it has been accredited a Euroclass B-s2,d0**

Wall E

For a building with storeys 18m or more above ground level and a boundary of 1000mm or more, Living Walls used in the external wall construction from 18m in height and above should be of limited combustibility Euroclass C-s3 d2 or better and over 18m should have an accreditation of Euroclass B-s3,d2 **Scotscape Living Wall system exceeds both these requirements as it has been accredited Euroclass B-s2,d0**

If you require fire certification for your Living Wall, it is important to notify us when quoting as certification cannot be provided retrospectively

***Except relevant buildings**. *According to paragraph 7(4), a "relevant building" means a building with a storey (not including roof-top plant areas or any storey consisting exclusively of plant rooms) at least 18 metres above ground level and which- (i) contains one or more dwellings; (ii) contains an institution; or (iii) contains a room for residential purposes (excluding any room in a hostel, hotel or boarding house).*

In these cases the system should reach an European Classification A2-S1, d0. According to the Approved document B, Fire Safety, Volume 1 and 2, section B4, regulation 7(2), building work shall be carried out so that materials which become part of an external wall, or specified attachment of a relevant building are of European Classification A2-s1, d0 or A1, classified in accordance with BS EN 13501-1:2007+A1:2009 entitled "Fire classification of construction products and building elements."

For more information, please, link to the official website

https://www.gov.uk/government/publications/fire-safety-approved-document-b(Correct as of: 01/10/19)

Table B1 Reaction to fire classifications: transposition to national class

BS EN 13501-1 classification	Transposition
A1	Material that, when tested to **BS 476-11**, does not either: a. flame b. cause a rise in temperature on either the thermocouple at the centre of the specimen or in the furnaces
A2-s1, d0	None
A2-s3, d2	Material that meets either of the following. a. Any material of density 300kg/m³ or more, which, when tested to **BS 476-11**, complies with both of the following: i. does not flame ii. causes a rise in temperature on the furnace thermocouple not exceeding 20°C b. Any material of density less than 300kg/m³, which, when tested to **BS 476-11**, complies with both of the following: i. does not flame for more than 10 seconds ii. causes a rise in temperature on the thermocouple at the centre of the specimen or in the furnace that is a maximum of 35°C and on the furnace thermocouple that is a maximum of 25°C
B-s3, d2	Any material that meets both of the following criteria. a. Class 1 in accordance with **BS 476-7**. b. Has a fire propagation index (I) of a maximum of 12 and sub-index (i1) of a maximum of 6, determined by using the method given in **BS 476-6**. Index of performance (I) relates to the overall test performance, whereas sub-index (i1) is derived from the first three minutes of the test
C-s3, d2	Class 1 in accordance with **BS 476-7**
D-s3, d2	Class 3 in accordance with **BS 476-7**