

## Fatra UK Ltd

Unit 12  
The Timber Yard  
East Moors Road  
Ocean Park  
Cardiff CF24 5EE

Tel: 029 2048 7954 Fax: 029 2048 9226

e-mail: sales@fatra.co.uk

website: www.fatra.co.uk



## Agrément Certificate

02/3921

Product Sheet 1

### FATRA ROOF COVERING SYSTEMS

### FATRAFOL FF810 AND FATRAFOL FF810/V ROOF COVERING SYSTEMS

This Agrément Certificate Product Sheet<sup>(1)</sup> relates to Fatrafol FF810 and Fatrafol FF810/V Roof Covering Systems, a range of reinforced PVC membranes for use in mechanically fastened, loose-laid and ballasted, protected, inverted, roof garden/green roof and blue roof specifications on pitched, flat and zero fall roofs.

(1) Hereinafter referred to as 'Certificate'.

#### CERTIFICATION INCLUDES:

- factors relating to compliance with Building Regulations where applicable
- factors relating to additional non-regulatory information where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.



#### KEY FACTORS ASSESSED

**Weather-tightness** — the systems will resist the passage of moisture to the interior of a building (see section 6).

**Properties in relation to fire** — the systems, when used in suitable specifications, can enable a roof to be unrestricted under the national Building Regulations (see section 7).

**Resistance to wind uplift** — the systems will resist the effects of any likely wind suction acting on the roof (see section 8).

**Resistance to mechanical damage** — the systems will accept, without damage, the limited foot traffic and loads associated with installation and maintenance (see section 9).

**Resistance to root penetration** — the systems can be designed to adequately resist the penetration of roots (see section 10).

**Durability** — under normal service conditions, the systems will have a service life in excess of 30 years (see section 12).



The BBA has awarded this Certificate to the company named above for the systems described herein. These systems have been assessed by the BBA as being fit for their intended use provided they are installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of Fifth issue: 15 June 2020

Originally certificated on 28 May 2002

Hardy Giesler  
Chief Executive Officer

*The BBA is a UKAS accredited certification body – Number 113.*

*The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at www.bbacerts.co.uk*

*Readers MUST check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA directly.*

*Any photographs are for illustrative purposes only, do not constitute advice and should not be relied upon.*

#### British Board of Agrément

Bucknalls Lane  
Watford  
Herts WD25 9BA

©2020

tel: 01923 665300  
clientservices@bbacerts.co.uk  
www.bbacerts.co.uk

## Regulations

In the opinion of the BBA, Fatrafol FF810 and Fatrafol FF810/V Roof Covering Systems, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements of the following Building Regulations (the presence of a UK map indicates that the subject is related to the Building Regulations in the region or regions of the UK depicted):



### The Building Regulations 2010 (England and Wales) (as amended)

<b>Requirement:</b>	<b>B4(2)</b>	<b>External fire spread</b>
Comment:		The systems, when applied to suitable substructure, can enable a roof to be unrestricted under this Requirement. See sections 7.1 to 7.3 of this Certificate.
<b>Requirement:</b>	<b>C2(b)</b>	<b>Resistance to moisture</b>
Comment:		The systems, including joints, will enable a roof to satisfy this Requirement. See section 6.1 of this Certificate.
<b>Regulation:</b>	<b>7(1)</b>	<b>Materials and workmanship</b>
Comment:		The systems are acceptable. See section 12 and the <i>Installation</i> part of this Certificate.



### The Building (Scotland) Regulations 2004 (as amended)

<b>Regulation:</b>	<b>8(1)(2)</b>	<b>Durability, workmanship and fitness of materials</b>
Comment:		The use of the systems satisfies the requirements of this Regulation. See sections 11.1 and 12 and the <i>Installation</i> part of this Certificate.
<b>Regulation:</b>	<b>9</b>	<b>Building standards applicable to construction</b>
Standard:	2.8	Spread from neighbouring buildings
Comment:		The systems, when used with a suitable substructure, can be regarded as having low vulnerability under clause 2.8.1 <sup>(1)(2)</sup> of this Standard. See sections 7.1 to 7.3 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The systems, including joints, will enable a roof to satisfy the requirements of this Standard with references to clauses 3.10.1 <sup>(1)(2)</sup> and 3.10.7 <sup>(1)(2)</sup> . See section 6.1 of this Certificate.
Standard:	7.1(a)	Statement of sustainability
Comment:		The systems can contribute to meeting the relevant requirements of Regulation 9, Standards 1 to 6 and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard.
<b>Regulation:</b>	<b>12</b>	<b>Building standards applicable to conversions</b>
Comment:		Comments in relation to the systems under Regulation 9, Standards 1 to 6 also apply to this Regulation, with reference to clause 0.12.1 <sup>(1)(2)</sup> and Schedule 6 <sup>(1)(2)</sup> .

(1) Technical Handbook (Domestic).

(2) Technical Handbook (Non-Domestic).



### The Building Regulations (Northern Ireland) 2012 (as amended)

<b>Regulation:</b>	<b>23(a)(i)</b>	<b>Fitness of materials and workmanship</b>
Comment:	<b>(iii)(b)(i)</b>	The systems are acceptable. See section 12 and the <i>Installation</i> part of this Certificate.
<b>Regulation:</b>	<b>28(b)</b>	<b>Resistance to moisture and weather</b>
Comment:		The systems, including joints, can enable a roof to satisfy the requirements of this Regulation. See section 6.1 of this Certificate.

<b>Regulation:</b>	<b>36(b)</b>	<b>External fire spread</b>
<b>Comment:</b>	The systems, when used on suitable substructures, can enable a roof to be unrestricted under this Requirement. See sections 7.1 to 7.3 of this Certificate.	

## Construction (Design and Management) Regulations 2015 Construction (Design and Management) Regulations (Northern Ireland) 2016

Information in this Certificate may assist the client, designer (including Principal Designer) and contractor (including Principal Contractor) to address their obligations under these Regulations.

See sections: 1 *Description (1.1)* and 3 *Delivery and site handling (3.3)* of this Certificate.

### Additional Information

#### NHBC Standards 2020

In the opinion of the BBA, Fatrafol FF810 and Fatrafol FF810/V Roof Covering Systems, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Chapter 7.1 *Flat roofs and balconies*.

#### CE marking

The Certificate holder has taken the responsibility of CE marking the membranes, in accordance with harmonised European Standard BS EN 13956 : 2012.

### Technical Specification

#### 1 Description

1.1 Fatrafol FF810 and Fatrafol FF810/V Roof Covering Systems comprise polyester-mesh reinforced polyvinyl chloride (PVC) single-ply roofing membranes with solvent or hot-air welded lap joints. The membranes have the nominal characteristics given in Table 1.

*Table 1 Nominal characteristics*

Characteristic (unit)	Fatrafol FF810		Fatrafol FF810/V	
Thickness (mm)	1.2	1.5	1.2	1.5
Roll length (m)	25	20	25	20
Roll width (m)	1	1.30	2	2.05
Mass per unit area (kg·m <sup>-2</sup> )	1.56	1.90	1.56	2
Tensile strength (N per 50 mm)	≥1000/1000	≥1000/1000	≥1000/1000	≥1000/1000
Elongation at break (%)	≥15/20	≥15/20	≥15/20	≥15/20
Tear resistance (N)	≥200/220	≥200/220	≥200/220	≥200/220
Impact resistance (mm)				
Substrate A	1000	1250	1250	1250
Substrate B	2000	2000	2000	2000
Static load (kg)				
Substrate B	20	20	20	20
Low temperature foldability (°C)	≤ -25	≤ -25	≤ -25	≤ -25
Colours	Dark grey , light grey and anthracite			

1.2 Ancillary items for use with the membranes and included in this assessment are:

- Fatra FF854 PVC liquid sealant — used to seal site-cut edges of FF810 membrane
- Fatra FF855 Mechanically fixed membrane adhesive — used to bond the membrane to the PVC fixing discs
- Fatra FF852 PVC Fixing Discs — for use for mechanically fastened systems in conjunction with the appropriate washers and fixings
- Fatra FF800 and FF801 — a 300 g·m<sup>2</sup> non-woven geotextile fleece used as a separation or protection layer.

1.3 Other items or components which may be used with the systems, but which are outside the scope of this Certificate, are:

- Fatra composite gutter system — Membrane coated Gutter System - Factory laminated steel profiles finished with Fatra 333L textured, embossed membrane to give a continuous roof line and slip-resistant finish
- Fatra FF818 Polyethylene Vapour Control Layer — a 600 gauge polyethylene membrane
- Fatra FP range — a range of membrane coated galvanized steel profiles for parapets, edge details and upstands
- Fatra FF865 Slab Support Feet — for use with paving slabs in loose-laid applications
- Fatra FF850 and FF851 Preformed PVC Corners — for use as internal and external corners
- Fatra FF812 — a slip-resistant, textured walkway membrane in 650 mm widths
- Fatra FO Rainwater Outlets — a range of vertical and horizontal outlets compatible with Fatra FF810 and Fatra FF810/V membranes
- FF914 Stafol Protection Membrane — a 0.5 mm thick, unreinforced PVC membrane designed for use as protective/sacrificial layer in Fatra ballasted or sedum roof applications
- Fatra FF814 PVC Standing Seam Profile — triangular PVC profile designed to be applied to Fatra membrane covered roofs to reproduce the appearance of a traditional metal roof.

## 2 Manufacture

2.1 Fatrafol FF810 membrane comprises upper, middle and lower layers manufactured by the calendaring and lamination process. The layers are thermoplastically fused together, sandwiching the polyester mesh (of weight 80 to 110 g·m<sup>-2</sup>) between them. Fatrafol FF810/V membrane is manufactured by a multi-extrusion process.

2.2 As part of the assessment and ongoing surveillance of product quality, the BBA has:

- agreed with the manufacturer the quality control procedures and product testing to be undertaken
- assessed and agreed the quality control operated over batches of incoming materials
- monitored the production process and verified that it is in accordance with the documented process
- evaluated the process for management of nonconformities
- checked that equipment has been properly tested and calibrated
- undertaken to carry out the above measures on a regular basis through a surveillance process, to verify that the specifications and quality control operated by the manufacturer are being maintained.

2.3 The management system of Fatra a.s. has been assessed and registered as meeting the requirements of ČSN EN ISO 9001 : 2016 and ČSN EN ISO 14001 : 2016 by Bureau Veritas (Certificates CZ 006993-1 and CZ 006994-1).

## 3 Delivery and site handling

3.1 The membranes are delivered to site in rolls wrapped in paper, bearing the Certificate holder's name, batch number, product name, surface colour and the BBA logo incorporating the number of this Certificate.

3.2 Rolls should be stored horizontally on a clean, dry, level surface and under cover until required.

3.3 The Certificate holder has taken the responsibility of classifying and labelling the systems components under the *CLP Regulation (EC) No 1272/2008 on the classification, labelling and packaging of substances and mixtures*. Users must refer to the relevant Safety Data Sheet(s).

## Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Fatrafol FF810 and Fatrafol FF810/V Roof Covering Systems.

### Design Considerations

#### 4 General

4.1 Fatrafol FF810 and Fatrafol FF810/V Roof Covering Systems are satisfactory for use as mechanically fixed roof waterproofing layers in the following specifications:

- exposed pitched or flat roofs with limited access
- zero falls roofs
- blue roofs
- protected roofs
- inverted roofs
- green roofs on pitched or flat roofs with limited access
- roof gardens on flat roofs.

4.2 The membranes may also be used in loose-laid roof waterproofing in the following specifications:

- ballasted roofs
- inverted roofs
- green roofs on pitched or flat roofs with limited access
- roof gardens on flat roofs.

4.3 Decks to which the systems are to be applied must comply with the relevant requirements of BS 6229 : 2018, BS 8217 : 2005 and, where appropriate, *NHBC Standards* 2019, Chapter 7.1.

4.4 The following terms are defined for the purpose of this Certificate as:

- roof garden (intensive) — a roof with a substantial layer of growing medium with planting that can include shrubs and trees, generally accessible to pedestrians
- green roof (extensive) — a roof with a shallow layer of growing medium planted with low-maintenance plants such as mosses, sedums, grasses and some wild flower species
- blue roof — a flat roof designed to allow controlled attenuation of rain fall during heavy and storm events, as part of sustainable urban drainage systems (SUDS). Guidance for the design and construction of blue roofs is available in the *NFRC Technical Guidance Note for the construction and design of Blue Roofs*.

4.5 Limited access roofs are defined for the purpose of this Certificate as those subjected only to pedestrian traffic for maintenance of the roof covering, cleaning of gutters etc. Where traffic in excess of this is envisaged, such as pedestrian access roofs, additional protection to the membranes must be provided (see section 9 of this Certificate and the relevant clauses of the Certificates holder's installation instructions).

4.6 Flat roofs are defined for the purpose of this Certificate as those having a minimum finished fall of 1:80<sup>(1)</sup>. For design purposes, twice the minimum finished fall should be assumed unless a detailed analysis of the roof is available, including overall and local deflection, direction of falls, etc.

4.7 Pitched roofs are defined for the purpose of this Certificate as those having a fall in excess of 1:6.

4.8 Zero fall roofs are defined for the purpose of this Certificate as those having a finished fall which can vary between 0 and 1:80<sup>(1)</sup>. Reference should also be made to appropriate clauses in the Liquid Roofing and Waterproofing Association (LRWA) Note 7 – *Specifier Guidance for Flat Roof Falls*.

(1) *NHBC Standards* 2020 require a minimum fall of 1:60 for green roofs and roof gardens.

4.9 Structural decks for loose-laid and ballasted, inverted roofs and green roofs must be suitable to transmit the dead and imposed loads experienced in service. Imposed loads, dead loading and wind load specifications should be calculated by a suitably experienced and competent individual in accordance with BS EN 1991-1-1 : 2002, BS EN 1991-1-3 : 2003 and BS EN 1991-1-4 : 2005, and their UK National Annexes.

4.10 Recommendations for the design of green roof specifications are available within the latest edition of The GRO Green Roof Code — *Green Roof Code of Best Practice for the UK*.

4.11 The drainage systems for inverted roofs, zero fall roofs, green roofs or roof gardens must be correctly designed, and the following points should be addressed:

- provision made for access for maintenance purposes
- for zero fall roofs, it is particularly important to identify the correct drainage points, to ensure that drainage is sufficient and effective
- dead loads for green roofs and roof gardens can increase if the drains become partially or completely blocked causing waterlogging of the drainage layer
- additional guidance for inverted roof specifications is given in BBA Information Bulletin No 4 *Inverted roofs — Drainage and U value corrections*.

4.12 Contact with bituminous, coal tar and oil-based products must be avoided as the membranes are not compatible with lower grades of bitumen. If contact with such products is likely, a separating layer must be interposed before installing the waterproofing sheet. Where doubt arises, the advice of Certificate holder must be sought.

4.13 Insulation materials used in conjunction with the products must be either:

- as described in BS 8217 : 2005, or
- the subject of a current BBA Certificate and used in accordance with, and within the limitations of, that Certificate.

## 5 Practicability of installation

Installation of the systems must only be carried out by contractors who have been trained and approved by the Certificate holder.

## 6 Weathertightness



6.1 The systems, including joints, when completely sealed and consolidated, will adequately resist the passage of moisture to the interior of a building and enable a roof to comply with the requirements of the national Building Regulations.

6.2 The membranes are impervious to water and will provide a weathertight roof capable of accepting minor structural movement.

## 7 Properties in relation to fire



7.1 A system comprising an 18 mm thick plywood deck, a layer of a polyethylene vapour control layer, 150 mm thick PIR insulation board, and 1.2 mm thickness Fatrafol FF810 membrane mechanically fastened with FF852 PVC fixing discs and FF855 adhesive<sup>(1)</sup> is unrestricted under the national Building Regulations and can be a classified B<sub>ROOF</sub>(t4) in accordance with EN 13501-5 : 2016.

(1) Report reference P114702-1000 Issue 1, issued by BRE Global Ltd.. Report available from the Certificate holder.

7.2 In the opinion of the BBA, a roof incorporating the systems will be unrestricted under the national Building Regulations in the following circumstances:

- protected or inverted roof specifications, including an inorganic covering listed in the Annex of Commission Decision 2000/553/EC, can be considered to be unrestricted under the national Requirements
- a roof garden covered with a drainage layer of gravel 100 mm thick and a soil layer 300 mm thick
- irrigated green roofs and roof gardens.

7.3 The designation of other specifications (eg on combustible substrates) should be confirmed by reference to the requirements of the documents supporting the national Building Regulations.

7.4 If allowed to dry, the plants used may allow the spread of flame across the roof. This must be taken into consideration when selecting suitable plants. Appropriate planting, irrigation and/or protection must be applied to ensure the overall fire-rating of the roof is not compromised. Further guidance is available in the Department for Communities and Local Government publication, *Fire Performance of Green Roofs and Walls* – August 2013.

## 8 Resistance to wind uplift

8.1 The resistance to wind uplift of the systems is provided by mechanical fasteners secured to the deck and passing through the membranes. The number of fixings will depend on a number of factors, including:

- wind uplift forces to be resisted
- pull-out strength of fasteners
- elastic limit of the membrane
- appropriate safety factors.

8.2 The wind uplift forces are calculated by a suitably experienced and competent individual in accordance with BS EN 1991-1-4 : 2005 and its UK National Annex. On this basis, the number of fixings required should be established using a maximum permissible load of 0.45 kN per fixing.

8.3 The ballast requirements for loose-laid systems should be calculated by a suitably experienced and competent individual in accordance with the relevant parts of BS EN 1991-1-4 : 2005 and its UK National Annex. The systems should always be ballasted with a minimum depth of 50 mm of aggregate. In areas of high-wind exposure, the Certificate holder's advice should be sought. Alternatively, concrete slabs on suitable supports can be used.

8.4 The soil used in roof gardens and ballast on inverted/protected roofs must not be of a type that will be removed or become delocalised owing to wind scour experienced on the roof.

8.5 It should be recognised that the type of plants used in roof gardens could significantly affect the expected wind loads experienced in service.

## 9 Resistance to mechanical damage

9.1 The systems can accept the limited foot traffic and light concentrated loads associated with installation and maintenance. Reasonable care should be taken to avoid puncture by sharp objects or concentrated loads.

9.2 Where regular traffic is envisaged, such as for maintenance of lift equipment, a walkway should be provided using concrete slabs supported on bearing pads or a protective layer, such as Fatra FF812 membrane, with a textured finish. The advice of the Certificate holder should be sought on the most appropriate method to be used with the amount of traffic involved.

## 10 Resistance to root penetration

The systems will resist penetration by plant roots and can be used as a waterproofing system in green roof and roof garden specifications.

## 11 Maintenance



11.1 To ensure continued satisfactory performance, the systems must be the subject of six monthly inspections and maintenance in accordance with BS 6229 : 2018, Chapter 7.

11.2 Where damage has occurred it should be repaired in accordance with section 18 and the Certificate holder's instructions.

11.3 For green roofs and roof gardens, guidance is available within the latest edition of The GRO Green Roof Code – *Green Roof Code of Best Practice for the UK*.

## 12 Durability



Under normal service conditions, the systems will provide a durable waterproof covering with a service life in excess of 30 years.

## 13 Reuse and recyclability

The systems comprise PVC which can be recycled.

## Installation

### 14 General

14.1 Installation of Fatrafol FF810 and Fatrafol FF810/V Roof Covering Systems must be carried out in accordance with the relevant clauses of the Certificate holder's instructions, BS 8000-0 : 2014, BS 8000-4 : 1989 and this Certificate.

14.2 In all cases, a vapour control layer must be used directly over the deck.

14.3 The membranes may be applied over foil-faced insulation materials and fixed to the sub-structure in such a way as not to impair the performance of the waterproofing. Polystyrene-based insulation products may also be used in conjunction with a suitable isolation layer to separate the insulation from the roof covering, to reduce the risk of plasticiser migration.

14.4 The membranes must not be mechanically fixed over foam-glass insulation. Restrictions do not apply when mechanically fixing over mineral fibre board insulation.

14.5 Conditions on site should be those for normal roof waterproofing work. Deck surfaces must be dry, clean and free from sharp projections such as nail heads and concrete nibs. When used over a rough substrate, a suitable protection layer should be placed over the substrate.

14.6 Installation should not be carried out during wet weather (eg rain, fog or snow) nor when the temperature is below 0°C, unless suitable precautions against surface condensation are taken in accordance with the Certificate holder's instructions.

14.7 Soil or other bulk material should not be stored on one area of the roof prior to the installation, to ensure localised overloading does not occur.

## 15 Procedure

### Mechanically fastened

15.1 A vapour control layer is installed on to a dry, clean deck and turned up over the insulation at perimeters ensuring 100 mm end and side laps.

15.2 Insulation boards are laid in a staggered end joints and fixed in accordance with the Certificate holder's instructions.

15.3 Fatra FF852 PVC fixing discs are applied at an average of 3 to 4 per square metre, or in accordance with the Certificate holder's site specific wind load calculations.

15.4 Fatra FF855 Adhesive is applied to FF852 PVC Fixing Discs.

15.5 The Fatra FF810 membrane is then rolled over the fixing discs, lined up and pulled tight before the membrane grabs. The membrane is consolidated with a soft broom.

15.6 The membrane laps are then hot air welded to create a homogenous watertight seal.

15.7 Fatra FF812 membrane can be installed over the finished membrane by hot-air welding along its length to provide a slip-resistant walkway.

### Loose-laid and ballasted

15.8 When using the membrane over a rough substrate a layer of Fatra FF801 fleece is loose-laid over the deck prior to installation of the membrane.

15.9 The membrane should be unrolled over the substrate on top of any protective or isolating layer, taking care not to stretch the material and ensuring adequate overlaps for jointing (see section 16.1 to 16.4).

15.10 Fatra FF801 fleece should be laid over the membrane prior to application of the insulation or ballast.

15.11 Loose-laid applications should be covered by at least a 50 mm depth of well-rounded gravel. In areas of highwind exposure, paving slabs set on a suitable support (eg Fatra FF865 Slab Support Feet) may be considered.

15.12 When using a loose-laid application, normal account should be taken in the design of the deck of the extra dead loading due to the weight of the aggregate and/or paving.

### Green roofs and roof gardens

15.13 In green roof and roof garden specifications, subsequent layers such as separation layers, drainage layers and growing medium are installed in accordance with the Certificate holder's instructions. Guidance is also available within The GRO Green Roof Code — *Green Roof Code of Best Practice for the UK*.

## 16 Jointing

16.1 To ensure a watertight bond, lap joints in the membrane should be a minimum of 50 mm wide at sheet ends and details. Edge overlaps with adjacent sheets should be a minimum of 50 mm, welded over the last 40 mm as described in section 16.2 and 16.3.

16.2 When hot-air welding a lap joint, a minimum of 40 mm of the lap width must be welded. Pre-weld to the rear of the lap using a heat gun and closing the seam with a silicone roller, crossing over the lap in a diagonal motion.

16.3 After the pre-weld, place the gun nozzle under the overlap leaving 5mm projecting. Continually roll back and forth diagonally across the edge of the lap and down the full length of the seam producing the final homogenous weld and weatherproof seal.

16.4 After the welded seams have cooled, the seams must be visually checked for a thin dark line of extrusion from under the membrane and mechanically tested by running a steel hand probe along the joint by applying pressure to the seam at all times. If any weak welds are found, then peel the membrane back to fully open and re-weld with a hand gun.

## 17 Detailing

The Certificate holder supplies a range of prefabricated external or internal PVC corners, pipe collars, butt-straps and cover tape for use at details.

## 18 Repair

In the event of damage, repairs can be carried out by cleaning around the damaged area and hot air welding a new patch of membrane. The patch should have rounded corners and be larger than the damaged area by at least 50 mm in each direction.

## Technical Investigations

### 19 Tests

19.1 An assessment was made of data to EN 13956 : 2005 and the results assessed to determine:

- tensile strength and elongation
- low temperature foldability
- dimensional stability
- static indentation
- dynamic indentation
- watertightness
- tear resistance
- joint peel and shear resistance
- root resistance.

19.2 Tests were conducted and the results assessed to determine:

- water vapour resistance
- cyclic movement
- peel strength from support
- cold bend strength
- percentage plasticiser
- effect of water immersion
- effects of long-term heat ageing
- effects of long-term UV ageing.

### 20 Investigations

20.1 An assessment was made of existing data on fire performance.

20.2 The manufacturing process was evaluated, including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.

20.3 A re-assessment of the durability was carried out, based on a visit to an existing site and on results of tests carried out on unaged and naturally-aged material.

## Bibliography

- BS 6229 : 2018 *Flat roofs with continuously supported flexible waterproof coverings — Code of practice*
- BS 8000-0 : 2014 *Workmanship on construction sites – Introduction and general principles*  
BS 8000-4 : 1989 *Workmanship on building sites — Code of practice for waterproofing*
- BS 8217 : 2005 *Reinforced bitumen membranes for roofing — Code of practice*
- BS EN 1991-1-1 : 2005 *Eurocode 1 — Actions on structures — General actions — Densities, self-weight, imposed loads for buildings*  
NA to BS EN 1991-1-1 : 2005 UK National Annex to *Eurocode 1 — Actions on structures — General actions — Densities, self-weight, imposed loads for buildings*  
BS EN 1991-1-3 : 2003 + A1 : 2015 *Eurocode 1 — Actions on structures — General actions — Snow loads*  
NA + A2 : 18 to BS EN 1991-1-3 : 2003 + A1 : 2015 UK National Annex to *Eurocode 1 — Actions on structures — General actions — Snow loads*  
BS EN 1991-1-4 : 2005 + A1 : 2010 *Eurocode 1 — Actions on structures — General actions — Wind actions*  
NA to BS EN 1991-1-4 : 2005 + A1 : 2010 UK National Annex to *Eurocode 1 : Actions on structures — General actions — Wind actions*
- BS EN 13501-5 : 2016 *Fire classification of construction products and building elements — Classification using data from external fire exposure to roof tests*
- BS EN 13956 : 2012 *Flexible sheet for waterproofing — Plastic and rubber sheets for roof waterproofing — Definitions and characteristics*
- ČSN EN ISO 9001 : 2016 *Quality management systems — Requirements*  
ČSN EN ISO 14001 : 2016 *Environmental management systems — Requirements with guidance for use*
- EN 13956 : 2005 *Flexible sheet for waterproofing — Plastic and rubber sheets for roof waterproofing — Definitions and characteristics*

### 21 Conditions

#### 21.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is issued only to the company, firm, organisation or person named on the front page – no other company, firm, organisation or person may hold or claim that this Certificate has been issued to them
- is valid only within the UK
- has to be read, considered and used as a whole document – it may be misleading and will be incomplete to be selective
- is copyright of the BBA
- is subject to English Law.

21.2 Publications, documents, specifications, legislation, regulations, standards and the like referenced in this Certificate are those that were current and/or deemed relevant by the BBA at the date of issue or reissue of this Certificate.

21.3 This Certificate will remain valid for an unlimited period provided that the product/system and its manufacture and/or fabrication, including all related and relevant parts and processes thereof:

- are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA
- continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine
- are reviewed by the BBA as and when it considers appropriate.

21.4 The BBA has used due skill, care and diligence in preparing this Certificate, but no warranty is provided.

21.5 In issuing this Certificate the BBA is not responsible and is excluded from any liability to any company, firm, organisation or person, for any matters arising directly or indirectly from:

- the presence or absence of any patent, intellectual property or similar rights subsisting in the product/system or any other product/system
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product/system
- actual installations of the product/system, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product/system is installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the product/system, including its manufacture, supply, installation, use, maintenance and removal
- any claims by the manufacturer relating to CE marking.

21.6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product/system which is contained or referred to in this Certificate is the minimum required to be met when the product/system is manufactured, supplied, installed, used, maintained and removed. It does not purport in any way to restate the requirements of the Health and Safety at Work etc. Act 1974, or of any other statutory, common law or other duty which may exist at the date of issue or reissue of this Certificate; nor is conformity with such information to be taken as satisfying the requirements of the 1974 Act or of any statutory, common law or other duty of care.