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Agrément Certificate
13/5051
Product Sheet 7 Issue 3

TRIFLEX COLD LIQUID APPLIED WATERPROOFING AND SURFACING SYSTEMS

TRIFLEX PROTHAN SOLVENT-FREE ROOF WATERPROOFING SYSTEM

This Agrément Certificate Product Sheet(1) relates to the Triflex ProThan Solvent-Free Roof Waterproofing System, for use on flat, including protected zero fall, roofs and pitched roofs with limited access, including brown roof, green roof and roof garden specifications.

(1) Hereinafter referred to as 'Certificate'.

The assessment includes

Product factors:

- compliance with Building Regulations
- compliance with additional regulatory or non-regulatory information where applicable
- evaluation against technical specifications
- assessment criteria and technical investigations
- uses and design considerations

Process factors:

- compliance with Scheme requirements
- installation, delivery, handling and storage
- production and quality controls
- maintenance and repair

Ongoing contractual Scheme elements†:

- regular assessment of production
- formal 3-yearly review

KEY FACTORS ASSESSED

Section 1. Mechanical resistance and stability
Section 2. Safety in case of fire
Section 3. Hygiene, health and the environment
Section 4. Safety and accessibility in use
Section 5. Protection against noise
Section 6. Energy economy and heat retention
Section 7. Sustainable use of natural resources
Section 8. Durability

The BBA has awarded this Certificate to the company named above for the system described herein. This system has been assessed by the BBA as being fit for its intended use provided it is installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of Third issue: 10 December 2025
Originally certified on 20 November 2013

Hardy Giesler
Chief Executive Officer

This BBA Agrément Certificate is issued under the BBA's Inspection Body accreditation to ISO/IEC 17020. Sections marked with † are not issued under accreditation.

The BBA is a UKAS accredited Inspection Body (No. 4345), Certification Body (No. 0113) and Testing Laboratory (No. 0357).

Readers MUST check that this is the latest issue of this Agrément Certificate by either referring to the BBA website or contacting the BBA directly.

The Certificate should be read in full as it may be misleading to read clauses in isolation.

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

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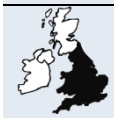
SUMMARY OF ASSESSMENT AND COMPLIANCE

This section provides a summary of the assessment conclusions; readers should refer to the later sections of this Certificate for information about the assessments carried out.

Compliance with Regulations

Having assessed the key factors, the opinion of the BBA is that the Triflex ProThan Solvent-Free Roof Waterproofing System, 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 Building Regulations 2010 (England and Wales) (as amended)

Requirement:	**B4(1)**	**External fire spread**
Comment:		The system is restricted by this Requirement in some circumstances. See section 2 of this Certificate.
Requirement:	**B4(2)**	**External fire spread**
Comment:		On a suitable substructure, the system may enable a roof to be unrestricted by this Requirement. See section 2 of this Certificate.
Requirement:	**C2(b)**	**Resistance to moisture**
Comment:		The system will enable a roof to satisfy this Requirement. See section 3 of this Certificate.
Regulation:	**7(1)**	**Materials and workmanship**
Comment:		The system is acceptable. See sections 8 and 9 of this Certificate.

The Building (Scotland) Regulations 2004 (as amended)

Regulation:	**8(1)(2)**	**Fitness and durability of materials and workmanship**
Comment:		The use of the system satisfies this Regulation. See sections 8 and 9 of this Certificate.
Regulation:	**9**	**Building standards – construction**
Standard:	2.8	Spread from neighbouring buildings
Comment:		The system, when applied to a suitable substructure, may enable a roof to be unrestricted by this Standard, with reference to clause 2.8.1[(1)(2)]. See section 2 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The system will enable a roof to satisfy this Standard, with reference to clauses 3.10.1[(1)(2)] and 3.10.7[(1)(2)]. See section 3 of this Certificate.
Standard:	7.1(a)	Statement of sustainability
Comment:		The system can contribute to satisfying 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.
Regulation:	**12**	**Building standards – conversion**
Comment:		Comments in relation to the system under Regulation 9, Standards 1 to 6, also apply to this Regulation, with reference to clause 0.12.1[(1)(2)] and Schedule 6[(1)(2)].

(1) Technical Handbook (Domestic).
(2) Technical Handbook (Non-Domestic).

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

Regulation:	**23(1)(a)(i)(ii)**	**Fitness of materials and workmanship**
Comment:	**(iii)(iv)(b)(i)**	The system is acceptable. See sections 8 and 9 of this Certificate.
Regulation:	**28(b)**	**Resistance of moisture and weather**
Comment:		The system will enable a roof to satisfy this Regulation. See section 3 of this Certificate.
Regulation:	**36(a)**	**External fire spread**
Comment:		The system is restricted by this Regulation in some circumstances. See section 2 of this Certificate.
Regulation:	**36(b)**	**External fire spread**
Comment:		On a suitable substructure, the system may enable a roof to be unrestricted by this Regulation. See section 2 of this Certificate.

Additional Information

NHBC Standards 2025

In the opinion of the BBA, the Triflex ProThan Solvent-Free Roof Waterproofing System, 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, terraces and balconies*.

In addition, in the opinion of the BBA, the system when installed and used in accordance with this Certificate can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards for Conversions and Renovations*, taking account other relevant guidance within the chapter and the suitability of the substrate to receive the system.

The *NHBC Standards* do not cover the refurbishment of existing roofs.

The opinion of the BBA does not amount to any endorsement or approval by NHBC and does not in any way guarantee that NHBC will approve such product / system as compliant with the NHBC Technical Requirements and Standards.

Fulfilment of Requirements

The BBA has judged the Triflex ProThan Solvent-Free Roof Waterproofing System to be satisfactory for use as described in this Certificate. The system has been assessed for use on flat, including protected zero fall, roofs and pitched roofs with limited access, including brown roof, green roof and roof garden specifications.

ASSESSMENT

Product description and intended use

The Certificate holder provided the following description for the system under assessment. The Triflex ProThan Solvent-Free Roof Waterproofing System is based on a two-component (base and hardener), solvent-free, liquid-applied polyurethane membrane, reinforced with Triflex 110 g Reinforcement, a polyester fleece with a nominal mass per unit area of 110 $g \cdot m^{-2}$.

Ancillary Items

The following ancillary items are essential to use with the system and have been assessed with the system:

- Triflex ProThan Detail — for use at details and for repairs
- Triflex Cleaner — cleaner used for cleaning tools, cleaning substrates and the reactivation of the cured Triflex ProThan membrane prior to overcoating when work is interrupted for periods in excess of 12 hours.

The Certificate holder recommends the following ancillary items for use with the system, but these materials have not been assessed by the BBA and are outside the scope of this Certificate:

- primers and pre-treatments for certain open textured and porous cementitious substrates, glass, metals, render, insulation, coated metals and plastics
- primers and pre-treatments for certain single ply membranes based on PVC, PVC-P, FPO, TPO, TPE, CPE, EPDM, PIB, VET, EVA and rubber
- primers and pre-treatments for certain membranes and coatings based on polyurethane, polymethylmethacrylate, unsaturated polyester, epoxy, acrylic and polyurea
- anti-corrosion and etch primers for metals
- compounds for small and large scale filling, levelling and repair
- anti-skid heavy duty finishes.

Applications

The system has been assessed for use on the following substrates(1):

- concrete
- steel
- insulation(2)
- bituminous membranes.

(1) The Certificate holder can be consulted for advice on the preparation and priming of other substrates, but these substrates and advice are outside the scope of this Certificate.
(2) The cohesive strength of the insulation must be considered with respect to the resistance to wind loading of the system.

The system is satisfactory for use as a fully adhered waterproofing layer on new and existing:

- exposed flat and pitched roofs with limited access
- protected and inverted roofs with limited access (including protected zero fall roofs)
- brown roofs, green roofs and roof gardens (including protected zero fall roofs)
- roofs to water retaining structures.

Definitions for products and applications inspected

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

- limited access roof – a roof subjected only to pedestrian traffic for maintenance of the roof covering, cleaning of gutters, etc
- flat roof – a roof having a minimum finished fall of 1:80(1)
- pitched roof – a roof having a fall in excess of 1:6
- zero fall roof – a roof having a minimum finished fall between 0 and 1:80(1)
- 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 wildflower species
- brown roof — a roof with a growing medium selected to allow indigenous plant species to inhabit the roof over time; no deliberate planting is undertaken
- invasive plant species — vegetation species having vigorous and/or invasive root systems likely to cause damage to components of the inverted roof insulation system and roof waterproofing.

(1) *NHBC Standards* 2025 require a minimum fall of 1:60 for green roofs and roof gardens.

Product assessment – key factors

The system was assessed for the following key factors, and the outcome of the assessments is shown below. Conclusions relating to the Building Regulations apply to the whole of the UK unless otherwise stated.

1 Mechanical resistance and stability

Not applicable.

2 Safety in case of fire

Data were assessed for the following characteristics.

2.1 External fire spread

2.1.1 When tested to CEN/TS 1187 : 2012, Test 4, and classified to BS EN 13501-5 : 2005, the construction given in Table 2 achieved a B_{ROOF}(t4) classification for slopes below 10°.

Table 1 Results of an external fire spread test(1)

Substrate	Air and vapour control layer (AVCL)	Insulation	Carrier membrane	Waterproofing membrane
19 mm plywood(2)	0.6 mm Triflex SA Vapour Control Layer(2), adhered with Triflex FastPrime(2)	120 mm Triflex Insulation(2), adhered with Triflex Insulation Adhesive(2)	0.6 mm Triflex SA Carrier Membrane(2)	2.0 mm Triflex ProThan

(1) Test and classification reports 321302 and 316531, issued by Exova Warringtonfire, respectively. Copies of the reports are available from the Certificate holder on request.
(2) This component is outside the scope of this Certificate.

2.1.2 On the basis of data assessed, the construction listed in Table 1 will be unrestricted by the documents supporting the national Building Regulations with respect to proximity to a relevant boundary. Restrictions may apply at junctions with compartment walls.

2.1.3 A roof incorporating the system will be similarly unrestricted under the national Building Regulations with respect to proximity to a relevant boundary in the following circumstances:

- when used in protected or inverted roof specifications, including an inorganic covering (eg gravel or paving slabs) listed in the Annex of Commission Decision 2000/553/EEC
- a roof garden covered with a drainage layer of gravel 100 mm thick and a soil layer 300 mm thick
- irrigated roof gardens, green roofs and brown roofs.

2.1.4 The classification and permissible areas of use of other specifications must be confirmed by reference to the requirements of the documents supporting the national Building Regulations.

2.1.5 If allowed to dry, plants used may allow the spread of flame across the roof. This must be taken into consideration when selecting suitable plants for the roof. Appropriate planting, irrigation and/or protection must be applied to ensure the overall fire-rating of the roof is not compromised.

2.2 Reaction to fire

2.2.1 The Certificate holder has declared a reaction to fire classification of Class E to EN 13501-1 : 2018 for the system.

2.2.2 On the basis of data assessed, the system will be restricted in use under the documents supporting the national Building Regulations in some cases.

2.2.3 In England, the system, when used in pitches greater than 70°, excluding upstands, must not be used less than

1 m from a relevant boundary, on residential buildings more than 11 m in height or on other buildings more than 18 m in height. Restrictions apply on assembly and recreation buildings. These constructions must also be included in calculations of unprotected area.

2.2.4 In Wales and Northern Ireland, the system, when used in pitches greater than 70°, excluding upstands, must not be used less than 1 m from a relevant boundary, or on buildings more than 18 m in height or in some cases, on assembly and recreation buildings. These constructions must also be included in calculations of unprotected area.

2.2.5 In Scotland, the use of the system is unrestricted with respect to building height and proximity to a relevant boundary. However, restrictions on the overall construction may apply, depending on the reaction to fire classification achieved by the complete system, which must be established on a case-by-case basis.

3 Hygiene, health and the environment

Data were assessed for the following characteristics.

3.1 Weathertightness

3.1.1 Results of weathertightness tests are given in Table 2.

Table 2 Weathertightness

System assessed	Assessment method	Requirement	Result
Triflex ProThan	Water vapour diffusion resistance to EN 1931 : 2000 (23°C, 75% RH)	Value achieved	μ = 35052
Triflex ProThan	Watertightness under 10 kPa pressure to TR-003:2004	No leakage	Pass
Triflex ProThan	Resistance to delamination to EOTA TR-004 : 2004	≥ 50 kPa	
- on concrete			Pass
- on steel			Pass
- on insulation			Pass
- on bitumen membrane			Pass

3.1.2 On the basis of data assessed, the system will adequately resist the passage of moisture into the interior of a building and so satisfy the requirements of the national Building Regulations.

3.1.3 The adhesion of the system is sufficient to resist the effects of wind suction, elevated temperature and thermal shock conditions likely to occur in practice and remain weathertight.

3.2 Resistance to mechanical damage

3.2.1 Results of resistance to mechanical damage tests are given in Table 3.

Table 3 Resistance to mechanical damage

System assessed	Assessment method	Requirement	Result
Triflex ProThan	Resistance to dynamic indentation to EOTA TR-006 : 2004, tested at 23°C	Value achieved	
- on steel	Control		I_4
	Cured at 8°C		I_4
	Cured at 35°C		I_4
- on insulation	Control		I_4
	Cured at 8°C		I_4
	Cured at 35°C		I_4
- on concrete	Control, tested at -30°C		I_4
Triflex ProThan	Resistance to static indentation to EOTA TR-007 : 2004	Value achieved	
- on concrete	Tested at 23°C		L_4
	Tested at 90°C		L_4
- on steel	Tested at 23°C		L_4
	Tested at 90°C		L_4
Triflex ProThan	Resistance to fatigue movement to EOTA TR-008 : 2004 (1000 cycles, tested at -10°C)	Watertight and less than 75 mm delamination from the substrate	Pass

3.2.2 On the basis of data assessed, the system can accept, without damage, the limited foot traffic and light concentrated loads associated with installation and maintenance and the effects of minor structural movement likely to occur in practice while remaining weathertight.

3.2.3 Where traffic in excess of the examples given in section 3.2.2 is envisaged, such as for maintenance of lift equipment, a suitable walkway must be provided (for example, using concrete slabs supported on bearing pads). Reasonable care must be taken to avoid puncture by sharp objects or concentrated loads. The Certificate holder can be consulted for advice on suitable heavy duty finishes, but such products and advice are outside the scope of this Certificate.

3.2.4 In areas of heavy foot traffic, an additional coat of Triflex ProThan filled with aggregate can be applied and sealed with Triflex ProThan. The Certificate holder must be consulted for further advice, but such advice is outside the scope of this Certificate.

3.3 Resistance to root penetration

3.3.1 Results of a resistance to root penetration test is given in Table 4.

Table 4 Resistance to root penetration

System assessed	Assessment method	Requirement	Result
Triflex ProThan	Resistance to root penetration to FLL Method (1999)	No penetrated roots or rhizomes after 2 years	Pass

3.3.2 On the basis of data assessed, the system will resist the penetration by plant roots and rhizomes and can be used as a waterproofing system in green roof and roof garden specifications.

3.3.3 For green roofs in inverted roof specifications, when installed in accordance with this Certificate, the inverted roof insulation and water-flow-reducing layer (WFRL) will be adequately protected against root damage, subject to routine maintenance being carried out in accordance with this Certificate and as recommended by the Green Roof Organisation (GRO) *Code of Best Practice.*

3.3.4 For roof gardens in inverted roof specifications, when installed in accordance with this Certificate, the inverted roof insulation and water-flow-reducing layer (WFRL) must be protected from damage from invasive plant roots, for example, by using root resistant planter boxes or tree pits lined with an effective root barrier.

4 Safety and accessibility in use

Not applicable.

5 Protection against noise

Not applicable.

6 Energy economy and heat retention

Not applicable.

7 Sustainable use of natural resources

Not applicable.

8 Durability

8.1 The potential mechanisms for degradation and the known performance characteristics of the materials in the system were assessed.

8.2 Specific test data were assessed as given in Table 5.

Table 5 Durability

System assessed	Assessment method	Requirement	Result
Triflex ProThan	Resistance to fatigue movement to EOTA TR-008 : 2004 after heat ageing for 200 days at 80°C to EOTA TR-011 : 2004 (50 cycles, tested at -10°C)	Watertight and less than 75 mm delamination from the substrate	Pass
Triflex ProThan	Resistance to delamination to	≥ 50 kPa	
- on concrete	EOTA TR-004 : 2004		Pass
- on steel	after exposure to water at 60°C		Pass
- on insulation	for 180 days		Pass
- on bitumen membrane			Pass
Triflex ProThan	Dynamic indentation to	Value achieved	
- on steel	EOTA TR-006 : 2004		I_4
- on insulation	after heat ageing for 200 days at 80°C to EOTA TR-011 : 2004 (tested at –30°C)		I_4
- on steel	after UV ageing for 1000 MJ·m^{-2} at 60°C to		I_4
- on insulation	EOTA TR-010 : 2004 (tested at –10°C)		I_4
Triflex ProThan	Resistance to static indentation to	Value achieved	
- on steel	EOTA TR-007 : 2004		L_4
- on insulation	after exposure to water at 60°C for 180 days to EOTA TR-012 : 2004 (tested at 90°C)		L_4
Triflex ProThan	Tensile strength to EN ISO 527-1 : 1993 after heat ageing for 200 days at 80°C to EOTA TR-011 : 2004	No significant change against control	
	Longitudinal direction		Pass
	Transverse direction		Pass
	after UV ageing for 1000 MJ·m^{-2} at 60°C to EOTA TR-010 : 2004		
	Longitudinal direction		Pass
	Transverse direction		Pass
Triflex ProThan	Elongation to EN ISO 527-1 : 1993 after heat ageing for 200 days at 80°C to EOTA TR-011 : 2004	No significant change against control	
	Longitudinal direction		Pass
	Transverse direction		Pass
	after UV ageing for 1000 MJ·m^{-2} at 60°C to EOTA TR-010 : 2004		
	Longitudinal direction		Pass
	Transverse direction		Pass

8.3 Service life

8.3.1 Under normal service conditions, the system will have a life in excess of 25 years, provided it is designed, installed and maintained in accordance with this Certificate and the Certificate holder's instructions.

8.3.2 When fully protected, under normal service conditions, the system will have a life at least equivalent to the roof in which it is incorporated, provided it is designed and maintained in accordance with this Certificate and the Certificate holder's instructions.

8.3.3 In situations where maintenance or repair of any of the components in the roof structure are necessary (eg protection layer or insulation), the durability of the membrane may be reduced. In these circumstances, the Certificate holder must be consulted, but such advice is outside the scope of this Certificate.

8.3.4 An estimation cannot be given for the life of green roof specifications owing to the nature of use; however, under normal circumstances, it should be significantly greater than for exposed waterproof coverings.

PROCESS ASSESSMENT

Information provided by the Certificate holder was assessed for the following factors:

9 Design, installation, workmanship and maintenance

9.1 Design

9.1.1 The design process was assessed by the BBA, and the following requirements apply in order to satisfy the performance assessed in this Certificate.

9.1.2 Decks to which the system is to be applied must comply with the relevant requirements of BS 6229 : 2018 and, where appropriate, *NHBC Standards* 2025, Chapter 7.1.

9.1.3 For design purposes of flat roofs, twice the minimum finished fall must be assumed, unless a detailed structural analysis of the roof is available, including overall and local deflection, direction of falls, etc.

9.1.4 Structural decks to which the system is to be applied must be suitable to transmit the dead and imposed loads experienced in service. Allowance needs to be made for loading deflections to ensure that the free drainage of water is maintained.

9.1.5 Imposed loads, dead loading and wind loads must 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.

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

9.1.7 The growing medium used in green roofs, roof gardens and brown roofs must not be of a type that will be removed or become delocalised owing to wind scour experienced on the roof.

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

9.1.9 For green roofs, roof gardens and brown roofs, invasive non-native alien plant species as defined by UK Government guidance must not be used.

9.1.10 For green roof, roof garden and brown roof finishes, to protect the roof waterproofing, invasive plant species must not be used. In particular, the following species must be excluded:

- invasive weeds including buddleia
- plants and grasses with aggressive rhizomes such as bamboo
- self-setting woody weeds such as sycamore and ash seedlings must be removed at early germination stage
- other woody plants which spread aggressively including rhododendron.

9.1.11 The Green Roof Organisation (GRO) can provide guidance on species not included in section 9.1.9 but such advice is outside the scope of this Certificate.

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

- provision made for access for maintenance purposes
- for protected 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 roof, brown 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.*

9.1.13 Insulation materials to be used in conjunction with the system must be in accordance with the Certificate holder's instructions and must be either:

- as described in the relevant clauses of BS 6229 : 2018, or
- the subject of a current BBA Certificate and used in accordance with, and within the limitations of, that Certificate.

9.2 Installation

9.2.1 Installation instructions provided by the Certificate holder were assessed and judged to be appropriate and adequate.

9.2.2 Installation must be carried out in accordance with the relevant clauses of BS 8000-0 : 2014, BS 8000-4 : 1989 and BS 6229 : 2018, the Certificate holder's instructions and this Certificate. A summary of instructions and guidance is provided in Annex A of this Certificate.

9.2.3 Installation must not be carried out during inclement weather, eg rain, fog or snow, and the ambient temperature at the time of laying must be between 8 and 35°C.

9.2.4 Substrates to which the system is to be applied must be sound, clean, frost-free, dry and free from sharp projections. The Certificate holder's advice must be sought with regard to the suitability of the substrate to receive the system, suitable cleaning procedures and the use of a proprietary surface cleaner/HSE approved fungicidal wash where required, but such advice is outside the scope of this Certificate.

9.2.5 Previously coated areas must be checked for integrity and adequate adhesion to the substrate. Defects such as cracks and blisters must be repaired prior to application of the system in accordance with the Certificate holder's instructions.

9.2.6 Adhesion checks must be carried out to ensure that the system is compatible with the existing surfaces. The Certificate holder must be consulted for details of suitable test methods and requirements before use, but such consultation advice is outside the scope of this Certificate.

9.2.7 Detailing, such as at upstands, penetrations and joints, must be carried out using Triflex ProThan Detail in accordance with the Certificate holder's instructions. Where use of Triflex ProThan Detail is not practicable owing to the complexity of detail, the Certificate holder must be consulted for an alternative solution, but such consultation advice is outside the scope of this Certificate.

9.2.8 All equipment must be cleaned with Triflex Cleaner.

9.2.9 Growing medium or other bulk material must not be stored on one area of the roof prior to installation, to ensure that localised overloading does not occur.

9.2.10 The system is applied to provide a waterproofing membrane with a minimum dry film thickness of 2.1 mm.

9.2.11 The Triflex ProThan resin base and hardener components are combined by completely emptying the hardener into the container of the base resin and mixing (using a slow speed agitator) for at least three minutes until homogeneous. The blended material is then transferred to another clean container and mixed again for at least one minute.

9.2.12 A layer of the mixed Triflex ProThan resin is applied with a roller to the clean, prepared and, if required, primed substrate at a minimum application rate of 2.0 $kg \cdot m^{-2}$.

9.2.13 Triflex 110 g Reinforcement is rolled and embedded into the wet coating, avoiding creasing and trapped air. Adjacent lengths of the reinforcement must overlap by a minimum of 50 mm (100 mm if left over 12 hours), ensuring that there is sufficient coating to fully encapsulate it. Additional coating is applied if required.

9.2.14 A second coat of mixed Triflex ProThan resin is applied, wet on wet, by roller at a minimum application rate of 1.0 $kg \cdot m^{-2}$.

9.2.15 At each stage the system must be checked to ensure that it has been applied to achieve the minimum consumption. If a localised area has been applied below the minimum consumption, the affected area must be removed and reinstated to specification.

9.2.16 If work is interrupted for periods between approximately 12 and 24 hours, ensure that the cured membrane is clean. For periods in excess of 24 hours, the surface of the cured membrane must be carefully abraded using 80 grit sandpaper prior to overcoating.

9.2.17 The NHBC requires that the system, once installed, is inspected in accordance with *NHBC Standards* 2025, Chapter 7, Clause 7.1.11, including undergoing an appropriate integrity test where required. Any damage to the system assessed in this Certificate must be repaired in accordance with section 9.4 of this Certificate and reinspected, in order to maintain system performance.

9.3 Workmanship

Practicability of installation was assessed by the BBA on the basis of the Certificate holder's information. To achieve the performance described in this Certificate, installation of the system must be carried out by installers who have been trained and authorised by the Certificate holder.

9.4 Maintenance and repair

9.4.1 Ongoing satisfactory performance of the system in use requires that it is suitably maintained. The guidance provided by the Certificate holder was assessed by the BBA and found to be appropriate and adequate.

9.4.2 The following requirements apply in order to satisfy the performance assessed in this Certificate:

9.4.2.1 The system must be the subject of six-monthly inspections and maintenance in accordance with the recommendations in BS 6229 : 2018, Chapter 7, and the Certificate holder's own maintenance requirements. For green roof, roof garden and drainage systems, these six-monthly inspections must be carried out by a suitably experienced and competent individual (with horticultural knowledge) to ensure continued satisfactory performance. This must include an examination of the overall condition of the roof, to ensure that drain outlets and gutters are kept clear and unblocked and, for green roofs and roof gardens, the removal of any self-propagated plants and invasive plant species found. See section 9.1.10.

9.4.2.2 Green roofs, brown roofs and roof gardens must be the subject of regular inspections, particularly in autumn after leaf fall and in spring, to ensure unwanted vegetation and other debris are cleared from the roof and drainage outlets. Guidance is available within the latest edition of the *Green Roof Organisation (GRO) Code of Best Practice.*

9.4.2.3 For green roofs, to protect the roof waterproofing and any system components above the waterproofing, such as insulation or water flow reducing layer, invasive plant species (see sections 9.1.9 and 9.1.10 of this Certificate) must be eliminated through maintenance.

9.4.2.4 The control and removal of invasive plant species is carried out by hand. Where this is not possible, any chemicals used must be checked for compatibility with the roof waterproofing layer and any system components above the waterproofing, such as insulation or water flow reducing layer. The Certificate holder can advise on the suitability of a particular product, but such advice is outside the scope of this Certificate. Note, if using chemicals on a green roof or roof garden, rainwater outlets may need to be disconnected from the main drainage system to prevent contamination of the local water system and/or harm to flora and fauna.

9.4.2.5 The chemical fertiliser used on green roofs and roof gardens must be checked for compatibility with the roof waterproofing layer and any system components above the waterproofing, such as insulation or water flow reducing layer. The Certificate holder can advise on the suitability of a particular product, but such advice is outside the scope of this Certificate.

9.4.2.6 Any damage to the system must be repaired as soon as possible to ensure that the integrity of the waterproofing is maintained. Repairs must be carried out to reinstate the damaged area to the original specification in accordance with the Certificate holder's instructions.

9.4.2.7 If a leak occurs in the roof waterproof membrane, it must be repaired following removal of the gravel ballast, paving ballast, green roof or roof garden layer, water-flow-reducing layer and the insulation boards.

9.4.2.8 Where damage has occurred, the system must be repaired at the earliest opportunity in accordance with the Certificate holder's instructions and the following:

- areas of damaged system must be cut back to sound, well-adhering material and carefully abraded using 80 grit sandpaper
- the system is installed as described in section 9.2, ensuring that there is at least a 100 mm overlap over the existing sound material previously abraded.

9.4.2.9 Where maintenance or repair of any of the roof components above the waterproofing system is necessary, care must be taken to avoid damage to the system. If damage occurs, it must be repaired as soon as is practicable by the installer.

9.4.2.10 In the event of the system being contaminated by oil, grease or other chemicals, the advice of the Certificate holder must be sought, but such advice is outside the scope of this Certificate.

10 Manufacture

10.1 The production processes for the system have been assessed, and provide assurance that the quality controls are satisfactory according to the following factors:

10.1.1 The manufacturer has provided documented information on the materials, processes, testing and control factors.

10.1.2 The quality control operated over batches of incoming materials has been assessed and deemed appropriate and adequate.

10.1.3 The quality control procedures and product testing to be undertaken have been assessed and deemed appropriate and adequate.

10.1.4 The process for management of non-conformities has been assessed and deemed appropriate and adequate.

10.1.5 An audit of each production location was undertaken, and it was confirmed that the production process was in accordance with the documented process, and that equipment has been properly tested and calibrated.

† 10.2 The BBA has undertaken to review 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.

11 Delivery and site handling

11.1 The Certificate holder stated that the system is delivered to site in packs consisting of liquid base resin and hardener components. The packs bear a label that includes the component's name, health and safety information, and batch number. The components are available in the pack sizes detailed in Table 6.

Table 6 Pack sizes

Component	Pack sizes
Triflex ProThan	8 kg (Base + Hardener packs) 25 kg (Base + Hardener packs)
Triflex ProThan Detail	2.5 kg (Base + Hardener packs) 8 kg (Base + Hardener packs)
Triflex Cleaner	9 litre, 27 litre
Triflex 110 g Reinforcement	50 m (length) x 15, 20, 26.25, 35, 52.5, 70 or 105 cm (widths) rolls.

11.2 Delivery and site handling must be performed in accordance with the Certificate holder's instructions and this Certificate, including:

11.2.1 The system components must be stored in a cool, dry location and protected from freezing temperatures and direct sunlight.

11.2.2 Rolls of Triflex 110 g Reinforcement must be stored vertically in a dry, clean environment and protected from moisture.

†ANNEX A – SUPPLEMENTARY INFORMATION

Supporting information in this Annex is relevant to the product but has not formed part of the material assessed for the 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.

CLP Regulations

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

UKCA marking

The Certificate holder has taken the responsibility of UKCA marking the product in accordance with UKAD 030350-00-0402.

CE marking

The Certificate holder has taken the responsibility of CE marking the product, in accordance with EAD 030350-00-0402.

Management Systems Certification for production

The management system of the manufacturer has been assessed and registered as meeting the requirements of EN ISO 9001 : 2015, EN ISO 14001 : 2015 and EN ISO 50001 : 2011 by DEKRA (Certificates 80408283/4, 170408038/3 and 1800414009 respectively).

Additional information on installation

Design

A.1 When designing a zero fall roof, reference must also be made to the appropriate clauses in the Liquid Roofing and Waterproofing Association (LRWA) Note 7 – *Specifier Guidance for Flat Roof Falls*.

A.2 Recommendations for the design of green roofs, brown roofs and roof garden specifications are available within the latest edition of *The GRO Green Roof Code - Green Roof Code of Best Practice for the UK*.

A.3 Additional guidance for inverted roof specifications is given in BBA Information Bulletin No 4 *Inverted roofs – Drainage and U value corrections.*

Installation

A.4 Installation should also be in accordance with the relevant clauses of the Liquid Roofing and Waterproofing Association (LRWA) Note 7 – *Specifier Guidance for Flat Roof Falls.*

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 EN 1991-1-1 : 2002 *Eurocode 1 — Actions on structures — General actions — Densities, self-weight, imposed loads for buildings*
NA to BS EN 1991-1-1 : 2002 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 + A1 : 15 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 : 2005 + A1 : 2009 *Fire classification of construction products and building elements — Classification using data from external fire exposure to roofs tests*

CEN/TS 1187 : 2012 *Test methods for external fire exposure to roofs*

EAD 030350-00-0402 *Liquid applied roof waterproofing kits*

EN 1928 : 2000 *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Determination of watertightness*

EN 1931 : 2000 *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Determination of water vapour transmission properties*

EN 13501-1 : 2018 *Fire classification of construction products and building elements. Classification using data from reaction to fire tests*

EN ISO 527-1 : 1993 *Plastics — Determination of tensile properties — General principles*

EN ISO 9001 : 2015 *Quality managements systems — Requirements*

EN ISO 14001 : 2015 *Environmental management systems — Requirements*

EN ISO 50001 : 2011 *Energy management systems — Requirements with guidance for use*

EOTA TR-004 : 2004 *Determination of the resistance to delamination*
EOTA TR-006 : 2004 *Determination of the resistance to dynamic indentation*
EOTA TR-007 : 2004 *Determination of the resistance of static indentation*
EOTA TR-008 : 2004 *Determination of the resistance of fatigue movement*
EOTA TR-010 : 2004 *Exposure procedure for artificial weathering*
EOTA TR-011 : 2004 *Exposure procedure for accelerated ageing by heat*
EOTA TR-012 : 2004 *Exposure procedure for accelerated ageing by hot water*

FLL Method (1999) *Forschungsgesellschaft Landschaftsentwicklung und Landschaftsbau Method for testing root penetration resistant materials*

Conditions

1 This Certificate:

- relates only to the product 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
- 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
- and any matter arising out of or in connection with it or its subject matter (including non-contractual disputes or claims) is governed by and construed in accordance with the law of England and Wales.
- the courts of England and Wales shall have exclusive jurisdiction to settle any matter arising out of or in connection with this Certificate or its subject matter (including non-contractual disputes or claims).

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.

3 This Certificate will be displayed on the BBA website, and the Certificate Holder is entitled to use the Certificate and Certificate logo, provided that the product 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.

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

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

6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product which is contained or referred to in this Certificate is the minimum required to be met when the product 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.

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