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Agrément Certificate
18/5491
Product Sheet 1

XP WATERPROOFING SYSTEM

COREFLEX XP FOR PODIUM DECK

This Agrément Certificate Product Sheet(1) relates to COREFLEX XP(2), a thermoplastic membrane integrally bonded to an active hydrophilic polymer composite, for use in waterproofing on roofs, podiums, green roofs and roof gardens.

(1) Hereinafter referred to as 'Certificate'.
(2) COREFLEX XP is a registered trademark.

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

Weathertightness — the product will resist the passage of moisture into the building (see section 6).

Properties in relation to fire — the product will enable a roof to be unrestricted under the national Building Regulations (see section 7).

Resistance to wind uplift — resistance to wind uplift is dependent upon the top layers of the roof garden/green roof specification (see section 8).

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

Resistance to penetration of roots — the product will resist the penetration of roots (see section 10).

Durability — under normal service conditions, the product will provide a durable roof waterproofing with a service life in excess of 25 years (see section 12).

The BBA has awarded this Certificate to the company named above for the product described herein. This product 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 First issue: 10 October 2018

John Albon – Head of Approvals Construction Products

Claire Curtis-Thomas
Chief Executive

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 are advised to check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA direct.
Any photographs are for illustrative purposes only, do not constitute advice and should not be relied upon.

Regulations

In the opinion of the BBA, COREFLEX XP, 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)

Requirement:	**B4(2)**	**External Fire Spread**
Comment:		On suitable substructures or in suitable specifications, the use of the product can enable a roof to be unrestricted under the requirements of this Regulation. See sections 7.1, 7.2, 7.3 and 7.5 of this Certificate.
Requirement:	**C2(b)**	**Resistance to moisture**
Comment:		The product, including joints, will enable a roof to satisfy this Requirement. See section 6.1 of this Certificate.
Regulation:	**7**	**Materials and workmanship**
Comment:		The product is acceptable. See section 12 and the *Installation* part of this Certificate.

The Building (Scotland) Regulations 2004 (as amended)

Regulation:	**8(1)(2)**	**Durability, workmanship and fitness of materials**
Comment:		The use of the product satisfies the requirements of this Regulation. See sections 11 and 12 and the *Installation* part of this Certificate.
Regulation:	**9**	**Building standards applicable to construction**
Standard:	2.8	Spread from neighbouring buildings
Comment:		The product, when applied to a suitable substructure or in a suitable specification, can be regarded as having low vulnerability under clause 2.8.1(1)(2) of this Standard. See section 7.1, 7.2, 7.3 and 7.5 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The product, including joints, will enable a roof to satisfy the requirements of this Standard, with reference to clauses 3.10.1(1)(2) and 3.10.7(1)(2). See section 6.1 of this Certificate.
Standard:	7.1(a)	Statement of sustainability
Comment:		The product 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.
Regulation:	**12**	**Building standards applicable to conversions**
Comment:		Comments in relation to the product 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(a)(i) (iii)(b)(i)**	**Fitness of materials and workmanship**
Comment:		The product is acceptable. See section 12 and the *Installation* part of this Certificate.
Regulation:	**28(b)**	**Resistance to moisture and weather**
Comment:		The product, including joints, will enable a roof to satisfy the requirements of this Regulation. See section 6.1 of this Certificate.

Regulation:	**36(b)**	**External fire spread**
Comment:		On suitable substructures, the use of the product can enable a roof to be unrestricted under the requirements of this Regulation. See section 7.1, 7.2, 7.3 and 7.5 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 section: 3 *Delivery and site handling* (3.1, 3.2 and 3.4 to 3.8) of this Certificate.

Additional Information

NHBC Standards 2018

In the opinion of the BBA, COREFLEX XP, 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 product in accordance with harmonised European Standard BS EN 13956 : 2012. An asterisk (*) appearing in this Certificate indicates that data shown are given in the manufacturer's Declaration of Performance.

Technical Specification

1 Description

1.1 COREFLEX XP is a thermoplastic plasticised polyvinylchloride (PVC-P) membrane integrally bonded to an active XP polymer core geotextile layer to form a waterproofing membrane composite. The active XP polymer core is offset 150 mm from the PVC membrane layer along one long roll edge to allow the thermoplastic membrane overlaps to be fused together on site using conventional hot-air welding techniques. Membrane overlaps should have a uniform minimum width of 100 mm for both the PVC layer and the active XP polymer core layer.

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

- CoreFlash — a 1.5 mm thick reinforced thermoplastic PVC-P membrane, designed for use as a flashing membrane in non-exposed service conditions
- CoreFlash UV — a 1.5 mm thick reinforced UV stable thermoplastic PVC-P membrane, designed for use as a flashing membrane in exposed service conditions. Exposed areas such as upstands use CoreFlash UV
- CoreFlash NR — a 1.5 mm thick non-reinforced thermoplastic PVC-P membrane, designed for use as a flashing membrane
- Coretex XP — a 2.3 mm thick XP Polymer Core waterproofing geotextile, designed for use as an accessory detailing product
- Universal Corner — a 1.5 mm thick pre-formed non-reinforced PVC-P corner flashing detail, designed for use as a detailing product
- PF-150 — a 1.5 mm thick pre-formed non-reinforced PVC-P detailing component, designed for sealing around penetrations up to 50 mm in diameter
- Adhesive SB-100 — a solvent based flashing adhesive used for bonding all CoreFlash membranes to vertical and horizontal substrates
- Coredisc – a 100 mm round x 1.1 mm thick reinforced thermoplastic disc, designed for use as a detailing product
- Waterstop XP (covered by BBA Certificate 15/5278, Product Sheet 2) — a rectangular section, flexible, blue extruded strip of active expanding hydrophilic polymer/butyl rubber, with one side backed by a silicone release paper,

available in coils 15 mm wide by 10 mm thick by 6 m long. The product is used as a water bar at reinforced concrete construction joints and around penetrations in underground concrete foundations and structures
- Seal X-XP — a trowel-grade mastic, for detailing use around penetrations, corner transitions and terminations
- Cetseal — a single-component moisture curing polyether sealant/adhesive, designed for use as an adhesive for Coretex XP membrane overlaps, a detailing product used for sealing at termination details and around penetrations, and as an adhesive for Waterstop XP to prevent it from moving during the pouring and placement of concrete at construction joints and around penetrations
- Revo-Fix — steel mesh strips plus fixings, designed for use as an alternative mechanical fixing method for securing Waterstop XP to concrete construction joint surfaces
- Akwaswell — a hydrophilic polyurethane caulk, used for detail work including pipe penetrations.

2 Manufacture

2.1 The product is manufactured in a controlled continuous process in which the hydrophilic polymer blend and adhesive are uniformly distributed between woven and non-woven geotextiles. The two geotextiles are interlocked by a needle punching process, which links the geotextiles and contains and confines the hydrophilic polymer blend. An additional PVC-P thermoplastic membrane is then laminated to one side of the product.

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 systems of the manufacturer have been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2008 by Quality & Reliability Polska (Certificate Q&R_503) and Kiwa (Certificate M 8749).

3 Delivery and site handling

3.1 The product is supplied in rolls 1.7 m wide by 12.9 m long, the PVC-P membrane is 1.55 m wide with the active XP polymer core geotextile offset by 150 mm along one long roll edge. The product is labelled with the product name, dimensions and product information, and delivered on pallets. The rolls, weighing 76 kg each, are packaged 16 units per pallet.

3.2 Ancillary items are packaged as shown in Table 1.

Table 1 Ancillary items — packaging

Component	Unit	Delivery packaging	Weight
CoreFlash	12.9 x 1.55 m roll	20 rolls per pallet	42.5 kg per roll
CoreFlash UV	12.9 x 1.55 m roll	20 rolls per pallet	42.5 kg per roll
CoreFlash NR	12.9 x 1.55 m roll	20 rolls per pallet	40.0 kg per roll
Universal Corner	Injection moulded unit	20 per box	2.75 kg per box
PF-150	Injection moulded unit	20 per box	3.2 kg per box
Adhesive SB-100 Coredisc	Pail 100 mm round x 1.1 mm disc	60 pails per pallet 100 per box	4.5 kg per pail 2 kg per box
Akwaswell	310 ml cartridges	12 cartridges per box	6.8 kg per case
Waterstop XP	6 m coil	8 coils per box, 36 boxes per pallet	10.5 kg per box
Cetseal	290 ml cartridge	12 cartridges per box	5.4 kg per box
Coretex XP	1.55 x 6.45 m roll	30 rolls per pallet	15.5 kg per roll
Seal-X XP Revo-Fix	Pail Steel mesh strips 15 mm x 10 mm x 1.0 m plus fixings	48 pails per pallet 30 m per box	15 kg per pail 3 kg per box

3.3 Waterstop XP must be stored in dry conditions to prevent premature contact with water.

3.4 Seal-X XP must be stored at temperatures of between 16 and 27°C, in a dry storage area away from sources of heat.

3.5 Adhesive SB-100 must be stored at temperatures of between 15 and 35°C, in a dry storage area away from sources of heat and strong oxidisers.

3.6 Akwaswell must be stored at temperatures of between 5 and 25°C, in a dry storage area away from sources of heat.

3.7 Protective clothing and eye protection must be worn, and eye and skin contact must be avoided for Seal-X XP, Adhesive SB-100 and Akwaswell.

3.8 The Certificate holder has taken the responsibility of classifying and labelling the product 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 COREFLEX XP.

Design Considerations

4 Use

4.1 COREFLEX XP is satisfactory for use as a roof waterproofing membrane in the following specifications:

- loose-laid and ballasted on flat roofs and podium decks with limited access
- green roofs (extensive planting) on flat roofs with limited access
- flat roofs in roof gardens (intensive planting).

4.2 The product is satisfactory for use as a roof waterproofing membrane in fully adhered flat and pitched roofs with limited access.

4.3 Limited access roofs are defined for the purpose of this Certificate as those subjected only to pedestrian traffic for such duties as maintenance of the roof covering, cleaning of gutters etc. Where traffic in excess of this is envisaged, additional protection to the membrane must be provided (see section 9).

4.4 Flat roofs are defined for the purpose of this Certificate as those having a minimum finished fall of 1:80. 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, directions of falls, etc. Pitched roofs are defined for the purpose of this Certificate as those having a fall greater than 1:6.

4.5 Decks to which the product is to be applied must comply with the relevant requirements of BS 6229 : 2003 and, where appropriate, *NHBC Standards* 2018, Chapter 7.1.

4.6 Structural decks for loose-laid and ballasted, inverted roofs and green roofs must be suitable to transmit the dead and imposed load experienced in service.

4.7 Imposed loads, dead loading and wind loading specifications are calculated 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.

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

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

4.9 Recommendations for the design of green 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*.

4.10 The drainage system for completely flat green roofs or roof gardens must be correctly designed, and provision made for access for maintenance purposes. Dead loads for green roofs and roof gardens can increase if the drains become partially or completely blocked causing waterlogging of the drainage layer.

5 Practicability of installation

The product should only be installed by contractors who have been trained and approved by the Certificate holder.

6 Weathertightness

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

6.2 The product is impervious to water and will achieve a weathertight roofing capable of accepting minor structural movement.

7 Properties in relation to fire

7.1 When tested to DD CEN/TS 1187 : 2012 Test 4 and classified in accordance with BS EN 13501-5 : 2005, a system consisting of a 12 mm fibre cement board, CoreFlash UV loose laid and Coredisc welded on top of the T-joint, achieved a class B_{ROOF} (t4) classification.

7.2 The product, when used in protected 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 Building Regulations.

7.3 In the opinion of the BBA, when used in irrigated roof gardens or green roofs, the product will also be unrestricted.

7.4 If allowed to dry out completely, plants used in a roof garden may allow flame spread across the roof. This should be taken into consideration when selecting plants. Appropriate planting, irrigation and/or protection must be applied to ensure the overall fire rating of the roof is not compromised.

7.5 The designation of other specifications, eg when used on combustible substrates, should be confirmed by:

England and Wales — test or assessment in accordance with Approved Document B, Appendix A, Clause 1
Scotland — test to conform to Mandatory Standard 2.8, Clause 2.8.1[(1)(2)]

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

Northern Ireland — test or assessment by a UKAS-accredited laboratory, or an independent consultant with appropriate experience.

8 Resistance to wind uplift

8.1 The product, when used with a suitable roof garden or green-roof specification, will adequately resist the effects of wind uplift likely to occur in practice.

8.2 The precise ballast requirement should be calculated by a suitably qualified and experienced individual in accordance with BS EN 1991-1-4 : 2005 and its UK National Annex, but should not be below a minimum thickness of 50 mm. The use of concrete slabs on suitable protective supports should be considered in areas of high design wind loads.

8.3 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.

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

9 Resistance to mechanical damage

9.1 The product can accept the foot traffic and light concentrated loads associated with installation and maintenance. Reasonable care must be taken to avoid puncture by sharp objects or concentrated loads. Where traffic in excess of this is envisaged, such as for maintenance of lift equipment, a walkway should be provided.

9.2 Once the green roof or roof garden is installed, it can be regarded as a suitable protection for the membrane in use.

10 Resistance to penetration of roots

The product will resist penetration by plant roots and rhizomes, and can be used as a waterproofing membrane in green roof and roof garden specifications.

11 Maintenance

Roofs should be inspected twice-yearly, in autumn after leaf fall and in spring, to ensure that vegetation and other debris are cleared from the roof, and drainage outlets are cleared. 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 product will have a service life in excess of 25 years.

Installation

13 General

13.1 Installation of the product is carried out in accordance with this Certificate, the Certificate holder's instructions and the relevant clauses of BS 8000-4 : 1989 and BS 8217 : 2005.

13.2 Deck surfaces must be dry, clean and free from sharp projections such as nail heads and concrete nibs.

13.3 The membranes may be laid in conditions normal to roofing work, and must not be laid in rain, snow or heavy fog, nor if the temperature falls below 5°C, unless precautions such as against condensation have been taken.

13.4 Waterstop XP must not be applied during heavy rainfall or where there is standing water.

13.5 The roofing layers must always be installed with staggered overlaps and in such a manner that no counter-seams in the direction of outlets are made.

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

14 Procedure

Loose-laid

14.1 The membrane is laid flat onto the substrate without folds or ripples, with 100 mm side laps and 100 mm minimum end laps.

14.2 The membrane is mechanically fastened at the perimeter of the roof in accordance with the Certificate holder's instructions.

14.3 The lap joints are welded by hot-air welding in accordance with sections 14.5 To 14.7 and the Certificate holder's instructions.

14.4 The membrane must be covered by at least a 50 mm depth of well-rounded gravel or other suitable ballast, depending on the specification being installed. In areas of high wind exposure, paving slabs set on a suitable support may be considered.

Lap joints

14.5 Hot air welded lap joints are produced by using either an automated welding machine or a hand held welder, in accordance with the Certificate holder's instructions.

14.6 The weld depth is a minimum of 40 mm.

14.7 When hand welding, the joint must be rolled immediately using a silicone rubber seam-roller, to ensure an even bond.

Installation of CoreFlash, CoreFlash NR and CoreFlash UV

14.8 CoreFlash and CoreFlash UV are installed with the black side orientated toward the substrate to be waterproofed and secured with Adhesive SB-100.

14.9 CoreFlash NR can be installed with either side toward the substrate to be waterproofed and secured with Adhesive SB-100.

14.10 Field seaming is accomplished by fusing the thermoplastic membrane with conventional welding equipment.

Installation of Coretex XP

14.11 Coretex XP is installed as appropriate to the detail requirements, with all adjacent edges overlapped by a minimum 100 mm and secured with Cetseal.

Installation of Seal-X XP

14.12 Seal-X XP is normally applied at a minimum 6 mm thickness and should be applied when ambient and surface temperatures are -4°C and above.

14.13 19 mm triangular corner fillets may be formed at slab/wall corner transitions or to vertical internal corners as applicable.

Installation of Waterstop XP

14.14 Joint surfaces must be clean, dry and free from cavities and spalling. Any irregularities in the surface do not normally need to be filled, but if necessary these can be filled with a suitable-strength cement grout or mortar while the concrete is still green, and made smooth. The Certificate holder can advise on suitable materials for this purpose.

14.15 Waterstop XP is positioned in the centre of the reinforced concrete construction joint. It must be positioned in such a way as to ensure that a minimum of 75 mm concrete cover is provided to all sides of the waterstop.

14.16 The waterstop is installed around all through-wall pipes and mechanical penetrations, and around all structural elements such as steel columns penetrating the slab.

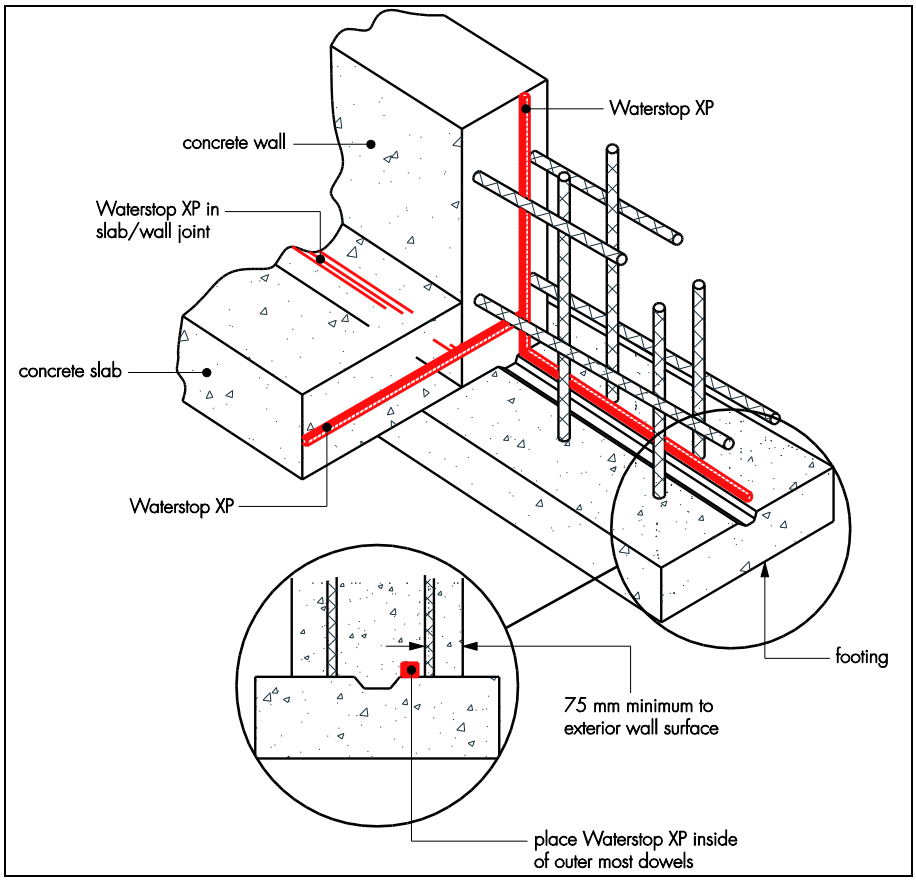
Swelling

14.17 If the material exhibits considerable swelling prior to confinement in the joint, it must be replaced with new material.

Fixing mesh method (for construction joints)

14.18 The release paper is removed, and lengths of Waterstop XP are placed so as to minimise coil end joints, ensuring that a minimum 75 mm depth of concrete will be maintained.

Figure 1 Waterstop XP installation details



14.19 Using a sharp knife or utility blade, coil ends are cut to fit tightly butted together, without overlapping, to form a continuous waterstop.

14.20 Revo-Fix strips are placed over the waterstop, and the strip-ends lapped by a maximum 25 mm. The lap is nailed through using the fixings supplied, and an additional fixing is installed 300 mm centre to centre along Revo-Fix.

Adhesive method (for construction joints and service penetrations)

14.21 A continuous bead of Cetseal (typical bead diameter 6 mm) is applied to the dry, smooth concrete surface, ensuring that a minimum 75 mm depth of concrete will be maintained.

14.22 The release paper is removed, and lengths of Waterstop XP are placed so as to minimise roll end joints. The waterstop is pressed into the adhesive bead, so that the adhesive spreads to coat most of the bottom of the waterstop.

14.23 Using a sharp knife or utility blade, coil ends are cut to fit tightly butted together, without overlapping, to form a continuous waterstop.

Concrete casting

14.24 Casting of retaining walls and substrate is carried out immediately after fixing Waterstop XP in position.

Installation of Akwaswell

14.25 The surface should be cleaned prior to application and a minimum 8 mm diameter bead applied continuously along the surface.

14.26 Akwaswell is placed where it will be covered by at least a minimum of 75 mm of concrete on all sides. Keep the nozzle tip pressed against the concrete at a 45° angle during application to assure continuous contact with the substrate. Typical application rate will be six linear metres per tube.

14.27 Askwaswell is installed when the ambient temperature is above 4°C and allow to cure for a minimum 24 to 36 hours.

15 Repair

15.1 Any damage must be repaired by cleaning around the affected area. Coretex XP is installed to cover the damaged area and extend it a minimum 100 mm beyond the damaged area. Secure Coretex XP with Cetseal.

15.2 Install CoreFlash to cover all of Coretex XP; extending a minimum 150 mm beyond the damaged area. Continuously weld the CoreFlash edge to the existing COREFLEX XP membrane in accordance with manufacturer's welding guidelines.

15.3 For CoreFlash repairs, matching CoreFlash, CoreFlash UV or CoreFlash NR are used to seal damaged existing flashing membrane. CoreFlash is laid to cover the damaged area and extend a minimum of 100 mm beyond the damaged area; the CoreFlash edge is continuously welded to the existing CoreFlash membrane in accordance with Certificate holder's instructions.

Technical Investigations

16 Tests

16.1 Tests were conducted on COREFLEX XP and the results assessed to determine:

- ability to self-heal
- peel resistance of the joints before and after water soak
- shear resistance of the joints before and after water soak
- low temperature flexibility before and after heat ageing
- weight loss after heat age
- weight loss after water soak
- tensile properties before and after heat age.

16.2 Tests were conducted on CoreFlash UV and the results assessed to determine:

- width
- thickness and mass per unit area
- resistance to liquid water
- low temperature flexibility before and after UV ageing
- weight loss before and after UV ageing
- tensile properties before and after UV ageing.

16.3 Tests were conducted on CoreFlash and the results assessed to determine:

- width
- straightness and flatness
- thickness and mass per unit area
- tensile properties
- resistance to impact.

16.4 Tests were conducted on Adhesive SB-100 and the results assessed to determine:

- thermal-gravimetric analysis
- IR analysis
- density
- tensile bond strength of CoreFlash to concrete and metal
- resistance to peel.

16.5 Tests were conducted on Akwaswell and the results assessed to determine:

- thermal-gravimetric analysis
- IR analysis
- density
- skinning and cure time
- unrestrained swelling characteristics under alkali, neutral, saline and acidic conditions
- load developed when restrained
- resistance to hydrostatic water pressure.

17 Investigations

17.1 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.

17.2 An assessment was made of existing data for COREFLEX XP from independent laboratories relating to:

- length, width, straightness and flatness
- thickness and mass per unit area
- resistance to liquid water
- tensile properties
- resistance to impact
- resistance to root penetration
- resistance to static loading
- exposure to liquid chemicals including water
- resistance to tearing (nail shank)
- water vapour transmission properties
- dimensional stability.

17.3 An assessment was made of existing data for CoreFlash UV from independent laboratories relating to fire classification

17.4 Visits were made to sites in progress to assess the application properties of the product.

17.5 A survey of contractors was conducted to assess the practicability of application and the performance in use.

Bibliography

BS 6229 : 2003 *Flat roofs with continuously supported coverings. Code of practice*

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 : 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 : 2015 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 roofs tests*

BS EN 13956 : 2012 *Flexible sheets for waterproofing. Plastic and rubber sheets for roof waterproofing. Definitions and characteristics*

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

BS EN ISO 9001 : 2008 *Quality management systems — Requirements*

18 Conditions

18.1 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.

18.2 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.

18.3 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.

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

18.5 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.

18.6 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.

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