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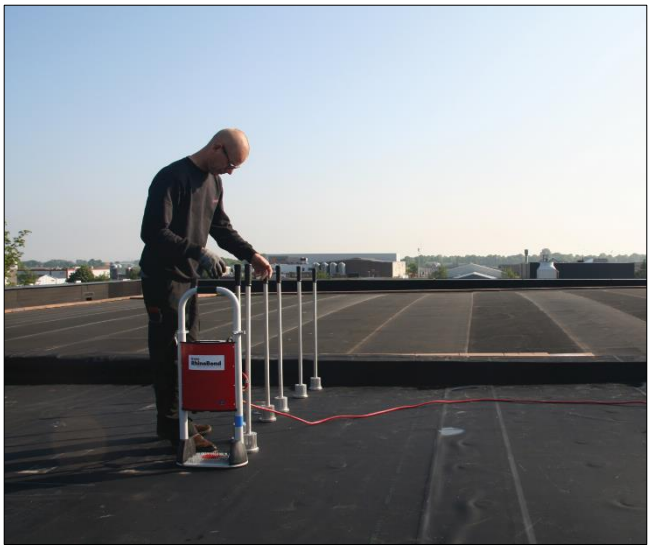
Agrément Certificate
91/2728
Product Sheet 1

HERTALAN ROOF WATERPROOFING SYSTEMS

HERTALAN EASY COVER AND EASY WELD EPDM ROOF WATERPROOFING SYSTEMS

This Agrément Certificate Product Sheet(1) relates to HERTALAN(2) EASY COVER and EASY WELD EPDM Roof Waterproofing Systems, for use in loose-laid and ballasted, partially- or fully-adhered and mechanically-fastened applications on flat, pitched and protected zero fall roofs with limited access.

(1) Hereinafter referred to as 'Certificate'.
(2) HERTALAN 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 systems and their joints, when completely sealed and consolidated, will resist the passage of moisture to the interior of the building (see section 6).

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

Resistance to wind uplift — when correctly specified, the systems will resist the effects of any wind suction likely to occur in practice (see section 8).

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

Durability — under normal service conditions, the systems will provide a durable waterproof covering with a service life of at least 25 years (see section 11).

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: 20 December 2016

John Albon – Head of Approvals Construction Products

Claire Curtis-Thomas
Chief Executive

Originally certificated on 26 November 1991

Certificate amended on 14 October 2020 to update zero fall wording.

Regulations

In the opinion of the BBA, HERTALAN EASY COVER and EASY WELD EPDM Roof Waterproofing 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)

Requirement:	**B4(2)**	**External fire spread**
Comment:		On suitable substructures the use of the systems can enable a roof to be unrestricted under this Requirement. See section 7 of this Certificate.
Requirement:	**C2(b)**	**Resistance to moisture**
Comment:		The membrane, including joints, meets this Requirement. See section 6.1 of this Certificate.
Regulation:	**7**	**Materials and workmanship**
Comment:		The systems are acceptable. See section 11 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 systems satisfies the requirements of this Regulation. See sections 10 and 11 and the *Installation* part of this Certificate.
Regulation:	**9**	**Building standards applicable to construction**
Standard:	2.8	Spread from neighbouring buildings
Comment:		The systems, when applied to a non-combustible substrate, can be regarded as having low vulnerability under clause 2.8.1(1)(2) of this Standard. See section 7 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The use of the systems 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 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.
Regulation:	**12**	**Building standards applicable to conversions**
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(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 systems are acceptable. See section 11 and the *Installation* part of this Certificate.
Regulation:	**28(b)**	**Resistance to moisture and weather**
Comment:		The systems, including joints, can 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 systems will enable a roof to be unrestricted under the requirements of this Regulation. See section 7 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* (1.3) and 3 *Delivery and site handling* (3.3 and 3.4) of this Certificate.

Additional Information

NHBC Standards 2016

NHBC accepts the use of HERTALAN EASY COVER and EASY WELD EPDM Roof Waterproofing Systems, provided they are installed, used and maintained in accordance with this Certificate, 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 systems 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 HERTALAN EASY COVER and EASY WELD EPDM Roof Waterproofing Systems comprise a range of membranes, adhesives, sealant and flashing.

1.2 The membranes available for use in the systems are:

- HERTALAN EASY COVER — an unreinforced, vulcanised ethylene-propylene-diene-monomer (EPDM) membrane available in rolls. The membrane is also available prefabricated in sections
- HERTALAN EASY WELD BASIC — an unreinforced, vulcanised EPDM membrane with an alternating top and bottom thermoplastic elastomer (TPE) welding band along the edges of the membrane
- HERTALAN EASY WELD MF — an unreinforced, vulcanised EPDM membrane with an alternating top and bottom TPE welding band along the edges of the membrane. The TPE welding strip is positioned specifically for mechanically-fixed applications.

1.3 The membranes are manufactured with the nominal characteristics shown in Table 1.

Table 1 Nominal characteristics

Characteristic (unit)	Membrane type		
	EASY COVER	EASY WELD BASIC	EASY WELD MF
Thickness (mm)	1.2, 1.3, 1.5, 2.0	1.3, 1.5	1.3, 1.5
Width (m)	1.4	1.4	1.4, 0.7
Length(1) (m)	20	20	20
Roll weight (kg)	41, 45, 52, 69	47, 55	47, 55, 24, 27
Watertightness*	pass	pass	pass
Tensile strength* ($N \cdot mm^{-2}$)	≥ 8.0	≥ 7.0	≥ 7.0
Elongation* (%)	≥ 400	≥ 400	≥ 400
Resistance to impact* (mm)	≥ 300	≥ 300	≥ 300
Static loading* (kg)	≥ 25	≥ 25	≥ 25
Tear resistance* (N)	≥ 25	≥ 25	≥ 25
Low temperature foldability* (°C)	≤ –45	≤ –45	≤ –45

(1) Other prefabricated membranes up to 300 m^2 are available to order.

1.4 Ancillary materials used with the membranes include:

- HERTALAN *ks*137 — an adhesive for lap jointing the membranes and/or flashing
- HERTALAN *ks*143 — for adhering the membranes to other substrates, eg concrete, wood, polyurethane insulation, polystyrene insulation (with suitable solvent-resistant facing) and bitumen sheeting
- HERTALAN – RhinoBond System — the system consists of the RhinoBond plates coated to allow induction bonding with the HERTELAN EPDM membranes. The plates can be used in combination with the ThreadSafe tube fixing. Also available is a protective plate to be used between the RhinoBond plate and the substrate, if the substrate is adversely affected by heat. The system is for use with the HERTALAN EASY COVER membrane
- HERTALAN EPDM STRIPS — 200 mm wide EPDM strips for application over mechanical fixings
- HERTALAN COVERSTRIP — a weldable strip for covering mechanical fixings and butted joints
- HERTALAN *ks*205 — a sprayable contact adhesive for adhering the membranes to wood, insulation boards and bitumen felts
- HERTALAN *ks*96 — an adhesive for bonding the membranes to wood, concrete (non-porous), fibre cement and insulation boards and for sealing seams, sealing overlaps made at T-crossings, finishing difficult overlaps in corners and finishing splices
- HERTALAN FLASHING — a non-vulcanised EPDM strip material that can be moulded in place with hot air and bonded with HERTALAN *ks*137 adhesive for non-standard applications. The flashing cures slowly under atmospheric conditions.

2 Manufacture

2.1 The membranes are manufactured by blending EPDM, processing oils, fillers and other additives. The sheets are produced by feeding the mix through a roller-head extruder before vulcanisation.

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 being operated by the manufacturer are being maintained.

2.3 The management system of the manufacturer has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2008 by LRQA (Certificate RGQ927902).

3 Delivery and site handling

3.1 The membranes are delivered to site either in rolls shrink-wrapped in polythene on a pallet, or as prefabricated sheets packed in polyester matting, stacked on a pallet, and shrink-wrapped in polythene. Rolls and sheets carry labels bearing the product name, dimensions, Certificate holder's name and the BBA logo incorporating the number of this Certificate.

3.2 EPDM membranes do not require any particular storage conditions; however, HERTALAN FLASHING should be stored in a clean, dry area and in temperatures between 5°C and 20°C. It cures gradually and therefore should not be stored for more than nine months. With curing, the flexibility reduces and, though the waterproofing characteristics are retained, forming details becomes progressively more difficult.

3.3 Sealants and adhesives must be stored in a dry, ventilated area at temperatures between 5°C and 25°C and isolated from potential ignition sources. Site storage of these products should not exceed six months.

3.4 The Certificate holder has taken the responsibility of classifying and labelling the system 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 HERTALAN EASY COVER and EASY WELD EPDM Roof Waterproofing Systems.

Design Considerations

4 General

4.1 HERTALAN EASY COVER and EASY WELD EPDM Roof Waterproofing Systems are satisfactory for use as:

- a loose-laid and ballasted waterproofing layer, fully adhered at edges and upstands, on flat and zero fall roofs with limited access
- a partially-adhered or fully-adhered waterproofing layer, fully adhered at edges and upstands, on flat, pitched and protected zero fall roofs with limited access
- a loose-laid system to the inverted roof concept, fully adhered at edges and upstands, on flat and zero fall roofs with limited access
- a mechanically-fixed waterproof layer, fully adhered at edges and upstands, on flat and protected zero fall roofs with limited access.

4.2 For ballasted installations, where the slope of the roof is over 3°, precautions must be taken to minimise the loss of ballast. The advice of the Certificate holder should be sought.

4.3 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, additional protection to the membrane must be provided.

4.4 Flat roofs are defined for the purpose of this Certificate as those with a pitch of more than 1:80 and less than 1:6. Pitched roofs are defined as those having falls in excess of 1:6. Zero-pitched roofs are defined for the purpose of this Certificate as those having a finished fall which can vary between 0° and 0.7°.

4.5 When designing flat roofs, twice the minimum finished fall should be assumed, unless a detailed analysis of the roof is available, including overall and local deflection or direction of falls.

4.6 For zero pitch roofs it is particularly important to identify the correct drainage points, to ensure that drainage is sufficient and effective. Reference should be made to the appropriate clauses of the LRWA Guidance Note No7 – *Specifier guidance for flat roof falls,* which generally requires surface drainage falls in most situations.

4.7 Decks to which membranes are to be applied must comply with the relevant requirements of either BS 6229 : 2003 or BS 8217 : 2005 and, where appropriate, *NHBC Standards* 2016, Chapter 7.1 *Flat roofs and balconies*.

4.8 Insulation materials used in conjunction with the membranes must be approved by the Certificate holder and 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 limitations of, that Certificate.

4.9 Contact between certain insulation materials and Hertalan *ks*143 or *ks*205 must be avoided and the Certificate holder consulted for advice.

4.10 Contact with low-grade bitumen and oil-based products should be avoided. If contact with such products is likely, a separating layer should be interposed before installing the waterproof sheet. If compatibility with other products is in doubt, the advice of the Certificate holder should be sought.

5 Practicability of installation

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

6 Weathertightness

6.1 The membrane and its joints, when completely sealed and consolidated, will adequately resist the passage of moisture to the inside of the building and so meet the requirements of the national Building Regulations.

6.2 The systems are impervious to water and, when used as described in this Certificate, will give a weathertight roof capable of accepting minor structural movement without damage.

7 Properties in relation to fire

7.1 Test results indicate that HERTALAN EASY COVER, fully adhered to a plywood substrate, will be unrestricted by the national Building Regulations.

7.2 When tested in accordance with DD CEN TS 1187 : 2012 Test 4 and classified to BS EN 13501-5 : 2005, the following achieved a $B_{ROOF}(t4)$ classification:

- a 90 mm thick composite system comprising 1.2 mm HERTALAN EASY COVER, PIR insulation, a self-adhesive bitumen/aluminium vapour control layer, HERTALAN *ks*143 adhesive and a 0.7 mm profiled steel deck
- a 90 mm thick composite system comprising 1.3 mm HERTALAN EASY WELD, mineral wool insulation, a self-adhesive bitumen/aluminium vapour control layer and a 0.7 mm profiled steel deck.

7.3 The membranes, when used in a loose-laid and ballasted specification, 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.

7.4 The designation of other specifications should be confirmed by:

England and Wales — test or assessment in accordance with Approved Document B, Appendix A, clause A1
Scotland — tests to conform to Mandatory Standard 2.8, clause 2.8.1
Northern Ireland — test or assessment by a UKAS-accredited laboratory or an independent consultant with appropriate experience.

8 Resistance to wind uplift

8.1 When the membrane is fully or partially bonded, the adhesion of the membrane is sufficient to resist the effect of wind suction and minor structural movement likely to occur in practice. However, in areas of high wind exposure, consideration should be given regarding the use of additional protection.

8.2 When the membrane is bonded to insulation boards, the resistance to wind uplift will be dependent on the cohesive strength of the insulation and the method by which it is secured to the roof deck. This should be taken into account when the insulation material is selected.

8.3 When installing the membranes in loose-laid and ballasted specifications, the precise ballast requirements should be calculated in accordance with the relevant parts of BS EN 1991-1-4 : 2005 and its UK National Annex, but should not be below the minimum thickness of 50 mm. In areas of high wind exposure, the use of concrete slabs placed on suitable paving slabs should be considered. Advice on additional protection is available from the Certificate holder.

8.4 In mechanically-fixed specifications, the resistance to wind uplift of the membrane is provided by mechanical fasteners passing through the membrane and secured into the deck. The number, design and position of these 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.

8.5 The number of fixings used should be established by reference to the wind uplift forces calculated in accordance with BS EN 1991-1-4 : 2005 and its UK National Annex on the basis of the maximum permissible loads for mechanically-fixed specifications of (N per fixing):

HERTALAN EASY COVER (fixed through the membrane)	648
HERTALAN EASY COVER (fixed through prefabricated flap)	504
HERTALAN EASY WELD (fixed in the seam)	388
HERTALAN-RhinoBond System	400.

8.6 If the RhinoBond plates are used when mechanically fastening the insulation boards, these can be counted within the number of fixings required for wind resistance of the waterproofing membrane, reducing the overall number of fixings required.

9 Resistance to foot traffic

Results of test data indicate that the membranes can withstand, without damage, the limited foot traffic and light concentrated loads associated with installation and maintenance. Reasonable care should be taken, however, to avoid sharp objects or concentrated loads. Where regular traffic is envisaged, eg for maintenance of lift equipment, a walkway should be provided using concrete slabs supported on bearing pads in accordance with the Certificate holder's instructions.

10 Maintenance

Roofs covered with the systems should be the subject of an annual inspection, as is good practice with waterproofing systems, to ensure continued security and performance, especially those roofs without ballast.

11 Durability

Under normal conditions, the systems will have a service life in excess of 25 years.

Installation

12 General

12.1 The installation of HERTALAN EASY COVER and EASY WELD EPDM Roof Waterproofing Systems must be carried out in accordance with the Certificate holder's instructions and this Certificate.

12.2 Conditions for installation 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.

12.3 Installation should not be carried out during wet or damp weather conditions or at temperatures below 5°C. The fully-adhered system must not be installed at temperatures below 5°C, owing to the risk of condensation contaminating the bonding adhesive.

12.4 Where contact with coal tar or oil-based products is likely, an isolating layer must be interposed between the product and the substrate. Where contact with bituminous products is likely, consideration should be given to the use of an isolating layer, and the advice of the Certificate holder should be sought.

12.5 Where appropriate, sheets may be prefabricated prior to application to reduce the amount of on-site lap jointing.

12.6 In mechanically-fixed applications, only fasteners approved by the Certificate holder must be used.

12.7 All detailing and flashing must be carried out in accordance with the Certificate holder's instructions.

12.8 The membrane is applied at edges and at upstands and must be fully bonded using HERTALAN *ks*137 or HERTALAN *ks*205 adhesive.

12.9 The soundness of the seams must be confirmed using a blunt awl.

13 Procedure (loose-laid and ballasted application)

13.1 The membrane is unrolled onto the substrate and fully adhered at perimeters. Flashing and lap jointing must be carried out in the manner described in section 16.

13.2 Loose-laid applications must be covered by at least 50 mm of well-rounded gravel (15/30 grade minimum). When rounded gravel is used, all edges and corners should be ballasted with concrete tiles (minimum thickness 60 mm) on bearing pads, to a distance of two metres from the perimeter, to avoid damage to the membrane owing to wind uplift.

13.3 Alternatively, concrete paving (minimum thickness 40 mm) on bearing pads can be used as ballast.

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

14 Procedure (bonded)

Partially-bonded application

14.1 HERTALAN *ks*143 and HERTALAN *ks*205 must not be applied directly onto insulation materials that will be adversely affected by the solvent in the adhesive. Where doubt arises about compatibility, the advice of the Certificate holder should be sought.

14.2 For partial bonding, HERTALAN *ks*143 is applied as parallel beads of approximately 8 mm diameter placed every 80 mm in a striped pattern, resulting in an application rate of between 200 $g \cdot m^{-2}$ and 225 $g \cdot m^{-2}$.

14.3 The adhesive should be allowed to dry for between 5 and 20 minutes (depending on ambient conditions) before the membrane is applied to the substrate by unrolling and ensuring good contact with the adhesive, and checking that it is free from wrinkles and trapped air.

14.4 For a satisfactory application, at least 50% of the total area of membrane must be bonded.

14.5 Laps must be sealed and flashing installed as described in section 16.

Fully-bonded application

14.6 For fully-bonded application using HERTALAN *ks*143, the adhesive is evenly applied to the substrate by roller at an application rate of between 300 $g \cdot m^{-2}$ and 350 $g \cdot m^{-2}$ and allowed to dry for between 5 and 20 minutes (depending on the ambient weather conditions) before application of the membrane.

14.7 For fully-bonded application using HERTALAN *ks*205, the adhesive is applied to both the substrate and the membrane at an application rate of 150 $g \cdot m^{-2}$ on each surface and allowed to become touch dry.

14.8 The membrane is carefully positioned and applied to the substrate avoiding the formation of folds, wrinkles and air voids.

14.9 For a satisfactory application, at least 90% of the total area of the membrane must be bonded.

14.10 Laps must be sealed and flashing installed as described in section 16.

15 Procedure (mechanically-fixed application)

HERTALAN EASY COVER fixed through the membrane

15.1 The membrane is rolled out on the roof and, after orientation, allowed to condition for at least 45 minutes.

15.2 The membrane is fixed using mechanical fasteners approved by the Certificate holder fixed through the membrane, and sealed using HERTALAN EPDM STRIPS bonded with HERTALAN *ks*137 and sealed with HERTALAN *ks*96. Alternatively, the fasteners can be sealed by welding strips of HERTALAN EASY WELD at least 120 mm wide.

15.3 The number of fasteners must be determined by calculation as described in section 8.5, and spaced at equal centres.

HERTALAN EASY COVER fixed through 'secret flaps'

15.4 In this application, the membrane is prefabricated with flaps that become apparent when the membrane is unrolled on the roof.

15.5 The membrane is unfolded, laid out on the roof and allowed to condition for at least 45 minutes.

15.6 Starting with the end to be fixed last, the membrane is rolled onto a pipe with a diameter between 50 mm and 70 mm.

15.7 The membrane is unrolled in the direction of the fall, revealing the fixing flaps.

15.8 The fasteners must be placed as near as possible to the hot-bonded joint.

15.9 Edges are fixed using HERTALAN *ks*137 or HERTALAN *ks*205 in accordance with the Certificate holder's instructions.

15.10 When it is necessary to join the membrane, the edges of the sheets to be joined are butted together and covered with either a 200 mm wide adhered HERTALAN EPDM STRIP or a 150 mm wide HERTALAN EASY WELD strip. The membrane can also be joined by making a lap joint using HERTALAN *ks*137 and sealed with HERTALAN *ks*96.

HERTALAN EASY WELD MF membrane

15.11 The first sheet of membrane is positioned, and fastened in the seam area of the sheet using suitable fixings recommended by the Certificate holder.

15.12 The number of fasteners must be determined by calculation as described in section 8.5.

15.13 The next sheet of membrane is placed and held in position with spot welds.

15.14 At T-seams, a strip of TPE must be used to fill the void owing to level variations between the membrane sheets.

15.15 When correctly positioned, the seams must be fully sealed and edges fixed as described in section 15.9.

HERTALAN-Rhinobond System

15.16 The system cannot be used directly on metal layers, such as aluminium faced insulation boards. An addition layer of insulation, at least 40 mm thick, must be used between the metal layer and the RhinoBond plate.

15.17 If used on a substrate that is affected by heat, such as EPS insulation, a protective plate is used between the material and the RhinoBond plate to stop heat transfer.

15.18 The fixing pattern is based on the wind uplift calculations, as described in section 8.5, with a maximum distance between fasteners of 600 mm.

15.19 The fasteners with RhinoBond plates are installed prior to putting the membrane in place. The top of the plate must remain clean and dry in order to give the maximum bond to the membrane.

15.20 The induction machine is adjusted to site conditions by carrying out test welds prior to starting to bond the membrane to the RhinoBond plates.

15.21 The membrane is put in position, and rolled out and fully folded out over the substrate.

15.22 The RhinoBond induction machine is placed on the EPDM membrane directly above the RhinoBond plate and activated. A signal will sound after 5 seconds, whereupon the machine is moved to the next plate and a cooling magnet placed directly onto the first plate.

15.23 The magnet is left in place for approximately one minute to hold the membrane in place while bonding to the plate. It is recommended that a minimum of six cooler magnets is used, to allow work to continue with a minimum of interruption.

15.24 The procedure must be repeated until all the RhinoBond plates are bonded to the membrane.

16 Details

Standard seaming procedure

16.1 At laps, the top sheet is folded back by about 100 mm. Both surfaces of the lap must be clean and dry, and, if necessary, surfaces are cleaned using a suitable cleaning agent recommended by the Certificate holder. HERTALAN *ks*137 is applied by brush, to give an even coverage, to both sides over a width of 80 mm, leaving the outer 20 mm free, and allowed to dry to the touch (5 to 10 minutes). The top sheet is allowed to fall freely onto the bottom sheet, avoiding stretching and wrinkling. The width of the lap joint should be a minimum of 100 mm.

16.2 The lap is rolled with a steel roller parallel to the splice to consolidate the joint, then checked to ensure that a good seal has been achieved. The remaining 20 mm is filled with a continuous bead of HERTALAN *ks*96 and which is rolled down, making it flush with the lap joint so that the sealant is at least 1 mm thick.

16.3 Excess sealant is removed using a suitable cleaning agent.

Flashing

16.4 Concurrent with the installation of the membrane, the flashing is applied. This is first bonded to the horizontal membrane and lapped in the manner described in sections 16.1 and 16.2, with a minimum lap of 100 mm.

16.5 The flashing is bonded with HERTALAN *ks*137 to the vertical surface of the wall.

16.6 For specific flashing requirements HERTALAN FLASHING can be used. The flashing (non-vulcanised) can be moulded in place using hot air, and bonded with HERTALAN *ks*137. The flashing cures slowly over a period of time under atmospheric conditions.

17 Repair

Any damage must be repaired immediately by cleaning the area around the damage and applying a patch of the membrane as described in sections 16.1 and 16.2.

Technical Investigations

18 Tests

Tests were carried out and the results assessed to determine:

- resistance to impact
- resistance to static loading
- resistance to root penetration
- hail resistance
- low-temperature foldability
- peel strength of joints
- shear strength of joints
- water absorption
- dimensional stability
- tensile strength and elongation
- effects on joints, static loading and impact resistance of 180 days water soak at 60°C.

19 Investigations

19.1 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.

19.2 Existing data on fire performance of the system components were assessed.

19.3 An evaluation was made of data for:

- resistance to wind loading of fully-bonded and partially-bonded systems using HERTALAN *ks*143, and mechanically-fixed systems
- peel adhesion of systems bonded with HERTALAN *ks*205
- effect of long-term water soak on joints.

Bibliography

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

BS 8217 : 2005 *Reinforced bitumen membranes for roofing — Code of practice*

BS EN 1991-1-4 : 2005 +A1 : 2010 *Eurocode 1: Actions on structures — General actions*
NA to BS EN 1991-1-4 : 2005 +A1 : 2010 UK National Annex to *Eurocode 1: Actions on structures — General actions*

BS EN 13501-5 : 2005 *Fire classification of construction products and building elements — Classification using data from external fire exposure to roofs test*

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

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

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

20 Conditions

20.1 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 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.

20.2 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.

20.3 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.

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

20.5 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.

20.6 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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