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Agrément Certificate
13/5046
Product Sheet 1

RIW HIGH PERFORMANCE DAMP-PROOFING SYSTEM

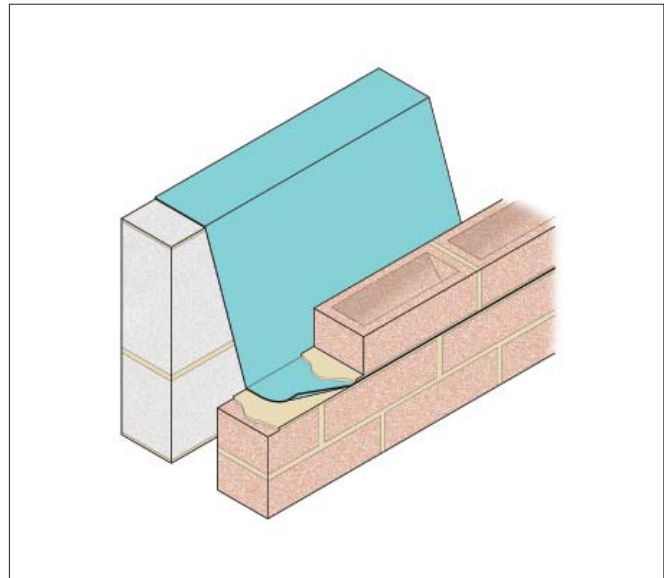
RIW SHEETSEAL 9000 DPC

This Agrément Certificate Product Sheet⁽¹⁾ relates to RIW Sheetseal 9000 DPC, a flexible sheet material manufactured from a mixture of thermoplastic polymers and additives, used to provide horizontal, vertical or stepped damp-proof courses in either solid or cavity masonry walls.

(1) Hereinafter referred to as 'Certificate'.

CERTIFICATION INCLUDES:

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



KEY FACTORS ASSESSED

Behaviour under load — the product will not extrude under load, up to the point of compressive failure of the wall (see section 6).

Resistance to water and water vapour — the product will provide an effective barrier against moisture (see section 7).

Compatibility with other materials — within normal construction, the product is compatible with all materials with which it will be in contact, with the exception of timber preservatives based on creosote or tar oils (see section 8)

Durability — when properly specified and installed, the product, in normal circumstances, will remain effective during the lifetime of the building (see section 10).

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

A handwritten signature in black ink, appearing to read 'Simon Wroe'.

Date of First issue: 14 October 2013

Simon Wroe
Head of Approvals — Materials

A handwritten signature in black ink, appearing to read 'Claire Curtis-Thomas'.

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.

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Regulations

In the opinion of the BBA, RIW Sheetseal 9000 DPC, if installed, used and maintained in accordance with this Certificate, will meet or contribute to meeting 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: A1	Loading
Comment:	The product will not extrude under load, up to the point of failure of the wall, and will not adversely affect the ability of a properly designed and built wall to sustain and transmit compression loads. The presence of a dpc can reduce the shear and tensile strength of a wall at that point, and design may need to take account of this. See section 6.1 of this Certificate.
Requirement: C2(a)(b)	Resistance to moisture
Comment:	Properly installed in a correctly designed structure, the product forms an effective barrier to the movement of water within the wall, enabling compliance with this Requirement. See section 7 of this Certificate.
Regulation: 7	Materials and workmanship
Comment:	The product is acceptable. See section 10 and the <i>Installation</i> part 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 product satisfies the requirements of this Regulation. See sections 9 and 10 and the <i>Installation</i> part of this Certificate.
Regulation: 9	Building standards applicable to construction
Standard: 1.1(a)(b)	Structure
Comment:	The product will not extrude up to the point of failure of the wall, and will not adversely affect the ability of the properly designed and built wall to sustain and transmit compression loads, with reference to clauses 1.1.1 ⁽¹⁾⁽²⁾ and 1.1.3 ⁽¹⁾⁽²⁾ . See section 6.1 of this Certificate.
Standard: 3.4	Moisture from the ground
Standard: 3.10	Precipitation
Comment:	Properly installed in a correctly designed structure, the product forms an effective barrier to the movement of water within the wall, enabling compliance with these Standards, with reference to clauses 3.4.1 ⁽¹⁾⁽²⁾ and 3.10.1 ⁽¹⁾⁽²⁾ . See section 7 of this Certificate.
Standard: 7.1(a)(b)	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:	All comments given for 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

Regulation: 23(a)(i)(iii)(b)(i)	Fitness of materials and workmanship
Comment:	The product is acceptable. See section 10 and the <i>Installation</i> part of this Certificate.
Regulation: 28(a)	Resistance to moisture and weather
Comment:	Properly installed in a correctly designed structure, the product forms an effective barrier to the movement of water within the wall, enabling compliance with this Regulation. See section 7 of this Certificate.
Regulation: 30	Stability
Comment:	The product will not extrude, up to the point of failure of the wall, and will not adversely affect the ability of a properly designed and built wall to sustain and transmit compression loads. See section 6.1 of this Certificate.

Construction (Design and Management) Regulations 2007

Construction (Design and Management) Regulations (Northern Ireland) 2007

Information in this Certificate may assist the client, CDM co-ordinator, designer and contractors to address their obligations under these Regulations.

See section: 1 *Description* (1.2) of this Certificate.

Additional Information

NHBC Standards 2013

NHBC accepts the use of RIW Sheetseal 9000 DPC, provided it is installed, used and maintained in accordance with this Certificate, in relation to *NHBC Standards*, Chapter 6.1 *External masonry walls*.

CE marking

The Certificate holder has taken the responsibility of CE marking the product in accordance with harmonised European Standard BS EN 14909 : 2012. An asterisk (*) appearing in this Certificate indicates that data shown is given in the manufacturer's Declaration of Performance.

Technical Specification

1 Description

1.1 RIW Sheetseal 9000 DPC is a flexible sheet, comprising a mixture of thermoplastic polymers and other additives, extruded into sheet form, reeled into rolls and cut to width.

1.2 The rolls are manufactured to the dimensions given in Table 1.

Table 1 Nominal characteristics

Characteristic (unit)	Value
Thickness (mm)	0.8
Mass (g·m ⁻²)	725
Roll length (m)	20
Roll width (mm) ⁽¹⁾	100 to 1000
Watertightness* (2 kPa)	Pass
Durability (artificial ageing)*	Pass
Durability (alkali)*	Pass
Resistance to low temperature* (°C)	-40
Resistance to impact* (mm)	400
Resistance to static loading (kg)	20
Colour	black

(1) Widths cut to order.

2 Manufacture

2.1 The product is manufactured from a blend of thermoplastic polymers and extruded into sheet form.

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.

3 Delivery and site handling

3.1 The product is delivered in rolls, secured with a wrapper bearing the manufacturer's name and the BBA logo incorporating the number of this Certificate.

3.2 Rolls must be stored on end and under cover.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on RIW Sheetseal 9000 DPC.

Design Considerations

4 Use


4.1 RIW Sheetseal 9000 DPC, when correctly specified and installed in accordance with this Certificate, provides satisfactory horizontal, vertical, or stepped damp-proof coursing (including cavity trays) in either solid or cavity walls of brick, block, stone, or concrete. General standards of good design practice are given in BS EN 1996-1-1 : 2005, BS EN 1996-2 : 2006 and BS EN 1996-3 : 2006 and their respective UK Annexes, and PD 6697 : 2010.

4.2 The product may also be used in conjunction with beam and block flooring.

5 Practicability of installation


The product should be installed by bricklayers experienced with this type of product.

6 Behaviour under load

 6.1 The product will not extrude under load, up to the point of compressive failure of the wall, and will not adversely affect the ability of a properly designed and built wall to sustain and transmit compression. The stability of the wall in respect of lateral loads must be checked in relation to the stresses permitted between the dpc and the mortar. The characteristic stresses for design purposes and further guidelines are available from the Certificate holder.

6.2 The product will withstand considerable movement of the wall, and is unlikely to be impaired by normally occurring movements up to the point where the wall itself is deemed to have failed.


7 Resistance to water and water vapour

 When correctly specified and installed, the product will provide an effective barrier against liquid water and water vapour either from a source external to the structure or from one part of the structure to another.

8 Compatibility with other materials

The product is compatible with most materials with which it is likely to come into contact within normal construction, including timber preservatives of water-based solutions of salts. However, contact with preservatives based on creosote or tar oils should be avoided. Where doubt exists, the advice of the Certificate holder should be sought.

9 Maintenance

 As the product is confined within the wall cavity and has suitable durability (see section 10), maintenance is not required.

10 Durability

 Artificial ageing tests indicate that a satisfactory retention of physical properties is achieved. When properly specified and installed, the product in normal circumstances will remain effective for the lifetime of the building.

Installation

11 General

11.1 Installation of RIW Sheetseal 9000 DPC must be in accordance with the Certificate holder's instructions and PD 6697 : 2010, and the relevant clauses of BS 8000-3 : 2001, BS 8215 : 1991 and BRE Digest 380 *Damp-proof courses*.

11.2 As with all flexible damp-proof courses, care should be taken to avoid impact damage from sharp objects (eg chisels) during installation.

11.3 The product is handled in the same manner as that for conventional flexible damp-proof courses, and is cut with a sharp knife. It will remain sufficiently flexible for installation in low temperatures and will not become tacky in warm conditions.

12 Procedure

12.1 The product must be laid on a wet, even bed of mortar and extend through the full thickness of the wall or wall leaf, including pointing, applied rendering or other facing material.

12.2 Perforations in adjacent courses of brickwork must be completely filled with mortar.

12.3 All lap joints in the dpc must have a minimum 100 mm overlap, be completely sealed with suitable tape and be supported by a suitable joint system in accordance with the Certificate holder's instructions.

12.4 When using the product with boot lintels or similar constructions, it is installed to follow the lintel profile wherever possible.

12.5 As with other similar materials, care must be taken to avoid damaging the dpc during setting of mortar droppings. Recommendations for avoiding damage occurring are:

- use of cavity battens to prevent mortar droppings from reaching the dpc
- removal of mortar droppings before they harden
- implements such as steel rods should never be used for cleaning the cavity
- inspection of cavity trays for damage as work proceeds.

Beam and block flooring

12.6 When used with beam and block flooring, the dpc may be laid dry on a brick or block wall provided that:

- minimum bearing⁽¹⁾ of the beam is achieved
- dead and applied loads upon the dpc via the beam do not exceed $2.5 \text{ N}\cdot\text{mm}^{-2}$
- the surface of the wall onto which the dpc and beam are to be installed is clean, smooth and free from projections or perforations. If this cannot be achieved, the dpc should be laid in an even bed of mortar
- loose aggregate is swept from the wall prior to installation of the dpc, and from the dpc prior to installation of the beams.

(1) As recommended by the flooring manufacturer.

13 Repair

Damaged areas of the product can be easily repaired prior to installation by cutting and/or replacing the damaged section, ensuring joints are made in accordance with section 12.3. Once covered, the product cannot be repaired.

Technical Investigations

14 Tests

Tests were conducted and results assessed to determine:

- weight
- water vapour permeability
- water vapour resistance
- water absorption
- resistance to water pressure
- resistance to impact
- tensile strength and elongation
- low temperature flexibility
- trouser tear
- nail tear
- dimensional stability
- heat ageing followed by tensile strength, elongation and low temperature flexibility
- water soak followed by tensile strength, elongation and low temperature flexibility.

15 Investigations

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

15.2 An assessment was made of reports of shear and flexure tests. The results were found to be satisfactory.

15.3 An assessment was made of the compatibility of the product with chemicals with which it is likely to come in contact.

Bibliography

BS EN 1996-1-1 : 2005 *Eurocode 6 — Design of masonry structures — General rules for reinforced and unreinforced masonry structures*

NA to BS EN 1996-1-1 : 2005 *UK National Annex to Eurocode 6 — Design of masonry structures — General rules for reinforced and unreinforced masonry structures*

BS EN 1996-2 : 2006 *Eurocode 6 — Design of masonry structures — Design considerations, selection of materials and execution of masonry*

NA to BS EN 1996-2 : 2006 *UK National Annex to Eurocode 6 — Design of masonry structures — Design considerations, selection of materials and execution of masonry*

BS EN 1996-3 : 2006 *Eurocode 6 — Design of masonry structures — Simplified calculation methods for unreinforced masonry structure*

NA to BS EN 1996-3 : 2006 *UK National Annex to Eurocode 6 — Design of masonry structures — Simplified calculation methods for unreinforced masonry structures*

PD 6697 : 2010 *Recommendations for the design of masonry structures to BS EN 1996-1-1 and BS EN 1996-2*

Conditions of Certification

16.1 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.

16.2 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.

16.3 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.

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

16.5 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.

16.6 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.