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Agrément Certificate
10/4800
Product Sheet 1

SANDTOFT FLASHINGS

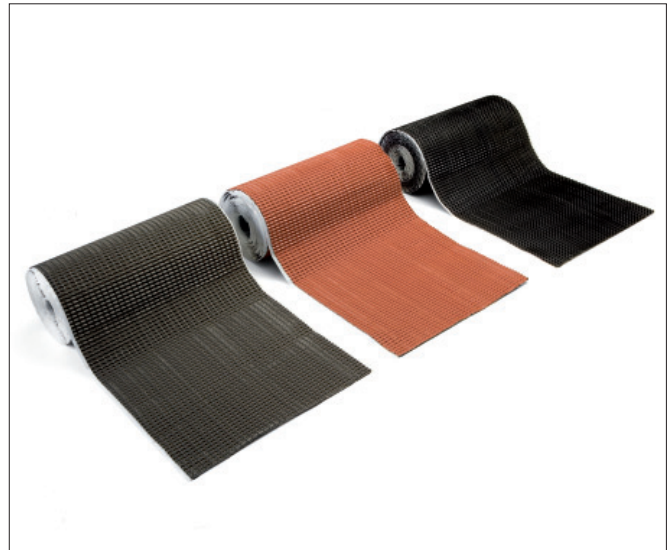
KORAFLEX FLASHING SYSTEM

PRODUCT SCOPE AND SUMMARY OF CERTIFICATE

This Certificate relates to the Koraflex Flashing System, for use as a flashing on side abutments and chimney applications on pitched roofs, as an alternative to lead.

AGRÉMENT CERTIFICATION INCLUDES:

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



KEY FACTORS ASSESSED

Weather-tightness — as part of a complete roof, the product will contribute to resisting the passage of moisture into the interior of the building (see section 5).

Properties in relation to fire — tests indicate that the product when used as part of a complete roof will be unrestricted under the Building Regulations (see section 6).

Strength — the product has adequate strength to resist the loads associated with the installation of the roof (see section 7).

Durability — under normal service conditions, the product will have a service life in excess of 20 years (see section 9).

The BBA has awarded this Agrément Certificate to the company named above for the system described herein. The 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

Stuart Sadler
Head of Approvals — Materials

Greg Cooper
Chief Executive

Date of First issue: 6 December 2010

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, the Koraflex Flashing System if used in accordance with the provisions of this Certificate, will meet or contribute to meeting the relevant requirements of the following Building Regulations:



The Building Regulations 2010 (England and Wales)

Requirement: B4(2)	External fire spread
Comment:	Data to DIN EN ISO 11925-2 : 2002 indicate that the system when used as part of a complete roof, will not affect the fire rating of the roof construction. See sections 6.1 and 6.2 of this Certificate.
Requirement: C2(b)	Resistance to moisture
Comment:	The system will contribute to a roof meeting this Requirement. See section 5 of this Certificate.
Requirement: Regulation 7	Materials and workmanship
Comment:	The system is acceptable. See section 9 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 system can contribute to a construction satisfying this Regulation. See sections 8 and 9 and the <i>Installation</i> part of this Certificate.
Regulation: 9	Building standards – construction
Standard: 2.8	Spread from neighbouring building
Comment:	Data to DIN EN ISO 11925-2 : 2002 indicates that the system can be regarded as having a low vulnerability, with reference to clause 2.8.1 ⁽¹⁾⁽²⁾ , and will not effect the fire rating of the roof construction. See sections 6.1 and 6.2 of this Certificate.
Standard: 3.10	Precipitation
Comment:	The system will contribute to a roof satisfying clauses 3.10.1 ⁽¹⁾⁽²⁾ and 3.10.8 ⁽¹⁾⁽²⁾ of this Standard. See section 5 of this Certificate.
Regulation: 12	Building standards – conversions
Comment:	All comments given for this system under Regulation 9, 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) 2000 (as amended)

Regulation: B2	Fitness of materials and workmanship
Comment:	The system is acceptable. See section 9 and the <i>Installation</i> part of this Certificate.
Regulation: B3(2)	Suitability of certain materials
Comment:	The system is acceptable. See section 8 of this Certificate.
Regulation: C4(b)	Resistance to ground moisture and weather
Comment:	The system will contribute to a roof satisfying this Regulation. See section 5 of this Certificate.
Regulation: E5(b)	External fire spread
Comment:	Data to DIN EN ISO 11925-2 : 2002 indicate that the system when used as part of a complete roof construction will not affect the fire rating of the roof construction. See sections 6.1 and 6.2 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.

Non-regulatory Information

NHBC Standards 2010

NHBC accepts the use of the Koraflex Flashing System, when installed and used in accordance with this Certificate, in relation to *NHBC Standards*, Chapters 6.8 *Fireplaces, chimneys and flues*, and 7.2 *Pitched roofs*.

Technical Specification

1 Description

1.1 The Koraflex Flashing System is manufactured from PUR colour coated aluminium covered on the back side with butyl adhesive and a release film. It is available in flat, corrugated and dimpled finishes.

1.2 The rolls are available with the following nominal characteristics:

Roll length (m)	5
Roll widths (mm)	140, 210, 280, 320 and 450
Weight per unit area (kg·m ⁻²)	2.57
Colour	Black, Grey and Red
Finish	dimpled

1.3 Quality control checks are carried out on incoming materials, during production and on final product, including:

- dimensions
- colour checks
- butyl adhesion.

2 Delivery and site handling

2.1 The system is packaged in carton boxes with product name and description, roll size and the BBA identification mark including the number of this Certificate.

2.2 The system should be stored upright on a smooth, clean, dry surface, under cover and protected from sunlight.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on the Koraflex Flashing System.

Design Considerations

3 Use

3.1 The Koraflex Flashing System when designed and installed in accordance with the relevant parts of BS 5534 : 2003 and BS 8000-6 : 1990 are suitable for use in flashing applications, such as abutments and chimneys to provide a weatherproof junction.

3.2 Where the system is likely to come into contact with aggressive chemicals (such as acid, alkali, oil and solvent), a test on the product should be conducted before proceeding. If any doubt arises, the Certificate holder's advice should be sought.

4 Practicability of installation

The material can be installed by competent roofing contractors experienced with this type of system.

5 Weathertightness



Tests confirm that the Koraflex Flashing System, when incorporated into a roofing system designed and installed in accordance with conventional good practice will adequately resist the passage of moisture to the interior of the building and so contribute to the roof meeting the requirements of the national Building Regulations:

England and Wales — Approved Document C, Requirement C2(b), Section 6

Scotland — Mandatory Standard 3.10, clauses 3.10.1 and 3.10.8

Northern Ireland — Regulation C4(b).

6 Properties in relation to fire



6.1 When samples of the Koraflex Flashing System, were tested in accordance with DIN EN ISO 11925-2 : 2002 there was no flame spread (surface/edge flaming) in excess of 150 mm vertically from the point of application of the test flame within 20 seconds from the time of application. Interpretation of these results indicates that the product will not affect the performance of the roof.

6.2 When tested in accordance with BS EN 13501-1 : 2007, the product achieved a Class E classification.

7 Strength

The system will resist normal impacts associated with installation and use.

8 Maintenance



Damaged areas can be repaired by following the Certificate holder's instructions prior to completing the roof covering.

9 Durability



Results of available test data indicate that the system should have a life in excess of 20 years.

Installation

10 General

10.1 Installation of the Koraflex Flashing System should be strictly in accordance with the Certificate holder's instructions and the relevant recommendations of BS 5534 : 2003, BS 6229 : 2003 and BS 8000-6 : 1990.

10.2 The system is worked the same way as lead flashing. It can be cut with a sharp knife. In respect of health and safety, protective gloves should be worn during installation.

10.3 Cutting and folding can be carried out at temperatures normally associated with roofing works.

10.4 Foot traffic should be avoided or protection boards should be used when installing the system.

10.5 Overlap joints of 150 mm minimum are required.

10.6 At chimneys and upstands, the flashing should extend by 20 mm width for chasing into the bricks. The overhang at chimneys should be 50 mm.

Technical Investigations

11 Tests

11.1 Samples of the Koraflex Flashing System were obtained from the Certificate holder for testing. The results of the tests carried out by, or on behalf of the BBA are summarised in Tables 2 and 3.

Table 2 Physical properties — directional

Test (units)	Mean result		Method
	Longitudinal	Transverse	
Tensile strength (N per 50 mm)			BS EN 12311-1
unaged	196	476	
aged ⁽¹⁾	246	475	
aged ⁽²⁾	203	499	
Elongation at break (%)			BS EN 12311-1
unaged	15	5	
aged ⁽¹⁾	21	5	
aged ⁽²⁾	16	7	
Tear resistance (nail) (N)			BS EN 12310-1
unaged	39	53	
Dimensional stability (%)	0.0	0.0	BS EN 1107-2

(1) UVB aged 2000 total hours UVB: 4 h UVB 313 at 50 ± 2°C, followed by 4 h condensation at 50 ± 2°C.

(2) 12 weeks at 80°C.

Table 3 Physical properties — general

Test (units)	Mean result	Method
Water absorption (%)	0.06	MOAT 66
Water vapour transmission ($\text{g}\cdot\text{m}^{-2}\cdot 24\text{ h}^{-1}$)	<0.01	BS 3177
Water vapour resistance ($\text{MN}\cdot\text{s}\cdot\text{g}^{-1}$)	<20520	
Low temperature foldability ($^{\circ}\text{C}$)		BS EN 495-5
Unaged		
upper	-40	
lower	-40	
Aged ⁽²⁾		
upper	-40	
lower	-40	
Peel strength — max load (N)		MOAT 64
Unaged		
concrete	21	
brick	15	
Aged ⁽¹⁾		
concrete	34	
brick	17	
Aged ⁽²⁾		
concrete	23	
brick	10	

(1) 28 days at 80°C.

(2) Water Soak 24 hrs at 23°C.

11.2 Tests were also carried out to examine the following properties:

- dimensional checks
- ash content
- weight per unit area
- effect of accelerated ageing and colour stability.

12 Investigations

12.1 An assessment was made of results of a fire test in accordance with DIN EN ISO 11925-2 : 2002 carried out by an independent test authority.

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

Bibliography

BS 3177 : 1959 *Method for determining the permeability to water vapour of flexible sheet materials used for packaging*

BS 5534 : 2003 *Code of practice for slating and tiling (including shingles)*

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

BS 8000-6 : 1990 *Workmanship on building sites — Code of practice for slating and tiling of roofs and claddings*

BS EN 495-5 : 2001 *Flexible sheets for waterproofing — Determination of foldability at low temperature — Plastic and rubbers sheets for roof waterproofing*

BS EN 1107-2 : 2001 *Flexible sheets for waterproofing — Determination of dimension stability — Plastic and rubber sheets for roof waterproofing*

BS EN 12310-1 : 2000 *Flexible sheets for waterproofing — Determination of resistance to tearing (nail shank)— Bitumen sheets for roof waterproofing*

BS EN 12311-2 : 2000 *Flexible sheets for waterproofing — Determination of tensile properties — Plastic and rubber sheets for roof waterproofing*

BS EN 13501-1 : 2007 *Fire classification of construction products and building elements. Classification using test data from reaction to fire tests*

DIN EN ISO 11925-2 : 2002 *Reaction to fire tests — Ignitability of building products when subjected to direct impingement of flame*

MOAT No 64 : 2001 *UEAtc Technical Guide for the assessment of Roof Waterproofing Systems made of Reinforced APP or SBS Polymer Modified Bitumen Sheets*

MOAT No 66 : 2001 *UEAtc Technical Guide for the assessment of non-reinforced, reinforced and/or Backed Roof Waterproofing Systems made of EPDM*

13 Conditions

13.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is granted only to the company, firm or person named on the front page — no other company, firm or person may hold or claim any entitlement to this Certificate
- 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.

13.2 Publications and documents referred to in this Certificate are those that the BBA deems to be relevant at the date of issue or re-issue of this Certificate and include any: Act of Parliament; Statutory Instrument; Directive; Regulation; British, European or International Standard; Code of Practice; manufacturers' instructions; or any other publication or document similar or related to the aforementioned.

13.3 This Certificate will remain valid for an unlimited period provided that the product/system and the manufacture and/or fabrication including all related and relevant 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.

13.4 In granting this Certificate, the BBA is not responsible for:

- 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
- individual installations of the product/system, including the nature, design, methods and workmanship of or related to the installation
- the actual works in which the product/system is installed, used and maintained, including the nature, design, methods and workmanship of such works.

13.5 Any information relating to the manufacture, supply, installation, use and maintenance 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 and maintained. It does not purport in any way to restate the requirements of the Health & Safety at Work etc Act 1974, or of any other statutory, common law or other duty which may exist at the date 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. In granting this Certificate, the BBA does not accept responsibility to any person or body for any loss or damage, including personal injury, arising as a direct or indirect result of the manufacture, supply, installation, use and maintenance of this product/system.