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Agrément Certificate
87/1915
Product Sheet 1 Issue 4

HAMBLESIDE DANELAW FLASHINGS

HAMBLESIDE DANELAW GRP VALLEY TROUGHS FOR TILED ROOFS

This Agrément Certificate Product Sheet(1) relates to Hambleside Danelaw GRP Valley Troughs for Tiled Roofs, for use in tiled pitched roofs constructed in accordance with the relevant requirements of BS 5534 : 2014. The products provide a weatherproof junction where there are changes in direction or material in a tiled roof structure.

(1) Hereinafter referred to as 'Certificate'.

The assessment includes

Product factors:

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

Process factors:

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

Ongoing contractual Scheme elements†:

- regular assessment of production
- formal 3-yearly review

KEY FACTORS ASSESSED

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

The BBA has awarded this Certificate to the company named above for the products described herein. These products 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 Fourth issue: 25 Apri 2024
Originally certified on 20 September 1987

Hardy Giesler
Chief Executive Officer

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

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

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

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

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

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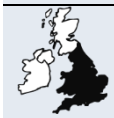
SUMMARY OF ASSESSMENT AND COMPLIANCE

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

Compliance with Regulations

Having assessed the key factors, the opinion of the BBA is that Hambleside Danelaw GRP Valley Troughs for Tiled Roofs, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements of the following Building Regulations:



The Building Regulations 2010 (England and Wales) (as amended)

Requirement:	**B4(2)**	**External fire spread**
Comment:		On suitable substructures, the use of the products may enable a roof to be unrestricted under this Requirement. See section 2 of this Certificate.
Requirement:	**C2(b)**	**Resistance to moisture**
Comment:		The products will contribute to a roof satisfying this Requirement. See section 3 of this Certificate.
Regulation:	**7(1)**	**Materials and workmanship**
Comment:		The products are acceptable. See sections 8 and 9 of this Certificate.

The Building (Scotland) Regulations 2004 (as amended)

Regulation:	**8(1)**	**Fitness and durability of materials and workmanship**
Comment:		The use of the products satisfies the requirements of this Regulation. See sections 8 and 9 of this Certificate.
Regulation:	**9**	**Building standards - construction**
Standard:	2.8	Spread from neighbouring buildings
Comment:		When applied to a suitable substructure, the products may enable a roof to be unrestricted under clause 2.8.1(1)(2) of this Standard. See section 2 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The products will contribute to satisfying this Standard, with reference to clauses 3.10.1(1)(2) and 3.10.8(1)(2). See section 3 of this Certificate.
Standard:	7.1(a)	Statement of sustainability
Comment:		The products can contribute to satisfying the relevant requirements of Regulation 9, Standards 1 to 6, and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard.
Regulation:	**12**	**Building standards - conversion**
Comment:		All comments given for the products under Regulation 9, Standards 1 to 6, also apply to this Regulation, with reference to clause 0.12.1(1)(2) and Schedule 6(1)(2).

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

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

Regulation:	**23(1)(a)(i)**	**Fitness of materials and workmanship**
Comment:	**(iii)(b)(i)**	The products are acceptable. See sections 8 and 9 of this Certificate.
Regulation:	**28(b)**	**Resistance to moisture and weather**
Comment:		The use of the products will enable a roof to satisfy the requirements of this Regulation. See section 3 of this Certificate.
Regulation:	**36(b)**	**External fire spread**
Comment:		On a suitable substructure, the use of the products may enable a roof to be unrestricted under this Regulation. See section 2 of this Certificate.

Additional Information

NHBC Standards 2024

In the opinion of the BBA, Hambleside Danelaw GRP Valley Troughs for Tiled Roofs, 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 7.2 *Pitched roofs*.

Fulfilment of Requirements

The BBA has judged Hambleside Danelaw GRP Valley Troughs for Tiled Roofs to be satisfactory for use as described in this Certificate. The products have been assessed for use as a weatherproof junction where there are changes in direction or material in a tiled roof structure.

ASSESSMENT

Product description and intended use

The Certificate holder provided the following description for the products under assessment. Hambleside Danelaw GRP Valley Troughs for Tiled Roofs consist of glass fibre-reinforced polyester laminates in a range of profiles (see Figures 1 to 5).

The product codes for the range of profiles are:

- HD 361 and 362 (Mortared Tile Valley Troughs)
- HD 401 and 402 (Mortared Tile Valley Troughs)
- HD RP3 and RP4 (Mortared Tile Valley Troughs)
- HD DVL/1/2 and HD DVLPT/1/2 (Dry Fix Valley Troughs)
- OBDVT1 and OBDVLPT1 (Over Batten Dry Fix Valley Troughs)
- SDVT1 (Secret Dry Fix Valley Troughs).

Mortar bonding strips are provided along the upper surface of each edge as a key for bedding the roof tiles in mortar, where necessary. The mortared products are finished in two width sizes (Hambleside Danelaw 360 and 400) and two lengths (2.4 and 3 m respectively). The standard dry fix troughs are produced to a flat profile (Figure 2).

The Secret Dry Fix Valley Troughs (SDVT1) are designed to be hidden when the roof is completed and are available in a length of 3 m and a width of 310 mm.

The products are finished in Anthracite Grey.

Figure 1 Mortared Valley Troughs

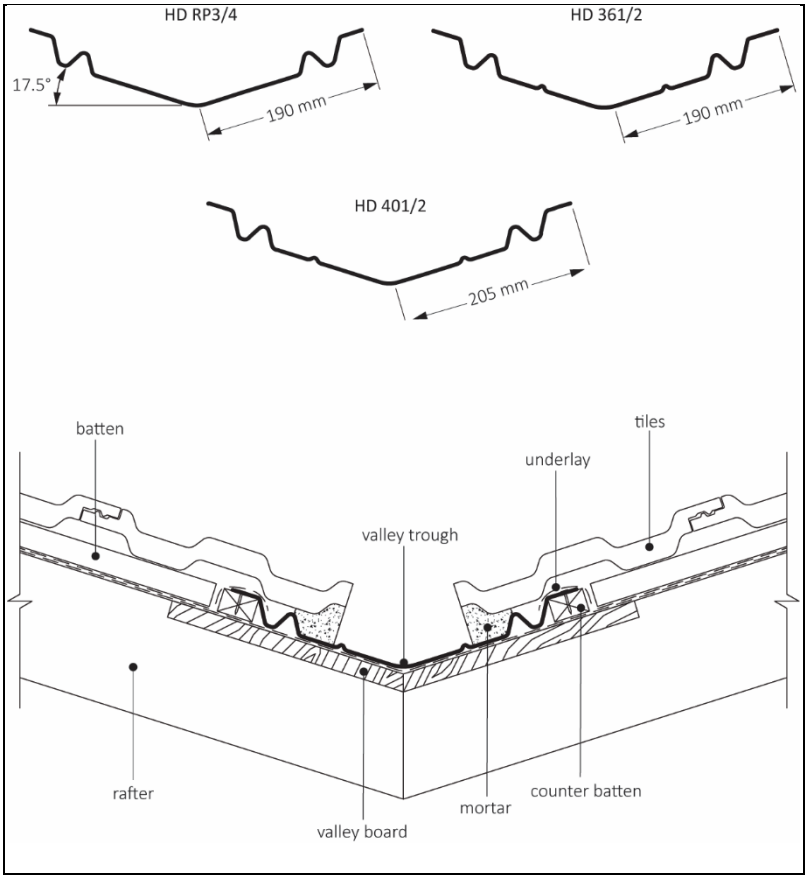


Figure 2 Dry Fix Valley Troughs

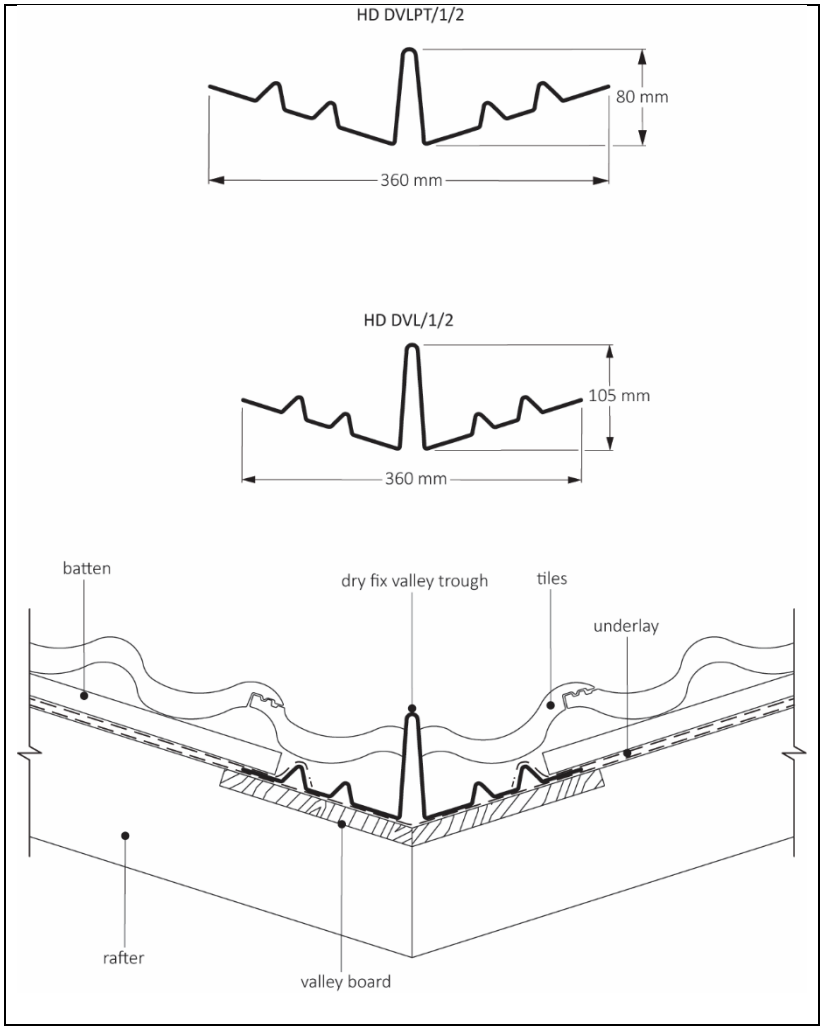


Figure 3 Over Batten Dry Fix Valley Trough

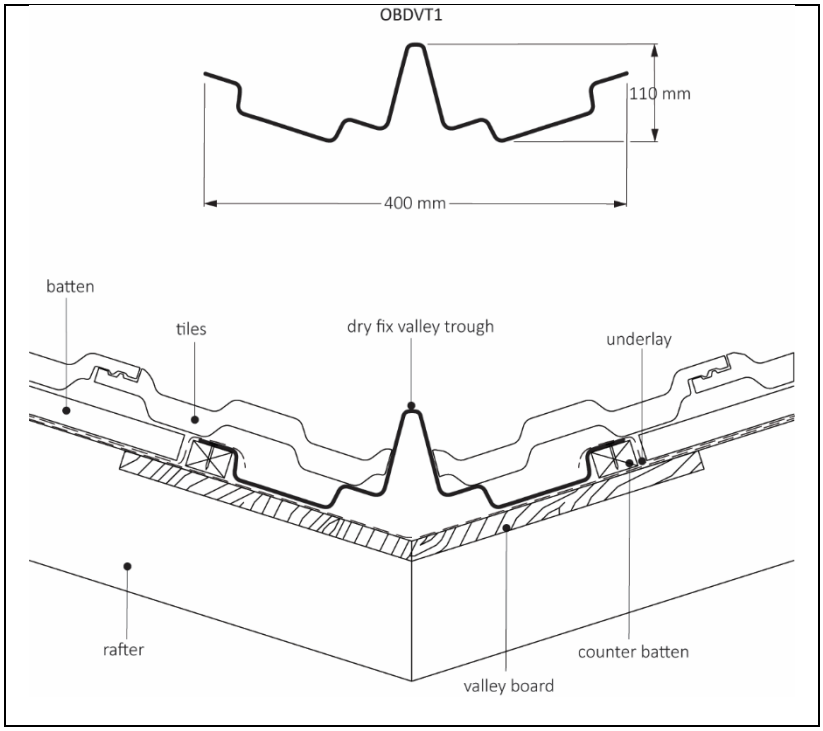


Figure 4 Over Batten Dry Fix Valley Trough Low Profile

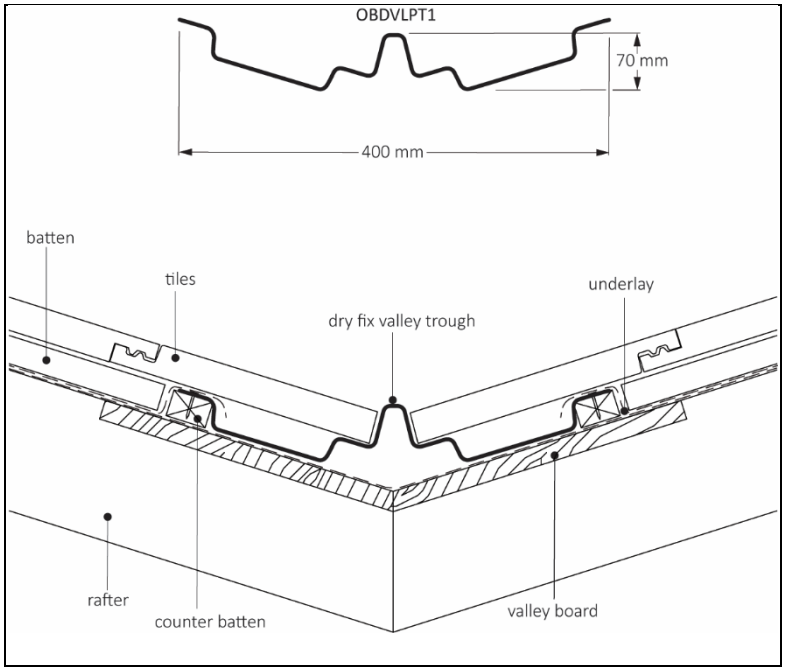
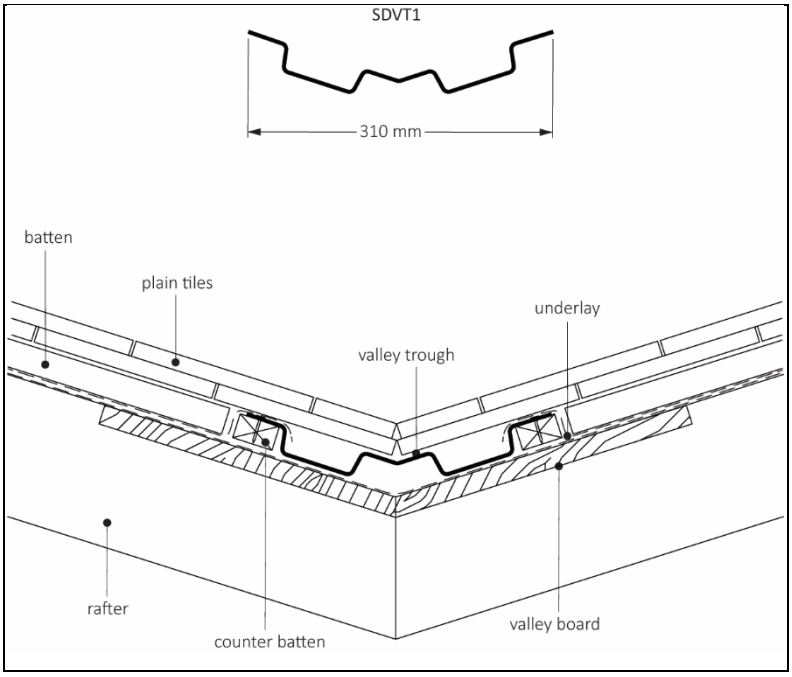


Figure 5 Secret Dry Fix Valley Trough



Ancillary Items

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

- support bridge (code HD DVBP) — for use in conjunction with Dry Fix Valley Troughs, to support interlocking single lap tiles, where small cuts of tiles occur
- anti-corrosive tile clip or tile lap clip (code HD DVC) — stainless steel clip for use with Hambleside Danelaw's Dry Valley Troughs and Dry Fix Systems.

Definitions for products and applications inspected

Pitched roofs are defined for the purpose of this Certificate as those having a fall in excess of 1:6.

Product assessment – key factors

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

1 Mechanical resistance and stability

Data were assessed for the following characteristics.

1.1 Strength and stability

1.1.1 Results of strength and stability tests are given in Table 1.

Table 1 Results of strength and stability tests

Product assessed	Assessment method	Requirement	Result
Hambleside Danelaw GRP sheet	Cross breaking strength to BS 2782-10 : Method 1005 : 1977 Control	Value achieved	
	Flexural strength		207 $N \cdot mm^{-2}$
	Deflection at break		1.77 mm
	Barcol hardness to BS 2782-10 : Method 1001 : 1977 Control (smooth) tested at 23°C and 50%RH	Value achieved	47.2
	Hard body impact to MOAT 22 : 1988	No significant damage	Pass

1.1.2 On the basis of data assessed, the products will resist the normal loads and impacts associated with installation and use.

2 Safety in case of fire

Data were assessed for the following characteristics.

2.1 External fire spread

2.1.1 The result of an external fire exposure test is given in Table 2.

Table 2 Result of a extrenal fire exposure test

Product assessed	Assessment method	Requirement	Result
A representative related product	BS 476-3 : 1958(1)	Value achieved	EXT. S. AB

(1) Test report reference 39204, issued by Warringtonfire, available from the Certificate holder on request.

2.1.2 On the basis of data assessed, the products are unrestricted by the documents supporting the national Building Regulations with respect to proximity to a relevant boundary.

2.1.3 This classification can be affected by other components of the roof, eg insulation materials, substrates/decking and membranes. These constructions must therefore be evaluated by reference to the requirements of the documents supporting the relevant national Building Regulations and any consequent restrictions imposed by those documents, on a case-by-case basis.

2.2 Reaction to fire

2.2.1 The Certificate holder has not declared a reaction to fire classification for the products to BS EN 13501-1 : 2018.

2.2.2 Designers must refer to the relevant national Building Regulations and guidance for detailed conditions of use, particularly in respect of substrate fire performance, cavity barriers, service penetrations and combustibility limitations for other materials and components used in the overall construction.

3 Hygiene, health and the environment

Data were assessed for the following characteristics.

3.1 Weathertightness

3.1.1 The results of a weathertightness test are given in Table 3.

Table 3 Results of a weathertightness test

Product assessed	Assessment method	Requirement	Result
Hambleside Danelaw GRP sheet	Water penetration at laps to BBA internal test method	No leakage	Pass

3.1.2 On the basis of data assessed, Hambleside Danelaw GRP Valley Troughs, when completely sealed, will adequately resist the passage of moisture to the inside of the building and so satisfy the relevant requirements of the national Building Regulations.

4 Safety and accessibility in use

Not applicable.

5 Protection against noise

Not applicable.

6 Energy economy and heat retention

Not applicable.

7 Sustainable use of natural resources

Not applicable.

8 Durability

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

8.2 Specific test data were assessed, as given in Table 4.

Table 4 Results of durability tests

Product assessed	Assessment method	Requirement	Result
Hambleside Danelaw GRP sheet	Cross breaking strength to BS 2782-10 : Method 1005 : 1977 - after water boil for 2 hours to MOAT 9 : 1973	No significant loss of properties	Pass
	Cross breaking strength to BS 2782-10 : Method 1005 : 1977 - 30 days water soak to MOAT 9 : 1973	No significant loss of properties	Pass
	Barcol hardness to BS 2782-10 : Method 1001 : 1977 - after water boil for 2 hours to MOAT 9 : 1973	No significant loss of properties	Pass

8.3 Service life

Under normal service conditions, the products will have a life of at least 20 years, provided they are designed, installed and maintained in accordance with this Certificate and the Certificate holder's instructions.

PROCESS ASSESSMENT

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

9 Design, installation, workmanship and maintenance

9.1 Design

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

9.1.2 The products must be designed in accordance with the relevant parts of BS 5534 : 2014, BS 8000-0 : 2014 and BS 8000-6 : 2023.

9.1.3 The troughs are manufactured with a pitch of 17.5°, but can be adapted by bending to accommodate roof pitches of between 17.5 and 60° with a maximum 20° pitch differential of adjacent roofs.

9.2 Installation

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

9.2.2 Installation of Hambleside Danelaw GRP Valley Troughs for Tiled Roofs must be in accordance with this Certificate, the Certificate holder's instructions and the relevant recommendations of BS 5534 : 2014, BS 8000-0 : 2014 and BS 8000-6 : 2023.

Procedure

9.2.3 The product must be fixed onto counter battens, and onto new or existing valley boards. Valley boards must be used for all valley details, either 6 mm continuous ply boards laid over the rafters and supported on timber noggins or 12 mm ply (or 19 mm softwood) set between the rafters supported on bearers.

9.2.4 The valley must be first lined longitudinally with BS 8747 : 2007 Type 1F or BBA-approved roofing underlay for the width of the valley boards.

9.2.5 Counter battens of the same depth as the tiling battens must be fitted onto the valley boards over the underlay at an appropriate distance from the valley centre to accommodate the trough, and nailed through into the main rafters/trusses below.

9.2.6 The lengths of trough must be firmly pressed down onto the valley board and then nailed to the counter batten at a maximum of 500 mm centres, using clout head nails or nails of a quality acceptable in good roofing practice.

9.2.7 The roof tile underlay must then be laid and dressed over the counter batten. Tiling battens must be fitted with the ends firmly located onto the valley boards, positioned close to the counter batten, taking care not to damage the underlay. The roof tile underlay can then be laid over or under the trough. If laid over the trough, it must not extend beyond the outer water channel.

9.2.8 The fascia board must be cut to allow the trough to pass through and discharge into the gutter. The end of the trough must be trimmed using a fine-toothed hacksaw, to the approximate centre line of the gutter. Alternatively, a soaker of minimum Code 4 lead or BBA/third party approved lead replacement flashing material may be fitted and dressed into the gutter.

9.2.9 The trough must be fitted, starting at the foot of the valley. Care must be taken to ensure that it is located centrally on the valley boards, before nailing the sides into the counter battens at 500 mm centres maximum and allowing a 150 mm overlap when measured vertically.

9.2.10 At the head of the valley, a lead saddle (minimum Code 4) or BBA/third party approved lead replacement flashing material of sufficient length must be fixed to lap over the trough by the same length of lap required between the two valley trough units, if a flashing material without self-adhesive backing is used.

9.2.11 At dormers, a lead soaker must be used at the base of the valley to dress onto the adjacent tiling. At sprocketed eaves or mansards, separate lengths of trough must be fitted above and below, with a lead saddle of sufficient lap length to link the two parts.

Mortared Tile Valley Troughs - Product codes 361, 362, 401, 402, RP3 and RP4

9.2.12 The tiles must then be laid dry, the cut line marked and the tiles removed before cutting. They can then be re-laid in position, and bedded onto mortar on the bonding strip, ensuring no blockage of the water channels behind the bedding line occurs.

Over-Batten Dry Fix Valley Troughs - Product codes OBDVT1 / OBDVLPT1 and Secret Dry Fix Valley Trough- Product code SDVT1

9.2.13 The tiles must be laid in accordance with the manufacturer's instructions. The tiles must be cut to the rake into the valley and abutted close or touching the raised centre section. To avoid distortion, care must be taken not to force the tiles too heavily against it.

9.2.14 Where small cuts of single lap tiles require additional support, especially on the left side of the valley, a proprietary tile lap clip (code HD DVC) may be used, but these products are outside the scope of the Certificate. Packing pieces and strips are not recommended. To avoid small cuts of double lap tiles occurring that are difficult to fix, it is recommended that a tile and a half or wider slate is used.

Dry Fix Valley Troughs - Product codes DVT and DVLPT

9.2.15 The underlay and battens must be fitted in the normal manner, ensuring that the underlay is laid over the outer water bar of the valley. Alternative methods may also be used. Battens must be cut so that they locate onto the flat fixing edges of the valley and are nailed through into the supporting boards.

9.2.16 The tiles must be laid in accordance with the manufacturer's instructions. The tiles must be cut to the rake into the valley and abutted against the raised centre section. To avoid distortion, care must be taken not to force the tiles too heavily against it.

9.2.17 A support bridge (code HD DVBP) to fit over the inner water bar is available to coincide with small cuts of tile that need supporting. Alternatively, a proprietary anti-corrosive tile clip (code HD DVC) may be used, but these products are outside the scope of the Certificate.

Finishing

9.2.18 The roof tiling must be carried out in accordance with the relevant parts of BS 5534 : 2014, BS 8000-0 : 2014 and BS 8000-6 : 2023.

9.3 Workmanship

Practicability of installation was assessed by the BBA, on the basis of the Certificate holder's information and site visits to witness installations in progress. To achieve the performance described in this Certificate, installation of the products must be carried out by roofers experienced with these types of products.

9.4 Maintenance and repair

9.4.1 Ongoing satisfactory performance of the products in use requires that they are suitably maintained. The guidance provided by the Certificate holder was assessed by the BBA and found to be appropriate and adequate. The following requirements apply to satisfy the performance assessed in this Certificate:

9.4.2 As the products are fully or partially confined and have suitable durability, maintenance is not required.

9.4.3 Damaged lengths can be replaced without having to remove adjacent lengths.

10 Manufacture

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

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

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

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

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

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

†10.2 The BBA has undertaken to review the above measures on a regular basis through a surveillance process, to verify that the specifications and quality control operated by the manufacturer are being maintained.

11 Delivery and site handling

11.1 The Certificate holder stated that the products are delivered to site in packs of 5 or 10 units bearing the product code, size, application instructions and the BBA logo incorporating the number of this Certificate.

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

11.2.1 The packs must be stored flat or on end, on a smooth, clean, dry surface, under cover and protected from sunlight.

ANNEX A – SUPPLEMENTARY INFORMATION †

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

Construction (Design and Management) Regulations 2015
Construction (Design and Management) Regulations (Northern Ireland) 2016

Information in this Certificate may assist the client, designer (including Principal Designer) and contractor (including Principal Contractor) to address their obligations under these Regulations.

Management Systems Certification for production

The management system of the manufacturer has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015 by BSI (Certificate FM 23063).

Bibliography

BS 476-3 : 1958 *Fire tests on building materials and structures — Part 3: Classification and method of test for external fire exposure to roofs*

BS 2782-10 : Method 1001 : 1977 *Methods of testing plastics — Glass reinforced plastics — Measurement of hardness by means of a Barcol impressor*
BS 2782-10 : Method 1005 : 1977 *Methods of testing Plastics — Part 10: Glass reinforced plastics — Method 1005: Determination of flexural properties — Three-point method*

BS 5534 : 2014 + A2 : 2018 *Slating and tiling for pitched roofs and vertical cladding — Code of practice*

BS 8000-0 : 2014 *Workmanship on construction sites — Introduction and general principles*
BS 8000-6 : 2023 *Workmanship on construction sites — Slating and tiling of roods and walls — Code of practice*

BS 8747 : 2007 *Reinforced bitumen membranes (RBMs) for roofing — Guide to selection and specification*

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

BS EN ISO 9001 : 2015 *International Standard for Quality Management Systems*

MOAT 9 : 1973 *Directive for the Assessment of Products in Glass-Reinforced Polyester for use in Building.*

MOAT 22 : 1988 *UEAtc Technical Guide for the Assessment of Non-Reinforced, Reinforced and/or Backed Roof Waterproofing Systems made of EPDM*

Conditions

1 This Certificate:

- relates only to the product that is named and described on the front page
- is issued only to the company, firm, organisation or person named on the front page – no other company, firm, organisation or person may hold or claim that this Certificate has been issued to them
- 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.

2 Publications, documents, specifications, legislation, regulations, standards and the like referenced in this Certificate are those that were current and/or deemed relevant by the BBA at the date of issue or reissue of this Certificate.

3 This Certificate will be displayed on the BBA website, and the Certificate Holder is entitled to use the Certificate and Certificate logo, provided that the product and its manufacture and/or fabrication, including all related and relevant parts and processes thereof:

- are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA
- continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine
- are reviewed by the BBA as and when it considers appropriate.

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

5 In issuing this Certificate the BBA is not responsible and is excluded from any liability to any company, firm, organisation or person, for any matters arising directly or indirectly from:

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

6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product which is contained or referred to in this Certificate is the minimum required to be met when the product is manufactured, supplied, installed, used, maintained and removed. It does not purport in any way to restate the requirements of the Health and Safety at Work etc. Act 1974, or of any other statutory, common law or other duty which may exist at the date of issue or reissue of this Certificate; nor is conformity with such information to be taken as satisfying the requirements of the 1974 Act or of any statutory, common law or other duty of care.

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