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Agrément Certificate

89/2153

Product Sheet 4 Issue 6

CORODRAIN GRP VALLEY TROUGH AND FLASHINGS RANGE

CORODRAIN GRP DRY VALLEY TROUGHS

This Agrément Certificate Product Sheet⁽¹⁾ relates to Corodrain GRP Dry Valley Troughs, for use in tiled and slated roofs constructed in accordance with the relevant requirements of BS 5534 : 2014, to provide a weatherproof junction at features such as changes of direction and materials.

(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[†].

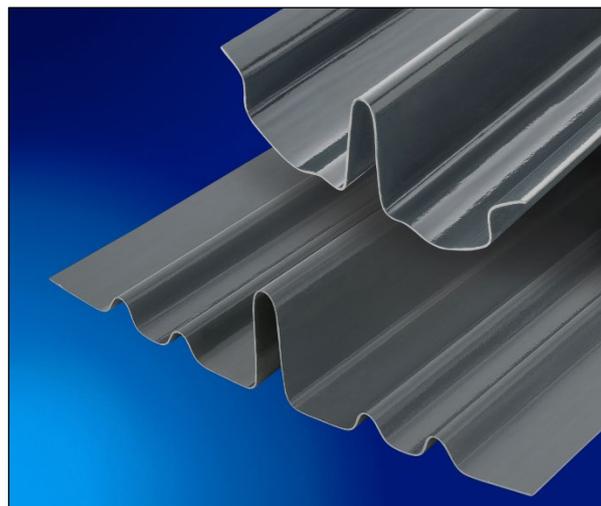
KEY FACTORS ASSESSED

Weathertightness — as part of a complete roof, the products will resist the passage of moisture into the interior of the building (see section 6).

Properties in relation to fire — the products have not been classified for reaction to fire in accordance with BS EN 13501-1 : 2018 and their use is restricted by the national Building Regulations (see section 7).

Strength — the products have adequate strength to resist the normal loads and impacts associated with installation of the roof (see section 8).

Durability — under normal service conditions, the products will have a service life of at least 20 years (see section 10).



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 Sixth issue: 20 October 2022

Hardy Giesler
Chief Executive Officer

Originally certificated on 23 March 2006

Certificate amended on 7 May 2024 to update product name.

The BBA is a UKAS accredited Inspection Body (No.4345).

This certificate has been amended on 7 May 2024 as part of a transition of The BBA Agrément Certificate scheme delivered under the BBA's ISO/IEC 17020 accreditation. Sections marked with the symbol † are not issued under accreditation.

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

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Regulations

In the opinion of the BBA, Corodrain GRP Dry Valley Troughs, 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(1)	External fire spread
Comment:		Roofs incorporating the products are restricted by this Requirement in some circumstances. See sections 7.2 and 7.3 of this Certificate.
Requirement:	B4(2)	External fire spread
Comment:		The products may contribute to a roof being unrestricted by this Requirement. See section 7.1 of this Certificate.
Requirement:	C2(b)	Resistance to moisture
Comment:		The products will contribute to a roof satisfying this Requirement. See section 6 of this Certificate.
Regulation:	7(1)	Materials and workmanship
Comment:		The products are acceptable. See section 10 and the <i>Installation</i> part of this Certificate.
Regulation:	7(2)	Materials and workmanship
Comment:		The products are restricted by this Regulation. See sections 7.2 and 7.3 of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)	Durability, workmanship and fitness of materials
Comment:		The use of the products satisfies the requirements of this Regulation. See section 10 and the <i>Installation</i> part of this Certificate.
Regulation:	8(3)	Durability, workmanship and fitness of materials
Comment:		The products are restricted by this Regulation. See sections 7.2 and 7.4 of this Certificate.
Regulation:	9	Building standards applicable to construction
Standard:	2.6	Spread to neighbouring buildings
Comment:		The products are restricted by this Standard in some circumstances, with reference to clauses 2.6.4 ⁽¹⁾⁽²⁾ and 2.6.5 ⁽¹⁾⁽²⁾ . See sections 7.2 and 7.4 of this Certificate.
Standard:	2.7	Spread on external walls
Comment:		The products are restricted by this Standard in some circumstances, with reference to clause 2.7.1 ⁽¹⁾⁽²⁾ . See sections 7.2 and 7.4 of this Certificate.
Standard:	2.8	Spread from neighbouring buildings
Comment:		The products may contribute to a roof being unrestricted by this Standard, with reference to clause 2.8.1 ⁽¹⁾⁽²⁾ . See section 7.1 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The products will contribute to a roof satisfying clauses 3.10.1 ⁽¹⁾⁽²⁾ and 3.10.8 ⁽¹⁾⁽²⁾ of this Standard. See section 6 of this Certificate.

Standard: 7.1(a) **Statement of sustainability**
Comment: The products 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 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 section 10 and the *Installation* part of this Certificate.

Regulation: 23(2) **Fitness of materials and workmanship**
Comment: The products are restricted by this Regulation. See sections 7.2 and 7.3 of this Certificate.

Regulation: 28(b) **Resistance to moisture and weather**
Comment: The products will contribute to a roof satisfying this Regulation. See section 6 of this Certificate.

Regulation: 36(a) **External fire spread**
Comment: Roofs incorporating the products are restricted by this Regulation in some circumstances. See sections 7.2 and 7.3 of this Certificate.

Regulation: 36(b) **External fire spread**
Comment: The products, when used as part of a complete roof, may contribute to a roof being unrestricted by this Regulation. See section 7.1 of this Certificate.

Construction (Design and Management) Regulations 2015

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

In the opinion of the BBA, this Certificate does not include any content which relates to the obligations of the client, designer (including Principal Designer) and contractor (including Principal Contractor) under these Regulations.

Additional Information

NHBC Standards 2022

In the opinion of the BBA, Corodrain GRP Dry Valley Troughs, 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*.

Technical Specification

1 Description

1.1 Corodrain GRP Dry Valley Troughs are glass fibre/polyester laminates manufactured to the profiles illustrated in Figures 1 to 4.

1.2 The products are manufactured to the following specifications:

Width (mm)	280 (Type DVU30SW) 370 (Type DVU30DW) 400 (Type DVU30VT)
Length (m)	3.0
Standard colour ⁽¹⁾	grey/blue.

(1) Other colours are available to order but are outside the scope of this Certificate.

1.3 DVU30SW70, DVU30SW90, DVU30SW110, DVU30VT70 and DVU30VT110 valley troughs are produced with an angle between two sides of 17° and can be readily adapted by bending to accommodate roof pitches. The 'U' valley type accommodates pitches of 17.5 to 49° with a maximum difference between two rafter pitches of 15°.

1.4 DVU30DW55, DVU30DW80 and DVU30DW105 valley troughs are suitable for roof pitches between 17.5 and 49°, and can accommodate a maximum difference between 2 rafter pitches of 20°.

Figure 1 Tile Valley Troughs Type DVU30VT

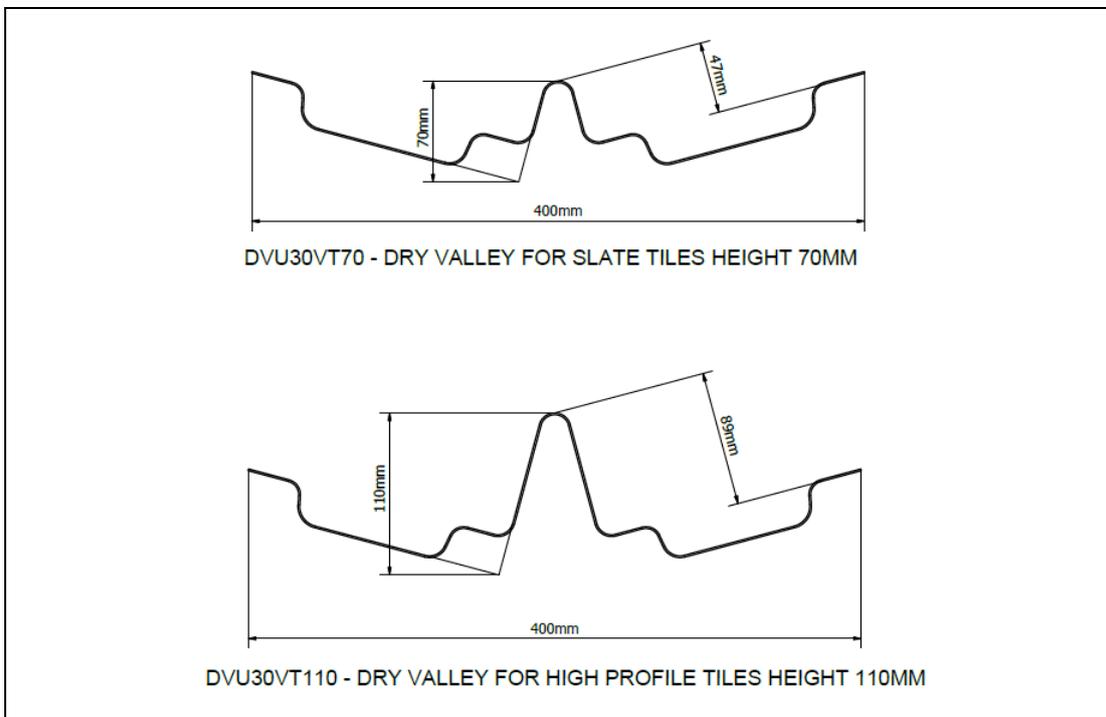


Figure 2 Tile and slate valley trough

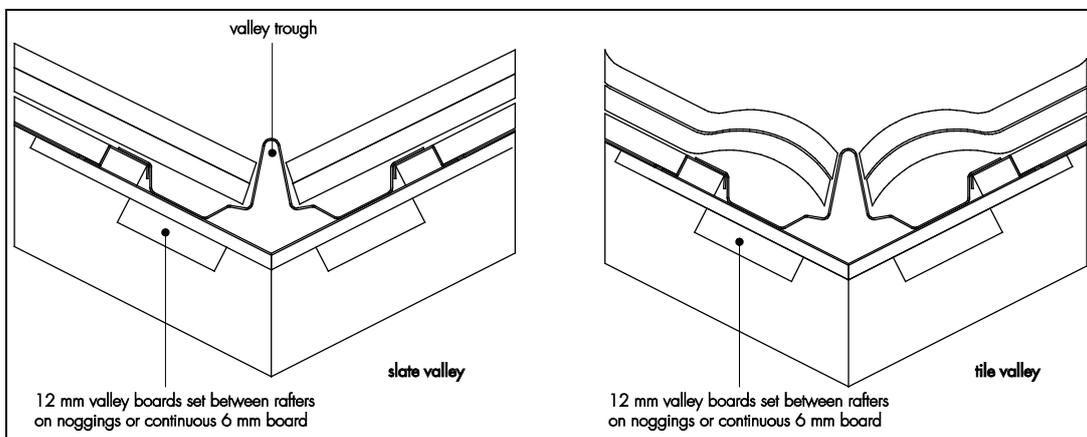


Figure 3 Tile/slate Valley Troughs Type DVU30SW

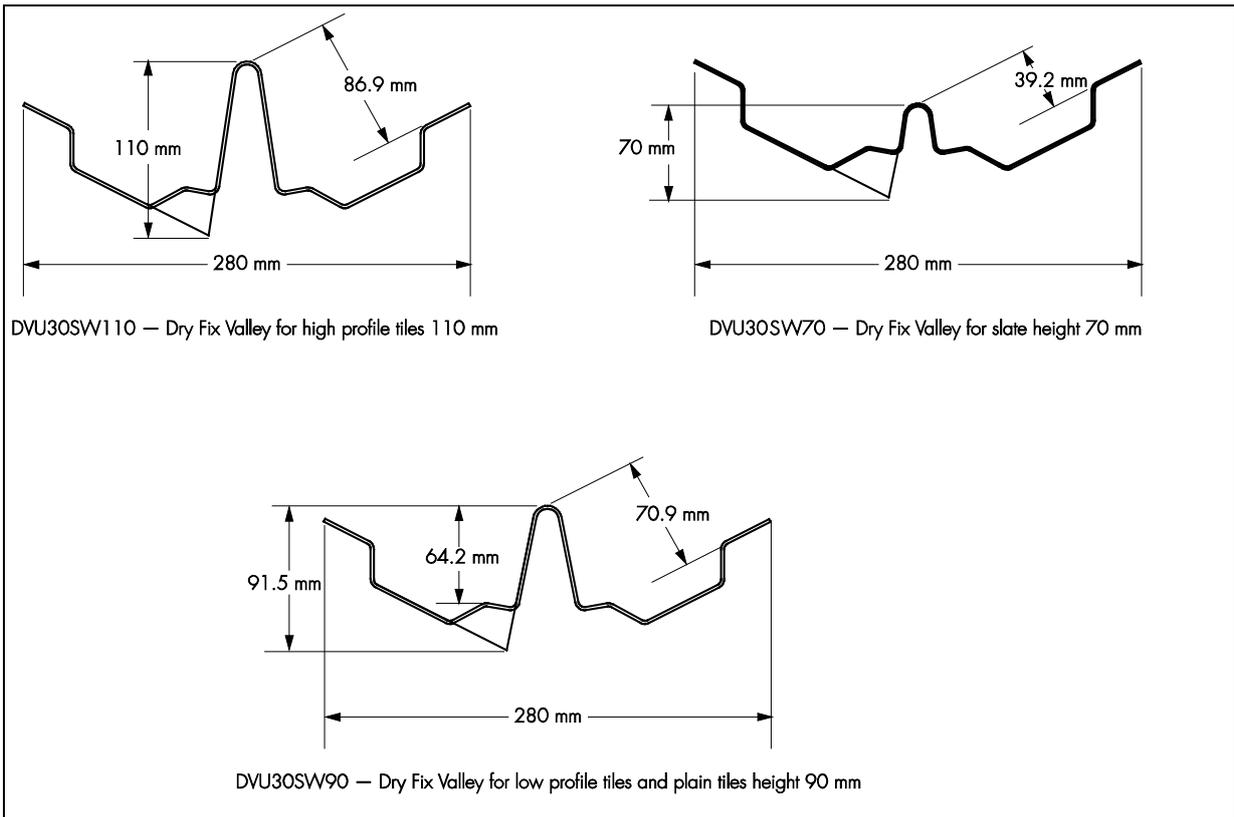
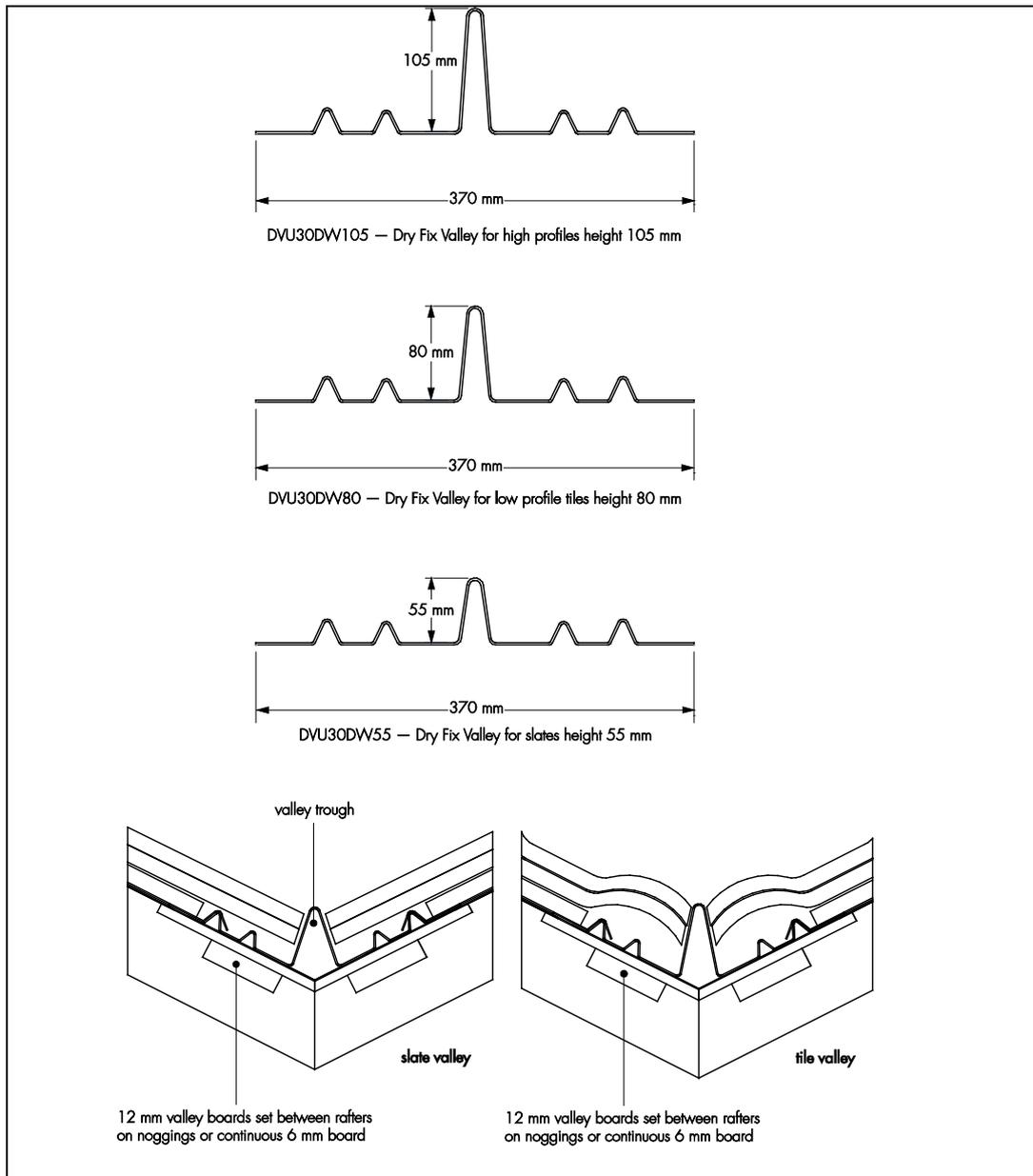


Figure 4 Tile/slate Valley Troughs Type DVU30DW



1.5 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:

- DVBRACKET — support brackets to support small cuts of tiles
- DVCLIP — corrosion-resistant tile clips to help secure small cut tiles.

2 Manufacture

2.1 The products are manufactured in a continuous process. Resin is spread across a film into which glass rovings are evenly distributed and formed into a laminate. The required profile is shaped by wooden formers and allowed to cure.

2.2 As part of the assessment and ongoing surveillance of product quality, the BBA has:

- agreed with the manufacturer the quality control procedures and product testing to be undertaken
- assessed and agreed the quality control operated over batches of incoming materials
- monitored the production process and verified that it is in accordance with the documented process
- evaluated the process for management of nonconformities
- checked that equipment has been properly tested and calibrated
- undertaken to carry out the above measures on a regular basis through a surveillance process, to verify that the specifications and quality control operated by the manufacturer are being maintained.

2.3 The management system of Ariel Plastics Limited has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015 by the BBA (Certificate 20/Q066).

3 Delivery and site handling

3.1 The products are distributed either individually or in packs of ten. Each pack bears the BBA logo incorporating the number of this Certificate.

3.2 Packs should be stored flat on a clean, level surface.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Corodrain GRP Dry Valley Troughs.

Design Considerations

4 Use

Corodrain GRP Dry Valley Troughs, when designed and installed in accordance with the relevant parts of BS 5534 : 2014, BS 8000-0 : 2014 and BS 8000-6 : 2013, are satisfactory for use as valley troughs in tiled and slated pitched roofs to provide a weatherproof finish.

5 Practicability of installation

The products are designed to be installed by a roofing contractor experienced in these types of products.

6 Weathertightness



The products will adequately resist the passage of moisture to the interior of the building and so satisfy the requirements of the national Building Regulations.

7 Properties in relation to fire



Samples of GRP, representative of that used in the manufacture of the products, when tested in accordance with BS 476-3 : 2004, achieved an EXT.S.AB rating⁽¹⁾.

(1) Report reference 238195, issued by BRE Testing, is available from the Certificate holder upon request.

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



7.3 In England, Wales and Northern Ireland, the products, when used in pitches greater than 70°, excluding upstands, should not be used on buildings that have a storey at least 18 m above ground level and which contain: one or more dwellings, an institution, a room for residential purposes (excluding any room in a hostel, hotel or boarding house), student accommodation, care homes, sheltered housing, hospitals or dormitories in boarding schools and, additionally in Northern Ireland, nursing homes and places of lawful detention.



7.4 In Scotland, the products, when used in pitches greater than 70°, should not be used on buildings more than 1 m from a boundary or that have a storey more than 11 m above ground level.

8 Strength

The products will resist the normal loads and impacts associated with installation and use.

9 Maintenance

No maintenance is necessary.

10 Durability



Under normal service conditions, the products will have a service life of at least 20 years.

Installation

11 General

11.1 Installation of Corodrain GRP Dry Valley Troughs must be in accordance with the Certificate holder's instructions and the relevant recommendations of BS 5534 : 2014, BS 8000-0 : 2014, BS 8000-6 : 2013 and the NFRC Technical Bulletin 28 *Inclined Preformed GRP Valley Troughs* and this Certificate.

11.2 The products must be cut to size with a fine-toothed saw and can accept holes being drilled using a sharp drill bit.

12 Procedure

Trough types DVU30SW110, DVU30SW70 and DVU30SW90

12.1 It is recommended that valley boards (either 12 mm plywood or 19 mm softwood boards, supported on noggins between rafters, or 6 mm boards laid over rafters) are used.

12.2 The valley must be lined longitudinally with reinforced underlay 1 m wide.

12.3 Counterbattens of similar size to the roofing battens, to support the edge of the trough, must be fixed at the correct distance from the centre of the valley (varying according to roof pitch) using nails in accordance with good roofing practice.

12.4 The adjacent main roof underlays should be laid over the counterbattens. Roofing battens should be fitted with the ends firmly located onto the valley boards, positioned close to the counterbattens, with care taken not to damage the underlay.

12.5 A section in the fascia board must be cut to allow the valley to run straight into the gutter without having to bend up over it.

12.6 A V-shaped notch must be cut out at the end of the valley to fit neatly into the gutter.

12.7 The valley trough is positioned by locating firmly between the counterbattens.

12.8 Commencing at the foot of the valley, troughs are nailed, through drilled holes, at 400 mm centres into the counterbattens.

12.9 Consecutive lengths of valley troughs must be laid allowing a minimum overlap of 150 mm at the joints, dependent on the pitch (in accordance with the Certificate holder's instructions).

Trough type DVU30DW55, DVU30DW80 and DVU30DW105

12.10 Valley boards of sufficient width must be fitted to provide support for the roofing battens, either minimum 12 mm ply lay boards set between the rafters, or 6 mm continuous ply boards laid over the rafters.

12.11 A single strip of appropriate roof underlay is laid up the centre of the valley.

12.12 The valley troughs are fitted securely onto the valley board, compressing the upstand to minimise the gap.

12.13 The roof underlay is laid over the outer water channel of the valley trough, and roofing battens installed so they overlap onto the flat fixing edge of the valley. The battens are nailed through the valley trough into the supporting boards.

12.14 The fascia board is cut to allow the valley trough to pass through and discharge into the gutter without flattening out. The end of the valley trough is trimmed using a fine-toothed hacksaw to the approximate centreline of the gutter, which normally entails a V-shaped cut.

12.15 The valley trough is fitted by commencing at the eaves taking care to ensure it is centrally located between the valley boards. The sides should be nailed into the counter battens at maximum 500 mm centres.

12.16 A minimum 150 mm overlap is allowed, and where the valley trough intersects, it should be trimmed with a fine toothed saw to form a mitred joint and dressed with a lead saddle.

12.17 The tiles are laid in accordance with the manufacturer's instructions. Tiles must be cut to follow the line of the valley and abutted against the central upstand. To avoid distortion, care must be taken not to force the tiles too heavily against it.

12.18 Support brackets (Code: DVBRACKET) are available to support small cuts of tiles, also corrosion-resistant tile clips (Code: DVCLIP) can be used to help secure small cut tiles.

Trough type DVU30VT110 and DVU30VT70

12.19 Valley boards of sufficient width must be fitted to provide support for the roofing battens, either minimum 12 mm ply lay boards set between the rafters, or 6 mm continuous ply boards laid over the rafters.

12.20 A single strip of appropriate roof underlay is laid up the centre of the valley.

12.21 Counter battens the same depth as the roofing battens should be fitted onto the valley boards.

12.22 The main roofing underlay should be laid over the counter batten. Roofing battens should be fitted with the ends firmly located onto the valley boards and positioned close to the counter batten. Care should be taken to avoid damaging the underlay.

12.23 The fascia board is cut to allow the valley trough to pass through and discharge into the gutter without flattening out. The end of the valley trough is trimmed using a fine-toothed hacksaw to the approximate centreline of the gutter, which normally entails a V-shaped cut.

12.24 The valley trough should be fitted with care taken to ensure it is centrally located between the valley boards. The sides should be nailed to the counter battens at a maximum of 500 mm centres.

12.25 The valley troughs must be laid allowing a minimum overlap of 150 mm, dependent on the pitch (in accordance with the Certificate holder's instructions).

13 Finishing

Tiling must be carried out in accordance with the relevant clauses of BS 5534 : 2014, BS 8000-0 : 2014 and BS 8000-6 : 2013.

14 Repair

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

Technical Investigations

15 Tests

Tests were carried out and the results assessed to determine:

- density
- glass/resin ratio
- dimensional checks
- hardness
- cross-breaking strength
- tensile strength/elongation
- impact resistance
- effect of elevated temperatures
- effect of water soak
- effect of UV exposure.

16 Investigations

16.1 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.

16.2 An assessment was made of the results of a fire test in accordance with BS 476-3 : 2004.

Bibliography

BS 476-3 : 2004 *Fire tests on building materials and structures — External fire exposure roof test*

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 : 2013 *Workmanship on building sites — Code of practice for slating and tiling of roofs and walls*

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

BS EN ISO 9001 : 2015 *Quality management systems — Requirements*

17 Conditions

17.1 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.

17.2 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.

17.3 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.

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

17.5 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.

17.6 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.