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**Agrément Certificate**  
**No 07/4492**

## FILON GRP VALLEY TROUGH AND FLASHINGS RANGE

### PRODUCT SHEET 1 — FILON GRP VALLEY TROUGHS FOR TILES (GTB 13 AND GTB 14) – BATTEN FIX

#### PRODUCT SCOPE AND SUMMARY OF CERTIFICATE

This Certificate relates to Filon GRP Valley Troughs for Tiles (GTB 13 and GTB 14) — Batten Fix, for use in slated or tiled roofs constructed in accordance with the relevant requirements of BS 5534 : 2003. The products are for use to provide a weatherproof junction at features such as changes of direction and materials.

#### 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

**Weathertightness** — as part of a complete roof, the products will resist the passage of moisture into the interior of the building (see section 4).

**Properties in relation to fire** — tests indicate that the products when used as part of a complete roof will be unrestricted under the Building Regulations (see section 5).

**Strength** — the products have adequate strength to resist the loads associated with the installation of the roof (see section 7).

**Durability** — under normal service conditions the products will have a service life of at least 20 years (see section 7).



The BBA has awarded this Agrément Certificate for Filon GRP Valley Troughs for Tiles (GTB 13 and GTB 14) – Batten Fix to Filon Products Limited as fit for their intended use provided they are installed, used and maintained as set out in this Agrément Certificate.

On behalf of the British Board of Agrément

Date of First issue: 18 February 2008

Greg Cooper: 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](http://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, Filon GRP Valley Troughs for Tiles (GTB 13 and GTB 14) — Batten Fix, 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 2000 (as amended) (England and Wales)

Requirement:	B4(2)	External fire spread
Comment:		Data to BS 476-3 : 2004 indicate that the products when used as part of a complete roof, will not effect the fire rating of the roof construction. See section 5 of this Certificate.
Requirement:	C2(b)	Resistance to moisture
Comment:		The products will contribute to a roof meeting this Requirement. See section 4 of this Certificate.
Requirement:	Regulation 7	Materials and workmanship
Comment:		The products are acceptable. See section 7 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 products satisfies the requirements of this Regulation. See sections 7 and 10 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards — construction
Standard:	2.8	Spread from neighbouring buildings
Comment:		Data to BS 476-3 : 2004 indicates that the products can be regarded as having a low vulnerability, with reference to clause 2.8.1 <sup>(1)(2)</sup> , and will not effect the fire rating of the roof construction. See section 5 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The products will contribute to a roof satisfying clauses 3.10.1 <sup>(1)(2)</sup> and 3.10.8 <sup>(1)(2)</sup> of this Standard. See section 4 of this Certificate.
Regulation:	12	Building standards — conversions
Comment:		All comments given for these products under Regulation 9, also apply to this Regulation, with reference to clause 0.12.1 <sup>(1)(2)</sup> and Schedule 6 <sup>(1)(2)</sup> . (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 products are acceptable. See section 7 and the <i>Installation</i> part of this Certificate.
Regulation:	B3(2)	Suitability of certain materials
Comment:		The products are acceptable. See section 10 of this Certificate.
Regulation:	C4(b)	Resistance to ground moisture and weather
Comment:		The products will contribute to a roof satisfying this Regulation. See section 4 of this Certificate.
Regulation:	E5	External fire spread
Comment:		Data to BS 476-3 : 2004 indicate that the products when used as part of a complete roof construction will not effect the fire rating of the roof construction. See section 5 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).

# Non-regulatory Information

## NHBC Standards 2007

NHBC accepts the use of Filon GRP Valley Troughs for Tiles (GTB 13 and GTB 14) — Batten Fix, when installed and used in accordance with this Certificate, in relation to *NHBC Standards*, Chapter 7.2 *Pitched roofs*.

## Zurich Building Guarantee Technical Manual 2007

In the opinion of the BBA, Filon GRP Valley Troughs for Tiles (GTB 13 and GTB 14) — Batten Fix, when installed and used in accordance with this Certificate, satisfy the requirements of the *Zurich Building Guarantee Technical Manual*, Section 4 *Superstructure*, Sub-section *Pitched roofs*.

## General

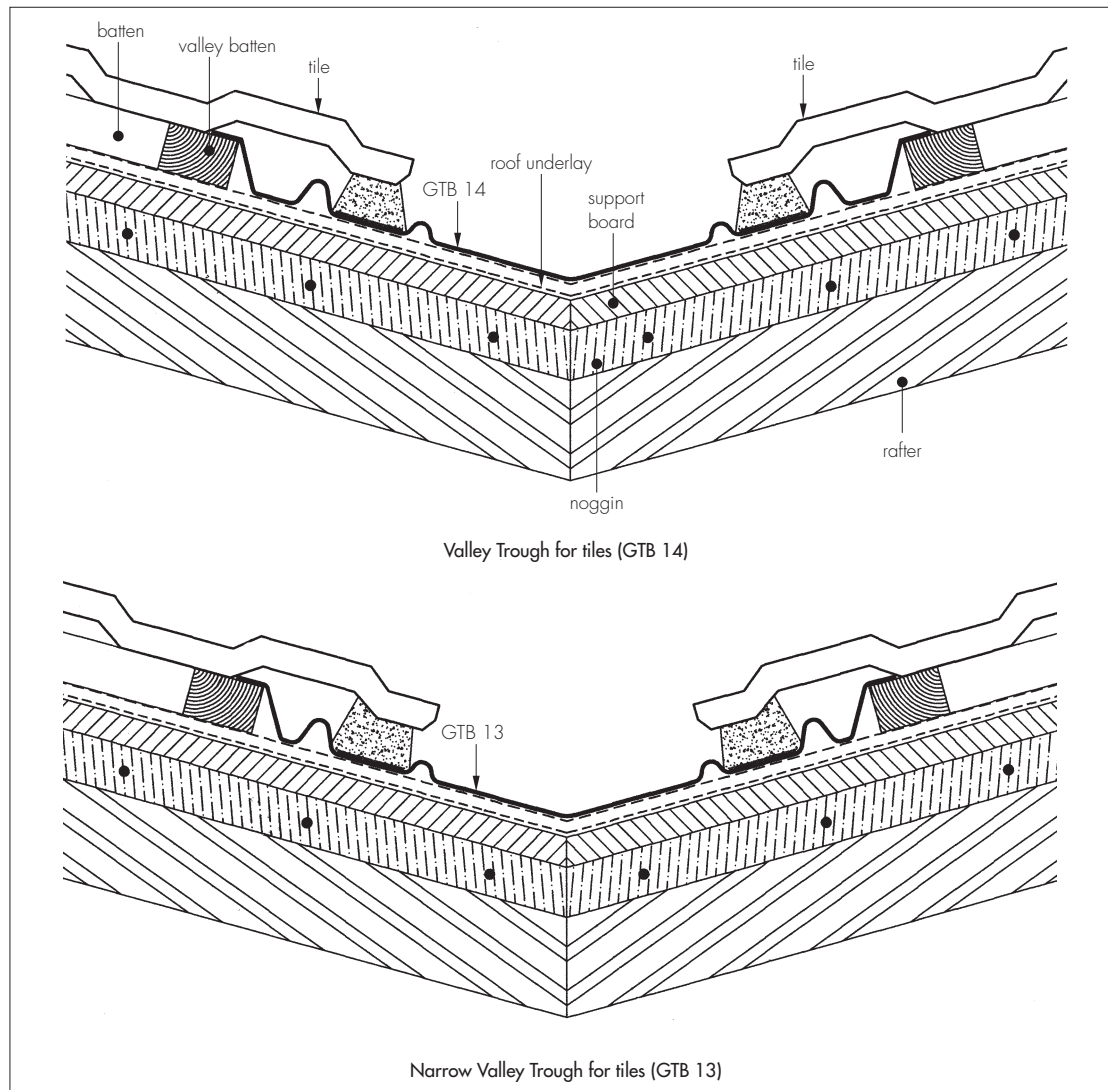
This Certificate relates to Filon GRP Valley Troughs for Tiles (GTB 13 and GTB 14) — Batten Fix for use as valley troughs in tiled roofs constructed using concrete tiles in accordance with BS 5534 : 2003.

## Technical Specification

### 1 Description

1.1 Filon GRP Valley Troughs for Tiles (GTB 13 and GTB 14) — Batten Fix are manufactured from glassfibre/ polyester laminate with a UV-resistant polyester film on the upper face, in a continuous process to the profile illustrated (see Figure 1). Sanded strips are bonded along the upper surface of each edge to provide a key for bedding the roof tiles into mortar.

Figure 1 Filon GRP Valley Trough for Tiles (GTB 13 and GTB 14) — Batten Fix



1.2 The profile is supplied in 3 m lengths and 360 mm and 400 mm widths, respectively. The valley trough is flexible and will suit roof pitches ranging from 17.5° to 60° with a recommended maximum difference between roof pitches of 20°.

1.3 The products are finished in standard colour, lead grey.

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

- weight
- dimensions
- visual inspection.

### 2 Delivery and site handling

2.1 The products are distributed in packs of 10 units, each unit marked with size, the application, the BBA identification mark including the number of this Certificate.

2.2 The packs should be stored flat or on end, 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 Filon GRP Valley Troughs for Tiles (GTB 13 and GTB 14) — Batten Fix.

## Design Considerations

### 3 Use

Filon GRP Valley Troughs for Tiles (GTB 13 and GTB 14) — Batten Fix are satisfactory for use in tiled pitched roofs constructed in accordance with the relevant clauses of BS 5534 : 2003.

### 4 Weathertightness



Tests indicate that the products will adequately resist the passage of moisture to the interior of a building and so meet 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<sup>(1)(2)</sup> and 3.10.8<sup>(1)(2)</sup>

(1) Technical Handbook (Domestic)

(2) Technical Handbook (Non-Domestic).

**Northern Ireland** — Regulation C4(b)

### 5 Properties in relation to fire



Samples of GRP, representative of that used in the manufacture of the product, when tested in accordance with BS 467-3 : 2004 achieved an EXT.S.AA rating.

### 6 Strength

The products will resist the impacts associated during installation and use.

### 7 Durability



Available test data and knowledge of the material indicate that the product should have a life of at least 20 years.

## Installation

### 8 General

Installation of Filon GRP Valley Troughs for Tiles (GTB 13 and GTB 14) — Batten fix should be in accordance with the manufacturer's instructions and the relevant recommendations of BS 5534 : 2003 and BS 8000-6 : 1990.

### 9 Procedure

9.1 The valley should first be lined longitudinally with reinforced underlay 1 m wide. A length of the tile valley trough should be pressed to a snug fit into the valley and marked with a chalk line longitudinally along either side.

9.2 Counter battens of similar size to the roofing battens should be fixed along the marked lines to support the edges of the valley troughs, using nails of a quality acceptable in good roofing practice.

9.3 Commencing at the foot all of the valley, the troughs should be nailed onto the battens using clout-headed nails fixed through pre-drilled holes at approximately 1 m centres.

9.4 Consecutive lengths of valley troughs should be laid dressed to shed water down the slope, allowing a minimum 150 mm overlap at the joints. At the top of adjoining troughs, the unit should be mitred and dressed with a Code 4 lead saddle.

9.5 The fascia board may need to be trimmed to ensure full water flow to the gutter.

9.6 Sanded strips running longitudinally along the lengths of the troughs are keys into which mortar and subsequently, tiles are bedded. Dencil slips should be used if excessive mortar is required, to reduce the risk of shrinkage. Care should also be taken not to block the water channel with the mortar.

9.7 It is recommended that valley boards/noggins should be flush-fitted with the top of the rafters to fully support the valley troughs.

## 10 Maintenance and repair



The smooth surface finish will inhibit the build up of foreign matter. Damaged lengths can be replaced without having to remove adjacent lengths.

## 11 Finishing

The tiling must be carried out in accordance with the relevant clauses of BS 5534 : 2003, and BS 8000-6 : 1990.

# Technical Investigations

## 12 Tests

Tests were carried out by the BBA to examine the following properties:

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

## 13 Investigations

13.1 An assessment was made of the results of a fire test in accordance with BS 476-3 : 2004 carried out by an independent test authority.

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

# Bibliography

BS 476-3 : 2004 *Fire tests on building materials and structures — Classification and method of test for external fire exposure to roofs*

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

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

## 14 Conditions

14.1 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.

14.2 References in this Certificate to any Act of Parliament, Statutory Instrument, Directive or Regulation of the European Union, British, European or International Standard, Code of Practice, manufacturers' instructions or similar publication, are references to such publication in the form in which it was current at the date of this Certificate.

14.3 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.

14.4 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.

14.5 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.

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**Agrément Certificate**  
**No 07/4492**

## FILON GRP VALLEY TROUGH AND FLASHINGS RANGE

### PRODUCT SHEET 2 — FILON GRP VALLEY TROUGHS FOR TILES (GTF 14) – FLAT FIX

#### PRODUCT SCOPE AND SUMMARY OF CERTIFICATE

This Certificate relates to Filon GRP Valley Troughs for Tiles (GTF 14) — Flat Fix, for use in slated or tiled roofs constructed in accordance with the relevant requirements of BS 5534 : 2003. The products are for use to provide a weatherproof junction at features such as changes of direction and materials.

#### 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

**Weathertightness** — as part of a complete roof, the products will resist the passage of moisture into the interior of the building (see section 4).

**Properties in relation to fire** — tests indicate that the products when used as part of a complete roof will be unrestricted under the Building Regulations (see section 5).

**Strength** — the products have adequate strength to resist the loads associated with the installation of the roof (see section 7).

**Durability** — under normal service conditions the products will have a service life of at least 20 years (see section 7).

The BBA has awarded this Agrément Certificate for Filon GRP Valley Troughs for Tiles (GTF 14) – Flat Fix to Filon Products Limited as fit for their intended use provided they are installed, used and maintained as set out in this Agrément Certificate.

On behalf of the British Board of Agrément

Greg Cooper: Chief Executive

Date of First issue: 18 February 2008

*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](http://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, Filon GRP Valley Troughs for Tiles (GTF 14) — Flat Fix, 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 2000 (as amended) (England and Wales)

Requirement:	B4(2)	External fire spread
Comment:		Data to BS 476-3 : 2004 indicate that the products when used as part of a complete roof, will not effect the fire rating of the roof construction. See section 5 of this Certificate.
Requirement:	C2(b)	Resistance to moisture
Comment:		The products will contribute to a roof meeting this Requirement. See section 4 of this Certificate.
Requirement:	Regulation 7	Materials and workmanship
Comment:		The products are acceptable. See section 7 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 products satisfies the requirements of this Regulation. See sections 7 and 10 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards — construction
Standard:	2.8	Spread from neighbouring buildings
Comment:		Data to BS 476-3 : 2004 indicates that the products can be regarded as having a low vulnerability, with reference to clause 2.8.1 <sup>(1)(2)</sup> , and will not effect the fire rating of the roof construction. See section 5 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The products will contribute to a roof satisfying clauses 3.10.1 <sup>(1)(2)</sup> and 3.10.8 <sup>(1)(2)</sup> of this Standard. See section 4 of this Certificate.
Regulation:	12	Building standards — conversions
Comment:		All comments given for these products under Regulation 9, also apply to this Regulation, with reference to clause 0.12.1 <sup>(1)(2)</sup> and Schedule 6 <sup>(1)(2)</sup> . (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 products are acceptable. See section 7 and the <i>Installation</i> part of this Certificate.
Regulation:	B3(2)	Suitability of certain materials
Comment:		The products are acceptable. See section 10 of this Certificate.
Regulation:	C4(b)	Resistance to ground moisture and weather
Comment:		The products will contribute to a roof satisfying this Regulation. See section 4 of this Certificate.
Regulation:	E5	External fire spread
Comment:		Data to BS 476-3 : 2004 indicate that the products when used as part of a complete roof construction will not effect the fire rating of the roof construction. See section 5 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).

## Non-regulatory Information

### NHBC Standards 2007

NHBC accepts the use of Filon GRP Valley Troughs for Tiles (GTF 14) — Flat Fix, when installed and used in accordance with this Certificate, in relation to *NHBC Standards*, Chapter 7.2 *Pitched roofs*.

### Zurich Building Guarantee Technical Manual 2007

In the opinion of the BBA, Filon GRP Valley Troughs for Tiles (GTF 14) — Flat Fix, when installed and used in accordance with this Certificate, satisfy the requirements of the *Zurich Building Guarantee Technical Manual*, Section 4 *Superstructure*, Sub-section *Pitched roofs*.

## General

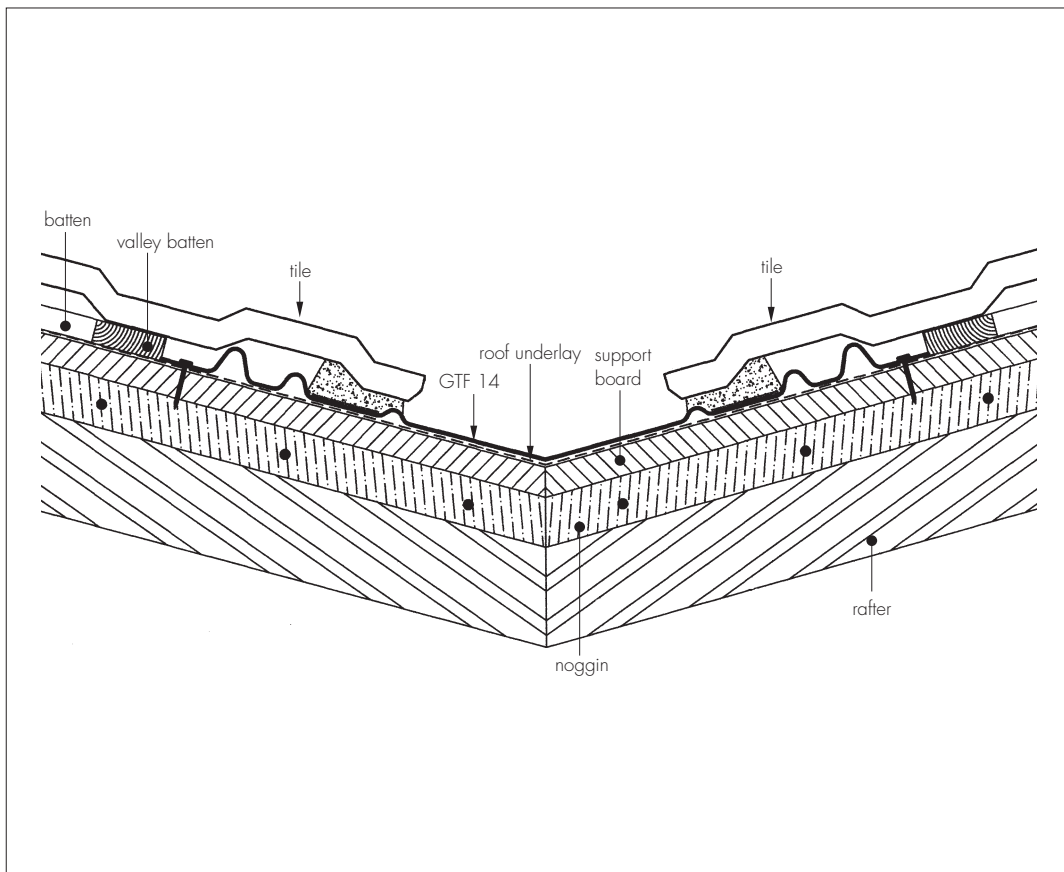
This Certificate relates to Filon GRP Valley Troughs for Tiles (GTF 14) — Flat Fix for use as valley troughs in tiled roofs constructed using concrete tiles in accordance with BS 5534 : 2003.

## Technical Specification

### 1 Description

1.1 Filon GRP Valley Troughs for Tiles (GTF 14) — Flat Fix are manufactured from glassfibre/polyester laminate with a UV-resistant polyester film on the upper face, in a continuous process to the profile illustrated (see Figure 1). Sanded strips are bonded along the upper surface of each edge to provide a key for bedding the roof tiles into mortar.

Figure 1 Filon GRP Valley Trough for Tiles (GTF 14) — Flat Fix



1.2 The profile is supplied in 3 m lengths and 400 mm width.

1.3 The products are finished in standard colour, lead grey.

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

- weight
- dimensions
- visual inspection.

### 2 Delivery and site handling

2.1 The products are distributed in packs of 10 units, each unit marked with size, the application, the BBA identification mark including the number of this Certificate.

2.2 The packs should be stored flat or on end, 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 Filon GRP Valley Troughs for Tiles (GTF 14) — Flat Fix.

## Design Considerations

### 3 Use

Filon GRP Valley Troughs for Tiles (GTF 14) — Flat Fix are satisfactory for use in tiled pitched roofs constructed in accordance with the relevant clauses of BS 5534 : 2003.

### 4 Weathertightness



Tests indicate that the products will adequately resist the passage of moisture to the inside of a building and so meet 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<sup>(1)</sup>(2) and 3.10.8<sup>(1)</sup>(2)

(1) Technical Handbook (Domestic).

(2) Technical Handbook (Non-Domestic).

**Northern Ireland** — Regulation C4(b).

### 5 Properties in relation to fire



Samples of GRP, representative of that used in the manufacture of the product, when tested in accordance with BS 467-3 : 2004 achieved an EXT.S.AA rating.

### 6 Strength

The products will resist the impacts associated during installation and use.

### 7 Durability



Available test data and knowledge of the material indicate that the product should have a life of at least 20 years.

## Installation

### 8 General

Installation of Filon GRP Valley Troughs for Tiles (GTF 14) — Flat Fix should be in accordance with the manufacturer's instructions and the relevant recommendations of BS 5534 : 2003 and BS 8000-6 : 1990.

### 9 Procedure

9.1 It is recommended that the valley should be fitted with either a flush fit valley board or with a valley board nailed directly on top of the rafters prior to the roof being underlaid in the normal practices.

9.2 When fitting a valley board by nailing directly to the rafters, the combined height of the board and the valley trough should not exceed the height of the tile battens.

9.3 The valley is fitted in the normal manner and pushed down onto the valley board and nailed through the pre-drilled holes at 1 m centres.

9.4 Sanded strips running longitudinally along the length of the trough are keys into which mortar and subsequent tiles should be bedded. If excessive mortar is required, dentil strips should be used to reduce the risk of shrinkage. Care should also be taken not to block the water channel with mortar.

9.5 Consecutive lengths of valley troughs should have a 150 mm overlap at any join, and at the top of adjoining troughs the units should be mitred and dressed with a Code 4 lead saddle.

9.6 It may be necessary to trim the fascia board to ensure full water flow to the gutter.

### 10 Maintenance and repair



The smooth surface finish will inhibit the build up of foreign matter. Damaged lengths can be replaced without having to remove adjacent lengths.

### 11 Finishing

The tiling must be carried out in accordance with the relevant clauses of BS 5534 : 2003, and BS 8000-6 : 1990.

# Technical Investigations

## 12 Tests

Tests were carried out by the BBA to examine the following properties:

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

## 13 Investigations

13.1 An assessment was made of the results of a fire test in accordance with BS 476-3 : 2004 carried out by an independent test authority.

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

## Bibliography

BS 476-3 : 2004 *Fire tests on building materials and structures — Classification and method of test for external fire exposure to roofs*

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

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

## 14 Conditions

14.1 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.

14.2 References in this Certificate to any Act of Parliament, Statutory Instrument, Directive or Regulation of the European Union, British, European or International Standard, Code of Practice, manufacturers' instructions or similar publication, are references to such publication in the form in which it was current at the date of this Certificate.

14.3 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.

14.4 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.

14.5 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.

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**Agrément Certificate**  
**No 07/4492**

## FILON GRP VALLEY TROUGH AND FLASHINGS RANGE

### PRODUCT SHEET 3 — FILON GRP SLATE VALLEY TROUGHS (GSVT 1)

#### PRODUCT SCOPE AND SUMMARY OF CERTIFICATE

This Certificate relates to Filon GRP Slate Valley Troughs (GSVT 1), for use in slated or tiled roofs constructed in accordance with the relevant requirements of BS 5534 : 2003. The products are for use to provide a weatherproof junction at features such as changes of direction and materials.

#### 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

**Weathertightness** — as part of a complete roof, the products will resist the passage of moisture into the interior of the building (see section 4).

**Properties in relation to fire** — tests indicate that the products when used as part of a complete roof will be unrestricted under the Building Regulations (see section 5).

**Strength** — the products have adequate strength to resist the loads associated with the installation of the roof (see section 7).

**Durability** — under normal service conditions the products will have a service life of at least 20 years (see section 7).

The BBA has awarded this Agrément Certificate for Filon GRP Slate Valley Troughs (GSVT 1) to Filon Products Limited as fit for their intended use provided they are installed, used and maintained as set out in this Agrément Certificate.

On behalf of the British Board of Agrément

Date of First issue: 18 February 2008

Greg Cooper: Chief Executive

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*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, Filon GRP Slate Valley Troughs (GSVT 1), 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 2000 (as amended) (England and Wales)

Requirement:	B4(2)	External fire spread
Comment:		Data to BS 476-3 : 2004 indicate that the products when used as part of a complete roof, will not effect the fire rating of the roof construction. See section 5 of this Certificate.
Requirement:	C2(b)	Resistance to moisture
Comment:		The products will contribute to a roof meeting this Requirement. See section 4 of this Certificate.
Requirement:	Regulation 7	Materials and workmanship
Comment:		The products are acceptable. See section 7 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 products satisfies the requirements of this Regulation. See sections 7 and 10 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards – construction
Standard:	2.8	Spread from neighbouring buildings
Comment:		Data to BS 476-3 : 2004 indicate that the products can be regarded as having a low vulnerability, with reference to clause 2.8.1 <sup>(1)(2)</sup> , and will not effect the fire rating of the roof construction. See section 5 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The products will contribute to a roof satisfying clauses 3.10.1 <sup>(1)(2)</sup> and 3.10.8 <sup>(1)(2)</sup> of this Standard. See section 4 of this Certificate.
Regulation:	12	Building standards – conversions
Comment:		All comments given for these products under Regulation 9, also apply to this Regulation, with reference to clause 0.12.1 <sup>(1)(2)</sup> and Schedule 6 <sup>(1)(2)</sup> . (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 products are acceptable. See section 7 and the <i>Installation</i> part of this Certificate.
Regulation:	B3(2)	Suitability of certain materials
Comment:		The products are acceptable. See section 10 of this Certificate.
Regulation:	C4(b)	Resistance to ground moisture and weather
Comment:		The products will contribute to a roof satisfying this Regulation. See section 4 of this Certificate.
Regulation:	E5	External fire spread
Comment:		Data to BS 476-3 : 2004 indicate that the products when used as part of a complete roof construction will not effect the fire rating of the roof construction. See section 5 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).

# Non-regulatory Information

## NHBC Standards 2007

NHBC accepts the use of Filon GRP Slate Valley Troughs (GSVT 1), when installed and used in accordance with this Certificate, in relation to *NHBC Standards*, Chapter 7.2 *Pitched roofs*.

## Zurich Building Guarantee Technical Manual 2007

In the opinion of the BBA, Filon GRP Slate Valley Troughs (GSVT 1), when installed and used in accordance with this Certificate, satisfy the requirements of the *Zurich Building Guarantee Technical Manual*, Section 4 *Superstructure*, Sub-section *Pitched roofs*.

## General

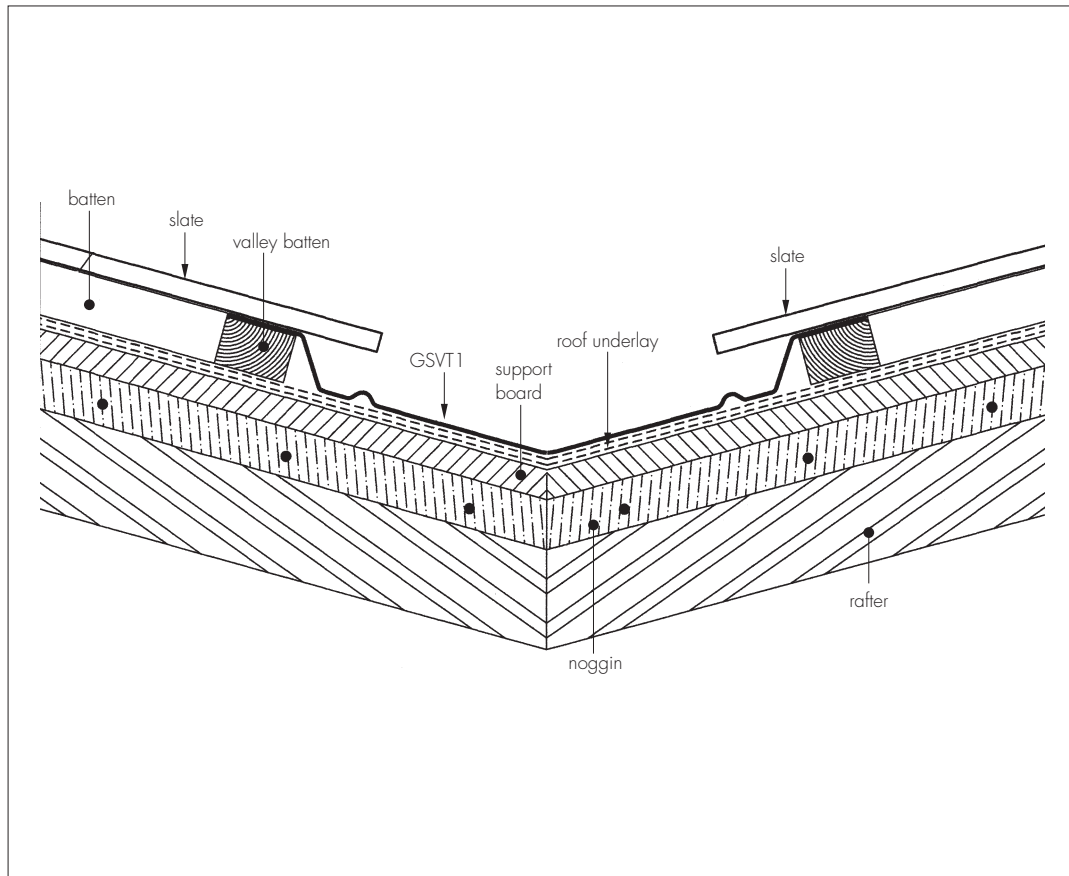
This Certificate relates to Filon GRP Slate Valley Troughs (GSVT 1) for use as valley troughs in tiled roofs constructed using concrete tiles in accordance with BS 5534 : 2003.

## Technical Specification

### 1 Description

1.1 Filon GRP Slate Valley Troughs (GSVT 1) are manufactured from glassfibre/polyester laminate with UV-resistant polyester film on the upper face, in a continuous process to the profile illustrated (see Figure 1).

Figure 1 Filon GRP Slate Valley Trough (GSVT 1)



1.2 The profile is supplied in 3 m lengths and 330 mm width.

1.3 The products are finished in standard colour, lead grey.

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

- visual inspection
- Barcol hardness
- weight
- dimensions.

### 2 Delivery and site handling

2.1 The products are distributed in packs of 10 units, each unit marked with size, the application, the BBA identification mark including the number of this Certificate.

2.2 The packs should be stored flat or on end, 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 Filon GRP Slate Valley Troughs (GSVT 1).

## Design Considerations

### 3 Use

Filon GRP Slate Valley Troughs (GSVT 1) are satisfactory for use in tiled pitched roofs constructed in accordance with the relevant clauses of BS 5534 : 2003.

### 4 Weathertightness



Tests indicate that the products will adequately resist the passage of moisture to the inside of a building and so meet 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<sup>(1)</sup>(2) and 3.10.8<sup>(1)</sup>(2)

(1) Technical Handbook (Domestic).

(2) Technical Handbook (Non-Domestic).

**Northern Ireland** — Regulation C4(b).

### 5 Properties in relation to fire



Samples of GRP, representative of that used in the manufacture of the product, when tested in accordance with BS 467-3 : 2004 achieved an EXT.S.AA rating.

### 6 Strength

The products will resist the impacts associated during installation and use.

### 7 Durability



Available test data and knowledge of the material indicate that the product should have a life of at least 20 years.

## Installation

### 8 General

Installation of Filon GRP Slate Troughs (GSVT 1) should be in accordance with the manufacturer's instructions and the relevant recommendations of BS 5534 : 2003 and BS 8000-6 : 1990.

### 9 Procedure

9.1 The valley should first be lined longitudinally with reinforced underlay 1 m wide. A length of the tile valley trough should be pressed to a snug fit into the valley and marked with a chalk line longitudinally along either side.

9.2 Counter battens of similar size to the roofing battens should be fixed along the marked lines to support the edges of the valley troughs, using nails of a quality acceptable in good roofing practice.

9.3 Commencing at the foot all of the valley, the troughs should be nailed onto the battens using clout-headed nails fixed through pre-drilled holes at approximately 1 m centres.

9.4 Consecutive lengths of valley troughs should be laid dressed to shed water down the slope, allowing a minimum 150 mm overlap at the joints. At the top of adjoining troughs, the unit should be mitred and dressed with a Code 4 lead saddle.

9.5 The fascia board may need to be trimmed to ensure full water flow to the gutter.

9.6 It is recommended that valley boards/noggings should be flush-fitted with the top of the rafters to fully support the valley troughs.

### 10 Maintenance and repair



The smooth surface finish will inhibit the build up of foreign matter. Damaged lengths can be replaced without having to remove adjacent lengths.

### 11 Finishing

The slating must be carried out in accordance with the relevant clauses of BS 5534 : 2003, and BS 8000-6 : 1990.

# Technical Investigations

## 12 Tests

Tests were carried out by the BBA to examine the following properties:

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

## 13 Investigations

13.1 An assessment was made of the results of a fire test in accordance with BS 476-3 : 2004 carried out by an independent test authority.

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

## Bibliography

BS 476-3 : 2004 *Fire tests on building materials and structures — Classification and method of test for external fire exposure to roofs*

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

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

## 14 Conditions

14.1 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.

14.2 References in this Certificate to any Act of Parliament, Statutory Instrument, Directive or Regulation of the European Union, British, European or International Standard, Code of Practice, manufacturers' instructions or similar publication, are references to such publication in the form in which it was current at the date of this Certificate.

14.3 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.

14.4 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.

14.5 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.

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**Agrément Certificate  
No 07/4492**

## FILON GRP VALLEY TROUGH AND FLASHINGS RANGE

### PRODUCT SHEET 4 — FILON GRP SECRET JOINING STRIP (GJS 1)

#### PRODUCT SCOPE AND SUMMARY OF CERTIFICATE

This Certificate relates to Filon GRP Secret Joining Strip (GJS 1), for use in slated or tiled roofs constructed in accordance with the relevant requirements of BS 5534 : 2003. The product is for use to provide a weatherproof junction at features such as changes of direction and materials.

#### 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

**Weathertightness** — as part of a complete roof, the product will resist the passage of moisture into the interior of the building (see section 4).

**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 5).

**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 of at least 20 years (see section 7).



The BBA has awarded this Agrément Certificate for Filon GRP Secret Joining Strip (GJS 1) to Filon Products Limited as fit for its intended use provided it is installed, used and maintained as set out in this Agrément Certificate.

On behalf of the British Board of Agrément

Date of First issue: 18 February 2008

Greg Cooper: Chief Executive

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*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.*

# Regulations

In the opinion of the BBA, Filon GRP Secret Joining Strip (GJS 1), 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 2000 (as amended) (England and Wales)

Requirement:	B4(2)	External fire spread
Comment:		Data to BS 476-3 : 2004 indicate that the product when used as part of a complete roof, will not effect the fire rating of the roof construction. See section 5 of this Certificate.
Requirement:	C2(b)	Resistance to moisture
Comment:		The product will contribute to a roof meeting this Requirement. See section 4 of this Certificate.
Requirement:	Regulation 7	Materials and workmanship
Comment:		The product is acceptable. See section 7 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 requirement of this Regulation. See sections 7 and 10 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards – construction
Standard:	2.8	Spread from neighbouring buildings
Comment:		Data to BS 476-3 : 2004 indicate that the product can be regarded as having a low vulnerability, with reference to clause 2.8.1 <sup>(1)(2)</sup> , and will not effect the fire rating of the roof construction. See section 5 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The product will contribute to a roof satisfying clauses 3.10.1 <sup>(1)(2)</sup> and 3.10.8 <sup>(1)(2)</sup> of this Standard. See section 4 of this Certificate.
Regulation:	12	Building standards – conversions
Comment:		All comments given for this product under Regulation 9, also apply to this Regulation, with reference to clause 0.12.1 <sup>(1)(2)</sup> and Schedule 6 <sup>(1)(2)</sup> . (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 product is acceptable. See section 7 and the <i>Installation</i> part of this Certificate.
Regulation:	B3(2)	Suitability of certain materials
Comment:		The product is acceptable. See section 10 of this Certificate.
Regulation:	C4(b)	Resistance to ground moisture and weather
Comment:		The product will contribute to a roof satisfying this Regulation. See section 4 of this Certificate.
Regulation:	E5	External fire spread
Comment:		Data to BS 476-3 : 2004 indicate that the product when used as part of a complete roof construction will not effect the fire rating of the roof construction. See section 5 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).

# Non-regulatory Information

## NHBC Standards 2007

NHBC accepts the use of Filon GRP Secret Joining Strip (GJS 1), when installed and used in accordance with this Certificate, in relation to *NHBC Standards*, Chapter 7.2 *Pitched roofs*.

## Zurich Building Guarantee Technical Manual 2007

In the opinion of the BBA, Filon GRP Secret Joining Strip (GJS 1), when installed and used in accordance with this Certificate, satisfies the requirements of the *Zurich Building Guarantee Technical Manual*, Section 4 *Superstructure*, Sub-section *Pitched roofs*.

## General

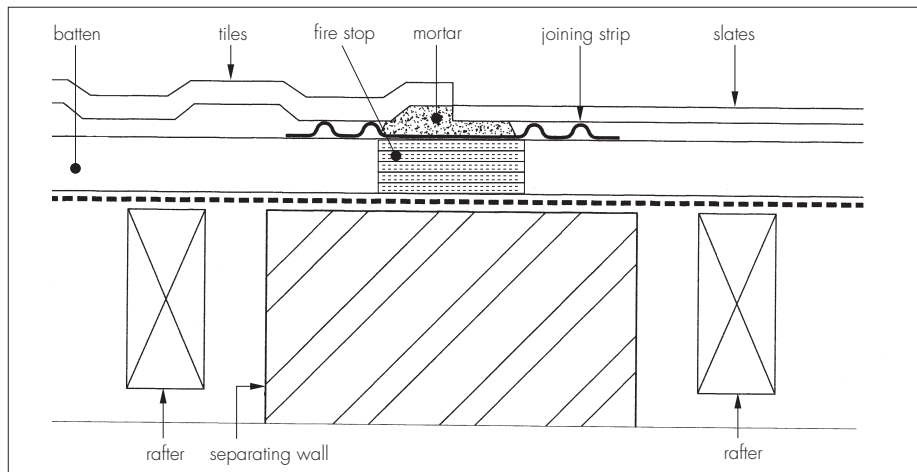
This Certificate relates to Filon GRP Secret Joining Strip (GJS 1) for use to join two separate roof coverings where existing roofs are refurbished and slates are joined to tiles. Slated/tiled roofs must be constructed in accordance with the relevant recommendations of BS 5534 : 2003.

## Technical Specification

### 1 Description

1.1 Filon GRP Secret Joining Strip (GJS 1) is manufactured from glassfibre/polyester laminate with a UV-resistant polyester film on the upper face, in a continuous process to the profile illustrated (see Figure 1). Sanded strips are bonded along the upper surface of each edge to provide a key for bedding the roof tiles into mortar.

Figure 1 Filon GRP Secret Joining Strip GJS 1



1.2 The profile is supplied in 3 m length and 216 mm width only.

1.3 The product is finished in standard colour, lead grey.

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

- visual inspection
- Barcol hardness
- weight
- dimensions.

### 2 Delivery and site handling

2.1 The product is distributed in packs of 10 units, each unit marked with size, the application, the BBA identification mark including the number of this Certificate.

2.2 The packs should be stored flat or on end, 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 Filon GRP Secret Joining Strip (GJS 1).

## Design Considerations

### 3 Use

Filon GRP Secret Joining Strip (GJS 1) is satisfactory for use when joining two separate roof coverings during refurbishment of existing roofs, enabling slates and tiles to be laid adjacent.

### 4 Weathertightness



Tests indicate that the product will adequately resist the passage of moisture to the inside of a building and so meet 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<sup>(1)(2)</sup> and 3.10.8<sup>(1)(2)</sup>

(1) Technical Handbook (Domestic).

(2) Technical Handbook (Non-Domestic).

**Northern Ireland** — Regulation C4(b).

## 5 Properties in relation to fire



Samples of GRP, representative of that used in the manufacture of the product, when tested in accordance with BS 467-3 : 2004 achieved an EXT.S.AA rating.

## 6 Strength

The product will resist the impacts associated during installation and use.

## 7 Durability



Available test data and knowledge of the material indicate that the product should have a life of at least 20 years.

# Installation

## 8 General

Installation should be in accordance with the manufacturer's instructions and the relevant recommendations of BS 5534 : 2003 and BS 8000-6 : 1990.

## 9 Procedure

9.1 The end tiles/slates on both roofs should be removed to expose the construction over the separating wall. Fire stopping must be provided to the top of the separating wall to ensure that fire cannot spread to the adjoining building in the event of a fire.

9.2 The underlay and battens over the joint area of the separating wall should be made good. New underlay should be inserted into the old, ensuring a sufficient overlap is achieved in accordance with BS 5534 : 2003.

9.3 The secret Joining Strip should be pushed into position over the battens halfway over the separating wall, with consecutive lengths dressed to shed water down the slope with a minimum 150 mm overlap. This should then be nailed through pre-drilled holes using clout-headed nails at approximately 1 m centres to the battens.

9.4 It is advisable to use double slates/tiles to eliminate the possibility of small sections requiring fixing.

9.5 The tiles or slates should be bedded with mortar onto the sanded strip, ensuring that the mortar does not enter the water channel of the tile or slate.

9.6 It may be necessary to trim the fascia board to allow the joining strip to sit on the board and discharge water into the gutter.

## 10 Repair



The smooth surface finish will inhibit the build up of foreign matter. Damaged lengths can be replaced without having to remove adjacent lengths.

## 11 Finishing

The slating/tiling must be carried out in accordance with the relevant clauses of BS 5534 : 2003, and BS 8000-6 : 1990.

# Technical Investigations

## 12 Tests

Tests were carried out by the BBA to examine the following properties:

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

## 13 Investigations

13.1 An assessment was made of the results of a fire test in accordance with BS 476-3 : 2004 carried out by an independent test authority.

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

## Bibliography

BS 476-3 : 2004 *Fire tests on building materials and structures — Classification and method of test for external fire exposure to roofs*

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

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

## 14 Conditions

14.1 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.

14.2 References in this Certificate to any Act of Parliament, Statutory Instrument, Directive or Regulation of the European Union, British, European or International Standard, Code of Practice, manufacturers' instructions or similar publication, are references to such publication in the form in which it was current at the date of this Certificate.

14.3 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.

14.4 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.

14.5 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.

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**Agrément Certificate**  
**No 07/4492**

## FILON GRP VALLEY TROUGH AND FLASHINGS RANGE

### PRODUCT SHEET 5 — FILON GRP ABUTMENT SECRET GUTTER (GAS 1)

#### PRODUCT SCOPE AND SUMMARY OF CERTIFICATE

This Certificate relates to Filon GRP Abutment Secret Gutter (GAS 1), for use in slated or tiled roofs constructed in accordance with the relevant requirements of BS 5534 : 2003. The product is for use as abutment secret gutter on tiled or slated roofs.

#### 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

**Weathertightness** — as part of a complete roof, the product will resist the passage of moisture into the interior of the building (see section 4).

**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 5).

**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 of at least 20 years (see section 7).



The BBA has awarded this Agrément Certificate for Filon GRP Abutment Secret Gutter (GAS 1) to Filon Products Limited as fit for its intended use provided it is installed, used and maintained as set out in this Agrément Certificate.

On behalf of the British Board of Agrément

Date of First issue: 18 February 2008

Greg Cooper: Chief Executive

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# Regulations

In the opinion of the BBA, Filon GRP Abutment Secret Gutter (GAS 1), 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 2000 (as amended) (England and Wales)

Requirement:	B4(2)	External fire spread
Comment:		Data to BS 476-3 : 2004 indicate that the product when used as part of a complete roof, will not effect the fire rating of the roof construction. See section 5 of this Certificate.
Requirement:	C2(b)	Resistance to moisture
Comment:		The product will contribute to a roof meeting this Requirement. See section 4 of this Certificate.
Requirement:	Regulation 7	Materials and workmanship
Comment:		The product is acceptable. See section 7 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 7 and 10 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards – construction
Standard:	2.8	Spread from neighbouring buildings
Comment:		Data to BS 476-3 : 2004 indicate that the product can be regarded as having a low vulnerability, with reference to clause 2.8.1 <sup>(1)(2)</sup> , and will not effect the fire rating of the roof construction. See section 5 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The product will contribute to a roof satisfying clauses 3.10.1 <sup>(1)(2)</sup> , 3.10.7 <sup>(1)(2)</sup> and 3.10.8 <sup>(1)(2)</sup> of this Standard. See section 4 of this Certificate.
Regulation:	12	Building standards – conversions
Comment:		All comments given for this product under Regulation 9, also apply to this Regulation, with reference to clause 0.12.1 <sup>(1)(2)</sup> and Schedule 6 <sup>(1)(2)</sup> . (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 product is acceptable. See section 7 and the <i>Installation</i> part of this Certificate.
Regulation:	B3(2)	Suitability of certain materials
Comment:		The product is acceptable. See section 10 of this Certificate.
Regulation:	C4(b)	Resistance to ground moisture and weather
Comment:		The product will contribute to a roof satisfying this Regulation. See section 4.1 of this Certificate.
Regulation:	E5	External fire spread
Comment:		Data to BS 476-3 : 2004 indicate that the product when used as part of a complete roof construction will not effect the fire rating of the roof construction. See section 5 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).

# Non-regulatory Information

## NHBC Standards 2007

NHBC accepts the use of Filon GRP Abutment Secret Gutter (GAS 1), when installed and used in accordance with this Certificate, in relation to *NHBC Standards*, Chapter 7.2 *Pitched roofs*.

## Zurich Building Guarantee Technical Manual 2007

In the opinion of the BBA, Filon GRP Abutment Secret Gutter (GAS 1), when installed and used in accordance with this Certificate, satisfies the requirements of the *Zurich Building Guarantee Technical Manual*, Section 4 *Superstructure*, Sub-section *Pitched roofs*.

## General

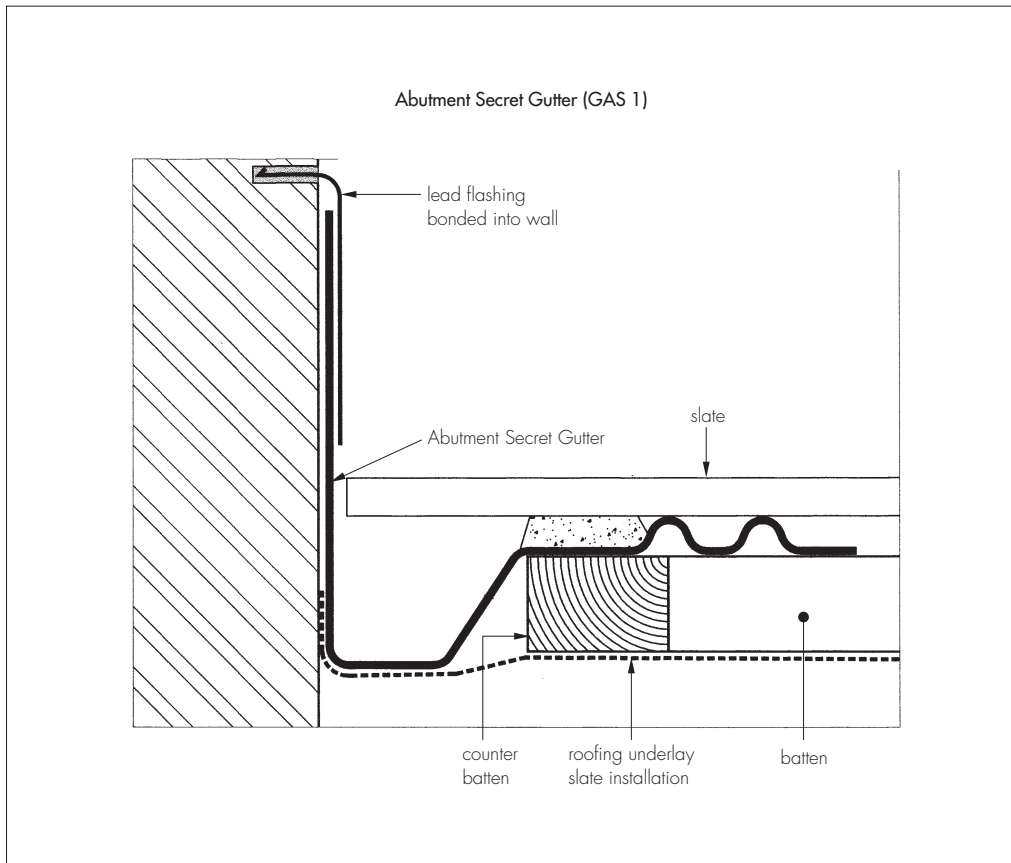
This Certificate relates to Filon GRP Abutment Secret Gutter (GAS 1) for use as an abutment secret gutter in tiled and slated roofs must be constructed in accordance with the BS 5534 : 2003.

## Technical Specification

### 1 Description

1.1 Filon GRP Abutment Secret Gutter (GAS 1) is manufactured from glassfibre/polyester laminate with a UV resistant polyester film on the upper face, in a continuous process to the profile illustrated (see Figure 1). Sanded strips are bonded along the upper surface of each edge to provide a key for bedding the roof tiles into mortar.

Figure 1 Filon GRP Abutment Secret Gutter (GAS 1)



1.2 The profile is supplied in 3 m length and 140 mm width only.

1.3 The product is finished in standard colour, lead grey.

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

- visual inspection
- Barcol hardness
- weight
- dimensions.

### 2 Delivery and site handling

2.1 The product is distributed in packs of 10 units, each unit marked with size, the application, the BBA identification mark including the number of this Certificate.

2.2 The packs should be stored flat or on end, 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 Filon GRP Abutment Secret Gutter (GAS 1).

## Design Considerations

### 3 Use

Filon GRP Abutment Secret Gutter (GAS 1) is satisfactory for use when joining two separate roof coverings during refurbishment of existing roofs, enabling slates and tiles to be laid adjacent.

### 4 Weathertightness



Tests indicate that the product will adequately resist the passage of moisture to the inside of a building and so meet 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<sup>(1)(2)</sup>, 3.10.7<sup>(1)(2)</sup> and 3.10.8<sup>(1)(2)</sup>.

(1) Technical Handbook (Domestic).

(2) Technical Handbook (Non-Domestic).

**Northern Ireland** — Regulation C4(b).

### 5 Properties in relation to fire



Samples of GRP, representative of that used in the manufacture of the product, when tested in accordance with BS 467-3 : 2004 achieved an EXT.S.AA rating.

### 6 Strength

The product will resist the impacts associated during installation and use.

### 7 Durability



Available test data and knowledge of the material indicate that the product should have a life of at least 20 years.

## Installation

### 8 General

Installation of Filon GRP Abutment Secret Gutter (GAS 1) should be in accordance with the manufacturer's instructions and the relevant recommendations of BS 5534 : 2003 and BS 8000-6 : 1990.

### 9 Procedure

9.1 The roof should be covered with underlay as in normal practice, with the underlay finished and turned approximately 100 mm up the abutting walls.

9.2 Battens should be cut 50 mm short of the abutment wall and nailed to the rafter, using clout-headed nails.

9.3 Noggings may need to be fixed flush to the top of the rafters to anchor the battens.

9.4 The flashing is nailed through pre-drilled holes at approximately 1 m centres to the roof battens.

9.5 At the ridge the abutment flashing should be mitred and dressed with a Code 4 lead saddle.

9.6 It is advisable to use double slates/tiles to eliminate the possibility of small sections requiring fixing.

9.7 The slates are laid in the normal manner, ensuring they are flush to the abutment flashing.

9.8 Where tiles are used, these should be bedded onto mortar which is applied onto the sanded strip running longitudinally along the length of the Abutment Secret Gutter. It may be necessary to break off the nibs of concrete tiles to eliminate kick-up.

9.9 Code 4 lead stepped flashing is used to dress over the abutment flashing upstand and over the abutting tiles/slates by approximately 150 mm.

9.10 It may be necessary to trim the fascia board to allow water to be discharged into the gutter. Alternatively, a tilt fillet and lead saddle/outlet may be incorporated.

## 10 Maintenance and repair



The smooth surface finish will inhibit the build up of foreign matter. Damaged lengths can be replaced without having to remove adjacent lengths.

## 11 Finishing

The slating/tiling must be carried out in accordance with the relevant clauses of BS 5534: 2003, and BS 8000-6 : 1990.

# Technical Investigations

## 12 Tests

Tests were carried out by the BBA to examine the following properties:

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

## 13 Investigations

13.1 An assessment was made of the results of a fire test in accordance with BS 476-3 : 2004 carried out by an independent test authority.

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

## Bibliography

- BS 476-3 : 2004 *Fire tests on building materials and structures — Classification and method of test for external fire exposure to roofs*
- BS 5534 : 2003 *Code of practice for slating and tiling (including shingles)*
- BS 8000-6 : 1990 *Workmanship on building sites — Code of practice for slating and tiling of roofs and claddings*

## 14 Conditions

14.1 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.

14.2 References in this Certificate to any Act of Parliament, Statutory Instrument, Directive or Regulation of the European Union, British, European or International Standard, Code of Practice, manufacturers' instructions or similar publication, are references to such publication in the form in which it was current at the date of this Certificate.

14.3 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.

14.4 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.

14.5 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.

