

Wienerberger Ltd

Wienerberger House
Brooks Drive
Cheadle
Cheshire SK8 3SA

Tel: 01924 413950 Fax: 016 491 1270
e-mail: sandtoftinfo@wienerberger.com
website: www.wienerberger.co.uk



Agrément Certificate

97/3351

Product Sheet 2

WIENERBERGER ROOF TILES

BRITLOCK INTERLOCKING SLATES

This Agrément Certificate Product Sheet⁽¹⁾ relates to BritLock Interlocking Slates, resin-based reconstituted slates for use as a roof covering on conventional pitched timber roofs with a rafter pitch of 20° and over, or hung vertically as a cladding on the outer face of external walls.

(1) Hereinafter referred to as 'Certificate'.

CERTIFICATION INCLUDES:

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



KEY FACTORS ASSESSED

Strength — the product has adequate strength to resist the impact loads associated with the installation of the roof (see section 6).

Performance in relation to fire — the product will enable a roof to be unrestricted under the national Building Regulations but their use as cladding is restricted to 18m in height (see section 7).

Weathertightness — the product resists the passage of moisture into the building (see section 8).

Durability — the product will have a service life in excess of 30 years (see section 10).



The BBA has awarded this Certificate to the company named above for the product described herein. This product has been assessed by the BBA as being fit for its intended use provided it is installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of Third issue: 17 May 2018

John Albon – Head of Approvals
Construction Products

Claire Curtis-Thomas
Chief Executive

Originally certificated on 20 March 1997

The BBA is a UKAS accredited certification body – Number 113.

*The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at www.bbacerts.co.uk
Readers are advised to check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA direct.*

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

British Board of Agrément

Bucknalls Lane
Watford
Herts WD25 9BA

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tel: 01923 665300
clientservices@bbacerts.co.uk
www.bbacerts.co.uk

Regulations

In the opinion of the BBA, BritLock Interlocking Slates, 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: | B3(2) | Internal fire spread (structure) |
| Requirement: | B4(1)(2) | External fire spread |
| Comment: | The product has a Class 3 surface and its use as cladding is restricted by these Requirements. For roofing applications, the product has an AA rating and its use is unrestricted. See section 7 of this Certificate. | |
| Requirement: | C2(b) | Resistance to moisture |
| Comment: | The product can contribute to satisfying this Requirement. See section 8 of this Certificate. | |
| Regulation: | 7 | Materials and workmanship |
| Comment: | The product <i>is</i> acceptable. See section 10.1 and the <i>Installation</i> part of this Certificate. | |



The Building (Scotland) Regulations 2004 (as amended)

| | | |
|--------------------|--|---|
| Regulation: | 8(1)(2) | Durability, workmanship and fitness of materials |
| Comment: | The product can contribute to a construction satisfying this Regulation. See sections 9 and 10.1 and the <i>Installation</i> part of this Certificate. | |
| Regulation: | 9 | Building standards applicable to construction |
| Standard: | 2.1 | Compartmentation |
| Standard: | 2.2 | Separation |
| Comment: | The product can contribute to satisfying these Standards, with reference to Clauses 2.1.15 ⁽²⁾ , 2.2.7 ⁽²⁾ and 2.2.10 ⁽¹⁾ . See section 7 of this Certificate. | |
| Standard: | 2.6 | Spread to neighbouring buildings |
| Standard: | 2.8 | Spread from neighbouring buildings |
| Comment: | The product is unrestricted under these Standards, with reference to Clauses 2.6.4 ⁽¹⁾⁽²⁾ and 2.8.1 ⁽¹⁾⁽²⁾ , provided the installation complies with the conditions set out in section 4.2. See section 7 of this Certificate. | |
| Standard: | 2.7 | Spread on external walls |
| Comment: | The product has a 'high risk' reaction to fire, and its use is restricted with reference to Clause 2.7.1 ⁽¹⁾⁽²⁾ of this Standard. See section 7.4 of this Certificate. | |
| Standard: | 3.10 | Precipitation |
| Comment: | The product will contribute to satisfying this Standard, with reference to Clauses 3.10.1 ⁽¹⁾⁽²⁾ and 3.10.8 ⁽¹⁾⁽²⁾ , provided the installation complies with the conditions set out in section 4.2. See section 8 of this Certificate. | |
| Standard: | 7.1(a)(b) | Statement of sustainability |
| Comment: | The product can contribute to meeting the relevant requirements of Regulation 9, Standards 1 to 6 and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard. | |
| Regulation: | 12 | Building standards applicable to conversions |
| Comment: | Comments in relation to the product under Regulation 9, Standards 1 to 6 also apply to this Regulation, with reference to clause 0.12.1 ⁽¹⁾⁽²⁾ and Schedule 6 ⁽¹⁾⁽²⁾ . | |

(1) Technical Handbook (Domestic).

(2) Technical Handbook (Non-Domestic).



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

| | | |
|--------------------|--------------------|---|
| Regulation: | 23(a)(i) | Fitness of materials and workmanship |
| Comment: | (iii)(b)(i) | The product is acceptable. See section 10.1 and the <i>Installation</i> part of this Certificate. |
| Regulation: | 28 | Resistance to moisture and weather |
| Comment: | | The product can contribute to satisfying this Regulation. See section 8 of this Certificate. |
| Regulation: | 35(3) | Internal fire spread - Structure |
| Regulation: | 36 | External fire spread |
| Comment: | | The product has a Class 3 surface and its use as cladding is restricted by these Regulations. For roofing applications the product has an AA rating and its use is unrestricted. See section 7 of this Certificate. |

Construction (Design and Management) Regulations 2015

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

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

See sections: 1 *Description* (1.1), 3 *Delivery and site handling* (3.1), 9 *Maintenance* (9.2 and 9.3) and 14 *Health and safety* (14.1) of this Certificate.

Additional Information

NHBC Standards 2018

In the opinion of the BBA, BritLock Interlocking Slates, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Chapters 6.2 *External timber framed walls* and Chapter 7.2 *Pitched roofs*.

Technical Specification

1 Description

1.1 BritLock Interlocking Slates are resin-based reconstituted slates with a riven appearance, with the nominal characteristics given in Table 1.

Table 1 Nominal characteristics

| Characteristic | BritLock Interlocking Slates |
|--|---|
| Size (mm) | 360 x 340 |
| Cover width (mm) | 300 |
| Thickness (mm) | 5 |
| Weight per slate (kg) | 1.4 |
| Installed weight (kg·m ⁻²) | 16.4 – 19.5 |
| Colours | Graphite, Heather Blue and Lakeland Green |

1.2 Slight colour variations may exist between batches. Slates should be randomised on site to achieve a consistent appearance when installed.

1.3 Slate-and-a-half slates with a covering width of 450mm, left-hand verge slates and left-hand verge slate-and-a-half are also available for use (See Figures 1 and 2).

1.4 Ventilation, dry verge and dry ridge components and a range of ridge and hip tiles are available from the Certificate holder but are outside the scope of this Certificate.

Figure 1 BritLock Interlocking slate roof

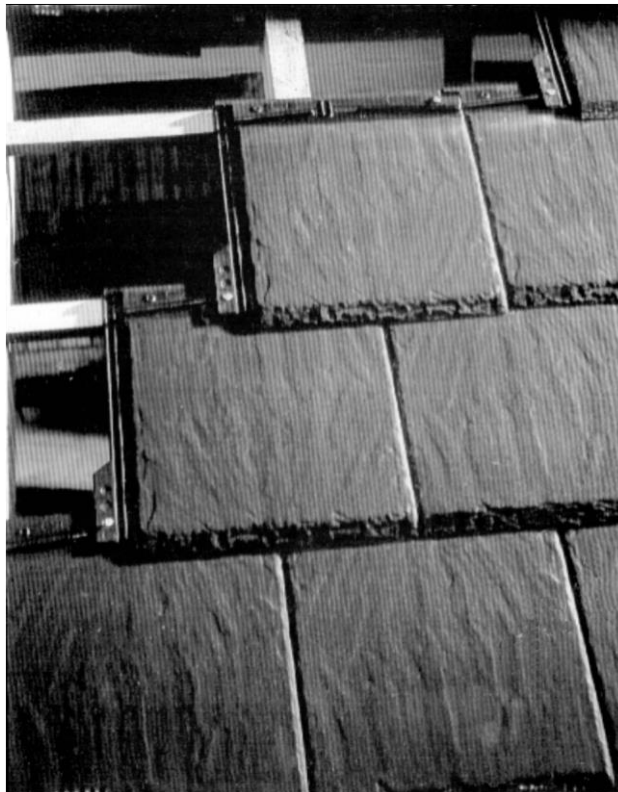
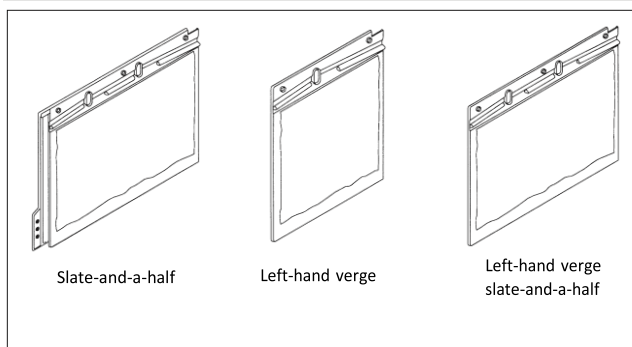


Figure 2 Slate fittings



2 Manufacture

2.1 BritLock Interlocking Slates are manufactured from a thermosetting resin, slate particles and other constituents. These are mixed to a dough, which is extruded, cut to weight and moulded under pressure and heat to give the appearance of natural riven slate.

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 Wienerberger Ltd has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015 by Lucideon Complete Integrated Certification Services (CICS) (Certificate 24486).

3 Delivery and site handling

3.1 The slates are packed in wooden crates of 500 or on a pallet and are protected by polythene wrapping. Storage must be on a level base in dry conditions, under cover and away from the possibility of damage.

3.2 The crate or wrapping bears the manufacturer's legend and the BBA logo incorporating the number of this Certificate.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on BritLock Interlocking Slates.

Design Considerations

4 Use

4.1 BritLock Interlocking Slates are satisfactory for use as a roof covering on conventional pitched timber roofs with a rafter pitch of 20° and over, or as a cladding on the outer face of external walls. It is essential that such roofs and walls are designed and constructed to incorporate the normal precautions to prevent moisture penetration and the formation of condensation.

4.2 Roofs and wall cladding incorporating the slates and subject to the national Building Regulations must be designed and constructed in accordance with the relevant recommendations of BS 5534 : 2014, BS 8000-0 : 2014 and BS 8000-6 : 2013. In particular, the designer must follow the recommendations of Clauses 5.2 for structural stability, 5.4 for rain and snow resistance, 5.4.2 for roof pitch, head-laps and side-laps, and 5.9.2 for condensation and select a construction appropriate to its location, paying due attention to design detailing, workmanship and materials to be used.

4.3 Other roofs and wall cladding incorporating the slates that are not subject to any of the Regulations given in section 3.2 should be constructed in accordance with BS 5534 : 2014, BS 8000-0 : 2014 and BS 8000-6 : 2013.

5 Practicability of installation

The slates are designed to be installed by a competent roofing contractor, experienced with these types of product.

6 Strength

6.1 The product has adequate impact resistance to damage during site handling and installation using conventional roofing methods.

6.2 The product, when tested after 24 hours immersion in water, had a mean bending strength of 27 N·mm⁻² (average of both directions).

6.3 The product has adequate resistance to the wind and snow loads likely to be encountered. In situations where high local loads may occur, the designer must seek the advice of the Certificate holder. Consideration must also be given to the guidance contained in BRE Digest 439 *Roof loads due to local drifting of snow*.

6.4 When fixed in accordance with the Certificate holder's instructions, the slates are resistant to the effects of wind uplift likely to be encountered in the UK. Where conditions of exposure may be severe, consideration must be given to the recommendations outlined in BS 5534 : 2014.

7 Performance in relation to fire



7.1 When tested in accordance with BS 476 -3 : 1958, the slates achieved an EXT S.AA designation.

7.2 A roof incorporating the slates is designated AA and is consequently unrestricted by the relevant requirements of the national Building Regulations.

7.3 When tested in accordance with BS 476-6 : 1989 and BS 476-7 : 1987, the slates had a fire propagation index (I) of ≤ 8.6 , a sub-index (i_1) of ≤ 0.0 and a Class 3 surface.

7.4 The slates have a Class 3 or a 'high risk' surface as defined by the national Building Regulations and are suitable for use as an external cladding to walls less than 18 metres above the ground and at a distance of one metre or more from any point on the boundary.

8 Weathertightness



8.1 Wind-driven rain penetration tests indicate that the slates have adequate resistance to the ingress of wind-driven rain when installed on a roof with a rafter pitch of 20°.

8.2 When used at pitches of 20° or greater on roofs, or 75° or greater on walls, in conjunction with a suitable roof tile underlay or sarking (for roofing applications), the slates will provide a roof or wall with satisfactory resistance to the passage of rain or snow.

9 Maintenance



9.1 Roofs and walls covered with the product must be visually inspected twice a year to ensure continued performance, as is good practice with all roofs and walls. Any damaged slates must be replaced in accordance with section 15.

9.2 Care is required when carrying out maintenance work on slate roofs and the recommendations contained in BS 5534 : 2014, Clause 6.14 *Workmanship, Repairs and Maintenance*, BS 8000-0 : 2014 and BS 8000-6 : 2013, Section 11 *Safety and general precautions* must be followed.

9.3 Precautions must be taken to prevent danger to the public from falling broken slates.

10 Durability



10.1 The slates have an expected service life in excess of 30 years.

10.2 After natural weathering, some slight change in colour may occur. However, this process is not likely to be progressive.

11 Reuse and recyclability

The product contains recycled natural slate which can be recycled.

12 General

12.1 The product is installed in accordance with the manufacturer's instructions, BS 5534 : 2014, BS 8000-0 : 2014 and BS 8000-6 : 2013, using conventional slating techniques.

12.2 When used on large roof areas, slates should be randomly selected from different batches to ensure consistent appearance. Damaged slates must not be used.

12.3 BritLock Interlocking Slates are not recommended for use with sprocketed eaves (bellcast).

13 Cutting

13.1 BritSlates are supplied with blind holes, and may be cut (for example at such details as eaves, hips and valleys) by marking with a series of holes (as for natural slate) and snapping over a straight edge, or using a carborundum disc cutter. Additional holes must be drilled using a rotary masonry drill. Holes must be positioned at least 20 mm from the edges of the slates.

13.2 After cutting and/or drilling, slates must be cleaned to avoid possible staining.

14 Health and safety

14.1 Any roof or wall clad with slates must be treated as fragile, and the recommendations in sections 9.2 and 9.3 followed. Precautions should be taken to prevent danger to the public from falling broken or displaced slates.

14.2 When stripping paint from timber such as at eaves or window frames, care must be taken to avoid discolouration or damage to the slates from heat/chemical sources, such as blowlamps, heat guns and chemical strippers.

15 Procedure

15.1 BritLock Interlocking Slates are installed on pitched roofs or hung vertically as a cladding on the outer face of external walls strictly in accordance with the manufacturer's instructions, BS 5534 : 2014 and BS 8000-6 : 2013.

15.2 At verges, either side of hips or valleys, and where the roof meets an abutment, the last slate in each course must be twice nailed at the head and, in addition, once at the tail (except left-hand verge slates). At verges, and where the tails of slates are unsecured at valleys, verge clips must also be used. At eaves and top edges, the last course of slates must be twice nailed at the head and, in addition, once at the tail. Slates in the remaining area must be nailed at the head (through the right-hand fixing holes) and, in addition, once at the tail. The nails and verge clips are supplied by the Certificate holder: other types or makes must not be used.

15.3 It is essential that fixing clips are correctly installed and the interlocks seat neatly in position.

15.4 Care is required to ensure that nails are not overdriven. They must be tapped rather than driven home.

15.5 Where the slates are to be used on an existing roof structure, the recommendations contained in BS 5534 : 2014, Section 6.14, *Workmanship, Repairs and Maintenance*, BS 8000-0:2014 and BS 8000-6 : 2013, Section 11, Clause 11.1.3 on re-covering must be followed. Consideration must also be given to the advice contained in *BRE Defect Action Sheets DAS 124 : 1988 Pitched roofs : Renovation of older type timber roofs — re-tiling or re-slating* and *DAS 125 : 1988 Pitched roofs : Re-tiling or re-slating older type timber roofs*.

15.6 Ridge and hip details may be completed using standard concrete or clay products and verge details may be completed using traditional mortar bedding techniques. Alternatively, dry-fix systems may be used but are outside the scope of this Certificate.

16 Repair

Damaged slates can be replaced by following the Certificate holder's instructions and the relevant sections of BS 5534 : 2014, BS 8000-0 : 2014 and BS 8000-6 : 2013.

Technical Investigations

17 Tests

17.1 Tests were carried out and the results assessed to determine:

- general appearance and dimensional accuracy
- density
- heat distortion temperature
- water absorption
- bending strength
- flexural strength
- quality requirements
- Charpy impact strength.

17.2 Tests were also carried out to determine the effects of:

- heat/rain cycling
- cyclic wetting and drying
- resistance to sulfuric acid immersion
- resistance to accelerated weather and colour stability.

17.3 Test data from independent laboratories were evaluated in relation to:

- resistance to windlift
- resistance to wind-driven rain penetration.

18 Investigations

18.1 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.

18.2 An assessment was made of existing data from independent laboratories, relating to BS 476-3 : 1958, BS 476-6 : 1989 and BS 476-7 : 1997.

18.3 A visit was made to a site in progress to assess the practicability of installation and the effectiveness of detailing techniques.

Bibliography

BS 476-3 : 1958 *Fire tests on building materials and structures — External fire exposure roof test*

BS 476-6 : 1989 *Fire tests on building materials and structure — Method of test for fire propagation for products*

BS 476-7 : 1987 *Fire tests on building materials and structures — Method for classification of the surface spread of flame of products*

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 claddings*

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

Conditions of Certification

19 Conditions

19.1 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 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.

19.2 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.

19.3 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.

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

19.5 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.

19.6 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.