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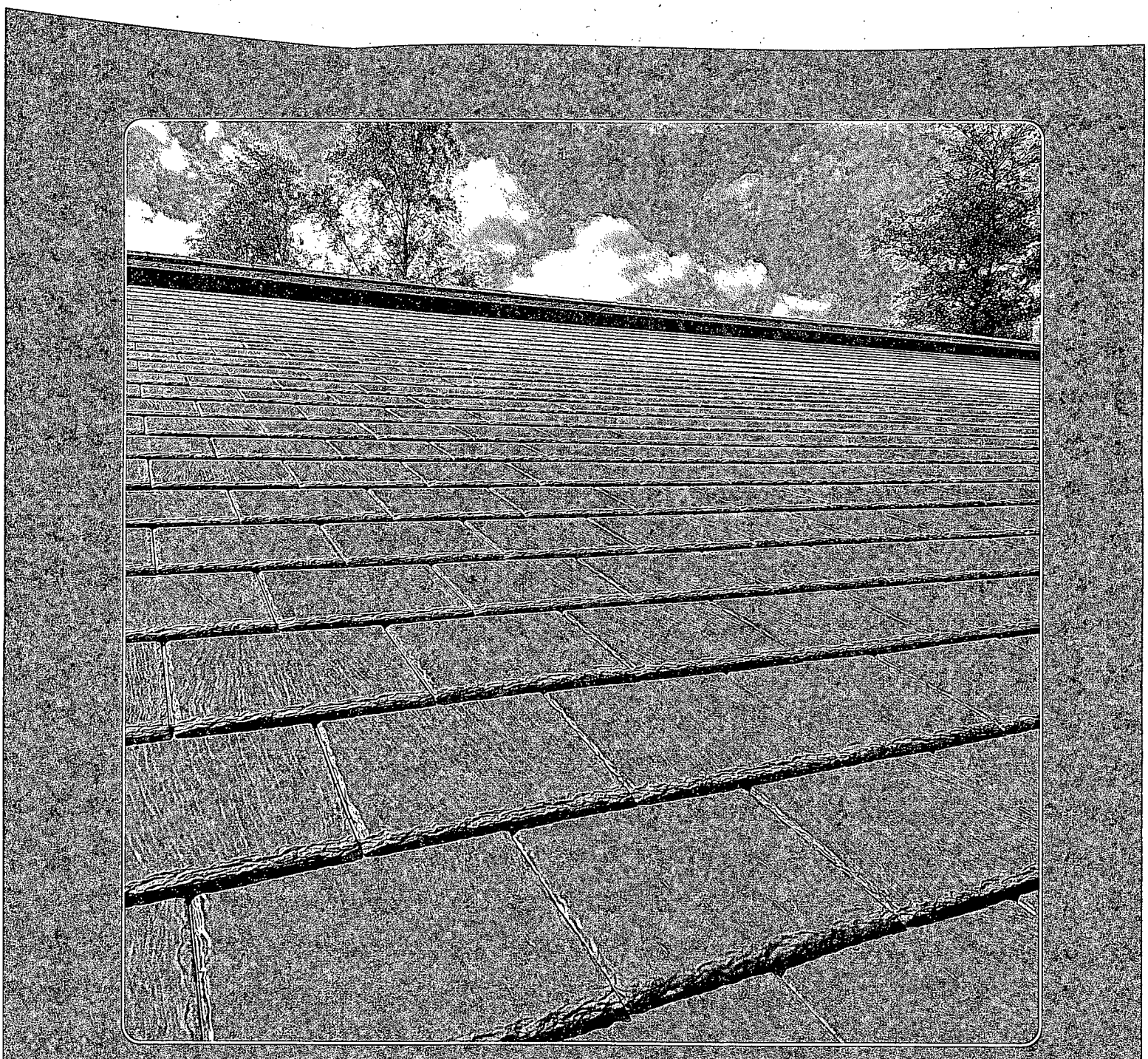
CAMBRIAN SLATE

for lasting looks

Redland



MONIER

CAMBRIAN SLATE

A minimum of 60% recycled Welsh Slate means Cambrian weathers like natural slate

Redland Cambrian
ROOFING BRITAIN
for 25 years

The first projects using Cambrian Slate were completed back in 1985. At the time, the introduction of Cambrian was heralded as a major step forward for embracing the principles of recycling natural slate and a new fixing method for roofing, leading to a coveted Queens Award for Technological Achievement in 1991. The success of Cambrian since proves that the early adopters were right in using a modern and revolutionary approach to roofing products.

Cambrian Slates combine the beauty of natural slate, with a robust manufacturing process, which provides enhanced performance, and a product that weathers naturally to deliver an aesthetic equalled only by its natural counterpart. Made in Wales using a minimum of 60% recycled Ffestiniog slate, and with a comprehensive 15 year Redland Roof System Guarantee, its attractiveness and lightweight benefits translate in many ways, across a wide number of contrasting building types. On the succeeding pages we showcase flagship projects, that highlight how Cambrian Slate contributes across the built environment from public sector re-roofing of existing housing stock to private new build, schools, retail and hospitals. Many of the accompanying examples incorporate specific elements that make up the whole roofing package, including ridge and hip systems that allow a finer roofing aesthetic.

WEATHERING WELL

Cambrian now has a 25 year history of installation in a wide variety of applications from office buildings, to re-roofing of public sector housing stock, to high end private housing and MOD sites across the UK. Due to its high natural slate content in manufacture, it has aged in the same way as its natural counterpart to deliver an aesthetic that has improved with time. The example to the right, in Chessington, Surrey, shows Cambrian fixed approximately 10 years ago on a self build refurbishment. Easy to fix, the Cambrian roof has weathered just like its natural slate counterpart on the front porch and adjacent property.

LOW PITCH, GUARANTEED PERFORMANCE

Cambrian was developed to overcome some very specific problems that natural slate products cannot. The interlocking design and unique three point fixing allows application to the lowest angle of roof pitch and is guaranteed to perform on roofs as low as 15°.

Extensive wind tunnel and durability testing during development also provides numerous security features such as protected nail holes, allowing use on even the most exposed sites. In addition, Redland's dry-fix accessories range provides further security, and the added benefit of a 15 Year Guarantee applicable to the complete roof system.

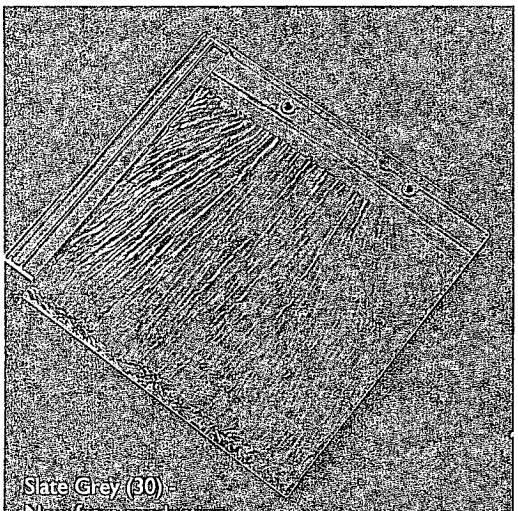
A fine example was completed at Ystradgynlais Community Hospital in Powys, where 6,500 square metres of Cambrian Slate Grey was used to re-roof the whole of the complex. Natural Welsh slate was dismissed as it couldn't be guaranteed to perform at the hospital roof's lowest 17.5° angle of pitch, whereas Cambrian, produced locally at Redland's plant in Rassau, offered both the looks and performance required. Redland's dry-fix Rapid Vented Ridge and Rapid Hip systems were used as part of the specification, reducing the re-roofing time by 20%.

"This was not a straightforward replacement of the roof, the solution requiring widespread changes to the details in design. The Redland guarantee ensures the specification met all Building Regulations and covered our design liability for the roof."

Mike Graham – Peter Barnes & Associates
Chartered Architects



Chessington self-build refurbishment highlighting naturally weathered tiles



Slate Grey (30)
New from production

TECHNICAL DATA

Size (overall)	300 x 336mm
Minimum Pitch and Headlap	
at 75mm headlap	15°
at 50mm headlap	25°
((The minimum pitch is based on a maximum rafter length of 10 metres. For rafter lengths greater than this please contact the Technical Solutions Hotline on +44(0)8708702595)	
Maximum Pitch	90°
(subject to fire resistance requirements above 69°)	
Maximum Headlap	90mm
Minimum Gauge	210mm
Maximum Gauge	
below 25°	225mm
25° and over	250mm
Linear Cover	300mm
Covering Capacity	
at max gauge	13.3 slates/m²
Weight * (approx)	
per 1,000 slates	1.24 tonnes
at max gauge	17kg/m²
Battens Required	
at max gauge	4.0m/m²
Batten Size	
Rafter centres up to 450mm	38 x 25mm
Rafter centres up to 600mm	50 x 25mm
Nail Size #	30 x 2.65mm
Number of Slates/Pallet	600

* All weights nominal
# Annular ring-shanked nail

PERFORMANCE

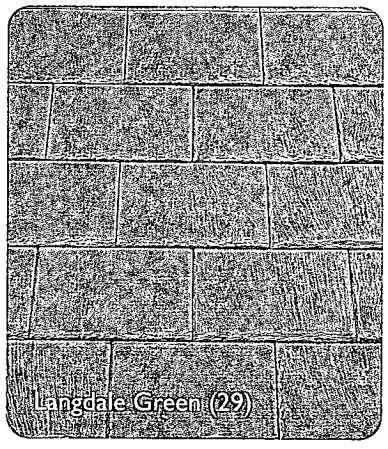
COLOUR RANGE

Cambrian is available in three colour options, Slate Grey (30), Langdale Green (29) and Heather (28) giving the three most popular and common slate colour options in the UK. Pre-weathered during manufacture, a slight lightening occurs with use, bringing an appearance even closer to its natural slate counterpart. Always request a tile sample for an exact colour reference.

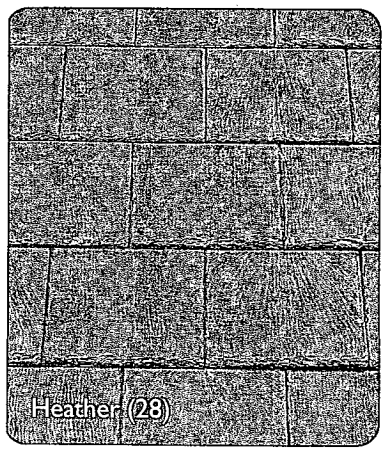
Email: sales.redland@monier.com
Telephone our Customer Service Hotline: 08705 601000



Slate Grey (30)



Langdale Green (29)



Heather (28)

FIXING

For lasting security against wind uplift, all Cambrian slates should be twice nailed and clipped with our specially designed stainless steel ring-shanked nails plus slate, eaves and verge clips. All are supplied in packs containing the correct type and number of nails.

FITTINGS

Cambrian Slates are complemented by matching left-hand verge slates, slate-and-a-halves and double slates. See accessories for the range of systems to complement Cambrian roof slates.

COMPOSITION

A minimum of 60% of Cambrian slate manufacture is from quarried Welsh slate spoil heap waste, with a further 20% of the content from ISO 14001 Certified manufacturers. The crushed slate is mixed with stone, resin and glass fibre reinforcement and pressed to form a strong durable slate.

SUSTAINABILITY

Redland Cambrian Slates are the most eco-friendly resin slates available. The 2008 Green Guide to Specification awards generic resin slates an "A" rating when part of standard roof constructions.

THIRD PARTY ACCREDITATION

Cambrian Slates have a life expectancy of at least 60 years and have been awarded BBA certification No 87/1907

REDLAND ROOFING SYSTEM GUARANTEE

Cambrian Slates, fittings and accessories are designed and tested to work together. This guarantees that every Redland product is weathertight, and all junctions are similarly guaranteed. If any element fails during its first 15 years, we will replace it and pay for the associated labour and material costs.

Redland
15 YEAR ROOF SYSTEM GUARANTEE

ACCESSORIES

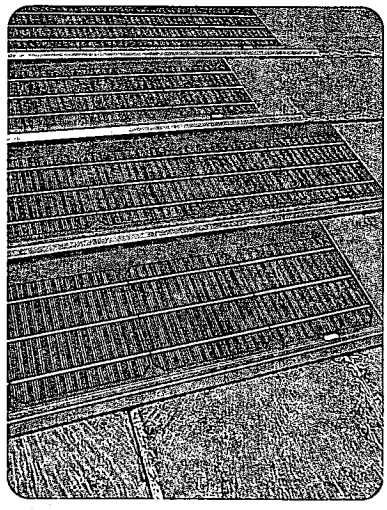
To ensure optimum performance of a Cambrian roof, Redland has developed a comprehensive range of attractive, cost-effective and maintenance-free solutions. For the full range, please refer to the Redland Guide to Roofing Systems or visit www.redland.co.uk/accessories

REDLAND SOLAR PV

Harnessing solar energy is one of the most attractive and sustainable means of generating zero carbon, renewable energy for use in buildings. A pitched roof is the ideal surface for solar energy, collection for heat and electricity generation.

Redland Solar PV, our second generation of PV roof tiles, encompasses five new roof tile-specific PV systems – each developed to match one of our five most popular tile ranges – used by house builders, including a system specifically for Cambrian Slate.

Designed for performance, ease of installation and good looks, Redland Solar PV offers significant benefits in all three areas over "above the roof" panel systems, where poor installation can compromise the roof structure.



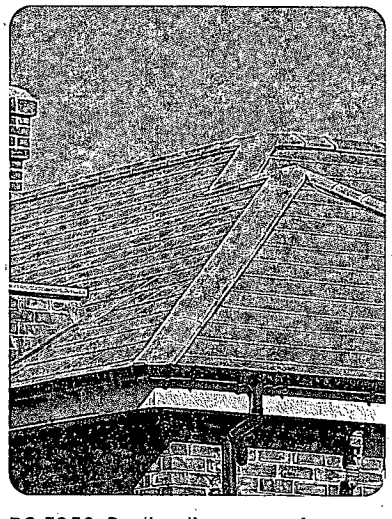
With a 25 year Power Output Guarantee, Redland Solar PV is MCS certified and eligible for use on Feed-in-Tariff Schemes. It has also been extensively tested for wind-uplift and fire resistance and is covered by Redland's 15 year Roof Guarantee which assures the durability and weathertightness of the whole roof.

DRY-FIX & VENTILATION

Dry-Fix systems eliminate the need for mortar bedding at key junctions on the roof and have a number of significant advantages:

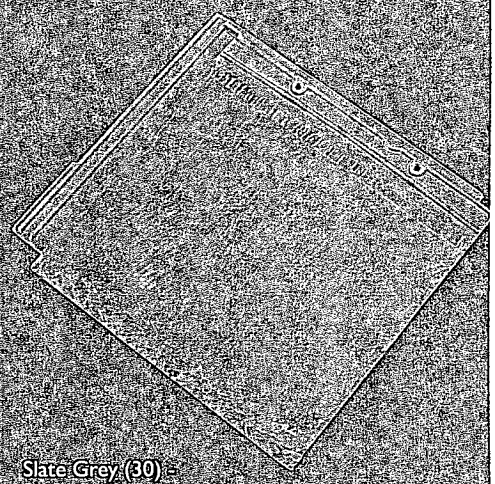
1. Secures the roof in severe weather conditions.
2. Eliminates mortar failure due to poor workmanship.
3. Quick and easy to fix, maintenance-free.
4. Can be laid even when bad weather is expected.
5. Ventilation can be incorporated at the ridge.
6. Complies with BS 5534 for mechanical fixing and BS 5250 for ventilation.

Good roof design does not just mean choosing the right slate. The protection of the supporting structure from the harmful effects of condensation is equally important. The proven method for preventing condensation is through the use of effective roof ventilation to comply with



BS 5250. Redland's range of Breathing Roof Solutions, using vapour permeable underlay with the reliability and security of a dry-fix ventilated ridge provides specifiers with simple, robust and guaranteed BS 5250-compliant specifications, designed to meet changes in building standards.

For full details of our dry-fix and ventilation solutions, visit www.redland.co.uk/accessories



Slate Grey (30) -
approximately 18 months natural weathering

REDLAND TECHNICAL SOLUTIONS

SPECMASTER

A complete guaranteed roof specification service designed for your peace of mind. Features include tailored specification clauses in NBS-based format, fully compliant with all British standards, and a 15 year design liability for all new build or re-roofing projects designed in accordance with SpecMaster. To obtain a SpecMaster go to www.redland.co.uk/specmaster

CAD DESIGNMASTER

A comprehensive CAD library of over 5,000 quality roofing drawings, all available in DWG and DXF format with a complementary NBS based specification clause. Available for download at www.redland.co.uk/designmaster

QUANTMASTER

A roof materials quantity estimating service including tiling battens and leadwork to eliminate over-ordering and under-ordering. Available by sending drawings to Redland Technical Solutions

FIXMASTER

Redland's fixing specification service removes the potential for roof failure by offering a choice of either a fixing specification tailored to a specific roof design and location, or a generic version. Complete an online datasheet at www.redland.co.uk/fixmaster

ECOMASTER

A complete guaranteed specification service for projects involving Redland Renewable Energy Systems including calculations of estimated energy benefits and approved installer networks. Go to www.redland.co.uk/ecomaster

VIEWMASTER

ViewMaster is a quick and easy way to show how Cambrian looks when laid on a roof. To access ViewMaster visit www.redland.co.uk/viewmaster

NEW WORKMANSHIP WARRANTY

Independently insured cover for the workmanship element of your SpecMaster project



BritLock Slate
Certificate No. 97/3351

Britlock® Slate

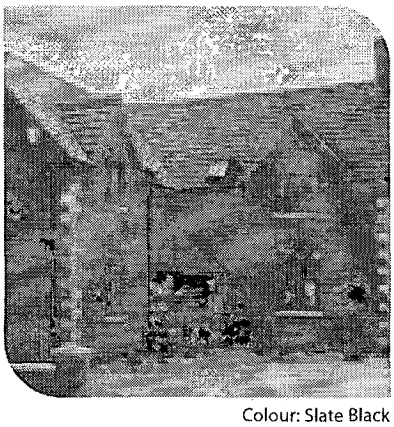
A lightweight, fully interlocking slate with a thin leading edge, made from 80% recycled slate waste. BritLock's single lap design and covering capacity of 11.7 m^2 offers savings through faster, easier fixing, reduced roof loadings and fewer tiles required per m^2.

BritLock can be laid at pitches as low as 17.5° and is therefore ideal for town houses, apartment blocks and, in particular, monopitch roof extensions.

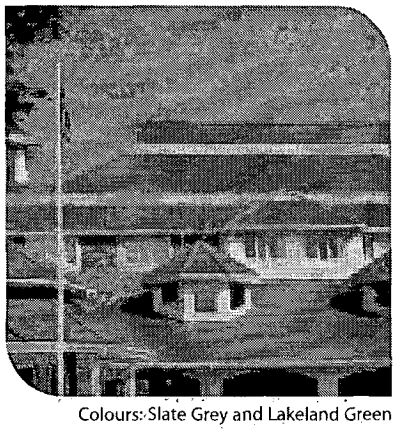
Although it is not purely its design which makes BritLock one of the most sustainable roofing products available. In addition to the carbon emissions saved through the lighter weight of product to be transported and installed, each tile is made from 80% recycled natural slate which is sourced from UK quarries, as opposed to the majority of natural slates which are imported from overseas.

BritLock is also manufactured using 100% green electricity which among many other initiatives such as the use of 100% bio diesel has enabled our manufacturing process to become totally carbon neutral, making BritLock one of the greenest roofing materials available.

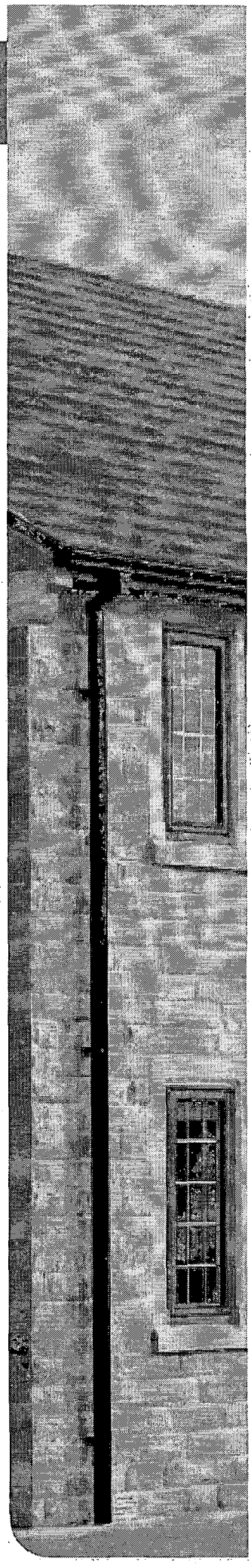
UK Registered Design No. 2017033
80% recycled British slate

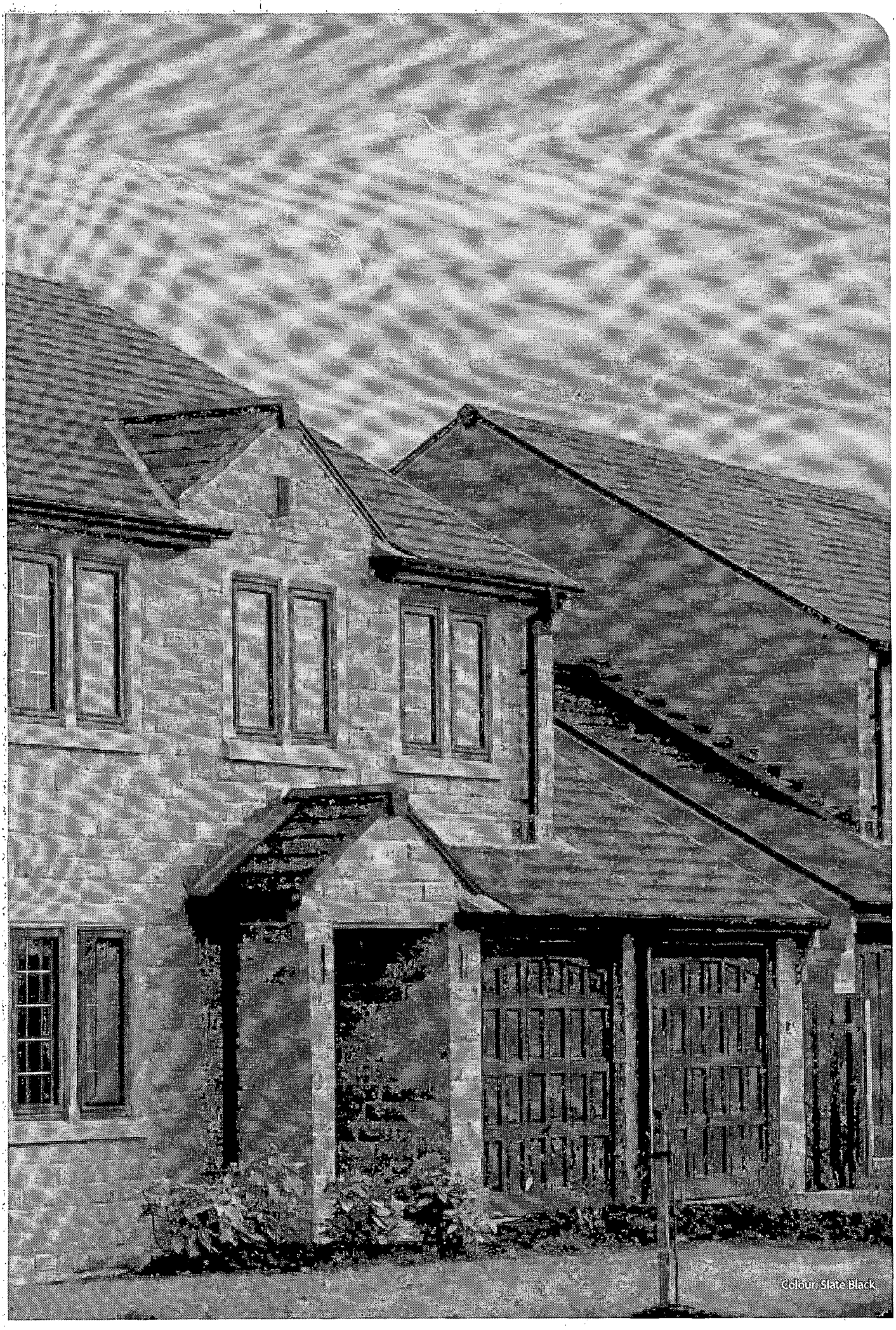


Colour: Slate Black



Colours: Slate Grey and Lakeland Green




Colour: Slate Black

Product data

Authority and testing

There is no British or European Standard to cover reconstituted slate products, but Sandtoft BritLock will meet the relevant performance requirements of BS 5534: 2003, the British Standard for slating and tiling.

Sandtoft BritLock is manufactured under a Quality Management System which is certified to comply with BS EN ISO 9001.

Sandtoft BritLock has been awarded British Board of Agrément Certificate No. 97/3351.

Environment

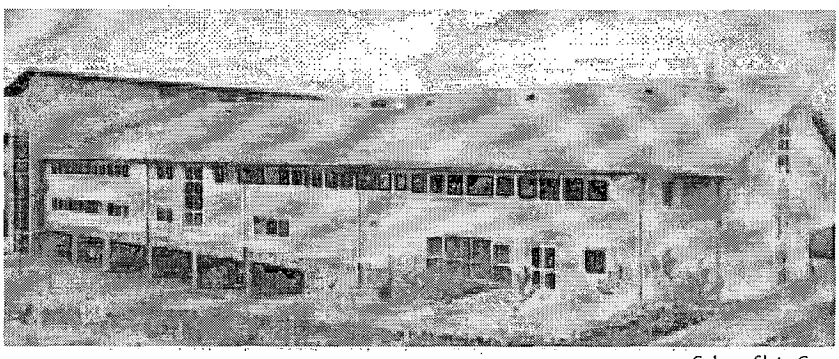
BritLock is one of the most sustainable roofing products on the market. The interlocking design on the slates reduces weight which saves energy during transportation and installation. In addition, each slate is made from 80% recycled natural slates which is sourced from within the UK, as opposed to the majority of slate products which are imported from overseas. As our manufacturing process for this product is entirely electrically powered, the switch to 100% green electricity has eliminated the $C0_2$ generated during the manufacturing process, making this innovative slate one of the greenest roofing products available.

Composition

Manufactured using 80% recycled UK natural slate. All slate raw material is crushed and graded waste, generated from the quarrying of natural slates. No asbestos or other fibres, and no cement, is used. The tiles are moulded under high pressure in a variety of mould patterns to give the random appearance of natural slate.

Guarantee

Sandtoft roof slates are guaranteed for 30 years (subject to the standard terms of the guarantee). All Sandtoft roof slates are included in the National Federation of Roofing Contractors co-partnership guarantee scheme which offers a 10 year guarantee for materials and workmanship along with insolvency insurance cover.



Colour: Slate Grey

Technical data

Minimum roof pitch*	17.5° at 120 mm headlap 22.5° at 75 mm headlap
Headlap (minimum)	75 mm
Headlap (maximum)	120 mm
Batten spacing at max. gauge	285 mm
Batten spacing at min. gauge	240 mm
Size of tile	360 x 340 mm
Covering capacity at max. gauge	13.9 tiles per m² (at 120 mm headlap) 11.7 tiles per m² (at 75 mm headlap)
Cover width	300 mm
Profile depth	11 mm
Hanging length	354 mm
Weight as laid	19.5 kg per m² (at 120 mm headlap) 16.4 kg per m² (at 75 mm headlap)
Weight per 1000	1.4 tonnes
Weight per tile	1.4 kg
Weight per crate (including pallet/packaging)	0.7 tonnes
Quantity per crate	500
Battens per m²	4.2 m (at 120 mm headlap) 3.5 m (at 75 mm headlap)
Batten size Up to 450 mm rafter centres Up to 600 mm rafter centres	 38 x 25 mm 50 x 25 mm
Nail size/type for tiles	38 x 2.95 mm aluminium clout head (supplied)

Notes:

* The minimum pitch applies up to a maximum rafter length of 9 metres. Where the rafter length exceeds 9 metres, or the site is considered to be of severe exposure, please contact Sandtoft Technical Department for guidance.

For projects where the rafters are below the minimum recommended roof pitch, please contact Sandtoft Technical Department for advice.

The BritLock Concealed Tile Ventilator must not be fitted on any roof pitch less than 22.5°.

The BritLock Concealed Tile Ventilator can only be fitted at headlaps between 75 mm and 100 mm, i.e. gauges between 285 mm and 260 mm.

BritLock Slate
Certificate No. 97/3351

Britlock® fittings and accessories

Eaves
Standard BritLock tile

Bedded verge
Left hand verge: Left hand verge tile and left hand verge tile-and-a-half in alternate courses

Right hand verge: Standard tile and tile-and-a-half in alternate courses

Dry verge
Slate Verge system

Ridges and hips
Duracoat legged angle ridge tile
Concrete legged angle ridge tile
Concrete angle ridge tile
Legged angle dry monoridge tile
Legged angle ridge tile (dry roof)
Legged angle hip tile (dry hip)
Gas vent ridge terminal

Roofing systems
Profile Ridge
RollRidge
Profile Mono Ridge
Roll Hip
BritLock Mitred Hip

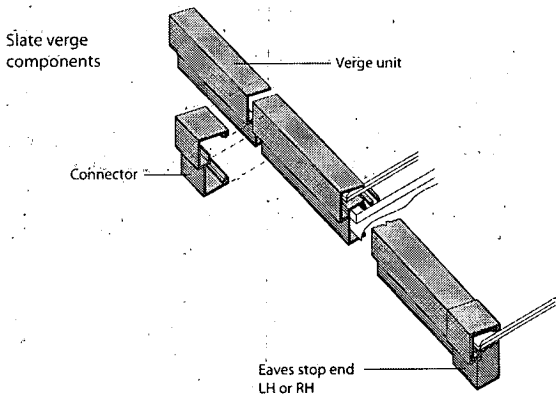
Ventilation
Eaves, ridge and slate ventilation systems

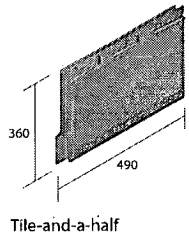
Fixing clips
Verge and valley clips

A range of decorative ridges and finials is also available. Further information is available from Customer Support Department.

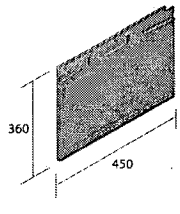


Profile Ridge system

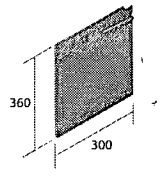




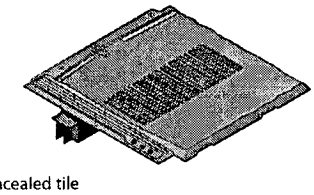
Tile-and-a-half



Left hand verge tile-and-a-half

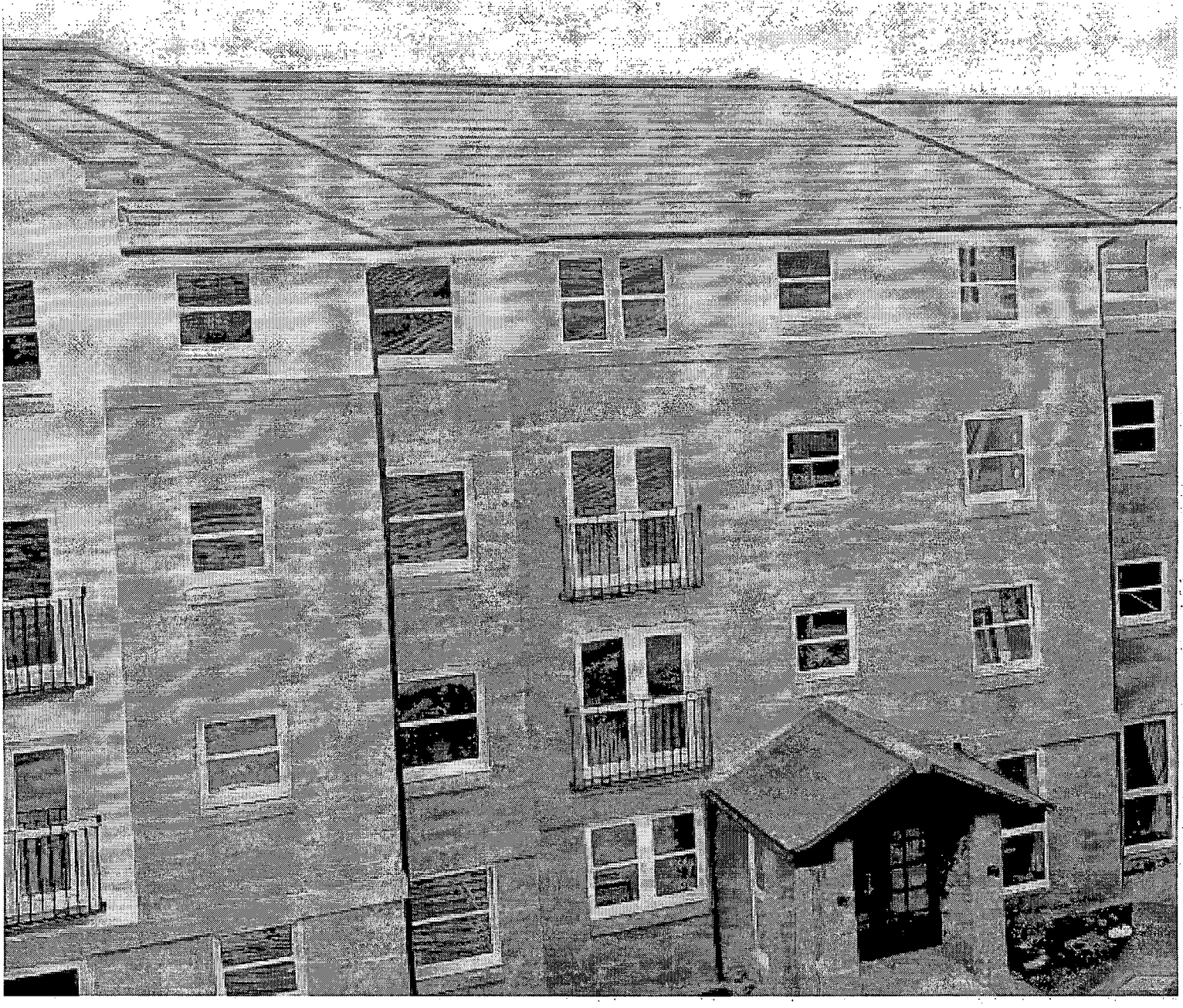


Left hand verge tile



Concealed tile ventilator 360 x 300 mm

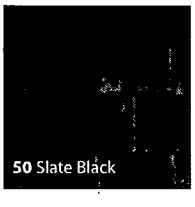
Colour range

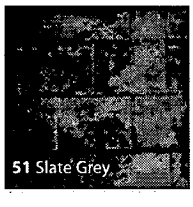


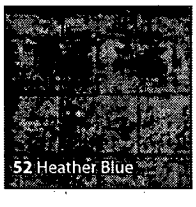
Appearance
Slight variations in colour may occur between batches of tiles. Actual samples are available on request.

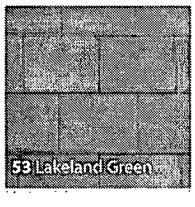
In order to maintain the shading differences found in natural slate, BritLock should be taken from several pallets and mixed at random on the roof.

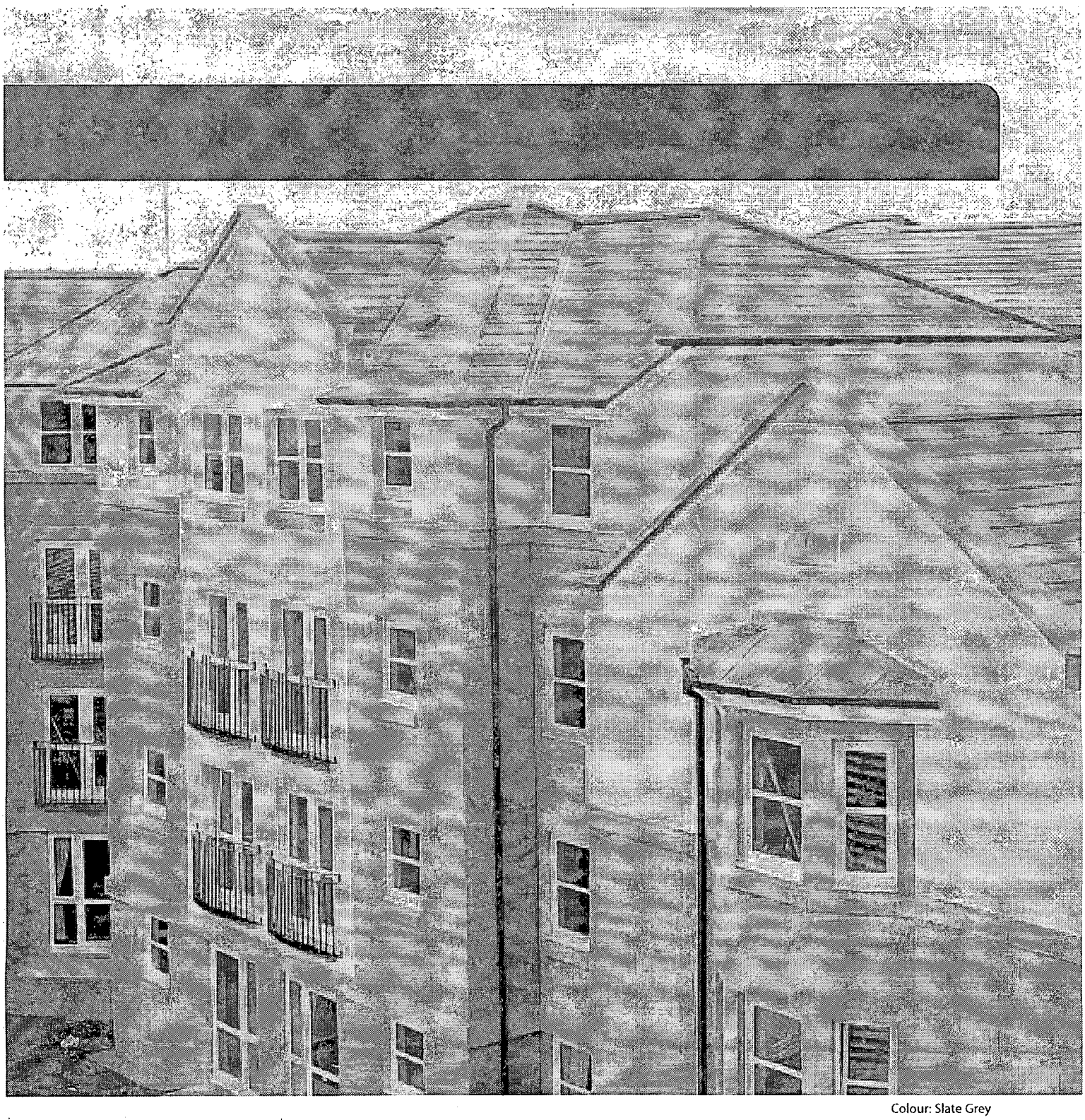
Colours







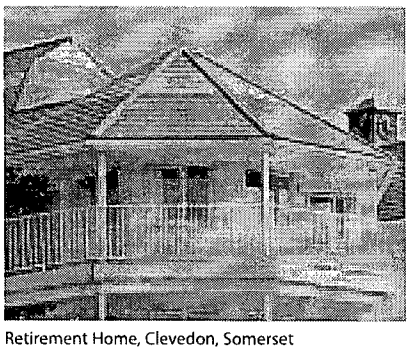




Colour: Slate Grey

Typical BritLock® applications

BritLock offers an authentic and sustainable slate roofing solution, ideal for both housing and commercial projects. They are also very suited to refurbishment work due to their lightweight design.



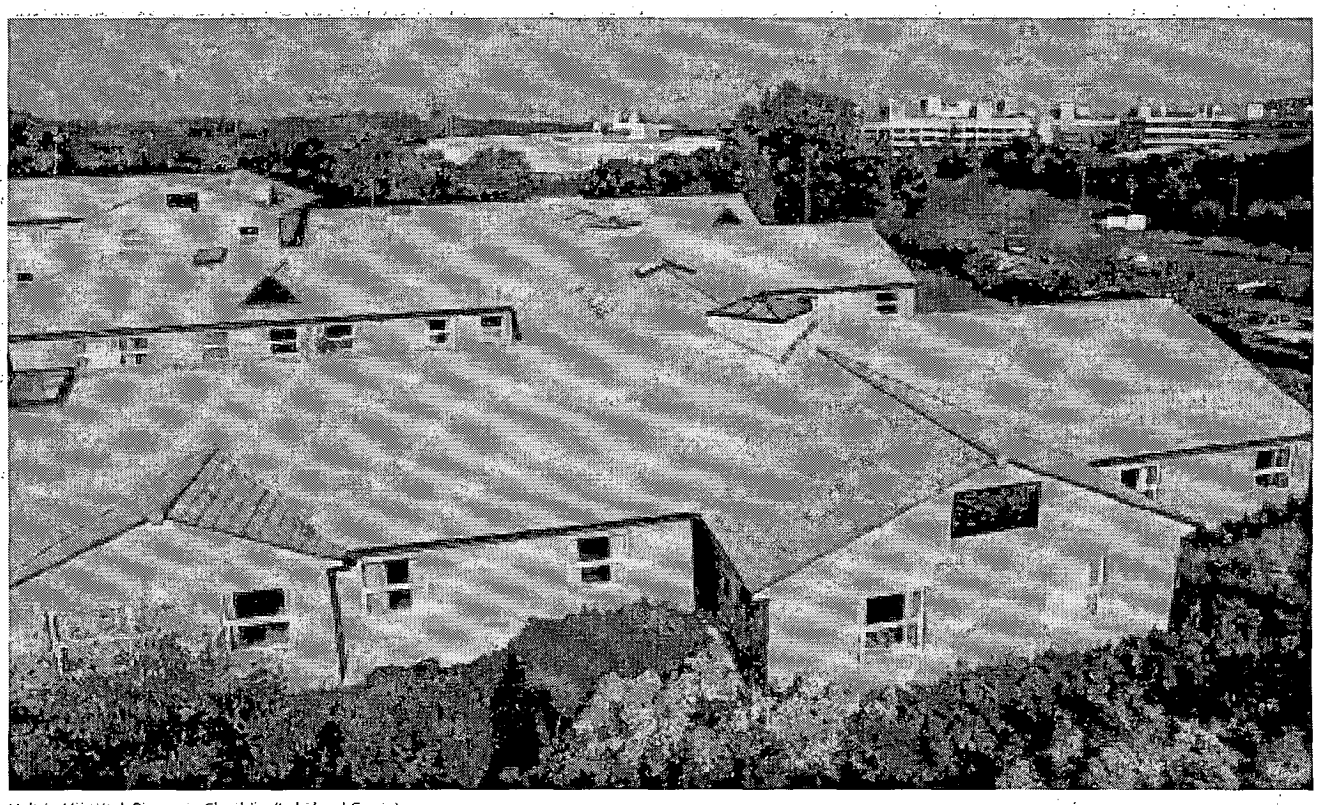
Retirement Home, Clevedon, Somerset (Slate Grey and Lakeland Green)



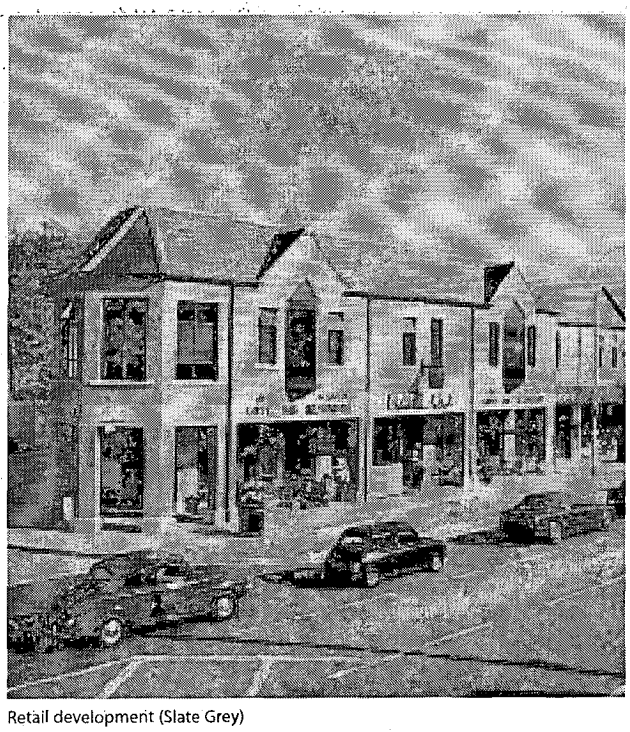
Housing development, Colchester (Slate Grey)



Chipping Norton Golf Club, Oxfordshire (Slate Grey)



Halton Hospital, Runcorn, Cheshire (Lakeland Green)



Retail development (Slate Grey)

BritLock offers the designer:

- Made from 80% recycled waste
- Quicker and easier to install than natural slate
- Reduces completion times by up to 30%
- Significant weight saving over natural slate
- Requires fewer battens on the roof
- No holing or sorting needed
- Weathers like natural slate
- Consistent quality that is guaranteed
- Manufacturing waste slate is recycled
- Performs down to 17.5°
- High performance fixing system
- Maintenance-free dry roof system
- Thin leading edge
- Riven surface with dressed edges and matt finish

Performance

Fixing
Tiles must be securely fixed to resist wind uplift. Sandtoft's fixing specification service FixingSPEC is designed to ensure your roof is correctly and securely fixed in accordance with British Standards. Complete details on-line for a project specific fixing specification or refer to the Zonal Method.

Please contact the Sandtoft Technical Department on 0870 145 2021 for more information.

Effects of environmental and other factors
BritLock is a highly durable and resistant to a wide range of environmental factors.

Further information is available on request from the Technical Support Department.

Roof ventilation
Roofs should be designed to avoid harmful condensation and be properly ventilated to comply with BS 5250, 'Code of Practice for the control of condensation in buildings.'

Detailed roof space ventilation specifications are available on request from the Technical Support Department.

Health and Safety
Health and Safety rules and regulations must be adhered to at all times before any handling or installation of Sandtoft products. Health and Safety and COSHH information is available from our Customer Support Team, and also available on our website www.sandtoft.com

Sitework
BritLock should be laid and fixed to comply with BS 5534, 'Code of Practice for Slating and Tiling' and BS 8000: Part 6, 'Code of Practice for Workmanship on Building Sites – Slating and Tiling'.

To ensure compliance with these standards we strongly advise that either the recommendations given in the Sandtoft Zonal Method User's Guide and zonal tables must be followed where available, or a calculated fixing specification must be obtained using Sandtoft's Fixing SPEC service.

For further information go to Fixing SPEC at www.sandtoft.com or contact Sandtoft Technical Support on 0870 145 2021.

Appearance
After installation, natural weathering of the recycled slate will result in a change to the exposed surface, replicating the appearance of natural slate. Contact Sandtoft Technical Support for further information or to request a mini-sample which shows the comparative change to the surface appearance due to weathering, the rate of which depends on the local environment, climate and aspect of the roof.

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

Maintenance
Sandtoft roof slates do not normally require any maintenance during their design life.

Packaging and storage
Sandtoft BritLock is supplied polythene wrapped on crates. Sandtoft products should be stacked on firm, even ground with good drainage. We advise that you consult our Safe Stacking Recommendations for details of recommended stacking heights. Contact our Customer Support Team or visit our website for a copy of our Safe Stacking Recommendations.

Roof SPEC
Sandtoft Roof SPEC is a complete roof design service. It incorporates a bespoke specification which is produced in accordance with the British Standards and NBS requirements, and is backed by a comprehensive 20 year Roof SPEC guarantee. Contact Sandtoft Technical Support Department for further details.

Technical services
Sandtoft Technical Support Department offers specialist advice and support to assist the roof designer, stockist and contractor.

A range of services is available, including mechanical fixing recommendations, detailed specification clauses based on the National Building Specification (NBS) format, CAD detailing and material estimates, as well as general advice on all aspects of pitched roofing.

Please contact the Sandtoft Technical Department on 0870 145 2021 or visit www.sandtoft.com for more information.

Specifying Britlock

To make use of the Roof SPEC, Fixing SPEC, CAD library services or for other information simply complete section 1 and other relevant sections and fax this data sheet to Technical Support on 0870 145 2019.

1. Personal details (please complete for all services)

Name
Position
Company
Address
Postcode
Tel
Fax
E-mail

2. Roof SPEC (please complete this section to enable us to write bespoke specification clauses for your project)

Type(s) of tiling

Project reference (e.g. extension to dwelling):

Base (e.g. trussed rafters at 600 mm centres):

Rafter pitch

Lay underlay over .....
(e.g. trussed rafters, sarking, counterbattens)

Tile type
BritLock

Tile colour

Vertical tiling (e.g. to gable walls)

Base (e.g. blockwork, vertical battens at 450mm centres)

Ventilated eaves

☒ Fascia ventilator grilles ☐ Rafter ventilator trays

Verges

☐ Bedded undercloak
☐ Nailed undercloak

Hips

☐ Mortar bedded hip
☐ Mortar bedded and nailed hip
☐ BritLock Mitred Hip

Hip tile (e.g. legged angle hip ridge):

Colour

Valley

☐ GRP valley ☐ Lead valley

Ridge

☒ Profile Ridge
☒ RollRidge
☐ Mortar bedded and nailed ridge
☐ Mortar bedded mono ridge
☒ Profile Mono Ridge

Ridge tile (e.g. legged angle ridge, monopitch ridge):

Ridge tile colour:

Roof slope ventilators

☐ Warm roof ☒ Cold roof

Position (e.g. high level, eaves level)

Roof slope terminals

Ventilator tile type

To vent (e.g. soil and vent pipes, kitchen ventilation pipes)

General

☒ Change of roof pitch
☐ Roof window ☒ Side abutment
☐ Top edge abutment ☒ Snow guards
☐ Top edge ventilated abutment

Junction (lead saddle) (e.g. junction of ridge with hip, junction of ridge with valley, junction of ridge with abutment, top junction of two valley gutters)

Sundry accessories (e.g. pipe flashing)

3. Fixing SPEC (to enable us to calculate a tile/slate fixing (i.e. nailing/clipping) specification please supply the following information)

Rafter pitch

Duo or mono pitch roof

Building height to eaves

Building width

Building length

Rafter length

Counterbattens ☐ Yes ☐ No

Counterbatten depth

Site address

Site postcode

4. CAD Library

CAD details can be supplied in the following ways – please tick format required:

☐ Hard copy
☐ E-mail file
☒ CD-ROM

alternatively, visit our website **www.sandtoft.com**

5. Further technical information

☐ Installation guide

General enquiries

Tel 0870 145 2020

Sandtoft Roof Tiles Ltd., Belton Road,
Sandtoft, Doncaster DN8 5SY

E-Mail info@sandtoft.co.uk
www.sandtoft.com

Technical enquiries

Tel 0870 145 2021
Fax 0870 145 2019
E-Mail technical@sandtoft.co.uk

Ordering and deliveries

To order Sandtoft BritLock Slates:
Tel 0870 145 2022
Fax 0870 145 2017

Please state the tile type, fittings and accessories types, all quantities and colours, site address and any specific requirements when placing an order.

www.sandtoft.com

Sandtoft

CAMPAIGNING FOR BEAUTIFUL ROOFS

Tile colours shown in this brochure are as accurate as the printing process will allow.
Product samples are available upon request. At Sandtoft we are continually innovating and improving our product range. We reserve the right to change product specifications without notice.
Please contact our Customer Support Team for the latest information or visit **www.sandtoft.com**
The paper used to print this brochure is manufactured using only natural wood pulp originating from managed, sustainable plantations, and is chlorine and acid free.