

# SLATE WORKS



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# NHBC slate specification: Slates – no more grey areas

By Nigel Shapland, Senior Technical Officer, NHBC

How to spot a good-quality roofing slate – five key points		
Look for	Result	Note
CE marking	A must!	To prove it complies with BS EN 12326
Strength*	>60 MPa	It's less likely to break
Water absorption	A1	Less than 0.6% (but the lower the better)
Carbonate content	S1	The Sulphur Dioxide test result
Reactive minerals	T1	The Thermal Cycling Test result



\* Although a figure isn't mentioned by the NHBC, mechanical strength is also important. SSQ recommends a minimum of 60 MPa (megapascals).

**Natural slate has long been accepted as a premier roof covering for pitched roofs, but a change in British Standards has led to concern about how roofing slates are being specified. It's a situation that's forced the NHBC to set out a specification it believes will provide the quality needed to meet NHBC Standards.**

In July 2004 a European Standard, EN 12326, replaced BS 680 as the standard to which any roofing slate used by the UK's building industry has to comply. Since then, as many in the industry feared, it's become apparent that the new standard is not a robust replacement and can lead to a decrease in the quality of the slates being used.

It's a worrying trend which, in the absence of any official guidance about what does constitute a 'good-quality' roofing slate, will

continue to frustrate and disappoint architects, builders, developers and homeowners. So, as a warranty provider expected to promote good building standards, the NHBC felt it necessary to set out the minimum specification it considers acceptable.

The situation has arisen because BS 680 and BS EN 12326 are not comparable in what they do and cannot be simply 'interchanged' in a specification. Whereas BS 680 used objective pass or fail results along with two specific levels of quality, BS EN 12326 has neither; it stipulates a series of tests that have to be carried out and then leaves designers and buyers to use the results to create either their own, unique specification or buy accordingly. In reality, "tested to BS EN 12326" and the consequent CE marking have, unfortunately, been innocently mistaken for bona fide signs of good quality.

Fortunately, specifying or buying a good-quality, durable roofing slate isn't as difficult as it may seem as the results of the tests specified by BS EN 12326 have to be provided on a document that accompanies the slate. Often referred to as the 'ACD'

(Accompanying Commercial Documentation), its provision is a legal requirement: without it, suppliers and buyers can neither prove nor verify the slate's provenance or its qualities. Three of the tests are critical and their combined result is used to determine whether the slate meets the NHBC's minimum specification:

**Water Absorption:** This indicates the slate's water absorbency and how it reacts when it gets wet. **Test result required by the NHBC: A1.**

**Carbonate Content:** This indicates how much carbonate the slate contains. This can quickly dissolve causing material loss and structural weakness. **Test result required by the NHBC: S1.**

**Reactive metallic minerals:** The *Thermal Cycling Test* indicates the stability of any reactive metallic minerals (often called pyrites) that may cause staining, pitting or delamination. **Test result required by the NHBC: T1.**

So, in summary, if you're specifying roofing slates, the NHBC's advice is to ensure they comply with BS EN 12326 and that they're graded 'A1, S1, T1' – and if you're buying roofing slates, to check the documentation to verify this.

For further information about the NHBC's specification, please contact the NHBC's technical team on 01908 747384 or via [technical@nhbc.co.uk](mailto:technical@nhbc.co.uk).



Photo: courtesy Turner & Hoskins Architects



Uncover the source,  
 discover the pedigree





Photo: courtesy Belvedere DWS Ltd (www.belvedere.uk.com)



Photo: courtesy Belvedere DWS Ltd (www.belvedere.uk.com)

## Belvedere's 'Glenridge' – wow!

Project:	A six-bedroom luxury house
Location:	Gerrards Cross, Buckinghamshire
Developer:	Belvedere DWS, Gerrards Cross, Buckinghamshire
Roofing:	Excel Roofing Contractors, Henley-on-Thames, Oxfordshire
Product:	SSQ Ultra Riverstone® Grey roofing slate

**"It's quite grand,"** smiled Ray Smith, describing his company's second development in Camp Road, Gerrards Cross. As a director of Belvedere DWS it's a modest, but proud, understatement about a house that stuns the senses: this is building at its finest.

Belvedere has an enviable name for designing and building some of the most luxurious homes in south-east England including several on the Wentworth Estate, one of Europe's most exclusive residential areas. The company's reputation for thoughtful design, extraordinary craftsmanship and uncompromising attention to detail comes from a philosophy of keeping everything in-house and using only tried-and-tested, like-minded contractors.

Set in an acre of mature woodland, 'Glenridge' is built on the crest of a ridge overlooking Bulstrode Park. The NHBC-assured house has a distinctive, friendly look but its unpretentious frontage masks a secret: at 930m<sup>2</sup> (10,000sq.ft) and on four floors it's a lot bigger than it actually looks!

It's a house with a multiple wow factor: the basement leisure complex includes a gym, sauna, steam room and nine-seat cinema; the geometrical oak staircase with its French-polished walnut handrail that winds elegantly from the ground floor up to the guest bedrooms on the second floor; the dining room with its range of sliding bi-fold doors that open onto a magnificent patio; the master bedroom that covers half the first floor, has gender-specific his-and-her bathrooms, dressing rooms and a balcony with a view over the lawns, thorough the wood and on, into the park...

A perfect example of Belvedere's meticulous attention to detail appears high on the roof – all the hips are fully mitred, overcoming the need for unsightly hip tiles. It's a detail that's easy to miss but, once noticed, it's hard to look away. Excel Roofing Contractor's Paul Groom has been working with Ray Smith for more than thirty years and is equally passionate about perfection. "Keith Da Costa [Belvedere's design director] specified natural roofing slate as it gives an established look and its versatility can be used to good effect. Good-quality slate can be accurately cut and its consistency meant that we could form a perfectly mitred joint along the hip. The roof took about four weeks to do and cutting the slates for the hips accounted for at least three days, but the result is certainly worth it – even if you can't see a lot of it!"

Belvedere has raised its game again and, using the design and build quality found on the Wentworth Estate, has introduced a new level of luxury to Camp Road. And if you're interested, 'Glenridge' has just gone on the market – it's an absolute steal at £5 million...



Photo: courtesy Belvedere DWS Ltd (www.belvedere.uk.com)



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Photo: courtesy Laurie Wood Architects



Photo: courtesy Laurie Wood Architects



Photo: courtesy Rockingham Forest Trust

# Stanwick Lakes' swooping roof

Project:	Stanwick Lakes Visitor Centre
Location:	Stanwick Lakes, Northamptonshire
Client:	Rockingham Forest Trust
Architect:	Laurie Wood Architects, Colchester, Essex
Roofing:	Strandor Roofing, Mears Ashby, Northamptonshire
Product:	SSQ Ultra Del Carmen® Blue-black roofing slates

**“Our new visitor centre at Stanwick Lakes is incredibly popular with visitors and the local community.” said Alyson Allfree, director of Rockingham Forest Trust. “And we love the swooping roof – it’s smart, durable and fits well with its surroundings.”**

Originally a 600-acre gravel quarry, the area has been restored back to nature and is now a Site of Special Scientific Interest managed by Rockingham Forest Trust. It’s become Northamptonshire’s most imaginative outdoor activity destination and offers something for everyone: abundant wildlife, adventure trails, picnic areas, cycling, fishing – and, now, cutting edge eco-architecture.

Designed by Laurie Wood Architects, the construction of the park’s stunning visitor centre embraces the key principles of environmental sustainability and is designed to be low energy and carbon neutral. In fact its very location, perched on the edge of one of the larger lakes, isn’t just to give visitors a better view of the ‘ducks’ – the building uses the lake as its prime source of energy.

Following recommendations from The Energy Practice [M&E Engineers] a heat-transfer system was installed to extract heat from the water in the lake which, apart from providing warmth, can also be used in reverse to provide cooling. The building’s other energy-related needs are provided by an array of solar panels and a 20kW wind turbine is to be installed to generate electricity.

The building’s construction follows best practice to ensure that it’s both truly sustainable in terms of the materials used and works holistically to minimise energy use and features a timber structure; curtain walling with integral ‘brise soleil’ solar shading; ceramic tile flooring; low-e glazing and a green roof over the offices. But, despite all these very worthy things, visitors can, perhaps, be forgiven for being most impressed by the visual impact of the centre’s dramatic, swooping roof.

*“We’ve had experience of laying curved, slate roofs in the past but, even so, this one was a real challenge.”* said Strandor Roofing’s Richard Threadgold.

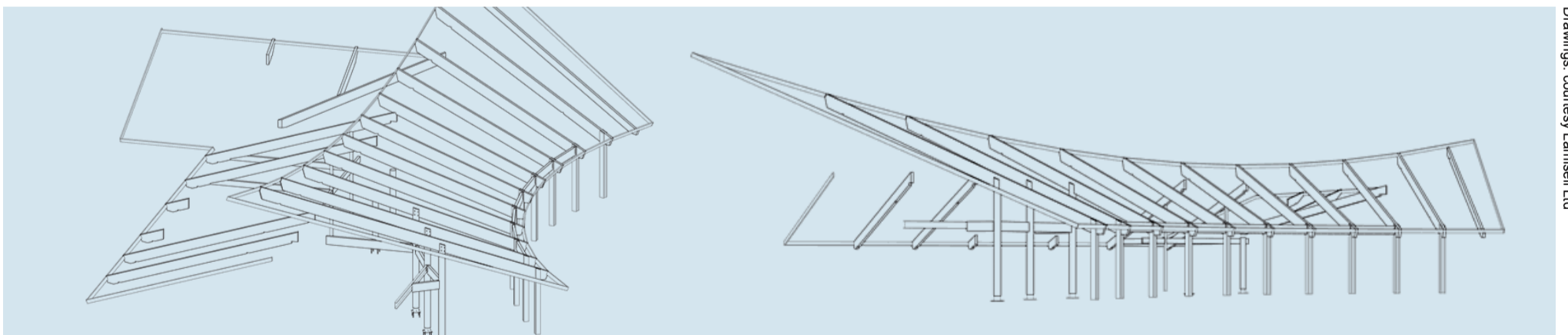
*“Apart from the surface being concave, the verges are different lengths [11m and 7m] and diverge, we were asked to use a 200mm wide slate for the*



Photo: courtesy Rockingham Forest Trust

*eaves, a mixture of different slate widths and had to finish with a single, 500 x 375mm slate at the roof’s apex! We knew that careful planning, accurate setting out and hook fixing were going to be essential and they really paid off. And we’d like to thank SSQ for being so helpful in letting us exchange slates for the sizes we needed.”*

‘Alyson’s roof’ offers a perfect example of natural slate’s versatility: slate roofs don’t have to be flat and boring!



Drawings: courtesy Lamisell Ltd



“Uncover the source, discover the pedigree”





## Riverstone architectural stone



Photos: courtesy Checkland Kindleysides



# Size? matters

Project:	The floor of a new Size? retail store
Location:	The Horsefair, Bristol
Client:	JD Sports Fashion, Bury, Lancashire
Designer:	Checkland Kindleysides, Cossington, Leicestershire
Flooring:	Kievel Tiling & Granite Ltd, Ampfield, Hampshire
Product:	SSQ Riverstone® architectural stone – Crazy Paving

**With a five-metre-tall image of a horse dominating its frontage, the new Size? shoe store in The Horsefair in Bristol is impossible to miss; the quirky design of this, the latest in a chain of fifteen Size? shops, won it the accolade of being voted 'Store of the Week' by Retail Week magazine and appearing in their book, Stores 09.**

Size? is part of JD Sports Fashion plc which, with over 400 stores, has become the UK's leading specialist multiple retailer of fashionable sports and casual wear. Although Size? is predominately a showcase for the most up-to-date trainers,

the store also offers its customers a complementary range of branded and own-brand sports and casual clothing.

The Horsefair has a diverse history dating back to the Middle Ages. Apart from being the location of the oldest Methodist chapel in the world, it was also the venue for the annual St James's Fair whose atmosphere was beautifully captured by artist Samuel Coleman in his 1824 painting – and it is from this that Checkland Kindleysides cleverly drew inspiration for the design of the store.

The rear wall of the single-floor store features a mural of Coleman's painting – look more closely at it and you'll notice that the characters' clothes bear sportswear brand logos such as Adidas and Vans! The picture's theme continues throughout the store: mannequins wearing carnival masks reflect the period's popular 'freak shows' and the wooden buildings in the painting are mirrored by fixtures and fittings printed with a wood-grain effect. To add a more contemporary feel, graffiti-style graphics reflect the character of the Size? brand and acrylic boxes are used for merchandise presentation.

To further enhance the feel of being outside in The Horsefair, Checkland Kindleysides specified that the flooring used throughout the store should be riven slate laid in crazy paving style. Brydol, the main contractor, engaged the specialist services of Romsey-based Kievel Tiling to supply and lay the 102m<sup>2</sup> floor. Kievel chose SSQ Riverstone Crazy Paving, the natural riven surface of the slate also providing a hard-wearing surface with excellent slip resistance. The thin slabs were bedded and flush-jointed in a natural-colour sand and cement mortar before being given two coats of a clear 'satin' sealant to protect the floor from staining and to further enhance the slate's dark grey-green colour.

## Did you know?

### Galician & Spanish Slate

**It's been hard to miss the full-page adverts for Galician & Spanish Slate over the last six months – they seem to pop up everywhere and we're often asked who they are.**

Galicia lies in the north-west of Spain and is a region famed for its slate: in fact it's the source of our own Spanish roofing slates. The Galician Government is keen to support its slate industry and is using a marketing agency to promote it here in the UK. It's a good idea and one we support as it increases awareness of Spanish slate and helps raise its profile.

You can't buy slate from them and, as they represent the industry generally, are impartial so they won't recommend a particular slate or supplier. Their website has a useful 'stockist locator' which shows who stocks Spanish slate, including ours, in your area.

For further information: [www.spanishslateuk.com](http://www.spanishslateuk.com)

**We hope you've enjoyed *Slateworks* and found it inspiring. If you have anything you would like us to consider for future issues, or would like us to send you, or your colleagues, additional copies, please contact Zoë Williams on:**

**Tel: 020 8963 8781**

**Email: [zoe@ssq.co.uk](mailto:zoe@ssq.co.uk)**

### Samples and literature

A full range of product guides, slate samples and geological test documents are available on request from:

Email: [info@ssq.co.uk](mailto:info@ssq.co.uk)

[www.ssqgroup.com](http://www.ssqgroup.com)

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