

NHBC: Making the Grade

The NHBC recently published a much needed "minimum specification" for roofing slate. Zoë Williams, group marketing manager at SSQ, one of the UK's leading slate suppliers, explains.



In December last year the NHBC published issue 43 of its technical newsletter, Standards Extra, which contained an article defining the specification of roofing slates that would meet the NHBC's standards. The article's title, Slates - no more grey areas, is an apt play on words as the replacement of a trusty old British Standard by a new-fangled European one brought the roofing industry a very unwelcome 'grey area' - a complete lack of official guidance about what, exactly, constituted a good-quality roofing slate. The NHBC's decision to establish the "minimum specification [needed] to meet with NHBC Standards to ensure the product has acceptable durability" helps resolve that and is good news for all concerned...

As borders between European countries fade into 'Europe: a country', national standards are inevitably being replaced by European-wide counterparts. Products used by the building and construction industry in Europe are covered by the European Construction Products Directive which specifies that roofing slates must comply with European Standard EN 12326. Finally implemented on 23 July 2004, EN 12326 was adopted in the UK as BS EN 12326 and consequently replaced BS 680, the British Standard Specification for roofing slate. So, why the 'grey area' and why should the NHBC feel the need to issue a specification?

Well, unlike our old standard, BS 680, which had objective pass or fail results along with two specific levels of quality, the new European standard, EN 12326, has neither. Instead, EN 12326 stipulates the tests that have to be carried out and how the results are provided - it's then up to individual specifiers to create a specification using this information. But, whereas specifying roofing slate "to BS 680" did, invariably, result in good-quality slates being used, using EN 12326 in the same way is playing Russian roulette with your roof.

The problem is that the two standards are not comparable in what they do and therefore not simply 'interchangeable' when specifying roofing slates. Using terms such as "complies with EN 12326" or "must be CE marked" are meaningless as they're too general - every roofing slate, irrespective of its quality, that is legally available for use by the building and construction industry in Europe, would qualify. Outstanding slates, which suppliers will happily back with a three-figure guarantee period, and 'cheap as chips' slates, that you'll be able to watch crumble in front of your very eyes, are all tested to EN 12326 and carry a CE marking. In essence, testing to EN 12326 and its consequent CE marking have been in danger of becoming mistaken for a bona fide 'mark of quality' for roofing slates - a plausible misconception that could be used by unscrupulous suppliers or catch out unwitting specifiers.

The NHBC's initiative has overcome this risk. Using the results of the tests in EN 12326, "the world's leading warranty and insurance provider for new homes" has specified exactly what it considers to be a roofing slate that has "acceptable durability". As the NHBC has shown, it's actually quite easy to sort the 'chaff from the grain' using the test results given by EN 12326 - so here's a brief guide to what you should keep in mind...

The UK's Building Regulations specify that any roofing slate intended for use by the building and construction industry in the UK must be tested to

How to spot a good quality roofing slate - five key points

Look for	Result	Note
CE marking	A must!	It's a legal requirement
Strength*	> 60 MPa I	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)

[BS] EN 12326. To prove this, it must 'carry' a CE marking which, for convenience, appears on the document that also gives the test results. This document, often referred to as the 'ACD' (Accompanying Commercial Document), is a legal requirement of EN 12326 and has to be available for inspection by a potential buyer. Without it, suppliers and buyers can't verify the slate's provenance or its qualities.

The purpose of this all-important document is to provide information about the slate and give the results of the tests specified by EN 12326. Inevitably, some of the terminology used is in the 'NASA talk' league but, despite that, the information needed to match the slate with the NHBC's specification is quite easy to remember: "A1 - S1 - T1". These three codes are grades awarded to the roofing slate in three key tests, those for water absorbency, carbonate content and reactive metallic minerals.

- **Water Absorption.** This indicates the slate's water absorbency and how it reacts when it gets wet. Water absorption should not exceed 0.6% (but, of course, the less, the better). Test result required by the NHBC: A1.
- **Carbonate Content.** This indicates how much carbonate the slate contains (again, the less, the better and certainly less than 3%). A test (the Sulphur Dioxide Test) then predicts the slate's performance in an acidic environment typical of our cities. Acidic deposition can quickly dissolve the carbonate in the slate 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') within the slate, predicts their reaction and whether they will oxidise to cause staining, pitting or delamination. Test result required by the NHBC: T1.

So, there you have it... If you've got CE marked documentation and the results show grades of 'A1', 'S1' and 'T1' you've got a pretty damn-good roofing slate that meets the NHBC's specification. It's as easy as that!



Where is this roof?

Lochgelly High School, Fife.

How big is it?

7000m²

What makes it special?

Apart from its resemblance to the Pentagon? A 22° pitch and the complex shape of the roof itself - with 90 hips and valleys, 120 faces and 90 service pipe penetrations.

Who designed it and why like this?

The refurb was designed by Fife Council architect, David Moore in conjunction with Redland's technical support team who used their 'SpecMaster' specification system to negotiate the aforementioned hips, valleys, faces and penetrations. (All sounds quite biological, doesn't it?).

What's the roof made from?

Redland Cambrian Slate

Why was it specified?

The original fibre cement tiles failed and were finally finished off by a 120mph hurricane. The Council wanted a vernacular finish. The Cambrian slates perform well at the low pitch of the roof and looked the part. They could be double-clipped and interlocked to withstand that bracing Scots weather.

Who was the contractor?

A canny Scots company, Forster - they road-tested (or should that be roof-tested?) the Cambrian Slates on a small part of the roof first. (A tip they probably received from their hairdresser!)

How long did it take them?

Two years in three phases.

How was it for the contractor?

On such a big roof there was quite a margin for potential errors. Forster used Redland's SpecMaster and quality auditors AWM to check work as they went along and provide a 15 year guarantee to keep all the wee soldiers - I mean bairns - dry for the foreseeable.