

# IMPORTED AND WELSH SLATE CRITERIA

## QUALITY STANDARDS

### Quality standards

**BS EN 12326** ensures that all roofing slates sold in the UK are tested in the same way, using the same methodology, regardless of their origin. **The CE Mark** carried on the packaging or accompanying commercial documentation, confirms that the slates have been tested and thus conform to UK Building Regulations.

Roofing slates, which **have not** been tested **BS EN 12326** and do **not carry CE marking** or documentation, do not conform to UK Building Regulations, and should not be incorporated into the building.

The standard itself is not an indication of the quality of the slate, there is no pass/fail criteria. It is merely a harmonised way of carrying out a number of mandatory tests. The results of these tests are given as values or statements. Thus the user is presented with the problem of how to determine a good slate from a not so good one.

Our suppliers in consultation with independent geologists have come up with a simple way of judging the performance of roofing slates. The test results, normally printed on the crate label, are the key to judging the quality of a roofing slate. They use the following criteria when carrying out initial source selection and during the quality control procedure.

Firstly look for the **CE** mark on the crates and accompanying commercial documentation. Identify the test results, on the label or from within the documentation.

Secondly, look for the following criteria:

<b>Dimensiones y Variación Dimensional:</b> Cumple <b>Espesor nominal y variación:</b> Cumple <b>Resistencia Mecánica (MOR):</b> Transversal: 55.88 MPa Longitudinal: 80.51 MPa <b>Absorción de Agua:</b> Cumple A1: 0.22% <b>Contenido en Carbonato:</b> Cumple: 0.4% <b>Ciclo Térmico:</b> T1 <b>Exposición al SO<sub>2</sub>:</b> S1 <b>Contenido en Carbono elemental:</b> Cumple: 0.52% <b>Comportamiento al fuego externo:</b> Se considera que cumple. <b>Reacción al fuego:</b> Cumple clase A1 <b>Emisión de sustancias peligrosas:</b> Ninguna en las condiciones de uso especificadas	<b>Dimension and Dimensional Variation:</b> Complies <b>Nominal Thickness and Variation:</b> Complies <b>Mechanical Resistance (MOR):</b> Transversal: 55.88 MPa Longitudinal: 80.51 MPa <b>Water Absorption:</b> Complies A1: 0.22% <b>Carbonate Content:</b> Complies: 0.4% <b>Thermal Cycling:</b> T1 <b>Exposure SO<sub>2</sub>:</b> S1 <b>Non-Carbonate Content:</b> Complies: 0.52% <b>External Fire Performance:</b> Deemed to satisfy <b>Reaction to Fire:</b> Complies Class A1 <b>Release of Dangerous Substances:</b> None in specified conditions of use	<b>CE</b> Año /Year 2008 <b>EN 12326</b> PIZARRA NO CARBONATA PARA CUBIERTAS Y FACHADAS NON-CARBONATED SLATE FOR ROOFING AND CLADDING Carbalgal de la Romana La Baña León Spain	<b>SSQ</b> EXCLUSIVE NATURAL SLATE <b>ULTRA</b> DEL CARMEN BLUE-BLACK T: +44 (0) 20 8961 7725 W: www.ssqgroup.com	Piezas / Pieces Medida / Size
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### Strength (CMoR)

Slates that perform well in the UK environment typically achieve flexural strengths in excess of 65 Mpa.

### Water absorption

Low water absorption is a characteristic of high quality slate. With lower water absorption there is a reduced risk of swelling minerals, delamination and damage during the freeze thaw cycle. The old British Standard for water absorption was <0.3% and the new standard BS EN 12326 looks for <0.6% for an A1 classification. We base their criteria on the old standard and look for <0.3%.

### Oxidation/thermal cycling

This will occur due to the presence of reactive iron-sulphur minerals, and is usually evidenced by the thermal cycling tests, but not always. The results are classified into 3 categories:

#### T1 COMPLY WITH ALL TESTS

Inert, may be some discolouration around the inclusion, but will not form runs of discolouration.

#### T2 COMPLY WITH A FEW TESTS

Inclusions present within the slate that will leach and form runs of discolouration, but are unlikely to cause structural changes.

#### T3 COMPLY WITH NONE

Holes, structural changes and runs of discolouration will occur due to oxidation of the inclusions.

We only look at roofing slates within the T1 classification.

### **Carbonate content**

The higher the carbonate content the higher the potential for rapid material loss under acidic conditions. It is generally safe to assume slates with a lower carbonate content will weather more slowly unless reactive iron-sulphurs are present. Proven quality roofing slates typically have a carbonate content <3%.

### **Proven performance**

Empirical testing in controlled conditions gives an indication of quality. However the best method of all to indicate the long term behaviour of roofing slate is to look at installations, thus establishing proven history of performance in the UK environment.

**All our slates come with Importers Guarantees, 30 – 50 years**

### Quick quality checklist

<b>Look for</b>	<b>Result</b>	<b>Note</b>
CE Marking	A Must!	It's a legal requirement.
Strength (MoR)	> 60MPa	It's less likely to break.
Carbonate content	< 3%	...and the lower the better.
Water absorption	A1	< 0.3%, and the lower the better.
Sulphur dioxide	S1	Avoid S2 and S3.
Thermal cycling	T1	Which means it won't rust. Avoid T2 and T3.
Proof	A proven history of successful use in the UK	

## **COMPARISON OF BRITISH AND FRENCH STANDARDS**

### **BSEN 12326-2:2000**

Slate samples are selected by the company commissioning the test.

Only the tested sample is guaranteed to comply with the quality standard achieved.

Testing is required only once.  
Certificate is then valid indefinitely.

### **French Norm (NF Mark)**

Slate is selected by testing authority at source.

Whole quarry is classified, not just a single slate sample.

Testing is more comprehensive and test criteria more stringent. Annual testing is obligatory.

The French Norm (NF) is a collective certification mark. It guarantees the quality and safety of a producer. The NF Mark ensures compliance with current standards and also incorporates additional quality criteria. The mark uses the same strict testing criteria as the CE Mark but the required results are even more demanding.

It is not a compulsory requirement but being awarded the NF Mark means that the highest standards in quality have been achieved.