

# Pedrosa Natural Roofing Slate Data Sheet

EN 12326-2:2012

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<b>Date of Issue</b>		Dec-13			
<b>Date of sampling</b>		Oct-13		<b>Date of testing</b>	
<b>Date of testing</b>				Oct-13	
<b>Product description and commercial name</b>			Pedrosa Roofing Slate 500x250		<b>Complies with European Standard</b>
<b>Dimensional tolerances</b>					
<b>Format</b>			Rectangular		
<b>Deviation from declared length</b>			< +/- 3mm		PASS
<b>Deviation from declared width</b>			< +/- 3mm		PASS
<b>Deviation from declared squareness</b>			< +/- 3mm or 1%		PASS
<b>Deviation from straightness of edges</b>			Slate length ≤ 500mm = ≤ 5mm deviation Slate length > 500mm = ≤ 1% deviation		0.1% PASS
<b>Slate type for deviation of flatness</b>			5mm-9mm		Textured
<b>Deviation from flatness</b>			< 1%		PASS
<b>Thickness</b>					
<b>Slate type for packed thickness calculation</b>			Textured		
<b>Nominal thickness and variation</b>			Decl. +/- 35%		PASS
<b>Strength</b>					
<b>Characteristic MoR</b>			Transverse	50.4MPa	Longitudinal
				58MPa	NR
<b>Mean failure load</b>			Transverse	978.7N	Longitudinal
				1023.1N	NR
<b>Water absorption</b>			0.4%		A1
<b>Freeze thaw</b>			not required		not required
					NR
<b>Thermal cycle test</b>			Pass		T1
<b>Carbonate content</b>			0.4%		PASS
<b>Sulphur dioxide exposure tests</b>			≤ 20% carbonate		Pass
			> 20% carbonate		S1
<b>Non-carbonate carbon content</b>			0.3%		NA
					PASS
<b>External fire exposure</b>			Deemed to satisfy		PASS
<b>Reaction to fire</b>			Deemed to satisfy class A1		PASS
<b>Release of dangerous substances</b>			None in conditions of use as roofing or external cladding		NR

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<b>1. The CE marking</b>	This shows that the product complies with the relevant European Directive.
<b>2. EN number</b>	The European Standard that the product has been tested to.
<b>3. The address of the supplier</b>	Self explanatory
<b>4. Date of Issue</b>	Self explanatory
<b>5. Dates of tests and sampling</b>	Note: EN 12326 specifies that roofing slate is tested every two years.
<b>6. Product description</b>	Slate for roofing and external cladding or carbonate slate for roofing and external cladding.
<b>7. Dimensional tolerances</b>	Confirmation that the roofing slates meet the dimensions advertised by the manufacturer and are within the tolerances stated.
<b>8. Thickness :</b>	Confirmation that the roofing slates meet the normal thickness advertised by the manufacturer.
<b>9.1 Strength :</b>	This indicates the strength of the slates. Samples are put under load until they break, the data being used to calculate the Modulus of Rupture (MoR) both across their width and length. Strong slates have an MoR above 60Pa The Modulus of Rupture test is also used to calculate the lower expected strength value which is then used to calculate the minimum thickness of the slate.
<b>9.2.</b>	These are the average loads needed to break the samples across their width and along their length. These results are used to calculate the MoR.
<b>10. Water Absorption :</b>	Excessive water absorption will result in natural slate being vulnerable to frost damage. Values up to 0.6% are classified as A1 - no further testing required ; Values over 0.6% classified as A2 - subject to a freeze-thaw test.
<b>11. Freeze-thaw test :</b>	Only carried out if the slate is graded A2 in the water absorption test. The test tries to predict the loss of strength caused as water in the slate freezes, damaging its structure. A2 roofing slates are potentially high risk in UK.
<b>12. Thermal cycle test :</b>	Assesses and predicts levels of oxidation within the slate. There are 3 classifications - T1/T2/T3 - which indicate the extent of the damage this may cause to the slate. T1 denotes the slate is free of oxidisable pyrite; T2 indicates that colour runs may develop and T3 indicates potential structural damage may result from the pyrite oxidising.
NOTE : Slates within code T3, which potentially may result in water penetration should only be used selectively with suitable methods of construction, that avoid such penetration. Slates showing exfoliation splitting or other structural changes in this test are not acceptable.	
<b>13. Carbonate content :</b>	There is no limit on carbonate content. However, the carbonate content determines which sulphur dioxide exposure test procedure should be carried out and, together with the strength, the minimum nominal thickness of the product.
<b>14. Sulphur dioxide exposure</b>	Indicates how the slate will perform in an acidic environment. Acidic deposition can dissolve carbonate in the slate causing material loss and structural weakness. Slate with a carbonate content of up to 20% is classified as either S1/S2/S3, a result that directly affects the thicknesses of the roofing slate that can be produced.
<b>15. Non-carbonate carbon content</b>	This indicates the amount of carbon in non-carbonate form that's present in the slate eg> graphite, oil and other organic matter. The standard stipulates a max limit of 2% so the lower the % the better.
<b>16. External fire exposure</b>	Self explanatory
<b>17. Reaction to fire</b>	Self explanatory
<b>18. Release of dangerous substances</b>	Self explanatory

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<b>Durability</b>	<p>Water: Impermeable to Water          Heat: Unaffected by rapid hot and cold cycles          Sunlight: Unfading in UV light          Chemical: Resistant to air pollution          Biological: Immune to biological degradation          Lifespan: Expected to exceed the life of the building          Fire: Non- combustible</p>
<b>Appearance</b>	
<b>Guarantee</b>	A formal quarry guarantee is given for all prime quality slate for a thirty year period. This is considered sufficient for all legal & contractual purposes.
<b>Sitework</b>	<ol style="list-style-type: none"> <li>1. Keep slate stored in pallets where possible, no more than two pallets high. Loose slates should be stacked on their long edge on dry ground over two rows of battens.</li> <li>2. Sort and Grade the slate in three or four thickness.</li> <li>3. Hole Slate on the back face. This forms a counter-sunk hole on the top face of the slate nail to finish flush with the surface of the slate.</li> <li>4. Mark out the roof accurately to maintain the lap and bond.</li> <li>5. Lay thicker slates at eaves decreasing in thickness towards the top of the roof.</li> <li>6. Only use felt and nails which conforms with B.S</li> <li>7. For hooking Fixing it is recommended to use 18/10 stainless steel of a superior quality.</li> </ol>
<b>European Standard</b>	Meets the European Standard BS EN 12326: Part 1: 2004