

Pizarras Intradima,SL

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The following certificate is a requirement of the Construction Products Regulation (CPR EU 305/2011) which came into force on 1st July 2013. This sets out the harmonised rules and methods of expression of the performance of construction products in relation to their essential characteristics. The certificate is the attested declaration of performance issued by the manufacturer based on tests performed by an accredited body or suitably qualified persons. This attestation is based on the information and certification gathered from the producers of the slate. Any further certification provided is an addition to the following documentation which summarises the characterisation of the slate in accordance with the requirements of BSEN-12326 Since its publication in 2000 and 2004.

Statement of Attestation:

Natural Roofing Slates supplied by PIZARRAS INTRADIMA SL conform to the requirements of the European Standard BSEN 12326-1:2004.

The information in the table below demonstrates conformity of the Roofing Slate.

Conformation Certificate (Declaration of Performance)						
PRODUCT			ROOFING & EXTERNAL CLADDING SLATE			
COMMERCIAL NAME:			GM			
Producer Address		PIZARRAS INTRADIMA SL 32300 O Barco-Ourense-Spain				
Dimensions & Dimensional Variations:		Complies (< +/- 5.0 mm)				
Nominal Thickness & Variations:		Complies (+/- 35%)				
Mechanical Resistance:		MoR	Transverse	52.4 MPa	Longitudinal	52.2 MPa
		Mean Failure Load	Transverse	604.4N	Longitudinal	635.2N
Carbonate Content		Complies < +/- 5%				
Water Absorption		Complies with Code A1 < 0.6%			Durable	
Freeze Thaw Cycle		Not Required due to A1 Status			Durable	
Thermal Cycling		Complies with Code T1			Durable	
Sulphur Dioxide Exposure		Complies with Code S1			Durable	
Non-Carbonate Carbon Content		Complies < 2%			Durable	
Release of Dangerous Substances		None in conditions of use as roofing or external cladding			Durable	
External Fire Performance		Deemed to Satisfy			Durable	
Reaction to Fire		Deemed to Satisfy Class A1			Durable	

BS EN12326-1 2004					
NUMBER OF THIS COMMERCIAL DOCUMENT		SPECIMEN		DATE OF ISSUE	
GM-ATG 08/H754		Gatto Mexon ATG 12-13		August 2012	
Commercial Document Issued By:	Natural Slate Supply Ltd. No 7 Manchester M20 2QD				
Location of Mine or Quarry:	OS-674002.194y 4692009.667 (ETRS 89 UTM)				
This document records the conformity of the product described below and is incomplete without the explanation of the meaning of the test results and the requirements of EN 12326-1:2004 and EN 12326-2:2000					
Date of Sampling:	10th July 2012	Date of Testing:		August 2012	
Product Description:	Slate for Roofing & Exterior Cladding				
Commercial Name:	GM				
1. DIMENSIONAL TOLERANCES:					CONFORMITY
Format:	Rectangular				
Deviation from declared length:	Less than +5mm				Pass
Deviation from declared width:	Less than +5mm				Pass
Deviation from squareness:	Less than + 1%				Pass
Deviation from straightness of edges:	Slate length <500 mm: max deviation of 5mm Slate length >500mm: max deviation of 1%				Pass
Slate type of deviation from flatness:	Very Smooth	Smooth	Normal	Textured	Very Smooth
Deviation from flatness:	0.09%	< 1%	< 1.5%	< 2%	0.09%
2. THICKNESS:					
Slate type for packed thickness calculation	Very Smooth	Smooth	Normal	Textured	
Nominal thickness and variation	Less than + 15%				Conforms
3. STRENGTH					
Characteristic MoR	Transverse	33.8 Mpa	Longitudinal	41 Mpa	
Mean Failure Load	Transverse	604.4 N	Longitudinal	635.2 N	
4. Water Absorption	0.34%			Code A1	Conforms
5. Freeze/Thaw	Not Required				
6. Thermal Cycle Test				Code T1	Conforms
7. Carbonate Content	0.1%				Good
8. Sulphur Dioxide Exposure Test	Less than 20%			Code S1	Conforms
9. Non Carbonate Carbon Content	0.3%				Conforms
10. External Fire Performance	Deemed to satisfy				Conforms
11. Reaction To Fire	Deemed to satisfy			Class A1	Conforms
12. Release Of Dangerous Substances	None in use as roofing or external cladding				Conforms

Date of sampling and testing		If more than one date is applicable to sampling or testing they should be indicated against the individual test results				
Product description		Slate for roofing and external cladding or carbonate slate for roofing and external cladding				
1. Dimensional tolerance						
Length and width		Maximum deviation + 5mm				
Deviation from squareness		Maximum deviation + 1% of the length				
Deviation from straightness of edges		Slate length < 500mm permitted deviation < 5mm				
		Slate length > 500mm permitted deviation < 1% of the length				
Flatness: The limits of deviation from flatness are defined for four types of slate. The bevelled edges shall be applied to the convex face. Slates with deviation from flatness in excess of the limit may be used for special applications.		Slate type	Maximum deviation from flatness as a % of the slate length			
		Very Smooth	< 0,9			
		Smooth	< 1,0			
		Normal	< 1,5			
		Textured	< 2,0			
2. Thickness: The basic nominal thickness is determined as a function of the bending strength using the equations given in 3, local climate conditions and traditional construction techniques. The basic nominal thickness is increased in relation to the slate's performance in the appropriate sulphur dioxide test (if required) as shown in 7 and 8 below						
3. Strength: Longitudinal and transverse bending strength and modulus of rupture; there is no limit for bending strength or modulus. However the basic nominal thickness is determined as a function of the bend strength using the equations given below, local climate conditions and traditional construction techniques.						
$e = X \sqrt{\frac{l}{R_{cl}}}$ <p>and</p> $e = X \sqrt{\frac{b}{R_{ct}}}$		Where:				
		e_l	is the longitudinal thickness, in millimetres (mm);			
		e_t	is the transverse thickness, in millimetres (mm);			
		l	is the length of the slate, in millimetres (mm);			
		b	is the width of the slate, in millimetres (mm);			
		R_{cl}	is the characteristic longitudinal modulus of rupture in megapascals (MPa);			
		R_{ct}	is the characteristic transverse modulus of rupture in megapascals (MPa);			
		X	Is a constant determined as a function of climate and the traditional construction techniques in root newton.millimetres (N ^{1/2} .mm ^{1/2}). It may be different for each equation and is selected for country of use according to the table below.			
National X Factors:	Country	Transverse	Longitudinal	Country	Transverse	Longitudinal
	Belgium	1,35	1,35	Italy	1,2	1,2
	France	1,25	1,40	Spain	1,2	1,2

4. Water absorption: The water absorption of slates shall not exceed 0,6% unless they can satisfy requirements of the freeze-thaw test.

5. Freeze-thaw test: Slates with a water absorption greater than 0,6% shall show no significant reduction in bending strength using a one-sided Student's t-test at the 2,5% significance level (slates with a water absorption of 0,60% or less are not required to undergo a freeze-thaw test).

6. Thermal cycle test: The following table explains the meaning of the test codes:

Code	Observation in the test	Conformity to the standard
T1	No Changes in appearance. Surface oxidation of metal minerals. Colour changes that neither affect the structure nor form runs of discolouration.	Acceptable
T2	Oxidation or appearance changes of the metallic with runs of discolouration but without structural changes.	Acceptable
T3	Oxidation or appearance changes of metallic minerals, which penetrate the slate and risk the formation of holes.	Acceptable subject to the note below

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.

7. Carbonate content: 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.

If the carbonate content is less than 20% then the sulphur dioxide exposure test procedure in EN 12326-2:2000, 15.1, applies. If the carbonate content is 20% or more, the sulphur dioxide exposure test procedure in EN 12326-2:2000, 15.2 applies. The minimum thickness is calculated using the table below.

8. Minimal nominal thickness in relation to carbonate content and sulphur dioxide exposure code

Carbonate content %	SO ₂ exposure test code from EN 12326-2:2000, 15.1	Depth of softened layer from EN 12326-2:2000, 15.2	Thickness adjustment
< 5,0	S1		None
	S2		$e_{bi} + 5\%$
	S3		$e_{bi} > 8,0\text{mm}$ or switch to the test in EN 12326-2:2000, 15.2
> 5,0 < 20,0	S1		$e_{bi} + 5\%$
	S2		$e_{bi} + 10\%$
	S3		$e_{bi} > 8,0\text{mm}$ or switch to the test in EN 12326-2:2000, 15.2
> 20,0		0 – 0,70mm	$e_{bi} + 0,50\text{mm} + 7t^2$

e_{bi} is the basic individual thickness obtained from 3 above in millimetres
 t is the thickness of the softened layer obtained from EN 12326-2:2000, 15.2 in millimetres

9. Non carbonate content: The non-carbonate content shall be less than 2%