Datasheet Explanation

Producer: Name & address or identifying mark **Specimen**					
EN 12326-1:200X					
Number of this commercial document	**Specimen**		Date of Issue		**Specimen**
Commercial document issued by; Name & address **Specimen**					
Location of the mine or quarry: District, county or province **Specimen**					
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 - 1:200x The tests referred to and the criteria are contained in 12326-1:200x &-2:2000					
Date of Sampling	**Specimen**		Date of testing		**Specimen**
Product description and commercial name					Conformity
1 Dimensional tolerances:					
Format	**Specimen**				
Deviation from declared length				**Specimen** mm	**Specimen**
Deviation from declared width				**Specimen** mm	**Specimen**
Deviation from squareness				**Specimen** %	**Specimen**
Deviation from straightness of edges				**Specimen** % or mm	**Specimen**
Slate Type of Deviation from flatness	Very Smooth	Smooth	Normal	Textured	
Deviation from flatness	**Specimen**	**Specimen**	**Specimen**	**Specimen**	**Specimen**
2 Thickness					
Slate Type for packed thickness calculation	Very Smooth	Smooth	Normal	Textured	
Nominal thickness and variation		**Specimen** mm		**Specimen** mm	**Specimen**
3 Strength					
Characteristic MoR	Transverse	MPa	Longitudinal	MPa	
Mean Failure Load	Transverse	**Specimen** N	Longitudinal	**Specimen** N	
4 Water Absorption				**Specimen** %	**Specimen**
5 Freeze Thaw	Pass or fail not required			**Specimen**	**Specimen**
6 Thermal Cycle Test:	Code T1, T2 or T3			**Specimen**	**Specimen**
7 Carbonate Content				**Specimen** %	**Specimen**
8 Sulphur Dioxide exposure tests **≤20% carbonate:**	Code S1, S2 or S3			**Specimen**	**Specimen**
>20% carbonate:	Depth of Softening			**Specimen** mm	**Specimen**
9 Non-carbonate carbon content				%	**Specimen**
10 External Fire Performance	Deemed to Satisfy				**Specimen**
11 Reaction to fire	Deemed to Satisfy class A1				**Specimen**
12 Release to dangerous substances	None in Conditions of use as roofing or external cladding				**Specimen**

Date of Sampling and Testing	If more than one date is applicable to sampling or testing they

Date of Sampling and Testing	should be indicated against the individual test results
Product Description	Slate for roofing and cladding or carbonate slate for roofing and cladding

1 Dimensional tolerances

Length and width	Maximum deviation ± 5mm
Deviation from squareness	Maximum 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	< 0.68
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 the 3 below, 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 (if required) as shown in 7 & 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 constructions techniques.

$$e_l = X.\sqrt{l} / R_l$$

and

$$e_t = X.\sqrt{b} / R_{ct}$$

Where

e_{cl} is the longitudinal thickness, in millimetres (mm);
e_{ct} 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_l is the characteristic longitudinal modulus of the rupture in mega Pascals (MPa)
R_t is the characteristic transverse modulus of rupture in mega Pascals (MPa)
X is the 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 the country of use according to the table ****.

Those countries which have not declared a national value should select a value or a pair of values in relation to their countries climate and traditional construction techniques. It should not be less than the minimum pair of values given above.

e_l and e_t are determined by using the length l and the width b of the slate. The maximum value determined is basic individual thickness of the slate, e_{bi}. The basic individual thickness is increased in relation to the slates performance in the appropriate sulphur dioxide test as shown in 7 and 8 below. For a significant difference between the longitudinal and transverse modulus of rupture the t-statistics is greater that 2,021.

**** National X factors Table

Country	Transverse	Longitudinal	Country	Transverse	Longitudinal
Belgium	1.35	1.35	Italy	1.2	1.2
France	1.25	1.4	Spain	1.2	1.2
Germany	1.2	1.2	UK	0.9	1.1

4 Water Absorption the water absorption of slates shall not exceed 0.6 % unless they can satisfy the 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% significant 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 metallic minerals. Colour changes that neither affect the structure nor form runs of discolouration.	Acceptable
T2	Oxidation or appearance changes of the metallic inclusions with runs of discolouration but without structural changes.	Acceptable
T3	Oxidation or appearance changes of the metallic minerals which penetrate the slate and risk the formation of holes..	Acceptable subject to the note below

Slates within Code T3 which potentially may result in water penetration should only be used selectively with suitable methods of construction which 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 test 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 EN 12326-2:2000, subclaused 15.1 applies. If the carbonate content is 20% or more the sulphur dioxide exposure the procedure EN 12326-2:2000, subclause 15.2 applies. The minimum thickness is calculated using the table below.

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

Carbonate content %	SO_2 exposure test code for EN 12326-2:2000, subclaused 15.1	Depth of softened layer from EN 12326-2:2000, subclause 15.2	Thickness adjustment
≤5.0	S1		None
	S2		e_{bi} +5%
	S3		e_{bi} ≥ 8.0mm or switch to the test in EN 12326-2:2000, subclause 15.2
>5.0 < 20.0	S1		e_{bi} +5%
	S2		e_{bi} + 10%
	S3		e_{bi} ≥ 8.0mm or switch to the test in EN 12326-2:2000, subclause 15.2
≥ 20.0		0 - 0.70mm	e_{bi} +0.50mm + $7t_2$

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

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