



## Galex Slate & Stone

The Casaio slate is extracted in the province of Ourense, Galicia in north western Spain. This seam began its metamorphic process during the Ordovician period, approximately 500 million years ago as is the case with most Spanish slate; despite the rugged terrain, scorching summers and freezing winters, Galicia still manages to provide the roofing and construction industry in general with some of the finest slate in the world.



The Casaio slate is easily distinguished from the vast majority of other slates, it's black in colour, smooth surfaced slate with minor pyrite inclusions, extremely flat with an overall superb planimetry, so much so that the versatility of the seam permits a vast array of sizes to be exfoliated and produced with incredible ease, from the very smallest to some of the largest formats available whilst retaining superb planimetry throughout.

Formats such as rounded and gothic as well as the traditional rectangular are all available, as are sizes up to 600mm x 450mm.

**One of the many advantages** of using this slate is in the fitting process where an acceptable level of on-site grading is required, making this an ideal choice for projects where budgetary considerations or time constraints are a genuine determining factor without sacrificing the quality for the sake of price.

Although the Casaio is indeed a budget slate, one of the many advantages of using this slate is made clear during the fitting process where minimal on site grading is required, it's also an extremely user friendly slate making this an ideal choice for projects where budgetary considerations are a determining factor.

The Casaio has obtained A1 S1 T1 in Best grades and T2 in Standard or second grade selections, however it has to be made clear that the T2 grading has no bearing on the watertightness of the roof fitted with these slates.

### Technical specifications :

Test	Results obtained
Water absorption	<b>A1 0.30%</b>
Exposure to Sulphur Dioxide ( SO <sub>2</sub> )	<b>S1</b>
Thermal cycle	<b>T1</b>
Non Carbonate carbon content	<b>0.88% ( ≤ 1.5% )</b>
Carbonate content	<b>0.1% ( ≤ 1.5% )</b>
External fire performance	<b>Deemed to satisfy</b>
Reaction to fire	<b>Deemed to satisfy, class A1</b>
Release of dangerous substances	<b>None in specified conditions of use.</b>
Mechanical resistance ( CMoR ) Longitudinal	<b>70.2 MPa</b>
Mechanical resistance ( CMoR ) Transversal	<b>48.2 MPa</b>

### **Pre fitting .**

Natural slate should be handled with care for health and safety reasons as well as keeping waste to a minimum.

The vast majority of slate being imported into the UK arrives preholed, the hole is punched from the back of the slate so as to create a countersunk effect on the front for the nail head to conveniently sit in; unholed or blank slates are available to special order which would be advisable for hook fixing or in the event that you should wish to hole the slates yourselves. In order to ensure best practice we recommend the following procedures:

Prior to fitting, the slates should be sorted into different thicknesses, ( Usually but not always, the number of different thicknesses depends greatly on the grade of slate purchased, the higher or superior the grade the less sorting required; However this is entirely dependant on the type of seam / stone and how easily the blocks can be split into individual roofing slates, which is a different criteria altogether than the actual composition of the slate and how well it can perform as a roofing material ) the thinner slates will be laid at the ridge, the thicker ones at the eaves of the roof with the gradually thinner slate making their way to the ridge.

Bowed or twisted slates should be set to one side and used for valleys, chimneys or eaves.

Load out the slates on the roof with the thickest slates on the lowest courses.

### **Fixing options:**

Throughout the UK slate fixing is traditionally carried out with nails, these must be copper, aluminium or in extremely corrosive or coastal areas silicon bronze.

The diameter of the nail head should be at least 10mm, the diameter of the nail shank should be at least 3mm and jagged, in high wind areas a ringed shank is recommended so as to prevent the nail from pulling out of the batten.

Hook fixing is far more popular in mainland Europe, it has many distinct advantages over nail fixing, firstly labour and fitting time savings are in the region of 20% to 30%, considerably lower pitches are possible with hooks as well as considerable freedom in roof design, greatly reduced breakages during fitting and very importantly greater resistance to wind uplift. Hooks must be stainless steel, 18/10 or 316 in coastal areas, 2.7mm diameter nail-in-hooks thereby complying with BS 5534.

### **Lead staining.**

Lead, when damp or wet will develop a white carbonate which, if it washes over slates will cause unsightly staining. To prevent this reaction marring the newly fitted roof, we advise treatment with patination oil of all leadwork including soakers and flashings before any rain occurs.

### **Wind load and weather resistance.**

Slate fitted within the guidelines provided will have adequate resistance to wind uplift, load and rain penetration. Further detailed guidance is provided in BS5534:2003 and BS6399, parts 2: 1997 and 3: 1998

### **Certification of slate.**

July 2004 saw the introduction of the EN 12326-1:2004, the European standard for Slate and Stone Products for Discontinuous Roofing, thereby replacing the various standards across Europe and also the previous British standard for roofing BS680.

The standard itself is comprised of a series of tests conducted under controlled conditions which help determine the parameters of products ( in the case of roofing slate, amongst other things it will determine the minimum thickness of slate required for each individual country based upon the results obtained from the various tests ) intended to be used in the various countries in Europe, and also for which purposes those products may be used, again dependent on the results obtained in testing.

Manufacturers claiming conformity with the product specification are obliged to submit their product to the relevant testing and make the results available in a report officially known as the Accompanying Commercial Document.

### **Health and Safety Statement.**

-The product in question is natural roofing slate to be used as a weathering seal for roofs and wall claddings.

-This slate is extracted from a single mountain site in Galicia, north west Spain originating from the Ordovician period, slate is composed of various minerals such as quartz, sericite, chlorite, feldspar and calcite.

-If dust is inhaled in excessive quantities over many years during the manufacturing process it can, without proper controls, possibly create a long term health hazard.

-In the context of site work the only potential hazard is sharp edges and splinters.

-Precautions to be taken in areas of restricted ventilation are dust masks and eye protection during cutting.

-Wear gloves during handling to avoid slate splinters and knee protectors during fixing.

-Store pallets no more than two high.

-For further information on this subject please contact the Health and Safety Executive on [www.hse.gov.uk](http://www.hse.gov.uk)

Health and Safety Executive ( Construction division )  
 Rose Court, 2 Southwark Bridge  
 LONDON SE1 9HS  
 Fax: 020 7556 2109  
 www.hse.gov.uk

### Slate coverage table.

Slate size mm	Head lap mm								
	75mm	80mm	85mm	90mm	95mm	100mm	105mm	110mm	115mm
600x300	12.5	12.6	12.7	12.9	13	13.1	13.2	13.4	13.4
500x300	15.4	15.6	15.8	16	16.2	16.4	16.6	16.8	17
500x250	18.5	18.7	18.9	19.1	19.4	19.6	19.9	20.1	20.4
460x225	17.5	17.7	18	18.2	18.5	18.7	19	19.3	19.6
400x250	24.1	24.5	24.9	25.3	25.7	26.1	26.6	27	27.5
400x200	30	30.5	31	31.5	32	32.5	33.1	33.6	34.2

### Minimum recommended head lap.

#### Slate size mm Minimum raft pitch – Severe exposure ( 56.5 L/M2 or greater per spell )

	20°	22.5°	25°	27.5°	30°	35°	40°	45°-75°	85°
600x300					100	90	80	70	
500x300		130	120	110	100	90	80	70	
500x250					100	90	80	70	65
460x225					100	90	80	70	65
400x250					100	90	80	70	65
400x200					100	90	80	70	65

#### Slate size mm Minimum raft pitch Moderate exposure ( Less than 56.5 L/M2 per spell )

	20°	22.5°	25°	27.5°	30°	35°	40°	45°-75°	85°
600x300			95	85	80	70	60	55	
500x300	115	105	95	85	80	70	60	55	
500x250			95	85	80	70	60	55	50
460x225					80	70	60	55	50
400x250					80	70	60	55	50
400x200					80	70	60	55	50

For technical assistance or indeed to find your local stockist if you don't already have their details please contact us on [info@gal-ex.com](mailto:info@gal-ex.com).

