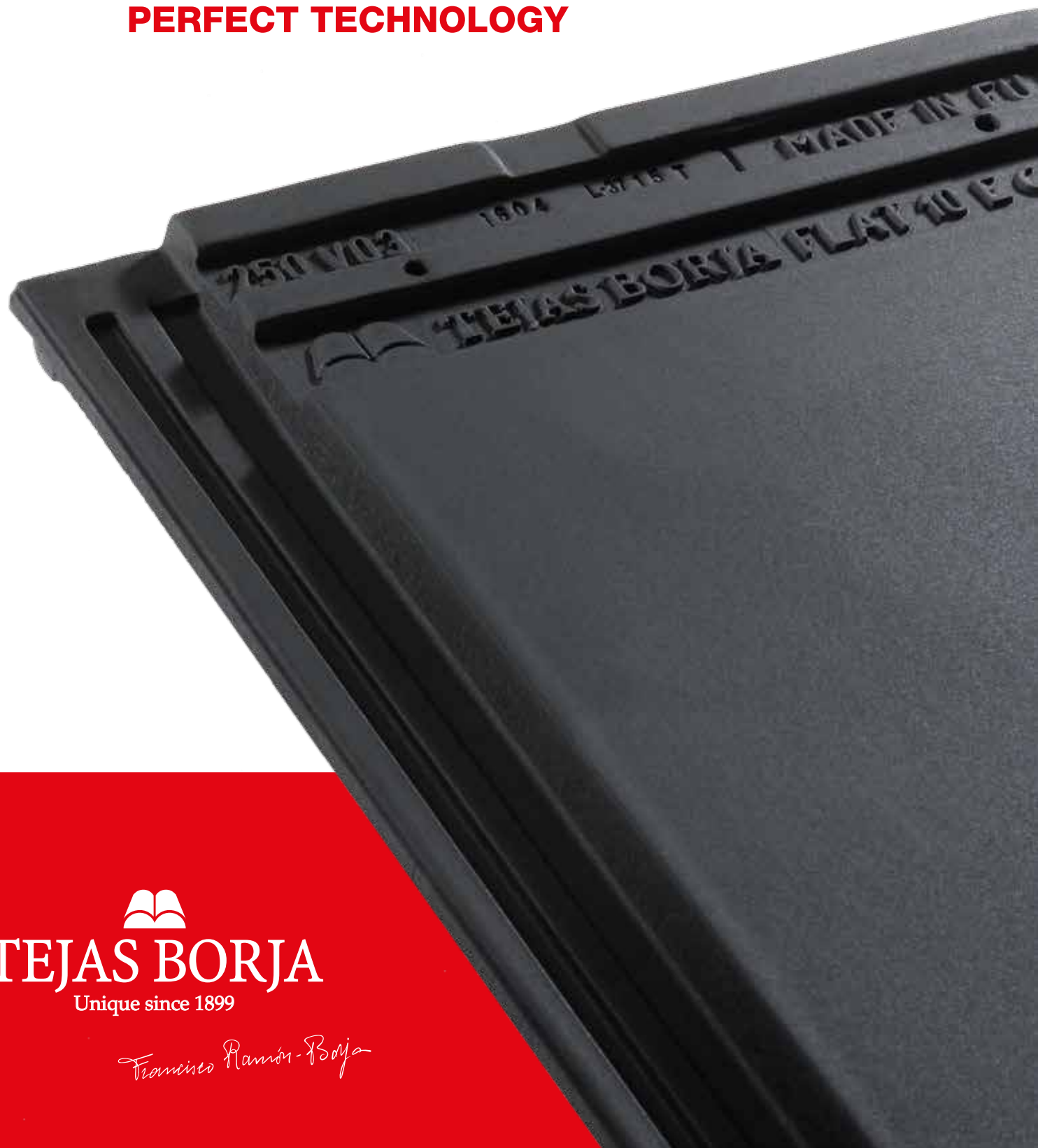




# FLAT<sup>10</sup>

**EXTREM-KER ROOF TILE**  
**PERFECT TECHNOLOGY**



**TEJAS BORJA**

Unique since 1899

*Francisco Ramón Borja*



# FLAT10

Latest EXTREM-KER® roof tile  
**Made in Spain**

In accordance with a long tradition in the manufacturing of ceramic roof tiles, Tejas Borja introduces a unique flat profile roof tile produced with carefully selected clays. Flat 10 combines all the primary manufacturing standards required by Tejas Borja: a cutting-edge design, latest technology, quality, experience and know-how.



*The Royal Institute of  
the Architects of Ireland*

**Architect choice awards 2014.  
Best exterior building product.**



## BEST EXTERIOR BUILDING PRODUCT

Awarded by the Royal Institute of Irish Architects (RIAI- Dublin).  
(Architecture Expo Show 2014)

Lugo Slate

PROJECT: FONT ARQUITECTURA E INTERIORISMO





## WHAT IS EXTREM-KER®?

**EXTREM-KER®**

Perfect Technology since 2010

### MAXIMUM FLATNESS

A perfect flat roof tile with no deformations.

### VERY LOW WATER ABSORPTION RATE (< 3%)

Tested to stand extreme climatic conditions.

### LIGHTNESS

37 kg/m<sup>2</sup> guarantees a lighter, thinner and resistant roof

### UNALTERABLE COLORS

### HIGH RESISTANCE



# FLAT10

**Large format EXTREM-KER® ceramic roof tile.**  
This large format roof tile is not only durable, but offers new and attractive design options for all styles of house construction.







# Technical characteristics

Size:	451 mm x 287 mm	Battens:	Metallic
Minimum recommended pitch:	35% - 19° (*)		Wooden
Weight:	3,70 kg/ud	Dry installation:	Using nails or screws (depending on the batten used)
Useful width:	255 mm	Other type of clips and fixing elements:	Please contact us
Pieces per pallet:	240 pcs / 785 pcs		

Maximum overlap (max. 100 mm - min. 65 mm)	Useful length	Units per sq.m.	Weight per sq.m.	Pitch	Waterproofing
100 mm	350 mm	11 pieces/sq.m	40,5 Kg	< 42 %	waterproofing membrane
70 mm	380 mm	10 pieces/sq.m	37 Kg	> 42 %	waterproofing membrane

Approximated values. Useful length needs to be set on site when installed on battens structure.  
 Installation must comply with UNE 136020 norm for ceramic roof tile installation and Tejas Borja specifications.  
 (\*) Zone 1, protected place, cross-bond installation, with waterproofing membrane, 350 mm batten distance on a roof length up to 6,5 m.



Leon

## ADVANTAGES

1

**Large format: 10 u/sq.m.**  
**3 cm adjustable length.**  
 Batten distance adjustable from 350 mm to 380 mm.



2

**Perfectly watertight:**  
 Deep double interlock (side and lineal).



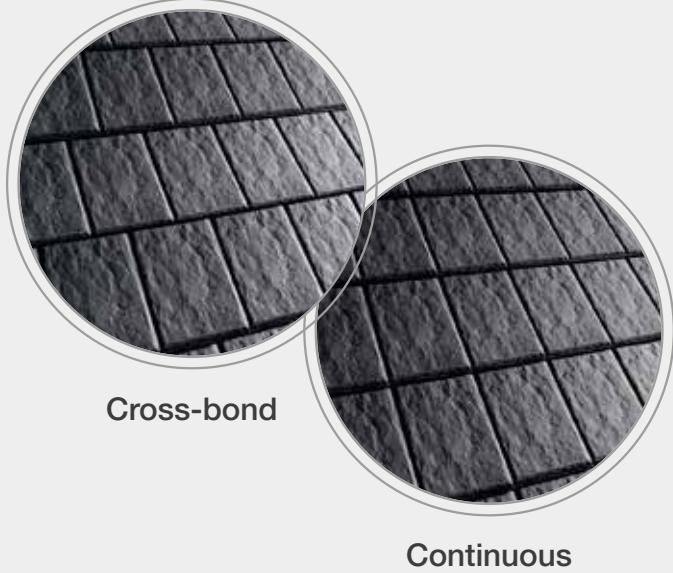
3

**Ideal for dry installation:**  
 Installation available with clips and a pre-holed continuous holding gap.



4

**Installation options:**  
 Cross-bond or continuous.







# Manufacturing process

## A ground-breaking design and format; technically perfect

The essence of tradition fused with the latest technology

Leon  
PROJECT: LUISA MARIA LÓPEZ PÉREZ (ARCHITECT)

### PERFECT TECHNOLOGY

Flat 10 is produced using the most advanced manufacturing processes and the latest technology in the industry.

1

#### Selected clays

Flat 10 is produced with 4 different types of high quality Mediterranean clays, carefully selected and free of imperfections. An exceptionally durable raw material which, following a stringent preparation process, results in a unique clay with very specific characteristics:

- **Compacted to the maximum.**
- **Excellent smelting.**
- **High resistance and a very low water absorption rate.**



2

#### Gypsum moulds

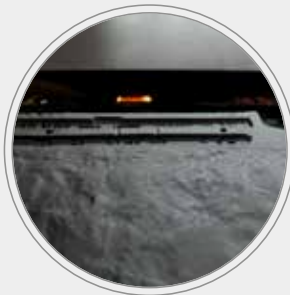
Flat 10 is produced in a gypsum mould, which guarantees a perfect format, aesthetic finish, and detailed definition of the roof tile. (\*)



3

#### Roller kiln

Flat 10 is fired "piece by piece" in a roller kiln. The roof tiles are placed one by one on a precisely levelled line of rollers which results in a perfectly flat roof tile.



4

#### Quality control

The final product is submitted to a very demanding quality control process in order to ensure a technically perfect product:

- **Sound test on every single tile.**
- **Colour uniformity and dimensional control in every batch.**
- **Flatness, warping and pre-holes control in every batch.**



(\*) Except textured roof tiles.



#### Environmental Friendly

FLAT 10 is a natural and environmentally friendly product. Due to a lower carbonate composition (rate) in the raw material, the CO<sup>2</sup> emissions are reduced during its manufacturing process.



#### Warranty

FLAT 10 is high quality product recommended for any climatic condition. Also classified as an EXTREM-KER® product, it is suitable for use in high mountain areas. (Ask about conditions in your local distributor).



# FLAT10

## finishes

Originally designed as an alternative to the natural slate, Flat 10 presents 6 unalterable colors: timelessly attractive and durable, making FLAT 10 an ideal option for all styles of house construction.



Rioja Red



Asturias Brown



Lugo Slate



Navarra Grey

### TEXTURED



Leon



Galicia Grey



Leon

\* Waterproof installation



# FLAT10

## accessories

2,5 u./lm  
3,15 Kg



Angular Ridge  
42 | 31 w 9,7 h

2,83 Kg



Angular Hip Starter  
42,2 | 29,3 w 10 h

4,37 Kg



Angular 3 Ways  
45,2 | 29,3 w 10 h

2,65 Kg



Universal Straight End Cap  
8,5 | 28,5 w 12,5 h

2,6-3 u./lm  
2,50 Kg



Flat Straight Edges(Left/Right)  
40,4 | 12,4 w 12,4 h

2,5 u./lm  
3 Kg



Universal Angular Edge  
43 | 14,5 w 14,5 h

1,3-1,4 u./lm  
2,10-2,30 Kg



Half Flat 10 Roof Tile (Left/Right)  
45 | 12/16,2 w 2,4 h

4,50 Kg



Flat 10 Ventilation  
45 | 28,7 w 7,5 h

4,10 Kg



Flat 10 Chimney Carrier  
45 | 28,7 w 7,8 h

1,70 Kg



Universal Ventilation Cap  
24,5 Øext 22 Øint 6 h

3 u./lm  
2,80 Kg




Bretagna 2 Ridge  
(Lugo Slate - Leon)  
36,2 | 25,1 w 12,5 h

3,45 Kg



Bretagna 2 Hip Starter  
(Lugo Slate - Leon)  
42,8 | 25 w 27 h

2,40 Kg



Bretagna 2 Straight End Cap  
(Lugo Slate - Leon)  
6 | 25 w 12,5 h

2,22 u./lm  
4,15 Kg



100° Ridge  
(Lugo Slate - Leon)  
48 | 25,5 w 12,5 h

3,30 Kg



100° Hip Starter  
(Lugo Slate - Leon)  
38 | 25,5 w 12 h

1,75 Kg



100° Straight End Cap  
(Lugo Slate - Leon)  
28,5 | 27,5 w 6,5 h





INSTALLATION SUGGESTIONS

Installation must comply with UNE 136020 norm for ceramic roof tile installation and Tejas Borja specifications.

RECOMMENDATIONS

Flat 10 must be installed by dry installation. With a dry installation, any possible contamination produced by mortar will be avoided and guarantees a perfect visual and aesthetic result of the roof.

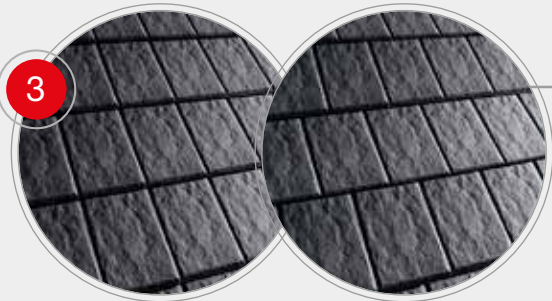
According with the exposure area, a minimum pitch must be taken into account. The use of a proper waterproof membrane will guarantee a watertight finish to the roof.

In order to assure a uniform finish to the roof it is recommended to mix roof tiles from different pallets before being installed.



INSTALLATION

Flat 10 must be installed on a battens structure (metallic or treated wood battens) in such a way that the roof tiles get mechanically fixed to the structure.



Facing the slope, installation must start from right to left all the way to the opposite side of the slope. Flat 10 can be installed cross-bond or continuous. When cross-bond installation, half tiles will be alternatively placed in the first line of tiles in each end of the slope.



In order to avoid water condensation points and a better thermal insulation, air flow must run beneath the roof tile. To get the roof ventilated it will be needed to allow air circulating throughout the eave and ridge line as well as throughout valleys and hips.

We recommend the use of ventilation accessories to ensure the air circulation under the roof tiles.

The use of the corresponding and proper under-roof components for each specific joint and encounter, will facilitate the ventilation and the watertight finish of the roof.

ROOF JOINTS

RIDGES AND HIPS

Make sure the ridge covers at least 75mm over the last line of roof tiles. In order to ensure a watertight finish and allow the ventilation of the roof, the use of under-ridge components will be required.



Left and right Edges must be placed overlapping (lengthwise) the roof tiles and must be fixed to the battens using dry installation.

EDGES

ENCOUNTERS

Multi-Use tape can be used for chimney and wall encounters.



HIPS AND VALLEYS

Mark and cut the roof tiles in order to keep a parallel and straight line in hips and valleys.

For more information, please email our technical department: [info@tejasborja.com](mailto:info@tejasborja.com)

Roof complements

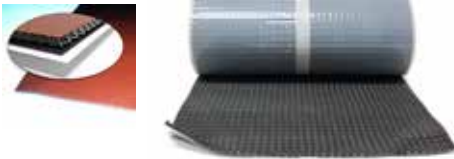
\* Other clips (contact us)



Waterproof and breathing membrane



Roofing adhesive tape



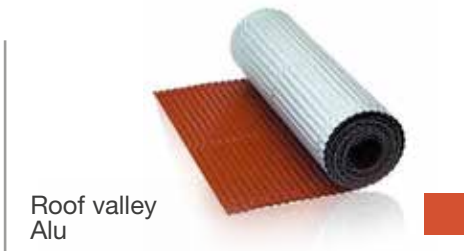
Multi-use PREMIUM



Counter flashing profile



Under ridge mixed roll tape



Roof valley Alu



Cantilever support



Under ridge Alu roll tape



PVC ventilation comb



## A century around tiles

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