

12CA Years



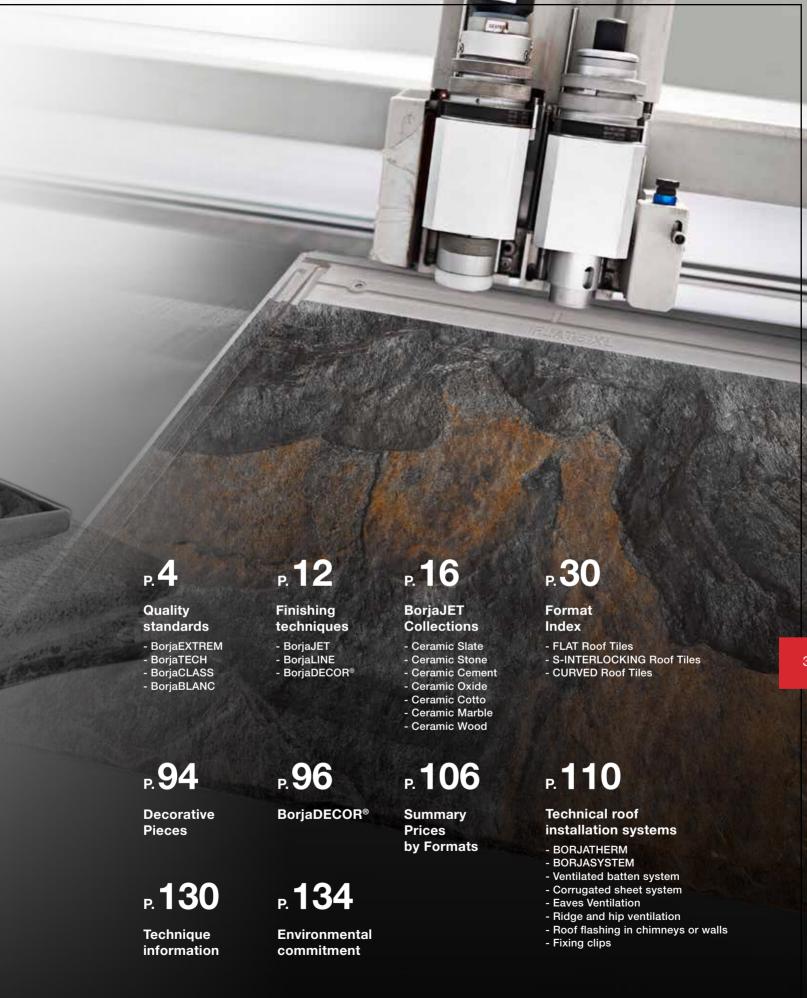
More than a century around tiles

After 120 years of passionated dedication to the manufacture of clay roofing tiles, we have it clear: we love what we do as we love helping you to make your dreams and projects come true and be a part of so many homes of so many families around the world.

Five generations of passion and love for what we do is reflected in our products. For this reason, we invite you to continue joining us on this great journey being the engine of our inspiration for another 120 years.

Understand the past to build the future.





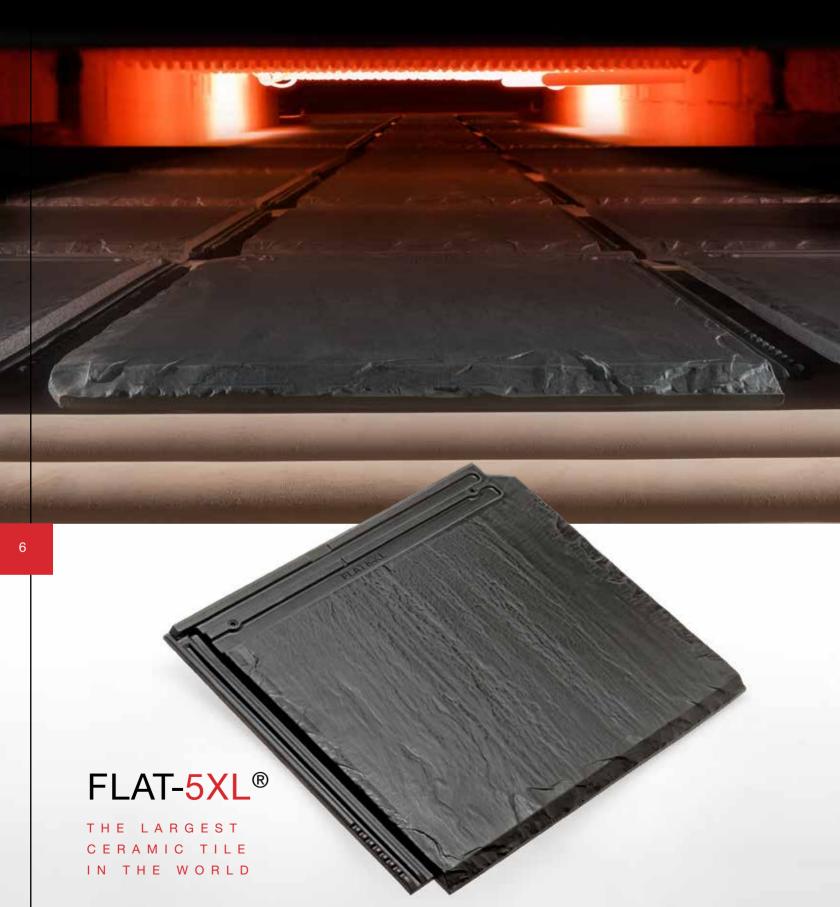
Quality standards

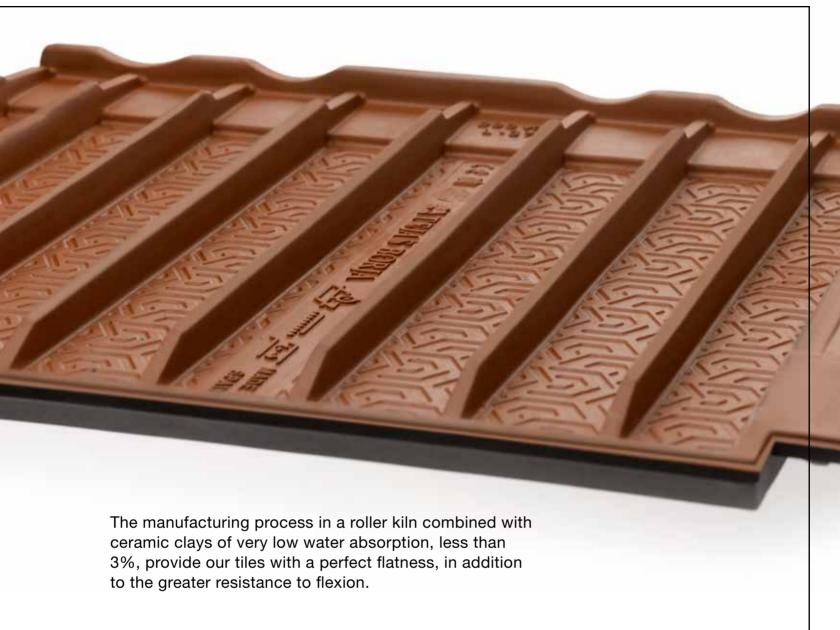
Tejas Borja produces its roof tiles by the highest levels of manufacturing standards, implementing quality systems that exceed the requirements of different regulations.

















FLAT-10 Tech

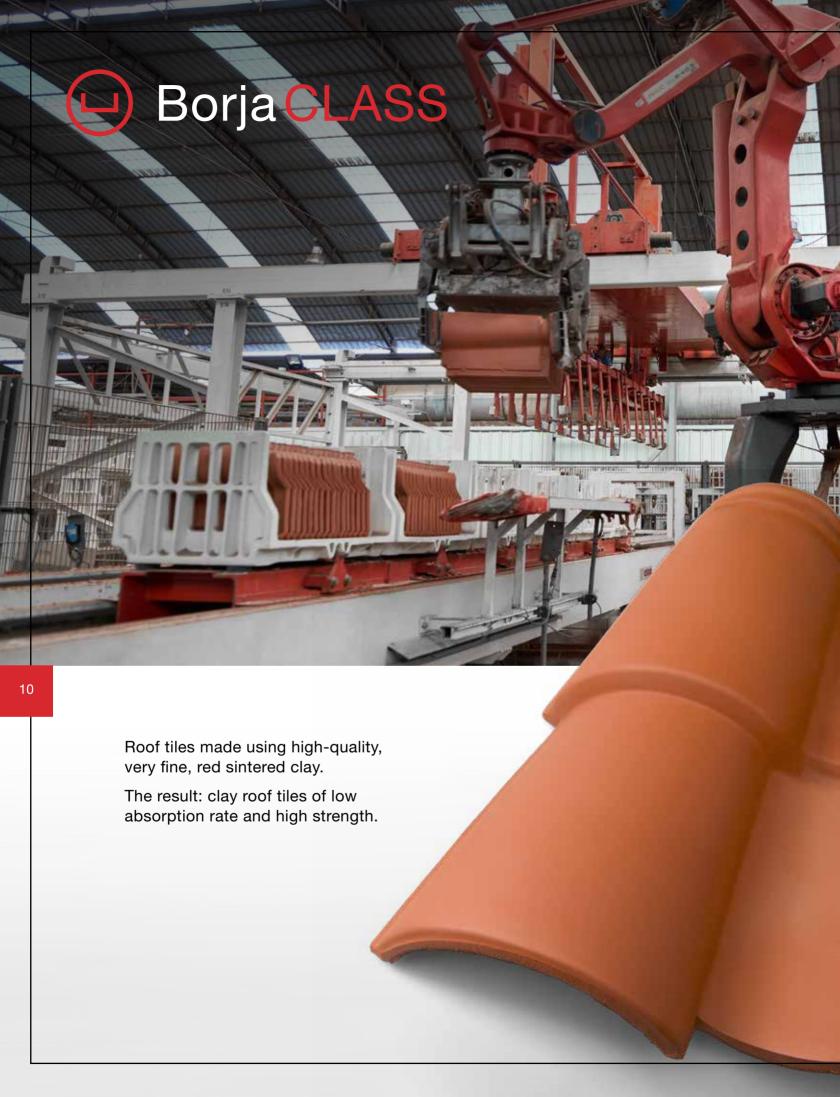
TECHNICA-10

TB-10 Tech



The manufacturing process of Tejas Borja, with plaster molds and H cassettes, confers to our products a very perfect and detailed definition with greater clay compaction, a very low absorption and extremely strong.







Ceramic roof tiles made with special white clays, which provide beautiful natural destonifications.



THE REVOLUTION of the ceramic tile sector

Finishing techniques

Our finishing techniques, provide solutions to all type of desing options and roofing projects.





Innovative World **EXCLUSIVE** from Tejas Borja

Inkjet digital printing technology applied in roof tiles manufacturing, makes possible the fusion of the richness of natural materials with the technical properties of ceramic tiles.

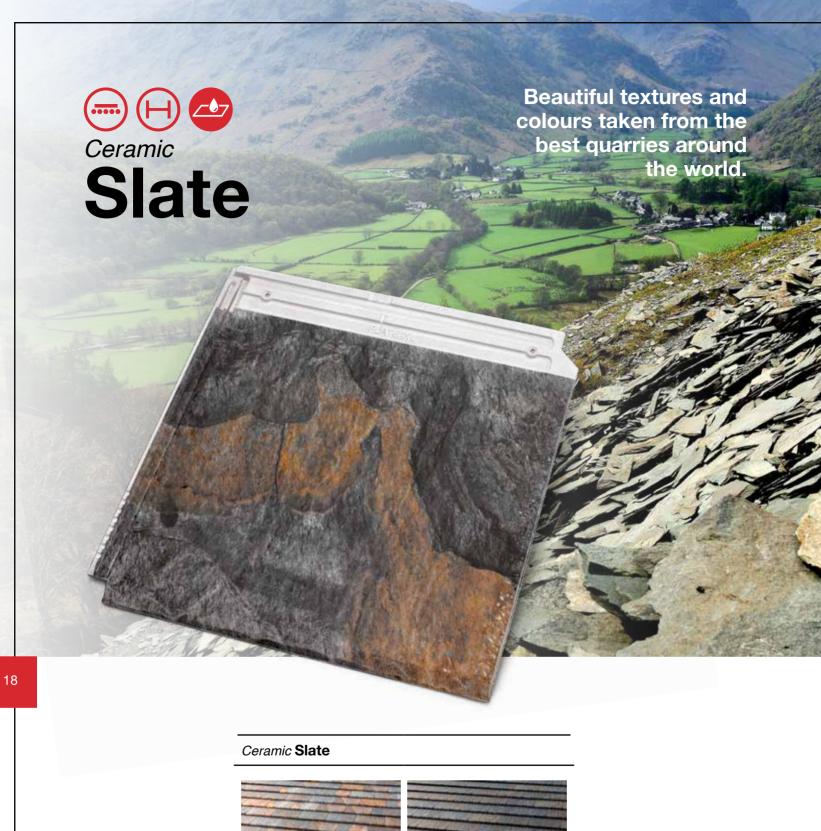




Five generations ago we began a long trip around the world. During all these years we visited incredible places and were where nobody had arrived in search of the pure essence of the nature. We knew incredible people and wonderful places, magic, with soul. We learnt where sensitivity it's born and what makes us tremble with our emotions.



We found... the essence for our new collection.





Nepal Orange

Paris Ocre

FLAT-5XL®



FLAT-10 Tech







Ceramic Stone



FLAT-5XL®













FLAT-5XL®





We capture the sensation given by the noblest woods to preserve their natural beauty, created by the passing of time.



Toronto Oak



Ceramic SLATE

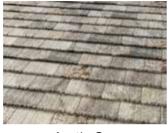


Nepal Orange



Paris Ocre

Ceramic STONE



Austin Grey



Denver Gold



Denver Iris

Ceramic CEMENT



Sidney Ghaphite





Tokyo Copper

Ceramic COTTO



Ibiza Pink

Ceramic MARBLE



Roma Dark

Ceramic WOOD



Toronto Oak

NOTE: Ceramic Slate and Ceramic Stone are textured surface models.

FLAT-10 Tech













Using this technological revolution we are able to make roof tiles with a wide variety of finishes such as slates, woods, stones, marbles and oxides. The result is a truly original product.

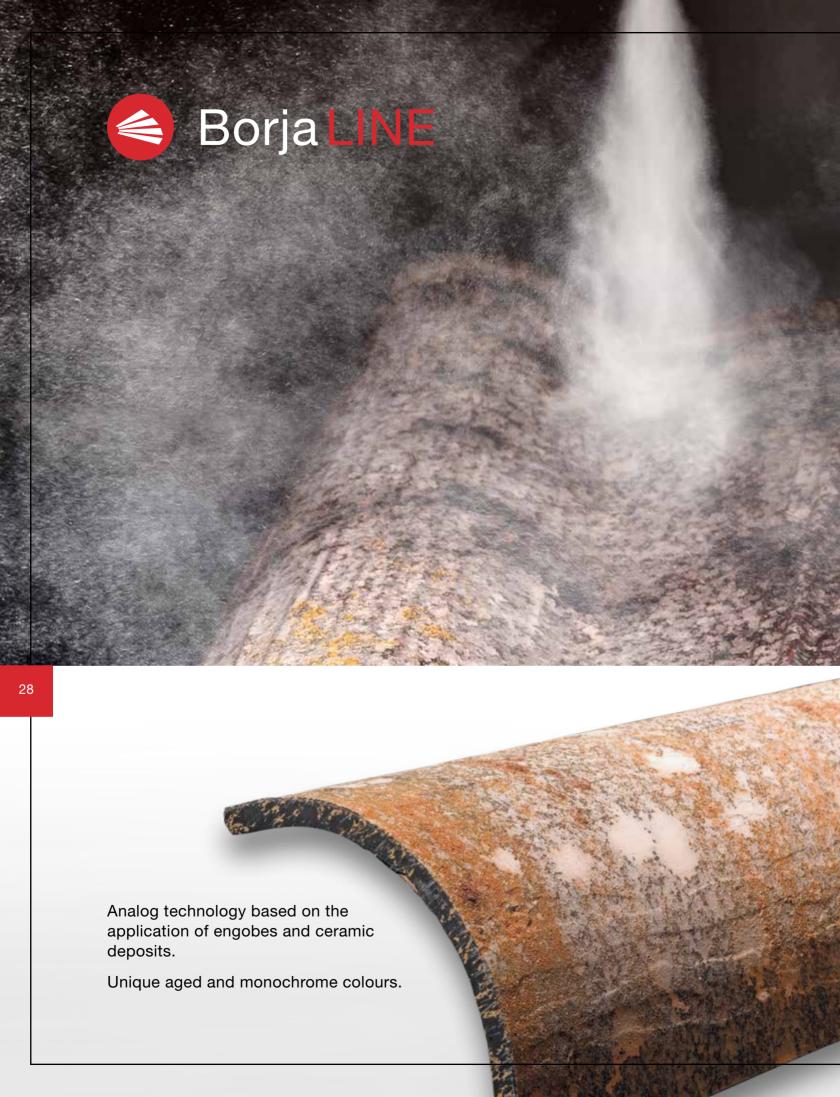






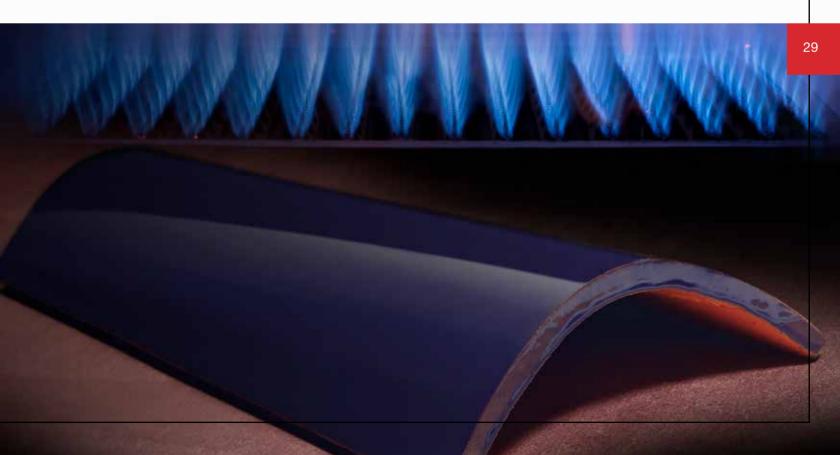








High gloss glazed roof tiles which prevent premature aging, delaying moss formation.





The roof tiles

р. 32

FLAT Roof Tiles

P. 34 - FLAT-5XL®

P. 38 - FLAT-10 Tech

P. 42 - TECHNICA-10

P. 46 - ALICANTINA-12

P. 50 - Accessories

P. 52 - Projects

P. 56

S-INTERLOCKING

S-INTERLOCKING Roof Tiles

P. 58 - TB-10 Tech

P. 64 - TB-12®

P. 68 - TB-4®

P. 72 - Accessories

P. 74 - Projects

p. 78

CURVEDRoof Tiles

P. 80 - C-50.21 Celler®

P. 80 - C-45.20

P. 80 - C-40.19

P. 80 - C-45.15

P. 86 - STEP CELLER 50/45

P. 88 - Accessories

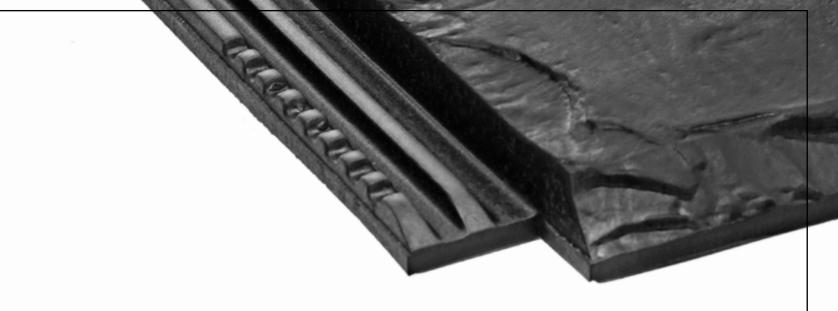
P. 90 - Projects

p. 92

ESPECIAL Roof Tiles

P. 92 - C-25.12 P. 92 - Escama





FLAT Roof Tiles



Another example of the innovation and technological development in ceramic roof tiles. The largest ceramic tile in the world.

P. 34

A new generation of flat tiles now lighter and with greater definition. Suitable for roofs and façades.

P. 38

Innovative flat tile in a Marseille style. Safer and technologically up-to-date. The most versatile format on the market. Ideal for all kinds of projects.

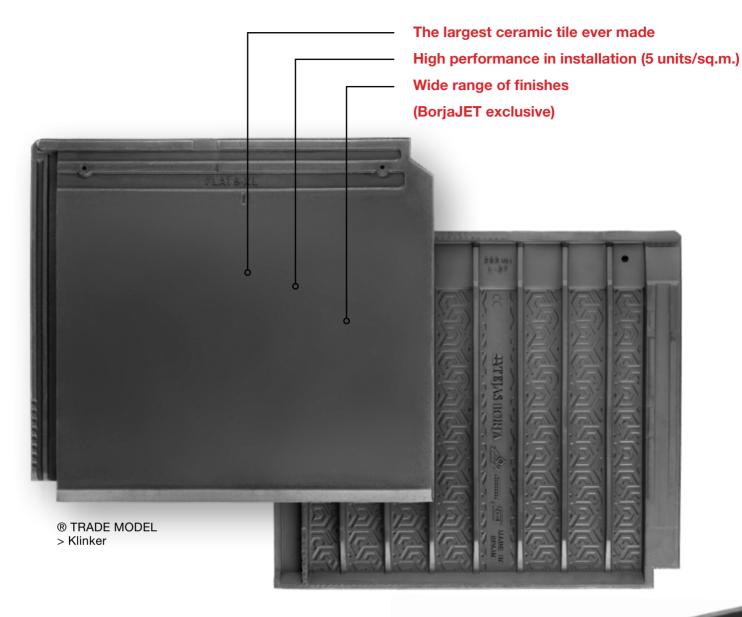
42

Our classic and versatile flat tile. Flat profile with two soft grooves manufactured along three generations by Tejas Borja.

46















Maximum Surface Flatness

Minimum Slope 35%

Longitudinal Overlap 50 mm

Flexural Strength







Characteristics		
Width	Vidth 510 mm	
Length	457 mm	
Weight	6,55 kg/tile	

Installation		
Tiles /sq. m.	5,4 units	
Minimum batten spacing	340 mm	
Maximum batten spacing	390 mm	

Approximate values: If the roof tiles are installed on battens, the useful length must be calculated on site. A tolerance of $\pm 2\%$ is allowed on the dimensions of the roof tiles according to UNE-EN 1024

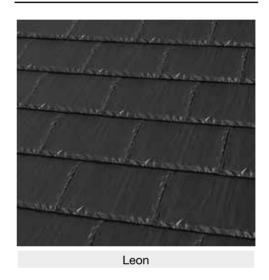




FLAT-5XL®

THE LARGEST CERAMIC TILE IN THE WORLD





Available in exclusive finishes (P.25)







Perfect, deep fit

Large format - 10 units per sq. m.

Exclusive BorjaJET finishes

Lightweight



> Klinker



Maximum Surface Flatness



Minimum Slope 35%



Longitudinal Overlap 35 mm





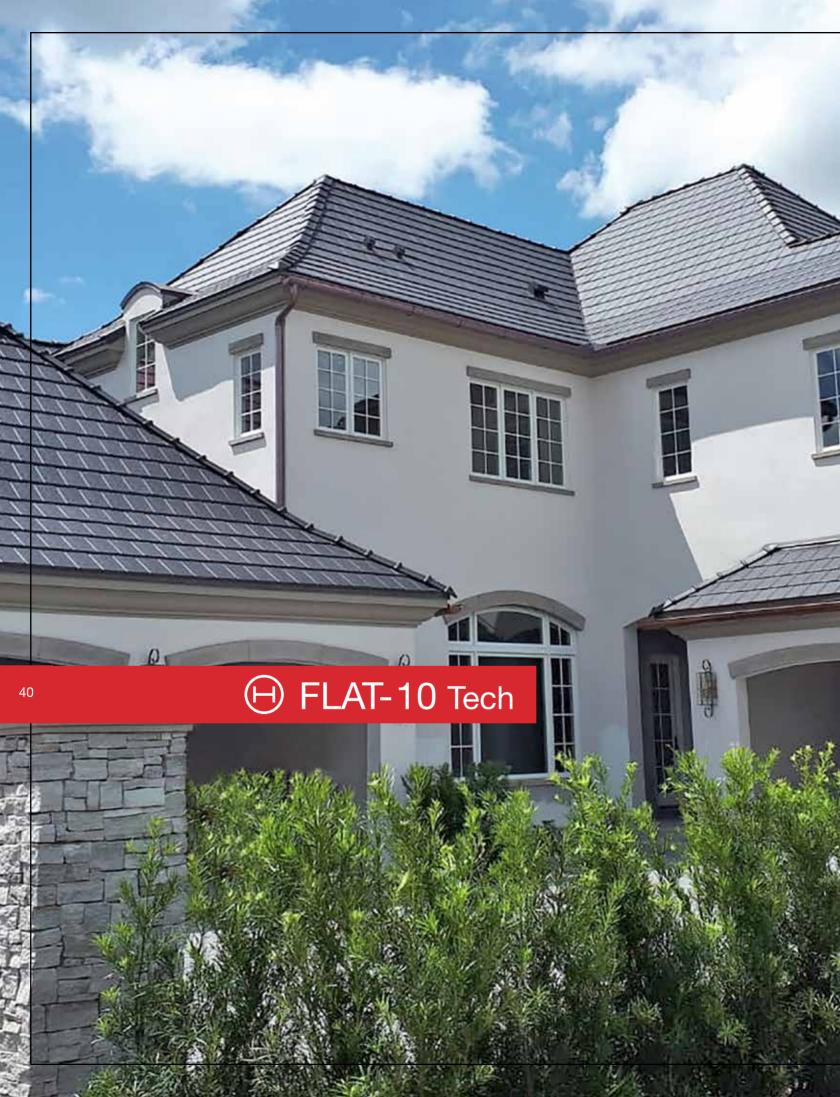




Characteristics		
Width	285 mm	
Length	475 mm	
Weight	3,5 kg/tile	

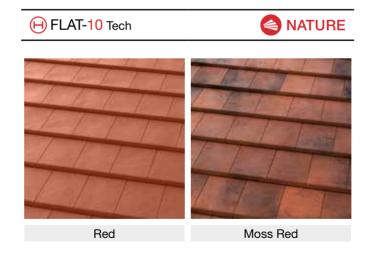
Installation		
Tiles /s.q. m.	9,9 units	
Minimum batten spacing	365 mm	
Maximum batten spacing	400 mm	

Approximate values: If the roof tiles are installed on battens, the useful length must be calculated on site. A tolerance of $\pm 2\%$ is allowed on the dimensions of the roof tiles according to UNE-EN 1024.



















Characteristics		
Width	262 mm	
Length	475 mm	
Weight	3,3 kg/tile	

Installation		
Tiles /s.q. m.	10,7 units	
Minimum batten spacing	370 mm	
Maximum batten spacing	415 mm	

Approximate values: If the roof tiles are installed on battens, the useful length must be calculated on site. A tolerance of \pm 2% is allowed on the dimensions of the roof tiles according to UNE-EN 1024.

The bottom side of the tile is always clay colour.

















FLAT ROOF TILES



Angular Ridge 42 x 31 x 9,7 cm. 2,5 Units/lm / 3,15 kg. Max. Slope 62%-31.5°



Angular Hip Starter 42,2 x 29,3 x 10 cm. 2,83 kg.



Angular 3 Ways 45,2 x 29,3 x 10 cm. 4,37 kg.



Angular 4 Ways 46,0 x 41,5 x 16,5 cm. 6,50 Kg.



Universal Straight End Cap 8,5 x 28,5 x 12,5 cm. 2,65 kg.



Bretagna 2 Ridge 36,5 x 25 x 12,5 cm. 3 Units/Im / 2,80 kg. Max. Slope 87%-40.5°



Bretagna 2 Hip Starter 42,8 x 25 x 12,5 cm. 3,45 kg.



Bretagna 2 Straight End Cap 6 x 25 x 27cm. 2,40 kg.



100° High Ridge 47,5 x 25,5 x 12,5 cm. Units/lm / 4,15 kg. Max. Slope 100%-45°



100° High Hip Starter 38 x 25,5 x 12,5 cm. 3,30 kg.



100° High Straight End Cap 27,5 x 28,5 x 6,5 cm. 1,75 kg.



100° Angular 3 Ways 40 x 45 x 22 cm. 5,15 kg.



100° Angular 4 Ways 46,5 x 46,5 x 16 cm. 7,50 Kg.



100° Low Ridge 47,5 x 24,5 x 10,5 / 2,22 cm. Units/lm / 4,00 kg. Max. Slope 100%-45°



100° Low Hip Starter 37 x 24,5 x 10,5 cm. 2,70 kg.



100° Low Straight End Cap 27,5 x 28,5 x 6,5 cm. 2,15 kg.



Flat Straight Edges (Left/Right) 40,4 x 12,4 x 12,4 / 2,6 cm. 3 Units/lm / 2,50 kg.



Universal Angular Edge 43 x 14,5 x 14,5 cm. 2,5 Units/Im / 3 kg.

(H) TECHNICA-10



FLAT-5XL® / FLAT-10 Tech / Technica-10 Straight Edges (Left/Right) 46,7 x 12,2 x 7,9 cm. / 3 kg.



Universal Ventilation Cap 24,5 Øext - 22 Øint x 6 cm. 1,70 kg.

FLAT-5XL®





TECHNICA-10 Chimney Carrier 47,3 x 26,22 x 10,2 cm. 3,4 kg.



ALICANTINA-12 Chimney Carrier 43 x 25,5 x 12 / 15,5 Øext-13,5 Øint cm. - 4,00 kg.



ALICANTINA-12

Half ALICANTINA-12 Roof Tile (Left/Right) 43 x 15 x 4,5 cm. 1,25 Units/Im / 1,80 kg.



FLAT-5XL®

Chimney Carrier 45,7 x 27,2 x 16 cm. 3,5 kg.

Half FLAT-5XL® Roof Tile 45,7 x 27,2 x 2,4 cm. 3,5 kg.



FLAT-10 Tech

Chimney Carrier 47,5 x 28,9 x 10,5 cm.

3,5 kg.

Half FLAT-10 Tech Roof Tile 47,5 x 16,6 x 2,6 cm. 2 kg.



Half Technica-10 Roof Tile 47,3 x 15,31 x 2,6 cm. 2 kg.



ALICANTINA-12 Ventilation 43 x 25,5 x 9 cm. 3,70 kg.



130 Universal Chimney 20,4 Øext-18 Øint x 23,5 cm. 2,15 kg.



FLAT-5XL® Ventilation 47,5 x 28,9 x 3,7 cm.



FLAT-10 Tech Ventilation 47,5 x 28,9 x 3,7 cm. 3,5 kg.



Technica-10 Ventilation 45,7 x 27,2 x 10,5 cm. 3,5 kg.





Ideal for straight lines roofs design, the flat tiles are timeless.

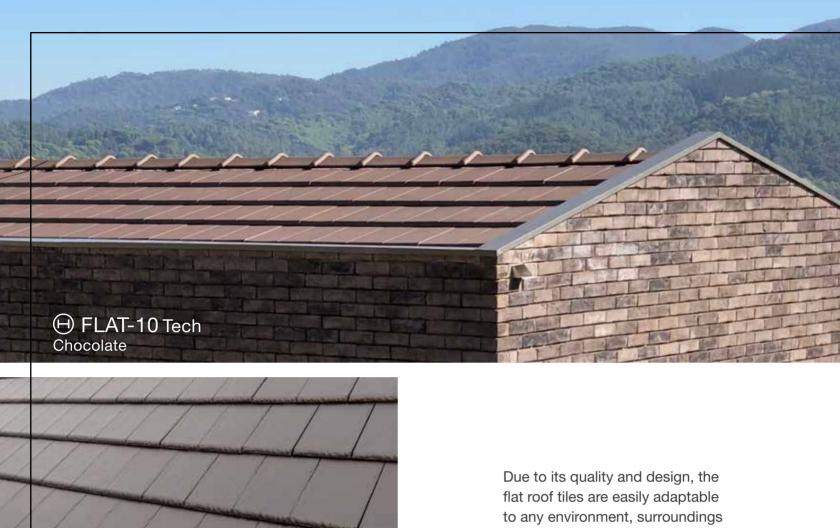












and climates.



⊕ FLAT-10 Tech

Leon

The aesthetics of flat roof tiles offer an elegant image with its own unique character.

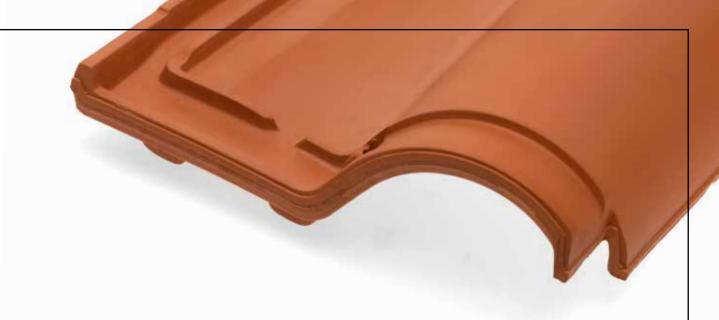












S-INTERLOCKING Roof Tiles



→ TB-10 Tech

Technological evolution in the large size S-interlocking roof tile format. Its perfect definition and finishing simulate curved roof tiles aesthetics.

P. 58

□ TB-12[®]

Classic S-interlocking roof tiles small format. Thanks to its versatility and aesthetic, the S-Interlocking roof tile is usually the first option for arquitects and roofers.

Trade model of S-interlocking roof tile adaptable to rounded areas with curved roof tile aesthetic.

P.68

P. 64









Easy to install

Minimum Slope 30%

Longitudinal Overlap 20 mm









	Characteristics		
The Contract of the Contract o	Width	282 mm	
11	Length	475 mm	
tly watertight Dick II tested INC - París)	Weight	3,6 kg/tile	

Installation	
Tiles /s.q. m.	10,4 units
Minimum batten spacing	390 mm
Maximum batten spacing	410 mm

Approximate values: If the roof tiles are installed on battens, the useful length must be calculated on site. A tolerance of $\pm 2\%$ is allowed on the dimensions of the roof tiles according to UNE - EN 1024.









Ground



Manoir®

H TB-10 Tech







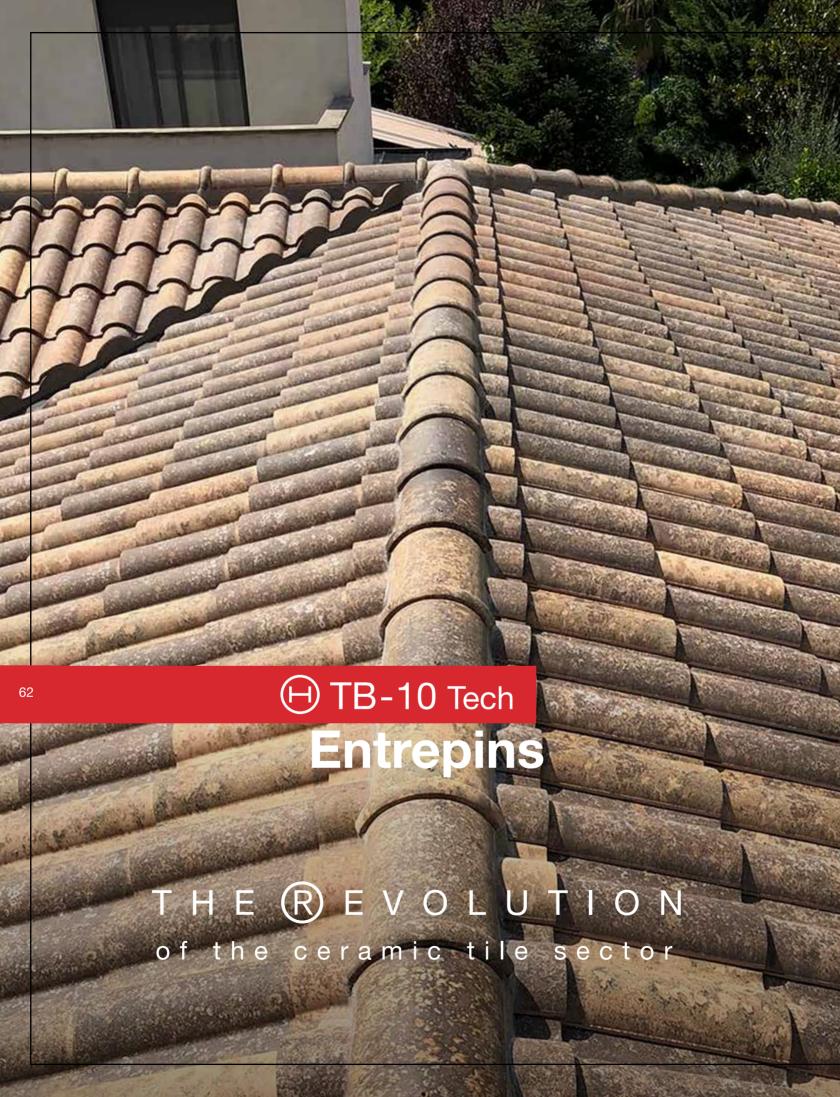
Edetania®



Lamalou®



61



We take our inspiration from the Mediterranean, transporting the charm of its landscapes to our tiles, the perfect fusion of nature and **inkjet technology**.



Centenaria® Entrepins

A hundred years in the blink of an eye





Approximate values: If the roof tiles are installed on battens, the useful length must be calculated on site. A tolerance of ± 2% is allowed on the dimensions of the roof tiles according to UNE - EN 1024.

The certified characteristics for the NF Terracotta tiles are: Structural faults, the geometric characteristics, resistance to flexural strength, impermeability, frost resistance for all products made with red mixture. AFNOR Certification / 11 rue Francis de Pressensé / 93571 LA PLAINE / SAINT-DENIS CEDEX / www.marque-nf.com



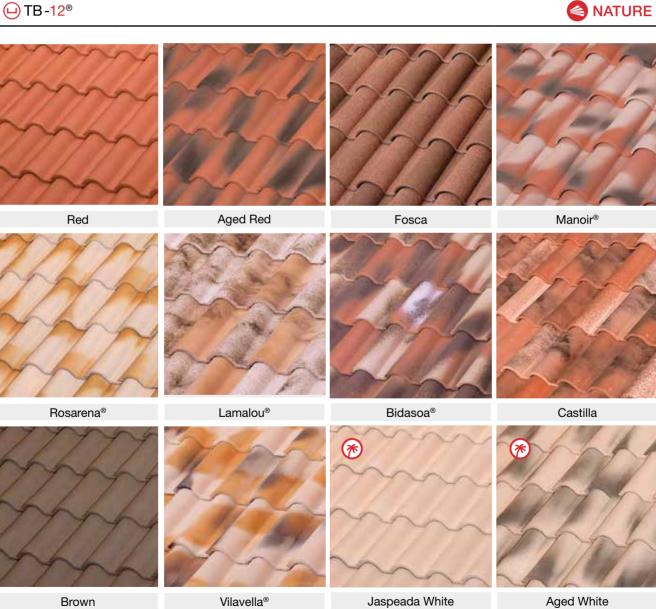






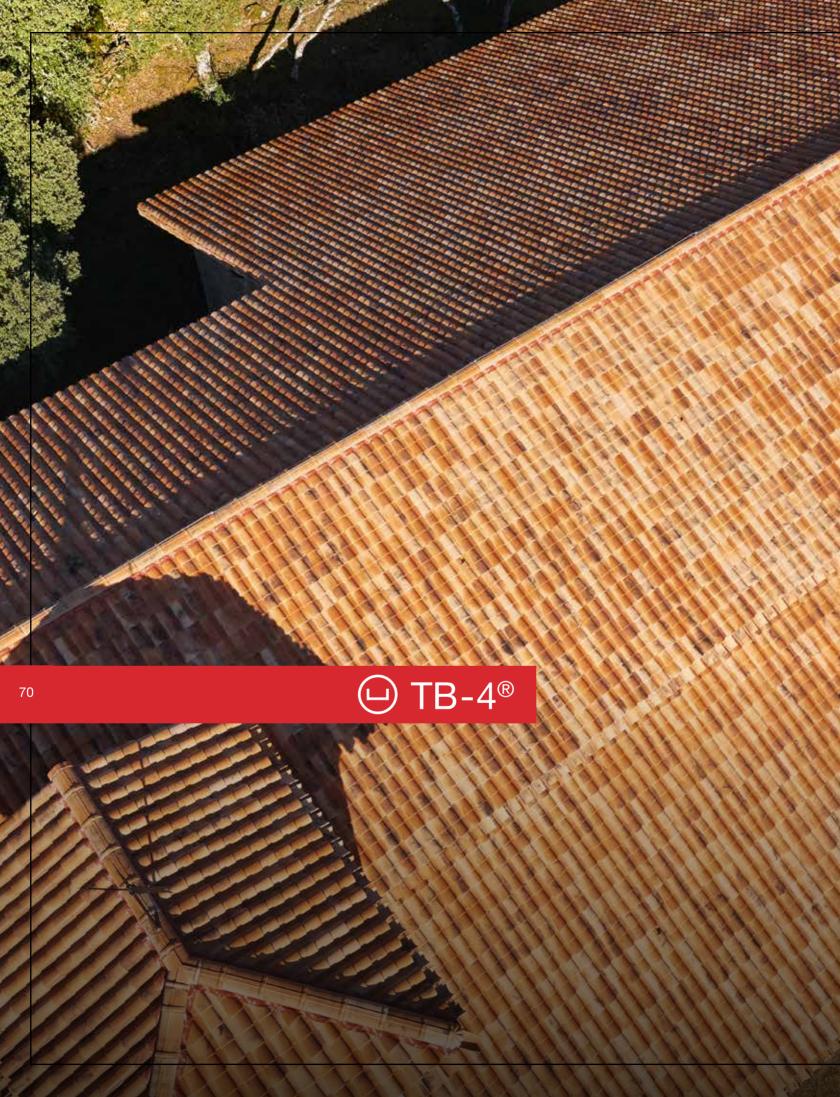
Graphite

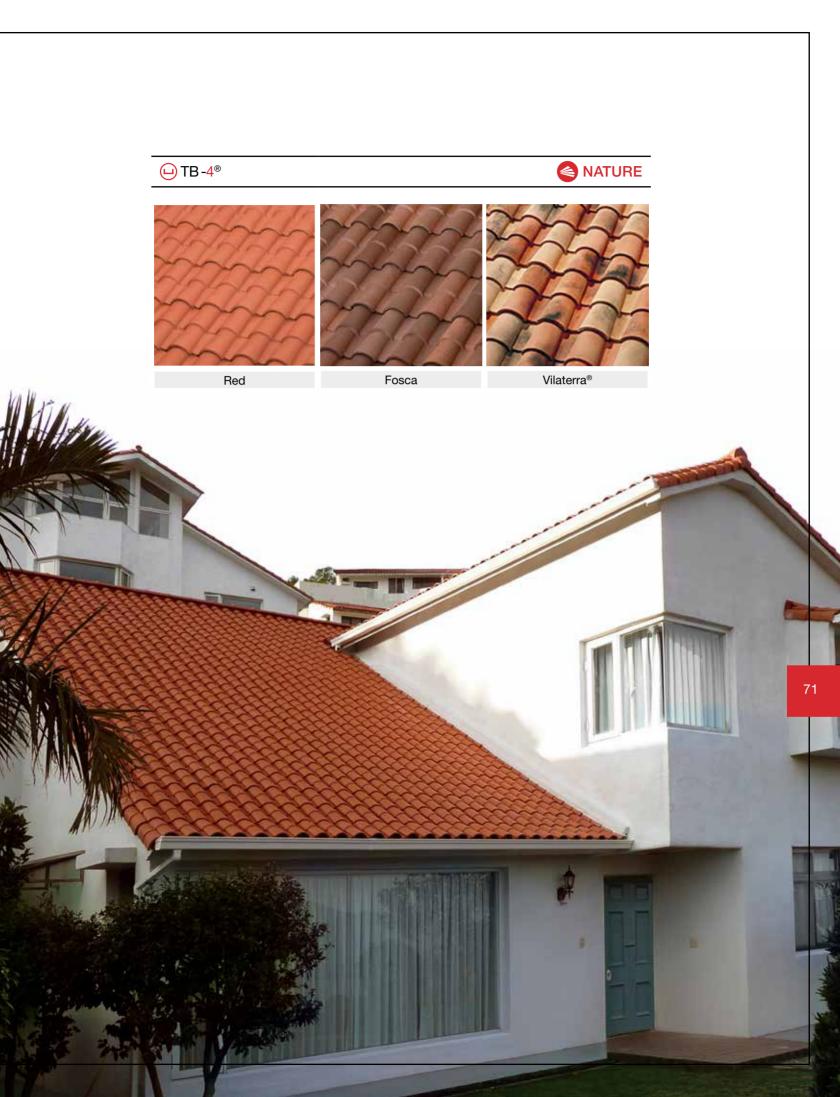














S-INTERLOCKING ROOF TILES



Circular Ridge 43 x 23 x 9 / 2,50 cm. Units/Im / 2,50 Kg. Max. Slope 47%-25.10°



Circular Hip Starter 43 x 20 x 8,5 cm. 2,95 Kg.



Circular 3 Ways 37,5 x 23 x 9,5 cm. 4,20 Kg.



Circular 4 Ways 38,5 x 44,5 x 13,5 cm. 4,50 Kg.



Universal Circular Straight End Cap 7,5 x 24,5 x 27,9 cm. 2,40 Kg.



Universal Circular Straight End Cap 17,5 x 26,7 x 27 cm. 2,80 Kg.



Cover+ Ridge 44,5 x 28,5 x 10,5 cm. 2,50 Units/Im / 3,50 Kg. Max. Slope 47%-25.10°



Cover+ Hip Starter 43,5 x 23 x 8,5 cm. 3,20 Kg.



Cover+3 Ways 32,5 x 42,5 x 14,5 cm. 3,10 Kg.



Cover+4 Ways 40,5 x 40,5 x 14 cm. 4,00 Kg.



Universal Cover+ Straight End Cap 6,5 x 27 x 31 cm. 2,00 Kg.



Universal Cover+ Curved End Cap 14,7 x 27,5 x 29,5 cm. 2,25 Kg.



Universal Under Ridge 24 x 12,2 x 5,6 cm. 5,00 Units/Im (on monopitch) 0.80 Kg.



Universal Straight Edge (Left/Right) 47 x 9 x 17 cm. 2,50 Units/lm 3,00 Kg.



Universal Curved Edge (Left/Right) 47 x 18,7 x 16 cm. 2,50 Units/Im / 3,25 Kg.



Universal Angular Edge (on monopitch) 43 x 14,5 x 14,5 cm. 2,50 Units/Im / 3,00 Kg.



130 Universal Chimney 20,4 Øext-18 Øint x 23,5 cm. 2,15 Kg.



Universal Ventilation Cap 24,5 Øext-22 Øint x 6 cm. 1,70 Kg.



Universal Eave Closure 13,8 x 7,1 x 6,8 cm. 5 Units/lm / 0,60 Kg.





Half TB-12® Roof Tile 44 x 16 x 6,5 cm. 2,50 Units/Im 1,80 Kg.



TB-12® Tile and a Half 43,6 x 36 x 7 cm. 2,50 Units/Im 4,50 Kg.





TB-4® Curved Edge (Left/Right) 43 x 13,5 x 14 cm. 2,50 Units/lm / 2,55 Kg.



Half TB-4® / Pan DecoCurved® TB-4® 44 x 15,5 x 6 cm. 2,5 Units/Im // 1,83 Kg.



(H) TB-10 Tech

Half TB-10 Tech Roof Tile 47,4 x 18 x 7,5 cm. 2,2 Kg.



TB-10 Tech Tile and a Half 47,4 x 41 x 7,5 cm. 5,2 Kg.



2/3 TB-12[®] * 30,5 x 26,5 x 7 cm. 5,00 Units/lm 2,20 Kg.



2/3 Tile and a Half TB-12® * 30 x 36,2 x 7 cm. 3,24 Kg.



One Half TB-4® 25 x 26 x 6 cm. 5 Units/lm / 2,30 Kg.



TB-4® Ventilation 43,5 x 26 x 10 cm. 3,50 Kg.



TB-10 Tech Ventilation 47,4 x 28,2 x 7,5 cm. 3,6 Kg.



TB-10 Tech Chimney Carrier 47,4 x 28,2 x 18 cm. 6 Kg.



TB-12® Ventilation 44 x 26 x 7 cm. 3,20 Kg.



TB-12[®] Chimney Carrier 43,5 x 25,5 x 11 cm. 16 Øext-13 Øint / 4,15 Kg.



TB-4® Chimney Carrier 43,5 x 26 x 18 cm. 16 Øext-13 Øint / 4 Kg.



One Half TB-4® Cover DecoCurved® 25 x 16 x 5,5 cm. 5 Units/Im / 1 Kg.



140 TB-10 Chimney 22,5 Øext-20 Øint x 23,5 cm. 2,35 Kg.



TB-12® Cover DecoCurved® 37 x 17 x 7 cm. 5,00 Units/Im / 2,00 Kg.



TB-12® Pan DecoCurved® 47 x 16 x 7 cm. 5,00 Units/Im / 2,50 Kg.



TB-4® Pan DecoCurved® 46 x 16 x 6 cm. 5,00 Units/Im / 2,60 Kg.





S-interlocking roof tiles are easy to fit and versatile, adaptable to any type of project. Always offering the best results in every building.

















A wide range of finishings make possible to create roofs in harmony with the environment.



















C-50.21 Celler®

⊕ C-45.20

Big size curved roof tiles formats. Made by extrusion process. Provides dimensional continuity with a uniform conical profile.

□ C-40.19

⊕ C-40.15

Small size curved roof tiles. Curved conical profiles with convergent edges, which facilitate the fitting of pans and covers with the same format.

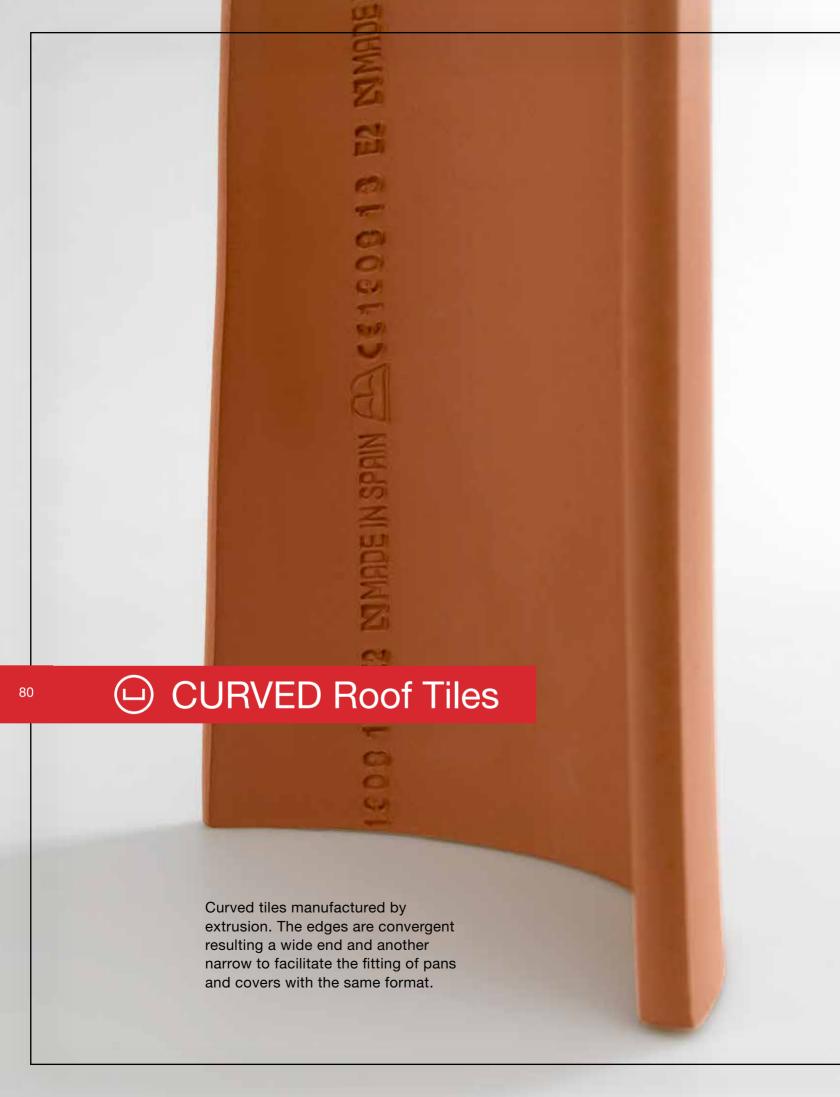
□ STEP CELLER 50/45

Step Celler pan tile. Ideal for dry fitting of big size curved roof tiles.

P.80

P.80

P.86













Weight

Tiles /s.q. m.

C-45.20 Characteristics		
Width	200/160 mm	
Length	450 mm	
Weight	1,95 kg/tile	

2,4 kg/tile

18 units

C-40.19 Characteristics		
Width	180/140 mm	
Length	408 mm	
Weight	1,6 kg/tile	
Tiles /s.q. m. 30 units		



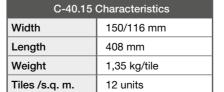








C-45.20 Characteristics		
Width	200/160 mm	
Length	450 mm	
Weight	1,95 kg/tile	
Tiles /s.q. m.	25 units	

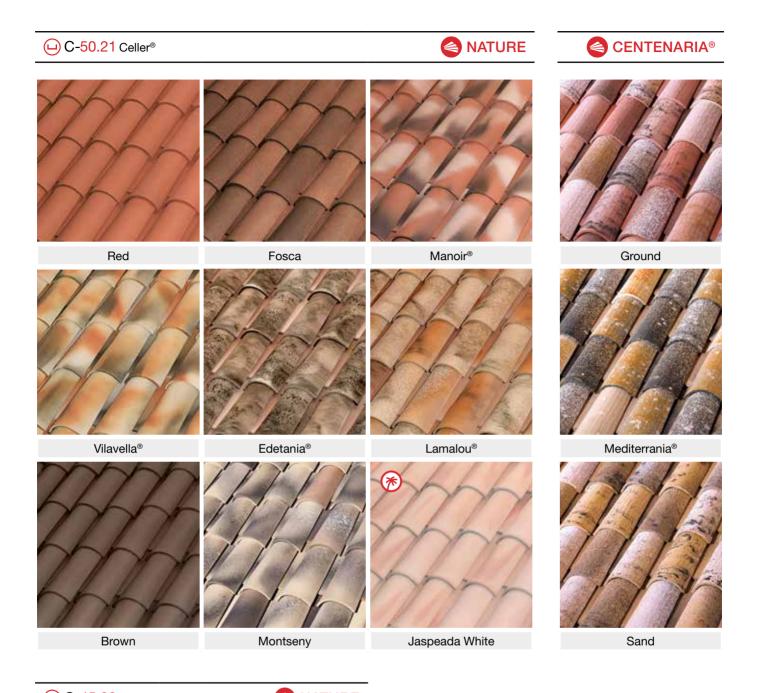




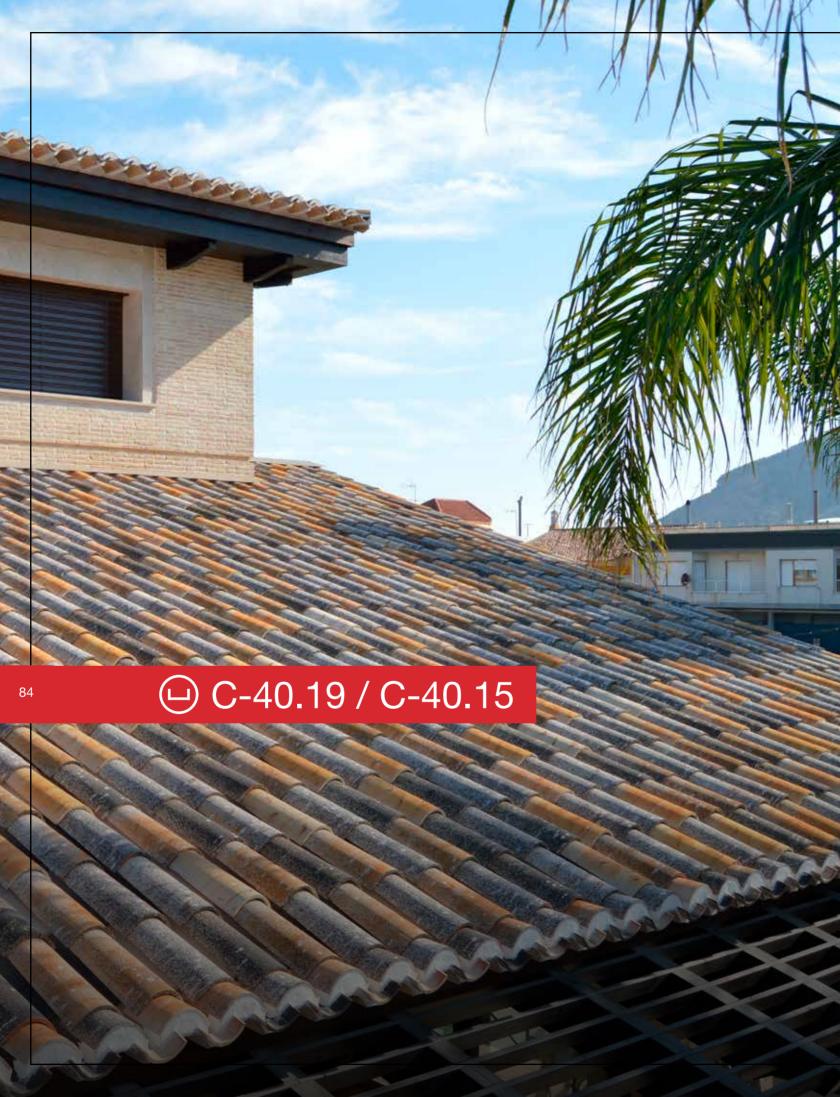


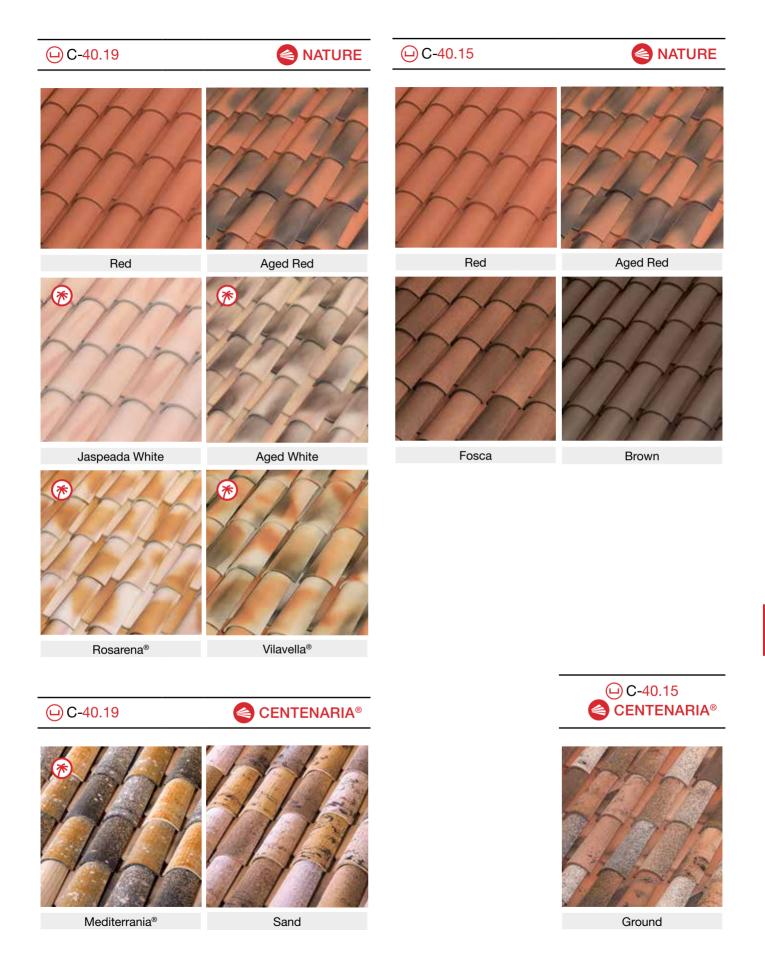
Approximate values: Installation must comply with Code of practice for the design and fixing of roofs with clay roofing tiles for the region and Tejas Borja specifications. A tolerance of 2% is allowed on the dimensions of the roof tiles according to UNE - EN 1024.

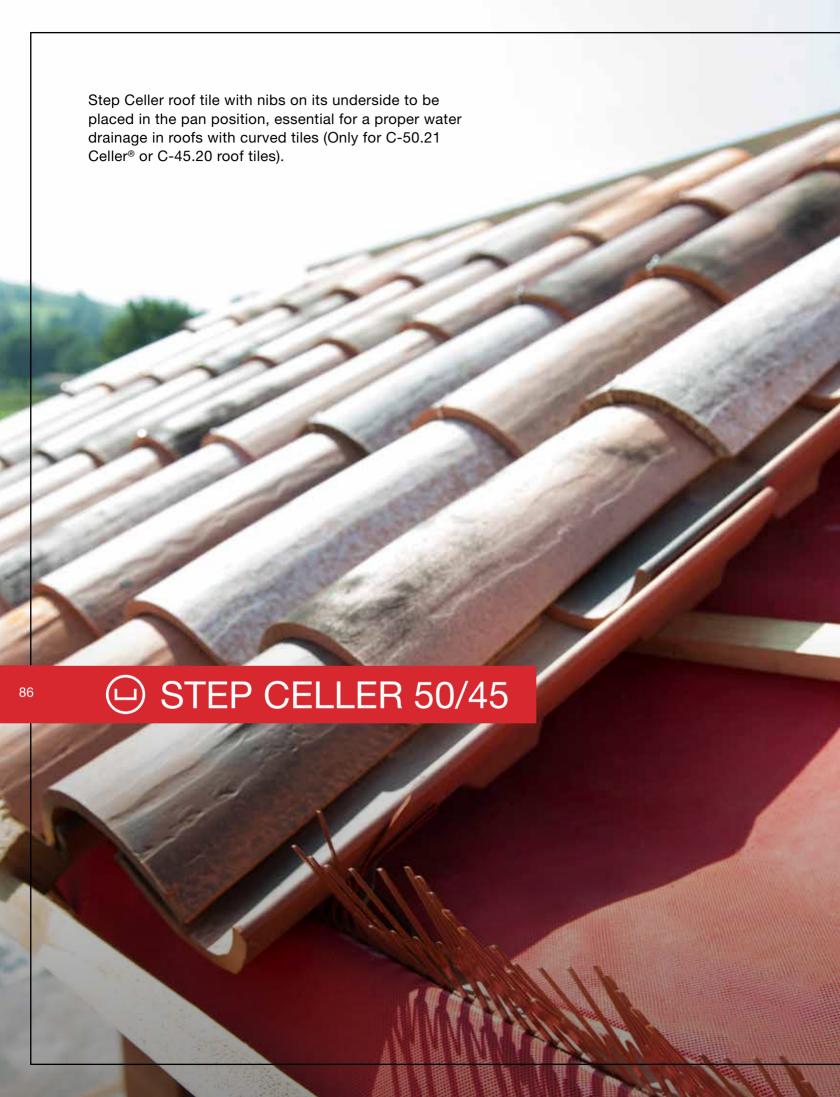


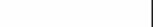






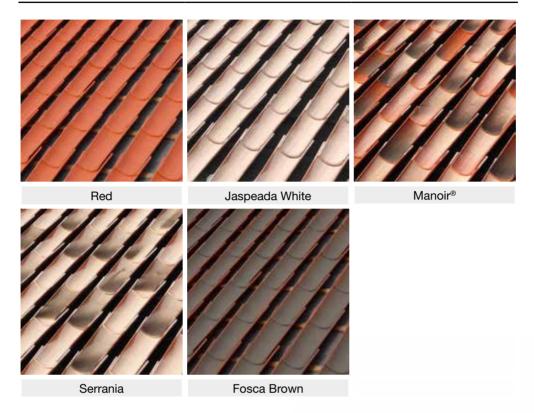








STEP CELLER 50/45



Step Celler 50/45 Manoir® roof tile: Matches with Centenaria® Ground and Manoir®. Step Celler 50/45 Serranía roof tile: Matches with Centenaria® Mediterrània®, Centenaria® Sand, Vilavella®, Edetania®, Lamalou® and Montseny.

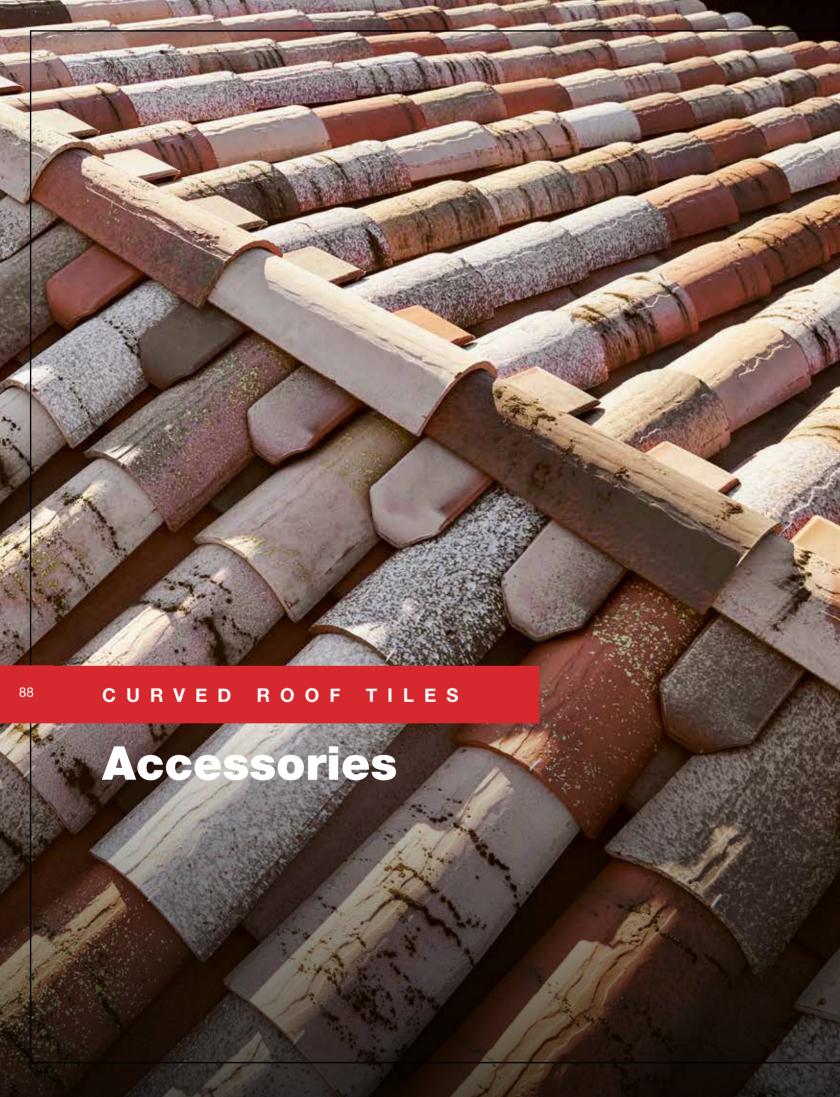
Step Celler 50/45 Fosca roof tile: Matches with Fosca and Brown.





STEP CELLER 50/45 Characteristics		
Width	205/165 mm	
Length	500 mm	
Weight	2,50 kg/tile	
Tiles /s.q. m.	10 units	

Approximate values: If the roof tiles are installed on battens, the useful length must be calculated on site. A tolerance of 2% is allowed on the dimensions of the roof tiles according to UNE - EN 1024.



CURVED ROOF TILES



Universal Under Ridge 24 x 12,2 x 5,6 cm. 5 Units/Im (on monopitch) 0,80 Kg.



130 Universal Chimney 20,4 Øext-18 Øint x 23,5 cm. 2,15 Kg.



Universal Ventilation Cap 24,5 Øext-22 Øint x 6 cm. 1,70 Kg.

☐ C-45.20



C-45.20 Ventilation 45,5 x 20-16 cm. 2,10 Kg.

C-50.21 Celler®



C-50.21 Celler® Hip Starter 50 x 17,5 x 7,5 cm. 2,80 Kg.



C-50.21 Celler® - 3 Ways 32,5 x 30,5 x 15 cm. 2,70 Kg.



C-50.21 Celler® - 4 Ways 40,5 x 37,5 x 15,5 cm. 5,50 Kg.



(L) C-40.19

C-40.19 Ventilation 40,5 x 18-14 cm. 1,70 Kg.



C-50.21 Celler® Chimney Carrier 50 x 21,5-17,5 x 18 cm. / 16 Øext-12 Øint cm. / 3,20 Kg.



C-50.21 Celler® Ventilation 50 x 21 x 17,4 cm. 2,60 Kg.



C-50.21 Celler® Eave Closure 27 x 9,7 a 11 cm. 4 Units/lm / 0,90 Kg.

☐ C-40.15



C-40.15 Ventilation 40,5 x 15 cm. 1,70 Kg.



Booster C-40.15 40,5 x 15 / 7 cm. L Cutted lenght 1,35 Kg.



C-40.15 Under Ridge 21,5 x 11,3 x 5,5 cm. 5,5 Units/Im (on monopitch) 0,62 Kg.





Curved roof tiles are the most known format for pitched roofs, as they can meet any construction need.









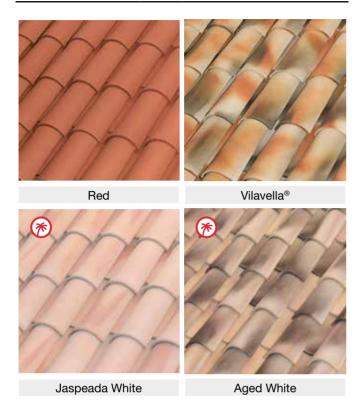




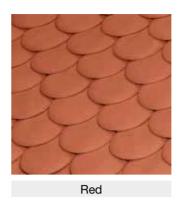








Escama



Escama

ACCESSORIES







"Gallon" Ridge with Ball 25 x 17,5 x 13 / 4,5 cm. Units/lm / 0,85 Kg.



Winged Dragon End Ridge 40 x 15 x 16 cm. 1,95 Kg.



Achantus Leaf End Ridge 32 x 15 x 26,5 cm. 2,19 Kg.







C-25.12 Characteristics		
Width	120/95 mm	
Length	250 mm	
Weight	0,65 kg/tile	
Tiles /s.q. m.	70 units	



	Escama Characteristics	
	Width	150 mm
	Length	195 mm
	Weight	0,40 kg/tile
$C \in$	Tiles /s.q. m.	78 units

Total waterproof of the entire roof surface is required for any pitch.

Approximate values: Installation must comply with Code of practice for the design and fixing of roofs with clay roofing tiles for the region and Tejas Borja specifications. Note: C-25.12 roof tile is considered decorative accessory used to complement the roof. Therefore is Included in AENOR certificates of the main roof tile (see accessories).



DECORATIVE PIECES



Decorative Piece A Ball 21 x 31,5 / 4,30 Kg.



Decorative Piece B Acorn 20,5 x 34 / 3,15 Kg.



Decorative Piece C Pine Cone 21,5 x 43 / 5,20 Kg.



Decorative Piece D Lollipop 16 x 48 / 4,00 Kg.



Decorative Piece E Gallego Lollipop 16 x 37 / 1,54 Kg.



Decorative Piece F Tulip 16 x 31 / 1,90 Kg.



Decorative Piece G Tower 16 x 43 / 1,60 Kg.



Decorative Piece H Pigeon 26 x 29 / Supporting base: 8.5 / 1,25 Kg.

CABALLETES BRETAÑA



Red Bretagna 1 Ridge 44,5 x 27 x 12,5 / 2,3 Units/Im / 3,50 Kg. Max. Slope 87%-40.5°



Brown Bretagna 1 Ridge 44,5 x 27 x 12,5 / 2,3 Units/Im / 3,50 Kg. Max. Slope 87%-40.5°



Red Bretagna 2 Ridge 36,2 x 25,1 x 12,5 / 3 Units/Im / 3,15 Kg. Max. Slope 87%-40.5°



Brown Bretagna 2 Ridge 36,2 x 25,1 x 12,5 / 3 Units/Im / 3,15 Kg. Max. Slope 87%-40.5°



Bretagna 2 Hip Starter Lugo Slate 36,2 x 25,1 x 12,5 / 3 Units/Im / 3,15 Kg. Max. Slope 87%-40.5°



Bretagna 2 Hip Starter Lugo Slate 42,8 x 25 x 12,5 / 3,45 Kg. Max. Slope 87%-40.5°



Bretagna 2 Straight End Cap Lugo Slate 6 x 25 x 27 / 2,40 Kg. Max. Slope 87%-40.5°







TB-12®/ TB-4® / ALICANTINA-12 / CURVED Roof Tiles / ESCAMA

GLAZED



TAMIZADOS

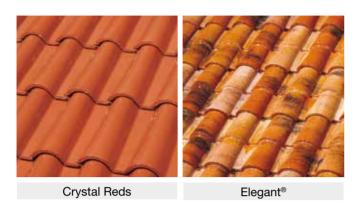




TB-12®/ TB-4® / ALICANTINA-12 / CURVED Roof Tiles / ESCAMA

CRYSTAL

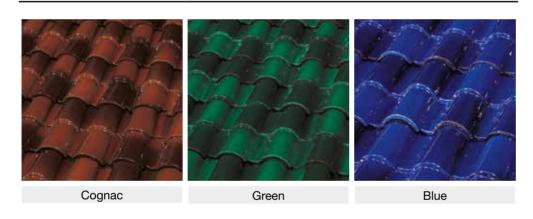
METALLICS





TB-4®

IRISADOS



INSPIRATION



^{**} The finishes: White, Copper and Lead finishes are produced only on 1 side colour. Elegant® finish, it is produced only in TB-4®. C-45.20 Roof Tile is not available in BORJAdecor®. White Glazed finish, is available only in ALICANTINA-12.

CRAKLE (surface crackling), The superficial crackling can appear in some tiles with glazed application, concerning only the aesthetics and not the structure of the tiles, by what in the Standard regulation EN 1304 it is not considered to be a defect.





Unique roofs in their surroundings due to all colours and sparkles. Special combinations and finishings for distinctive homes.

















The beauty of BorjaDECOR® range is unchangeable over the years.













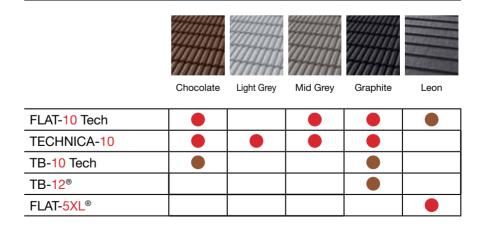


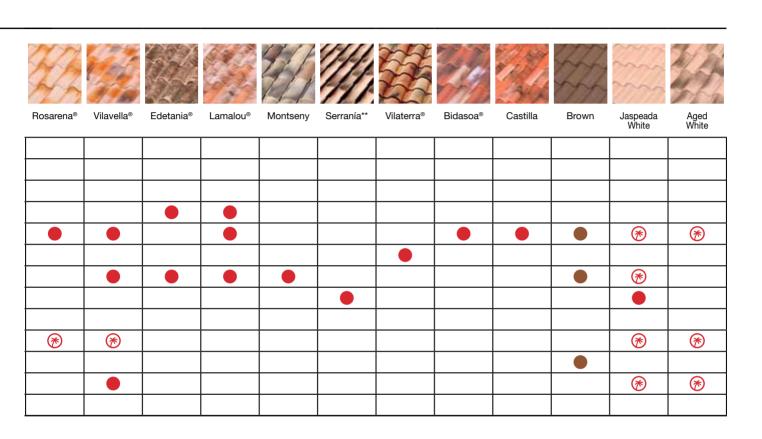


NATURE

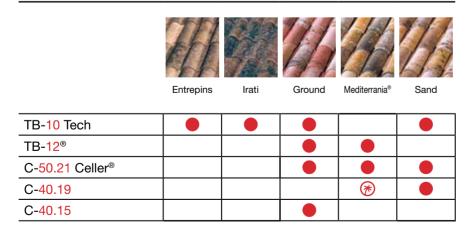


PLAIN COLOUR





CENTENARIA®



Centenaria finishes in TB-10 Tech format does not include texture surface.





Ceramic SLATE



Nepal Orange



Paris Ocre

Ceramic STONE



Austin Grey



Denver Gold



Denver Iris

Ceramic CEMENT



Sidney Ghaphite

Ceramic OXIDE





Tokyo Copper

Ceramic COTTO



Ibiza Pink

Ceramic MARBLE



Roma Dark

Ceramic WOOD



Toronto Oak

FLAT-5XL®



FLAT-10 Tech



Borja DECOR

GLAZED

ALICANTINA-12

C-50.21 Celler®

TALÓN 50/45

C-40.19 C-40.15 C-25.12

ESCAMA

TB-12®

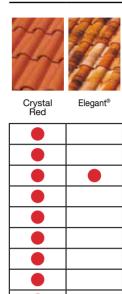
TB-4®

C-40.19 C-40.15 C-25.12 **ESCAMA**

TB-12® TB-4®

Cobalt Blue Carmin White Cognac Green * *

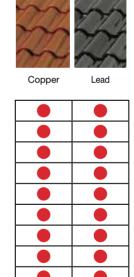
CRYSTAL



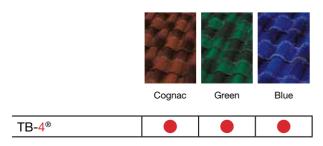
TAMIZADOS



METALLICS

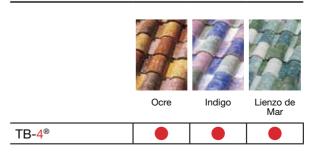


IRISADOS



INSPIRATION

€









BORJATHERM

BORJATHERM panels are light-weight and easy handling, although to very easy to install. These panels make unnecessary most of the products which used to be essential for the construction of a ventilated roof because the panel itself, installed directly onto the rafters, beams or inclined slabs, performs all the functions of these products in one.

The BORJATHERM insulated panels are made of a central core of polyurethane foam (a material with high-performance insulating properties), surrounded by a protective layer of aluminium foil and finished with an integrated Alu-Zinc batten to enable the fixing of the roof tiles.

As they are installed onto the existing roof structure, the panels form an unbroken external layer of insulation, completely free of thermal bridges.

This system proves the existence of long-lasting insulation which is quick and easy to install, and which provides maximum energy efficiency to the roof, offering significant financial savings compared to other roof insulation systems.



Possibility to install BORJATHERM system on every type of roofing structure: Wood Structure Ceramic brick walls Concrete slabs Pre-stressed joists



When installed according to our installation guide and with a minimum pitch of 30% (17°), **BORJATHERM** is an excelent under roof tile waterproofing, preventing possible accidental or damp caused by water leakage. Although, once the panels are installed on the roof slope, they make a first waterproofing layer that avoids the interior to get wet in case of rain during installation.



No batten pre-setting needed. The installation is done with two easy steps:

- Fix the panels to the structure and sealing of the joints.
- Place the roof tiles on the integrated battens.

With this roofing system the labor cost can be improved up to 40%.



The best isolation values in the market

Polyurethane foam is a solid and uniform material with a high insulating capacity thanks to its low thermal conductivity. BORJATHERM panels are coated with aluminium, which combined to the PUR foam becomes one of the best insulating materials in the building industry and guarantees the best thermal performance possible, along with being extremely light-weight, long lasting and thermally constant (-50/+100°C), which makes it ideal for use under roof tiles.

Thermal conductivity of the main insulation products in buildings.

Insulating Material	BORJATHERM	XPS	MINERAL WOOL
Thermal conductivity λ	0,022	0,034 - 0,036	0,04

Thicknesses of different insulating materials required to obtain an insulation value of R = 2,74 m²K/W

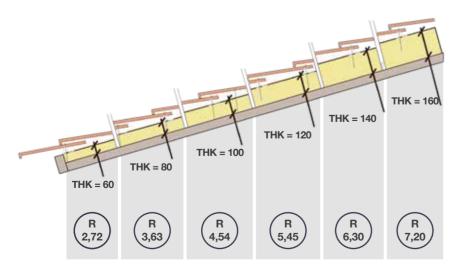
Insulating Material	Required thickness		
BORJATHERM coated polyurethane	6 cm		
Non-coated polyurethane	8 cm		
Polystyrene XPS	10 cm		
Mineral wool	11 cm		

Thermal values obtained for each available thickness of **BORJATHERM** panels.

Thickness	60 mm	80 mm	100 mm	120 mm	140 mm	160 mm
Heat resistance R (m² • K / W)	2,72	3,63	4,54	5,45	6,30	7,20
U (W / m ² • K)	0,37	0,27	0,22	0,18	0,16	0,14







The wide range of thicknesses available in the **BORJATHERM** line, allows to get the needed thermal insulation for any type of house, environment or location, keeping the warm during winter and protecting from heat during hot season.

PANELS ((LENGHT 3.980 MM) *	BATTEN DISTANCE			
BORJATHERM PANEL 60	370 mm	395 mm		
BORJATHERM PANEL 80	370 mm	395 mm		
BORJATHERM PANEL 100	370 mm	395 mm		
BORJATHERM PANEL 120	370 mm	395 mm		
BORJATHERM PANEL 140	370 mm	395 mm		
BORJATHERM PANEL 160	370 mm	395 mm		

^{*} Available for TB-12®, TB-10 Tech, TB-4 $^{\circ}$, FLAT-10 Tech, FLAT-5XL $^{\circ}$, ALICANTINA-12, TECHNICA-10, STEP CELLER 50/45.

BORJATHERM ROOF COMPONENTS



Ventilated BORJATHERM Extra Batten



Butyl Adhesive Sealing Band



PU Roofing Foam



Wood slope-starting Battens (Various thicknesess)



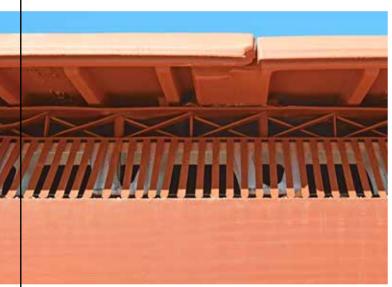
PU Adhesive and Sealant



BORJATHERM screws (different models available)







BORJATHERM roofing system has been installed in many projects around the world because of the good performing parameters in different types of constructions and climatic conditions.

For quite every type of roof slope and with any type of roof tile, BORJATHERM is the best solution to protect the house.













BORJASYSTEM

A BORJASYSTEM ventilated roof, installed together with the corresponding layer of thermal insulation, improves the energy efficiency of the roof, playing an important role in reducing the heat which passes through the covering to inside the home.

This roofing system minimizes the chances of condensation forming in the thermal insulation and the materials of the exterior walls and roof, thanks to the use of waterproof and breathable membranes and the continuous circulation of air between the supporting structure and the tiles.

The incorrect use of mortar causes the majority of problems experienced with sloping ceramic tile roofs:

- Damp and leaks.
- Structural overloading.
- Cracks and breaks in parts and joints.
- Lack of adequate ventilation.

The BORJASYSTEM installation system defines the criteria to be followed for a complete dry installation of the roof without the use of mortar.

120



GREATER EFFICIENCY

increasing thermal and acoustic insulation, reducing energy consumption.



>50% LIGHTER

suitable for use in any climate.



BETTER VENTILATION

than that provided by other installation systems.



IDEAL FOR RESTORATION

of historic buildings due to the similarity of the materials to those used in traditional systems.



PREVENTS CONDENSATION

caused by moisture in the roof (Spanish Technical Code, CTE DB-H1).



NATURAL PRODUCTS

wood and ceramics free from asbestos or any other toxic substances.



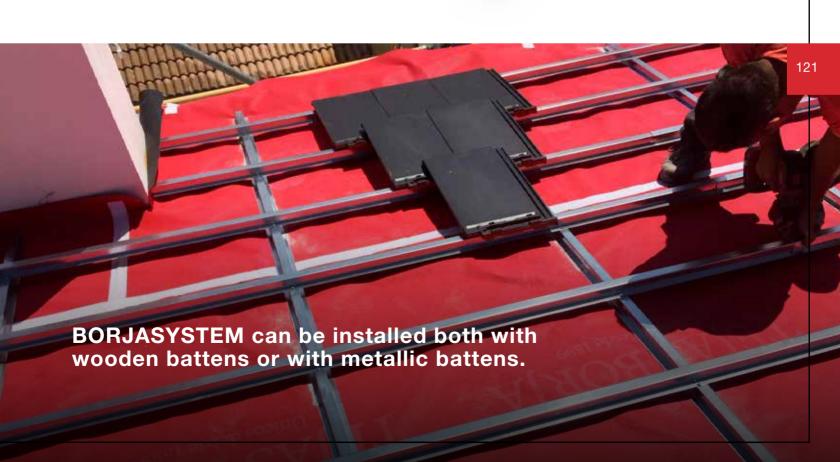
FROST RESISTANT

suitable for use in any climate.



INSTALLATION GUARANTEE

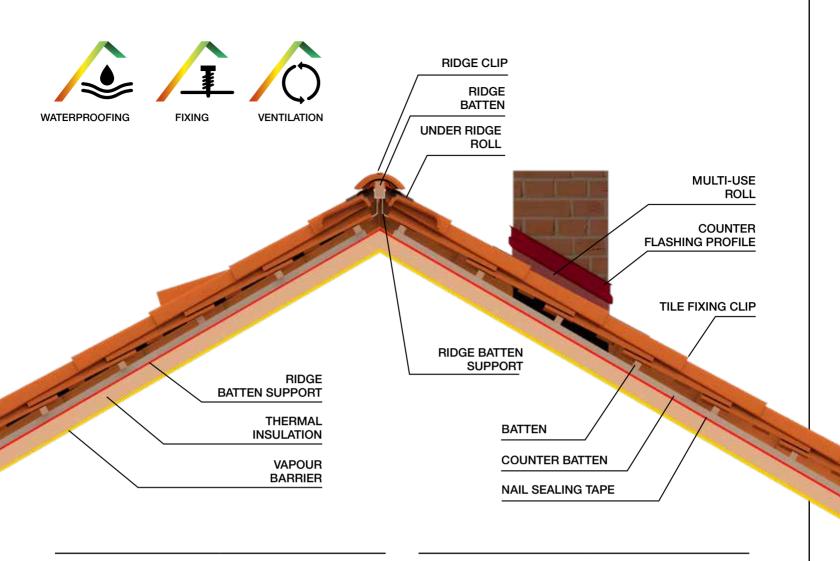
for our tiles.





WATERPROOFING









PIR Aluminium coated insulation

XPS Polystyrene insulation

BATTENS



Metallic Batten 30x30



Wood Batten 40x30

ROOF COMPONENTS



Roof Valley Alu Flashing



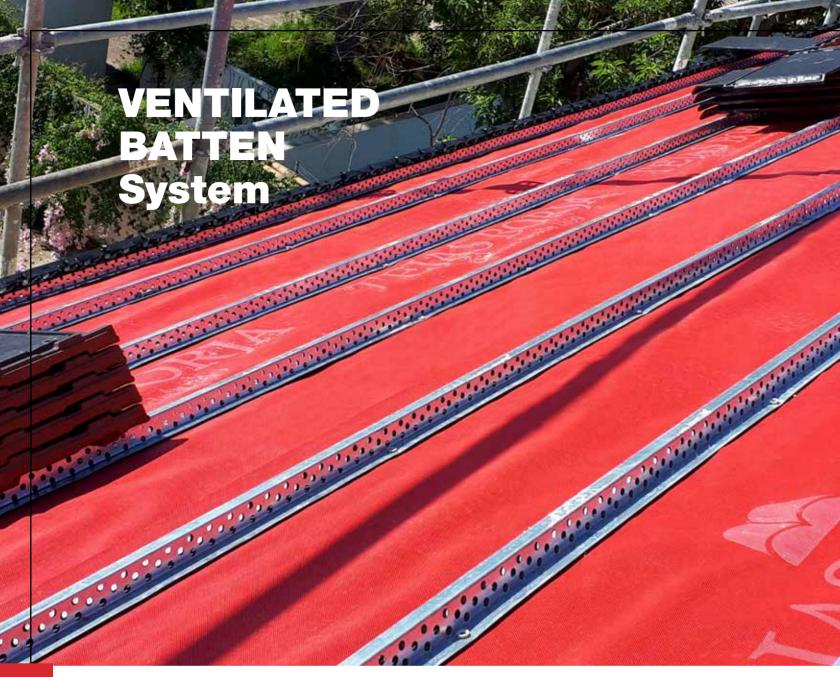
Glass TB-12® Roof Tile



Glass ALICANTINA-12 Roof Tile



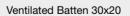
BORJASYSTEM screws (different models available)



This type of installation is based on the principles of ventilated dry fixing BORJASYSTEM, but instead of two layers of battens, it is only installed with one of these. It can be done thanks to the perforated metallic batten that permits the air circulation under the roof tiles.

ROOF COMPONENTS VENTILATED BATTEN SYSTEM







Ventilated Batten Screws (different types available)

Corrugated Sheet SYSTEM

The installation of the roof tiles over bituminous or fiberciment corrugated sheets makes what is called a "double deck" roof. This system allows to install at very low pitches, up to 15%.

The system can be addapted to any type of roof tile. In case of curved tiles, they get fixed with special adhesives and in case of interlocking or flat tiles, a batten has to be installed over the sheets.

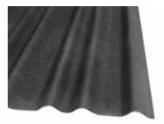
ROOF COMPONENTS VENTILATED BATTEN SYSTEM



Fiber ciment sheet 234 reinforced



Corrugated bitumen sheet for tiles with battens



Corrugated bitumen sheet 235



Butyl Flashing Band



PVC Batten 40x20



Corrugated System Screws (different types available)

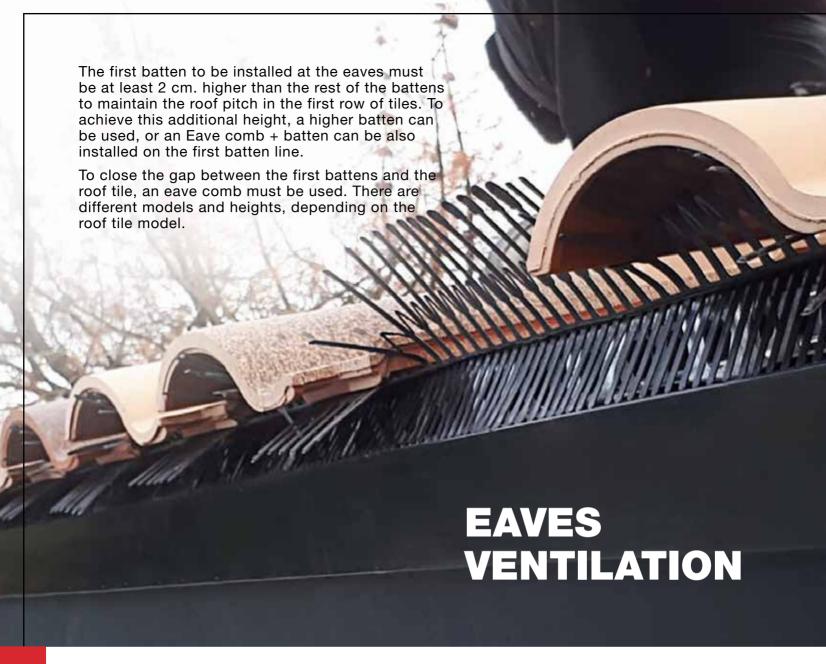


PU Roofing Foam



PU Foam Applicator





EAVE VENTILATION ROOF COMPONENTS



Ventilation comb 100 mm



Ventilation comb 60 mm



Bird stop grate 80 mm



Batten + ventilation comb (Batten 30 mm; comb 60 mm)

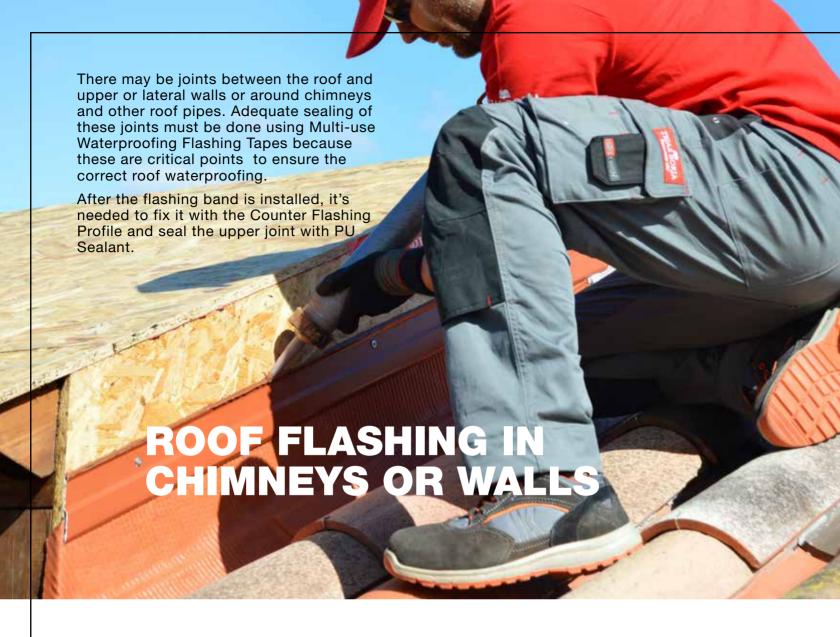
RIDGE AND HIP VENTILATION

The ridge batten gets fixed over the ridge batten supports, which are installed over the main roof battens. Ridge tapes are installed over the ridge batten to seal and ventilate the ridge. Once centred, the tape is fixed to the ridge using staples or nails at various points along the length of the batten. To waterproof the joint, the ridge tapes have two butyl adhesive strips on the underside on both edges of the tape. Finally the ridge pieces are installed, fixed mechanically to the ridge batten with screws or ridge clamps.

RIDGE AND HIP VENTILATION ROOF COMPONENTS







WATERPROOFING OF ENCOUNTERS



FIXING CLIPS

Additionally to the fixing screws and roofing adhesives, Tejas Borja presents a range of fixing clips to enhance the roof safety in case of storms or heavy winds.

ROOF TILE FIXING CLIPS



Fixing clip for S-interloocking and flat roof tile



Curved roof tile fixing clip



Flat roof tile fixing clip (Wood batten)



INFORMATION

Ceramic roof tiles have been traditionally used in roofing for centuries, providing protection from the weather and adding aesthetic value to the roof of any type of building.

Originally designed to cover houses, roofs are now used for new purposes in buildings, increasingly to protect building facades.

Ceramic tiles are a natural, durable and environmentally friendly product, as they do not harm the environment. At Tejas Borja we look after the product, monitoring the process at all stages from the rigorous selection of our clays to the final stage of the manufacturing process.

CHARACTERISTICS OF CERAMIC TILES

Our ceramic roof tiles easily meet all requirements associated with mechanical resistance, flexion, durability, waterproofing and thermal insulation. We also try to manufacture products that are easy to install on site, in order to make life easier for installers.

RESISTANCE

The mechanical resistance of roof tiles is of vital importance, given that people will occasionally have to walk on them in order to perform repairs or maintenance. For this reason, Tejas Borja roof tiles are the most resistant to flexion among those of its rivals.

DURABILITY

The durability of tiles is of great importance, due to the fact that they will be exposed directly to the elements without any additional protection.

Our tiles are guaranteed to perform well in frost and in accordance with current regulations (UNE - EN 1304, UNE - EN 539-1, UNE - EN 539-2). However, to ensure that a roof is effective and has a long useful life, it should be remembered that its quality will depend both on the tiles and the quality of the installation. For this reason, tiles must be installed in accordance with UNE - 136020 and our specifications.

Due to the implementation of new decorative technologies, Tejas Borja submits all its new products to additional certified tests to ensure along lasting performance both technical and aesthetic. All tests are performed by certified laboratories which submit the roof tiles to different ageing tests such as Light exposure as per ASTM G154-6, wear resistance as per UNE 138001:2008 IN, chemical Resistance as per ISO 10545-13 and Freeze/Thaw Resistance as per UNE-EN 1344:2002

WATERPROOFING

To prevent humidity as a result of condensation and leaks in the roof, the inner face of the tiles must have adequate ventilation. This ventilation will generate a continuous current of air, so as to remove moisture from the tiles and, in doing so, preventing them from being saturated with water.

In addition, an appropriate gradient will allow water to escape quickly and help avoid saturation. It is essential that minimum gradient requirements (determined as a function of weather conditions in the area where the project is located and the length of the skirts) be met. Under no circumstances can this gradient be less than 30%.

THERMAL INSULATION

Due to the importance of thermal insulation, both from a comfort and an energy-saving point of view, the performance of the materials chosen for the roof is relevant. In this regard, tests carried out at specialised institutions reveal that ceramic tiles perform best in terms of these parameters when compared to other roofing materials used for this purpose.

INSTALLATION

To ensure the good performance of our products installed on site and in order to meet the basic requirements referred to above, it is essential that the tiling be installed in accordance with their technical specifications.

The method of installation is the responsibility of the installer, and must comply with regulations in force. In addition, it should be remembered that for other unique work necessary in some roofs and which has not been foreseen in our instructions, good building practice for the installation must be observed at all times and the instructions contained in the relevant rules in force must be adhered to. In the event of any questions, contact our Technical Department.

You can find more information on the correct installation of ceramic roof tiles on our website, www.tejasborja.com

SAFETY CONDITIONS IN THE WORKPLACE

- All general provisions applicable in the general ordinance on workplace hygiene and safety will be adhered to.
- Materials collected in the roof will be disposed of. When necessary, the load will be distributed using slabs or elements that serve a similar purpose.
- No work will be done close to high-voltage power lines.
- Work will be suspended in the event of rain, snow or wind at speeds of more than 50 km/h. In the case
 of the latter, materials and tools that can be removed will be removed.
- Always use the necessary EPIs depending on each case, and in accordance with regulations in force.

DIFFERENCES IN TONE AND SUPERFICIAL ASPECTS OF THE ROOF TILES

(UNE - EN 1304)

Variations in tones inherent to the ceramic roof tile production process comply with regulations in force.

"Difference in tone" refers to variation in tone within the same colour and, by extension, different colours within the same production process. For monochromatic tiles, variations in tone inherent to the ceramic tile production process are tolerated in accordance with current regulations. Complaints are not accepted on the grounds of such variations. For more information, confirm with the plant before installation.

Indeed, during the production of ceramic tiles and their respective accessories, slight variations in tone can occur, which, being natural, can accentuate a very pleasant aesthetic impact if certain precautions are taken.

At all times, we recommend that before installation, tiles from different pallets allocated to the project be mixed in together so that, when they are installed, the various tones are as widely dispersed as possible.

In addition, during the production, packaging, handling and carriage of the ceramic tiles, scratches, abrasions or signs of friction can appear on the surface of the tiles. Together with possible creases in the clay, these features cannot be considered defects due to the fact that they do not affect the fundamental mechanics of the tiles (RESISTANCE, DURABILITY, WATERPROOFING AND THERMAL INSULATION), but rather are an aesthetic defect.

CRAQUELURE (superficial cracking)

Superficial microcracking can appear on some tiles with the application of enamels, producing only an aesthetic effect and not the structure of the tiles. As a result, such microcracking is not considered a defect under EN 1304.

EFFLORESCENCE

Some tiles can have a thin white film on them that becomes apparent shortly after installation. This can have a varying effect on the normal colour of the surface. In most cases, this efflorescence is temporary and due to soluble salts and impurities found in water, cement and aggregates in mortar, which will gradually disappear from the surface with precipitation and will not affect the functional characteristics of the tiles showing signs of efflorescence.

However, the weather will produce slight changes in tone over time.

ROOF MAINTENANCE

The accumulation of micro-organisms, moss, plants and other detritus on tiles, valley beams and gutters can hinder the movement of rainwater and the drying of roof tiles. This can pose a problem and cause leaks.

Roof tiles are made from a natural material. As a result, they must not be treated with any product that could alter their reaction to adverse weather conditions.

It is recommended that tiling and all of its parts, ceramics, insulation, evacuation channels, joints and support structure be inspected on a periodical basis. Whenever necessary, damaged elements must be repaired or replaced. All ceramic parts and evacuation channels must be cleared of any detritus and moss that has accumulated, so that drainage systems are not obstructed. Under the TBC (Technical Building Code), periodical inspections must be carried out every 1 to 3 years, depending on the component.



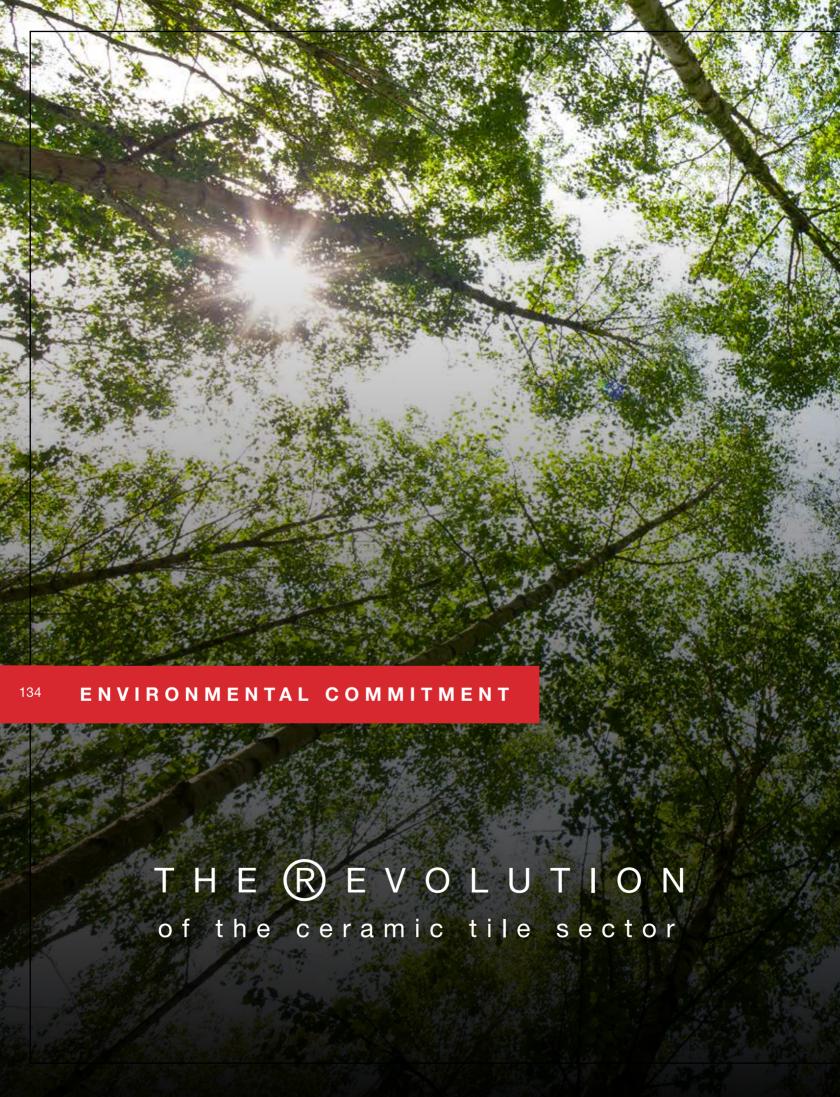
APPLICABLE CERTIFICATION STANDARDS

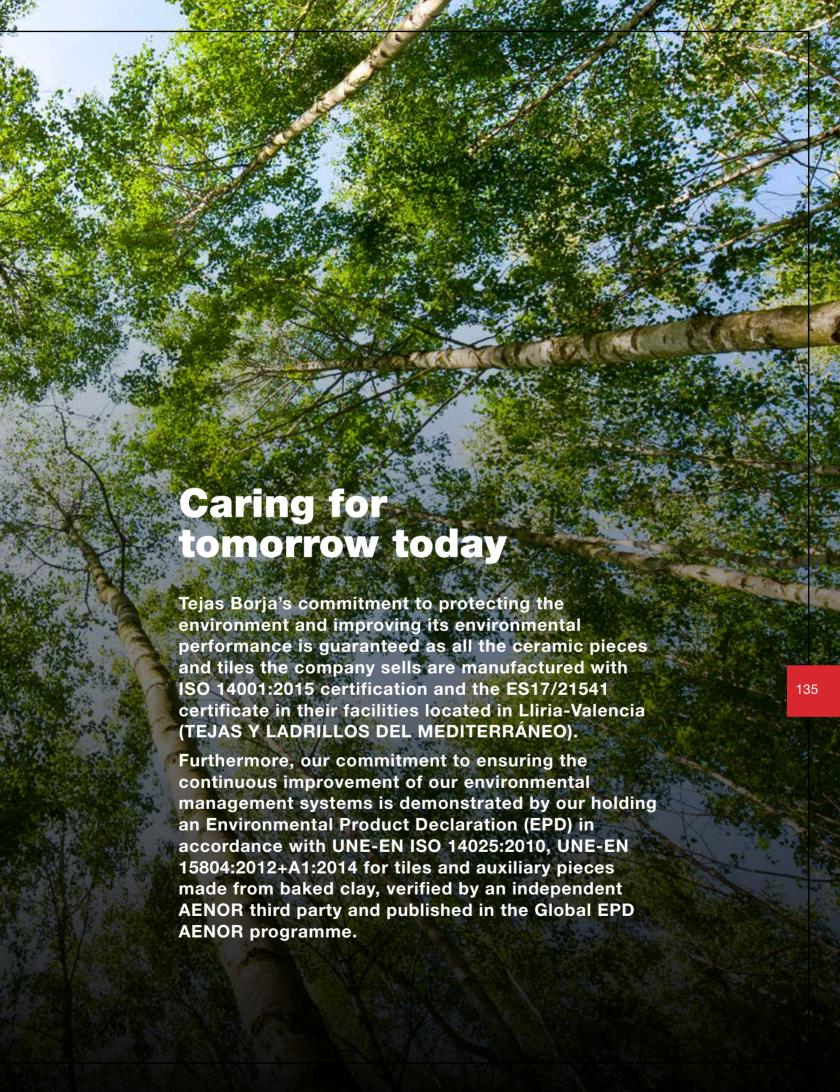
Tejas Borja complies with the following norms and certification standards:

- EN 1304. Clay roofing tiles for discontinuous laying. Product definitions and specifications.
- EN 1024. Geometric characteristics.
- EN 998-2. Specification for mortar for masonry. Part 2: Masonry mortar.
- EN 539-1. Impermeability (test conducted in accordance with Method 1 and Class 1).
- EN 539-2. (Frosting) Frost resistance (test conducted in accordance with C and E method).
- EN 538. Flexural strength.
- TBC (Technical Building Code).
- UNE 136020. Code of practice for the design and installation of roofs made from ceramic roofing tiles.
- RP 34.02. Specific AENOR regulations for tiles and auxiliary parts made from clay.
- RP 34.00. Specific AENOR regulations for ceramic materials made from clay.
- ISO 9001. Quality management systems. Requisites.
- · CE marking.
- ASTM C1167. Standard specifications for clay roof tiles.
- Miami Dade. Test procedure for wind and wind driver rain resistance of discontinuous roof system.
- DTU on building works.
 - NF P 31-201/202 (DTU 40.21) building works / Roof coverings made of slipping or grooved clay tiles.
 - NF P 31-201 (DTU 40.22) building works / Roof covering made from hollow terracota tiles.
- NF 063 certification benchmark. Clay roofing tiles. Certification benchmark for clay roofing tiles.

This catalogue has been published taking into account the latest rules, Codes and Guides as at January 2019. Tejas Borja S.A.U. reserves the right to change the characteristics and availability of products without prior notice.







THE REVOLUTION of the ceramic tile sector

Tejas Borja S.A.U. reserves the right to change the characteristics and availability of the products and colours displayed in this catalogue without prior notice. The colours of the pieces shown may vary slightly from the originals. The settings shown in this catalogue are decorative suggestions for publicity purposes only and in real installations the fitting instructions published by Tejas Borja must be followed.

