TOGNANA

SUPEROOF SINCE 1820

Proudly made in Italy

Authentic Italian Clay Roof Tile

A journey of almost 2 centuries...

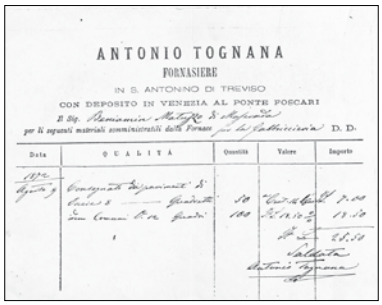
We are proud to work with 65 Professional Distributors who well know the products and that have the knowledge of the laying services.
The use of the containers by sea gives us the possibility to reach easily, and also with a reasonable cost, 65 different Countries in all around the world.

TOGNANA
SUPEROOF SINCE 1820

Our History

A legal dispute involving Antonio Tognana "brickyard owner" and the concessionaire of the Sile wharves in the village of S. Antonino near Treviso provides the evidence that our roots are even more ancient than we thought.
The historian, professor Camillo Pavan, while gathering material for a book on the Sile river, which was a fundamental waterway for the development of the Marquisate of Treviso, uncovered this case regarding a dispute over payment of rental for the use of the wharf from 1820 to 1830, an unusual way indeed to discover that the Tognana plant was already shipping goods in 1820 along the river to Venice.

The Tognana kiln at the end of 19th century



ANTONIO TOGNANA
FORNASIERE
IN S. ANTONINO DI TREVISO
CON DEPOSITO IN VENEZIA AL PONTE FOSCARI

Data	QUALITÀ	Quantità	Valore	Importo

An invoice dated 1872 by Antonio Tognana, kiln owner

It was only later, in fact, that the founder of the company would establish a warehouse in Venice at Foscari bridge. Thus we suddenly find ourselves with a weightier history and an even greater responsibility to guarantee a significant future to the company and all those: our clients, our employees and our suppliers, who continue to help us keep our position of leadership on the market.
Over these 196 years we have always engaged with serious commitment, enthusiasm and a strong sense of responsibility, in the business of producing roofing.
The quality of the clays from the Veneto plain, carefully selected and mixed with the continuous support of a laboratory, are the indispensable basis to obtain a life-long product, with no need for maintenance and great esthetical quality.
Our attention to the demands of the market have enabled us to develop a complete range of antique tiles produced in a single-firing technique using environmentally friendly ceramic glazes.
The production process for terracotta, is completely controlled in all phases by a process calculator, which ensures compliance with pre-set standards.
By making appropriate use of the information gathered via computer, the human resources involved in the production cycle are able to optimize results with products that meet the highest standards.
Flexural strength, water repellence, flatness and appearance are tested every day according to a programmed sampling system, to ensure that they meet standards.
There is, however, another important element that confirms the quality of Tognana Roof Tiles; 196 years of dedicated service! There are few companies that can boast a history that long, not only in Italy but anywhere in the world.

Mold and Press department

The future of your roof is rooted in the past

Healdsburg, California (USA)

ClubHotel Riu Tikida Dunas, Agadir (Morocco)

Project: JUMEIRA GOLF ESTATE – WILD WATER VILLAS (35 VILLAS)

Client : M/S. DAMAC, DUBAI

Project: JUMEIRA GOLF ESTATE – WILD WATER VILLAS (35 VILLAS) Client : M/S. DAMAC, DUBAI

Project: 300 VILLAS, MIRDIFF, DUBAI Consultant: King

Project: MAQTA VILLAGE, ABU DHABI Consultant: Rootage Arch

Project: RITZ CARLTON - GRAND CANAL, ABU DHABI Consultant: OTAK Project Manager: MACE

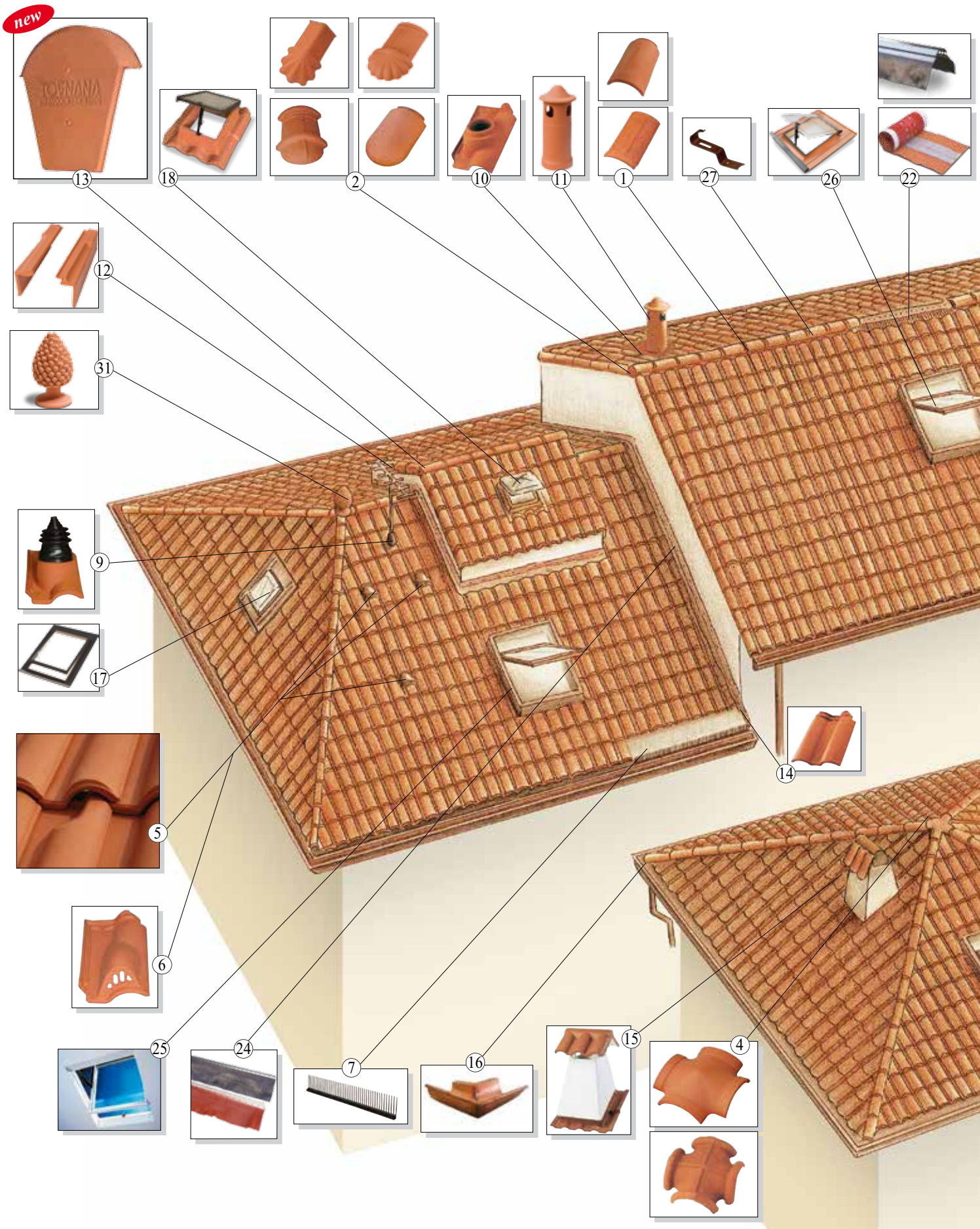
Project: INTERNATIONAL CITY, DUBAI Consultant: Dar Al Handasah

Tognanasuperoof
since 1820 proudly made in Italy

A whole new roof is a must.

A modern roof requires something
more than keeping the water outside.
A complete roof system **offers a high value.**
Tognanasuperoof has been operating in the roofing tiles
business since 1820 and is actually managed
by the seventh generation of Tognana Family .
We offer pitched roof in clay and concrete tiles
in all Europe and in many other Countries.
We recommend waterproof underlay at high transpiration, rain
gutter valley, ventilated under-ridge system, chimney, fittings,
windows and we offer many accessories
to realize a perfect roof system.
In our catalogue we have also **the cool roof system**
that can reduce the temperature below the tiles
and reduces the use and cost of the air conditioning.
The main object is to protect, with our systems,
buildings and houses against damage
caused by natural forces.

Venice (ITALY)


new
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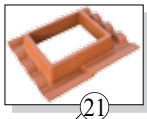
OF ROOFING RANGE

new

On page 72 the new certificate CERTIMAC:
resistance for **625 defrost/frost cycles**


Joist holder

COOL ROOF PROGRAM
FOR GREEN ENERGY IMPROVEMENT

Introduction

Cool roofs can help many building owners save money while protecting the environment.

This guidebook has been created to help you understand how cool roofs work, what kinds of cool roof options are available, and how to determine if cool roofing is appropriate for your building.

If you are planning a new building or replacing or restoring an existing roof, cool roofs should be considered as an energy efficiency option. Cool roof products exist for virtually every kind of roof.

Just as wearing light-colored clothing can help keep a person cool on a sunny day, cool roofs use solar-reflective surfaces to maintain lower roof temperatures.

Traditional dark roofs can reach temperatures of 150ºF (66ºC) or more in the summer sun.

A cool roof under the same conditions could stay more than 50°F (28ºC) cooler, Figure 1.

Figure 1: Dark vs. Cool Roof Surface Temperatures

A dark roof (left) becomes much hotter than a cool white roof (right) on a sunny afternoon.

Why Use Cool Roofs

A cool roof can be desirable to a building owner for several reasons. Cool roofs can reduce energy bills by decreasing air conditioning needs, improve indoor thermal comfort for spaces that are not air conditioned, and decrease roof operating temperature, which may extend roof service life. In many cases, cool roofs cost about the same as non-cool alternatives.

The energy cost savings you can realize from a cool roof depends on many factors, including local climate; the amount of insulation in your roof; how your building is used; energy prices; and the type and efficiency of your heating and cooling systems.

Cool roofs can also benefit the environment, and policymakers may issue cool roof regulations to provide these benefits to society.

Cool roofs can reduce local air temperatures, which improves air quality and slows smog formation; reduce peak electric power demand, which can help prevent power outages; reduce power plant emissions, including carbon dioxide, sulfur dioxide, nitrous oxides, and mercury, by reducing cooling energy use in buildings; and reduce heat trapped in the atmosphere by reflecting more sunlight back into space, which can slow climate change.

What is Cool Roof

Cool roofs are roofs that are designed to maintain a lower roof temperature than traditional roofs while the sun is shining. Sunlight is the primary factor that causes roofs to became very hot.

How Cool Roofs Work

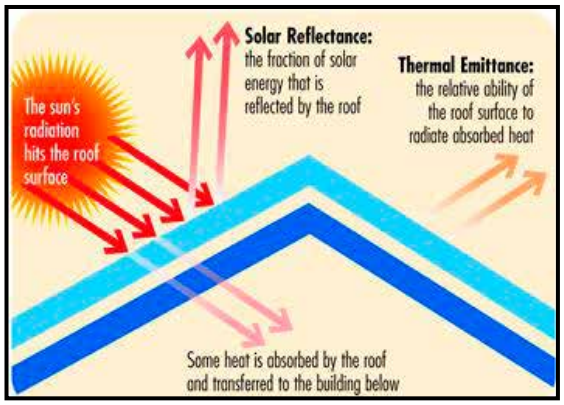
Cool roofs have surfaces that reflect sunlight and emit heat more efficiently than hot or dark roofs, keeping them cooler in the sun. In contrast, hot roofs absorb much more solar energy than cool roofs, making them hotter.

Solar reflectance and thermal emission are the two key material surface properties that determine a roof's temperature, and they each range on a scale from 0 to 1. The larger these two values are, the cooler the roof will remain in the sun.

Since most dark roofs absorb 90% or more of the incoming solar energy, the roof can reach temperatures higher than 150°F (66ºC) when it's warm and sunny.

Higher roof temperatures increase the heat flow into the building, causing the air conditioning system to work harder and use more energy in summertime.

Figure 2: Roof Surface Properties



Typical dark roofs can absorb 90% or more of incoming solar energy, while cool roofs may absorb less than 50%. *Image Source: CRRC*

In contrast light-colored roofs absorb less than 50% of the solar energy, reducing the roof temperature and decreasing air conditioning energy use. Reducing the roof's temperature with a cool roof can also increase the need for heating during heating seasons.

Later sections of this report show you how to evaluate the resulting cost savings for your building.

Solar Reflectance is the fraction of sunlight that a surface reflects. Sunlight that is not reflected is absorbed as heat. Solar reflectance is measured on a scale of 0 to 1. For example, a surface that reflects 55% of sunlight has a solar reflectance of 0.55.

Most dark roof materials reflect 5 to 20% of incoming sunlight, while light-colored roof materials typically reflect 55 to 90%. Solar reflectance has the biggest effect on keeping your roof cool in the sun.

Thermal Emission describes how efficiently a surface cools itself by emitting thermal radiation. Thermal emission is measured on a scale of 0 to 1, where a value of 1 indicates a perfectly efficient emitter.

Nearly all nonmetallic surfaces, like the unwrapped potato in Figure 3, have high thermal emission, usually between 0.80 and 0.95, that helps them cool down. Bare, shiny metal surfaces, like aluminum foil, have low thermal emission, which helps them stay warm.

A bare metal surface that reflects as much sunlight as a white surface will stay warmer in the sun because it emits less thermal radiation.

Solar Reflectance Index (SRI) is another metric for comparing the "coolness" of roof surfaces 1 . It is calculate from solar reflectance and thermal emission values. The higher the SRI, the cooler the roof will be in the sun. For example, a clean black roof could have an SRI of 0, while a clean white roof could have an SRI of 100. Dark roofs usually have an SRI less than 20.

Figure 3: Understanding Thermal Emittance

Potato skins (left), like most roofing materials, have high thermal emittance. A potato wrapped in foil (right) stays warmer longer since its aluminum surface has low thermal emittance. *Image Source: Wikipedia, Free Clipart Images*

What Qualifies as a Cool Roof

Typical minimum cool roof requirements are shown in Table 1, and this is what we mean by "cool roof" throughout this document. A roof can qualify as cool in one of two ways. The first way is by meeting or exceeding both the minimum solar reflectance and thermal emission values. The alternative way is to meet or exceed the minimum SRI requirement. This allows some roofs that have a low thermal emission and a high solar reflectance (or vice versa) to still qualify as a cool roof.

Table 1: Typical Minimum Cool Roof Requirements, California Energy Commission[2]

Roof Type	Solar Reflectance [3-year aged]	AND	Thermal Emittance [new or aged]	OR	Solar Reflectance Index (SRI) [3-year aged]
Low sloped	0.55		0.75		64
Steep sloped	0.20		0.75		16

Cool roof requirements depend on the roof's slope. Low sloped roofs have a pitch of 9.5° or less (2:12 rise over run), while steep sloped roofs have a pitch greater than this.

Requirements are usually less stringent for steep sloped Clay roof tiles, that are in generally light heavy . Some heavier roofs – such as those with concrete pavers, – also have less stringent cool roof standards. The weight of these roofs causes them to heat up more slowly, and during the night some of that stored heat is returned to the outdoor environment.

A bare metal surface that reflects as much sunlight as a white surface will stay warmer in the sun because it emits less thermal radiation.

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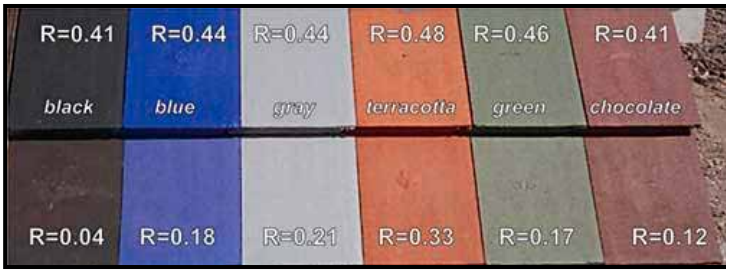
Not all Cool Roofs are White

Although white materials tend to be very good solar reflectors, colored roofing Clay tiles materials like those shown in the figure 4, can also be made to reflect more sunlight.

More than half of the sunlight reaching the earth is invisible to be the human eye, and this invisible sunlight heats the roof.

Figure 4: Cool Dark Colors



Cool-colored tiles (top row) look just like conventionally colored tiles but have higher solar reflectance (R). *Image Source: American Rooftile Coatings and Lawrence Berkeley National Laboratory*

A colored surface that reflects much of the invisible sunlight is a called a cool dark color, or cool color . A cool dark color reflects more sunlight than a similar-looking conventional dark color, but less that a light-colored surface. For example, a conventional dark colored surface might reflect 20% of incoming sunlight, a cool dark colored surface, 40%; and light colored surface, 80%.

Types of Cool Roofs

Roof systems are made of one or more material layers. The surface exposed to the sun is the one that determines if a roof is cool or not.

Different roofing systems present different surface options. By selecting the right surface, you can usually make your new or existing roof cool. Here are some common roof systems along with a description of how their surfaces can be made Cool.

Cool Roof Coatings contain white or special reflective pigments that reflect sunlight. Coatings are like very thick paints that can protect the roof surface from ultra-violet (UV) light and chemical damage, and some offer water protection and restorative features as well. Coatings can extend a roof's service life as long as the roof is still in good condition.

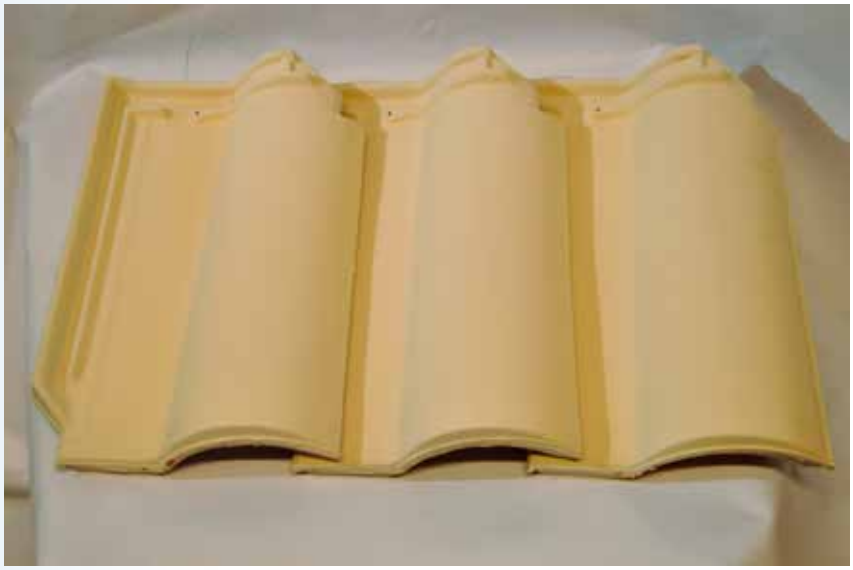
More than 500 different cool roof coatings are available, and products exist for most roof types. Manufacturers also coat some roof surfacing materials (membranes, metals, granules, etc.) at the factory to make them more reflective.

Tile Roofs made of clay is the best system, they come from the ground, so their colors differ depending on the earth's composition.

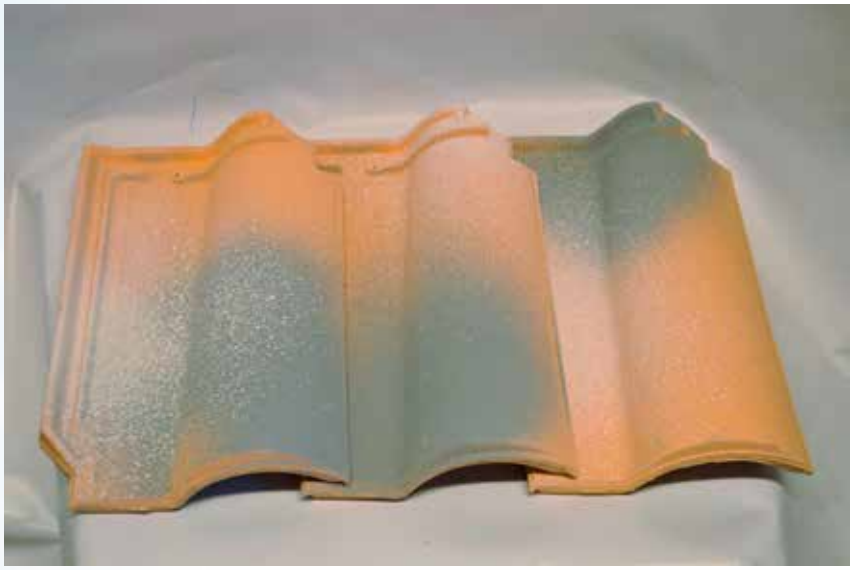
Some varieties will naturally be reflective enough to achieve cool roof standards. Tiles can be also be glazed to provide waterproofing or coated to provide customized colors and surface properties. These surface treatments can transform tiles with low solar reflectance into cool roof tiles.

Cool roof white

Cool roof green light



Cool roof yellow light



Cool roof mix colors

CERTIFICATIONS

Department of Engineering Enzo Ferrari
University of Modena and Reggio Emilia

EELab Energy Efficiency Laboratory

Object:	Measurement of solar reflectance, thermal emittance and Solar Reflectance Index – Report
Reference person:	Alberto Muscio – Antonio Libbra
Client:	Tognana Industrie e Fornaci Spa
Sample designation	White Cool
Commitment document:	Mail dated 18/12/2014 sent by Marco Nadalin
Notes:	Report rev. 1
Report date:	20/01/2015

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Università di Modena e Reggio Emilia
www.eelab.unimore.it

Department of Engineering Enzo Ferrari
University of Modena and Reggio Emilia

EELab Energy Efficiency Laboratory

Object:	Measurement of solar reflectance, thermal emittance and Solar Reflectance Index – Report
Reference person:	Alberto Muscio – Antonio Libbra
Client:	Tognana Industrie e Fornaci Spa
Sample designation	Emirates Classic Cool
Commitment document:	Mail dated 18/12/2014 sent by Marco Nadalin
Notes:	Report rev. 1
Report date:	20/01/2015

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University of Modena and Reggio Emilia

EELab Energy Efficiency Laboratory

Object:	Measurement of solar reflectance, thermal emittance and Solar Reflectance Index – Report
Reference person:	Alberto Muscio – Antonio Libbra
Client:	Tognana Industrie e Fornaci Spa
Sample designation	Yellow Cool
Commitment document:	Mail dated 18/12/2014 sent by Marco Nadalin
Notes:	Report rev. 1
Report date:	20/01/2015

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EELab Energy Efficiency Laboratory

Object:	Measurement of solar reflectance, thermal emittance and Solar Reflectance Index – Report
Reference person:	Alberto Muscio – Antonio Libbra
Client:	Tognana Industrie e Fornaci Spa
Sample designation	Gray Cool
Commitment document:	Mail dated 18/12/2014 sent by Marco Nadalin
Notes:	Report rev. 1
Report date:	20/01/2015

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Department of Engineering Enzo Ferrari
University of Modena and Reggio Emilia

EELab Energy Efficiency Laboratory

Object:	Measurement of solar reflectance, thermal emittance and Solar Reflectance Index – Report
Reference person:	Alberto Muscio – Antonio Libbra
Client:	Tognana Industrie e Fornaci Spa
Sample designation	Emirates Cool
Commitment document:	Mail dated 18/12/2014 sent by Marco Nadalin
Notes:	Report rev. 1
Report date:	20/01/2015

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ORGANIC PRODUCT

Liscio rosso

ORDER CODE: 120A01C

Rigato rosso

ORDER CODE: 120B01C

Coppo tiles are available in different color combinations that make it possible to satisfy any style of architecture. Recreating the authentic and distinct look of clay roof tile in the tradition that only existed thousands of years ago, Coppo tile provides the authentic experience while integrating the highest quality of ascetic appeal and durability.

Coppo 45

ORGANIC PRODUCT

Liscio chiaro pastello

ORDER CODE: 120A02C

Rigato chiaro pastello

ORDER CODE: 120B02C

ORGANIC PRODUCT

Liscio bruno

ORDER CODE: 120A03C

Rigato bruno

ORDER CODE: 120B03C

Coppo 45

Tetto mix

Coppo Tettomix incorporates a mixture of all three traditional tiles, Coppo Rosso, Chiaro Pastello and Bruno in order to produce an amalgamation of color. Each tile works in relationship with the other in order to bring out the best in any roof.

ORGANIC PRODUCT

Coppo 45

Roman Flat Tiles

Covering for an antique, precious roof, complete functions that were studied by the Romans to protect their roofs in the capital and on their various estates spread around what is now Europe. A safe roof that improves the value of your house. Available in Natural Terracotta and Antique finish.

Rosso
ORDER CODE: 196A01

Chiaro pastello
ORDER CODE: 196A02

Tettovecchio
ORDER CODE: 196A80

Rustico
ORDER CODE: 196A84

Coppovecchio rosso
ORDER CODE: 196A81

Finishing elements

140A01
Ridge/Rake

141S01
Left terminal

141D01
Right terminal

196A10
Eaves roman flat tiles

143A01
Three-ways

177B01
Four-ways

Pinetop

ORDER CODE: 142Z01

The pinecone is a decorative element that, in the ancient symbolism, was a symbol of prosperity, longevity and fertility. It can be installed on the roof of your house (in the top line), or on the entrance gate or on boundary walls.

"PINETOP DO NOT MISS IT ON YOUR ROOF"

Rustico anticato

ORDER CODE: 121F84C top tile
ORDER CODE: 121D81C bottom tile

Through the reproduction of light and shadow, Coppo Rustico emulates the passage of time resembling the rich tones of oak forests. The rough and natural aged look is ideal for the restoration of vintage buildings as well as in application on new construction where customers seek to achieve a look of historical depth and passion without having to wait decades to achieve these results.

ORGANIC PRODUCT

Coppo 45 Antique Finishes

Vecchio rosso

ORDER CODE: 121C81C top tile

ORDER CODE: 121D81C bottom tile

There is a struggle between the Antique and the Nuovo. The Antique provides character while lacking quality and the Nuovo provides quality yet fails to provide the artistic flare of the Antique. However, with the Coppo Vecchio line this age old dilemma is solved. By combining today's innovation with the passion of authenticity, a picture in time is achieved. Your creativity is not limited to only finishes, there are also three different base colors - Rosso, Pastel and Bruno, that you can choose from to create that masterpiece Italian villa.

Coppo 45 Antique Finishes

Vecchio chiaro

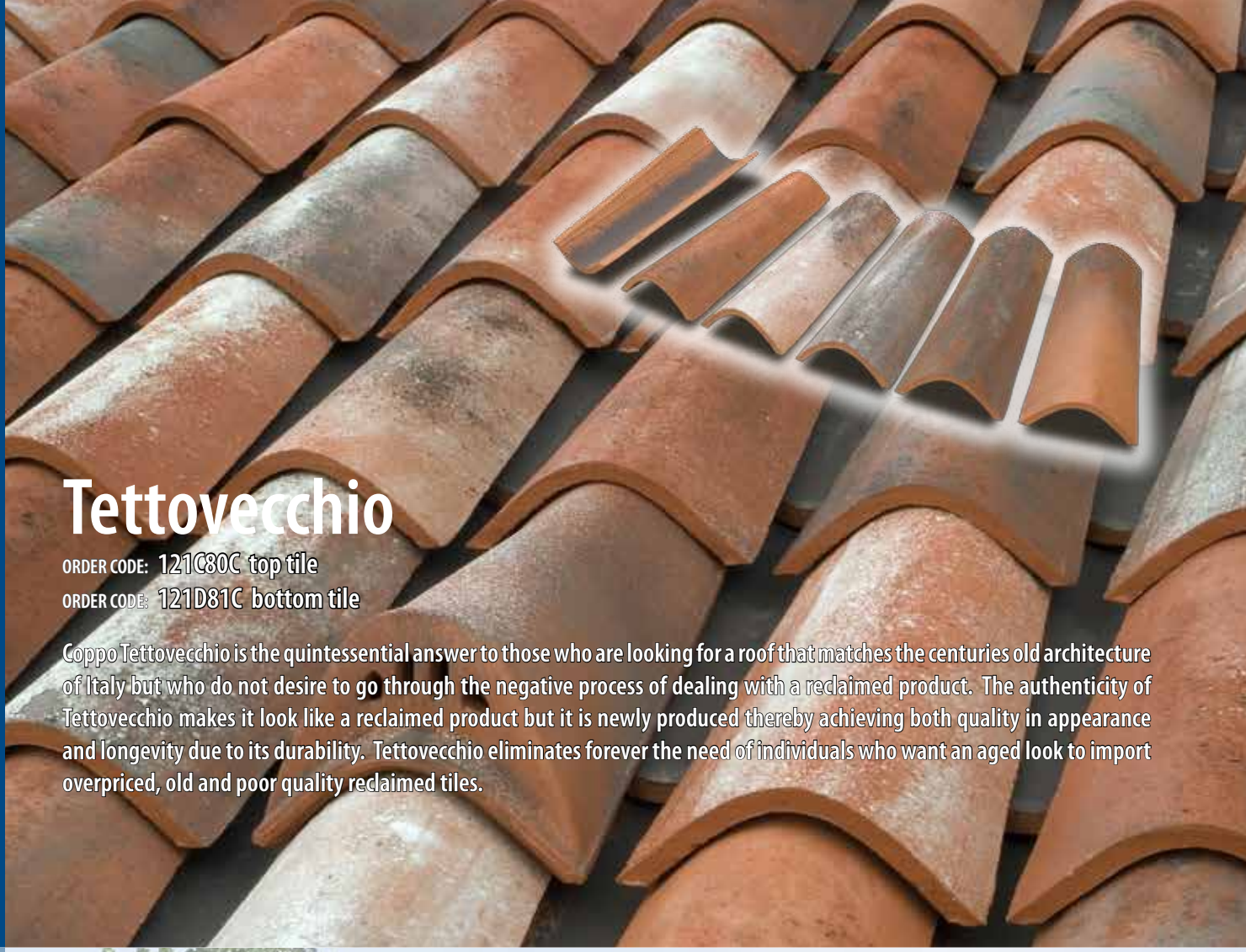
ORDER CODE: 121C82C top tile

ORDER CODE: 121D82C bottom tile

ORGANIC PRODUCT

Coppo 45 Antique Finishes

ORGANIC PRODUCT



Tettovecchio

ORDER CODE: 121C80C top tile
ORDER CODE: 121D81C bottom tile

Coppo Tettovecchio is the quintessential answer to those who are looking for a roof that matches the centuries old architecture of Italy but who do not desire to go through the negative process of dealing with a reclaimed product. The authenticity of Tettovecchio makes it look like a reclaimed product but it is newly produced thereby achieving both quality in appearance and longevity due to its durability. Tettovecchio eliminates forever the need of individuals who want an aged look to import overpriced, old and poor quality reclaimed tiles.

Coppo 45 Antique Finishes

Tettoantico

ORDER CODE: 121C85C top tile
ORDER CODE: 121D82C bottom tile

ORGANIC PRODUCT

Mediterraneo chiaro pastello

ORDER CODE: 127A02C

Coppo Mediterraneo Chiaro (pastel tint) embodies the historical clay tiles of Marche, Puglia, Campania, Calabria and Sicily. These tiles provided by an authentic experience integrate special clay color and highest quality and ascetic appeal.

Coppo Mediterraneo

ORGANIC PRODUCT

Mediterraneo rosso

ORDER CODE: 127A01C

Coppo Mediterraneo Rosso embodies the historical clay tiles found in the central regions of Italy. These tiles provided by an authentic experience, with the strong red clay color, have a higher quality and long durability.

Mediterraneo terra di Siena

ORDER CODE: 127G14C top tile
ORDER CODE: 127H14 bottom tile

Coppo Mediterraneo reproduces the authentic Italian tradition found in the southern Mediterranean regions. It's rough surface and coloration typifies the name "terra di Siena" as it recreates the hand made styles of a bygone era of artistic expression.

Coppo Mediterraneo

Finishing elements

140A01
Ridge/Rake

141S01
Left terminal

141D01
Right terminal

143A01
Three-ways

177B01
Four-ways

148M01
Ventilation tile Coppo Mediterraneo

148A01
Ventilation tile Coppo

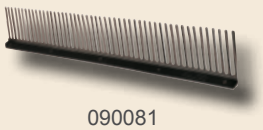
144A01
Antenna / Satellite tile

090085
Joist holder
(go to page 15 for fixing detail - #30)

090103
Hook for ridge

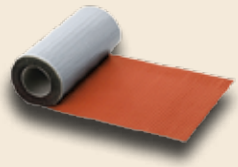
090114
Inox hook for cover coppo

090116
Inox hook for coppo with hole



090081
Bird dissuader in pvc
H 110 mm.

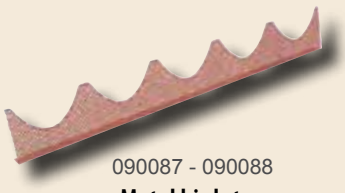
0902..
Waterproof underlay at high transpiration



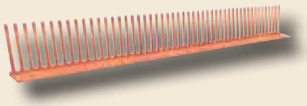
090160
Rain gutter

090100
Ventilated Under-ridge system

0900..



090087 - 090088
Metal bird stop



090083
Bird dissuader in copper
H 110 mm.

147A01
145A01
Chimney-pot
∅ 12 cm. approx.
to vent bathrooms and kitchens

147N01
Chimney-pot moorish style

142A01
Chimney-pot
∅ 12 cm. approx.
to vent bathrooms and kitchens

Plain Tile

ORDER CODE: 157A93

"With this tile it is very easy to install solar panel for solar energy"

Its squared and flat shape is typical of shingle roof that usually covers sloping roofs. We manufacture this special tile in natural terracotta. And we are confident that our new innovation to the overlap will grant a perfect water drainoff. Modern architecture is used to draw pure and squared profiles, so a pitched roof covered with Plain Tile matches easily with this popular design. Naturally your roof should be completed by angular ridges which are so integrated to the ridging line.

new

Plain Tile Rock Slate

Natural Terracotta
ORDER CODE: 157 A94

Fully Brown
ORDER CODE: 157 A98

Finishing elements

178A01
Angular Ridge

173A01
Angular terminal with shell

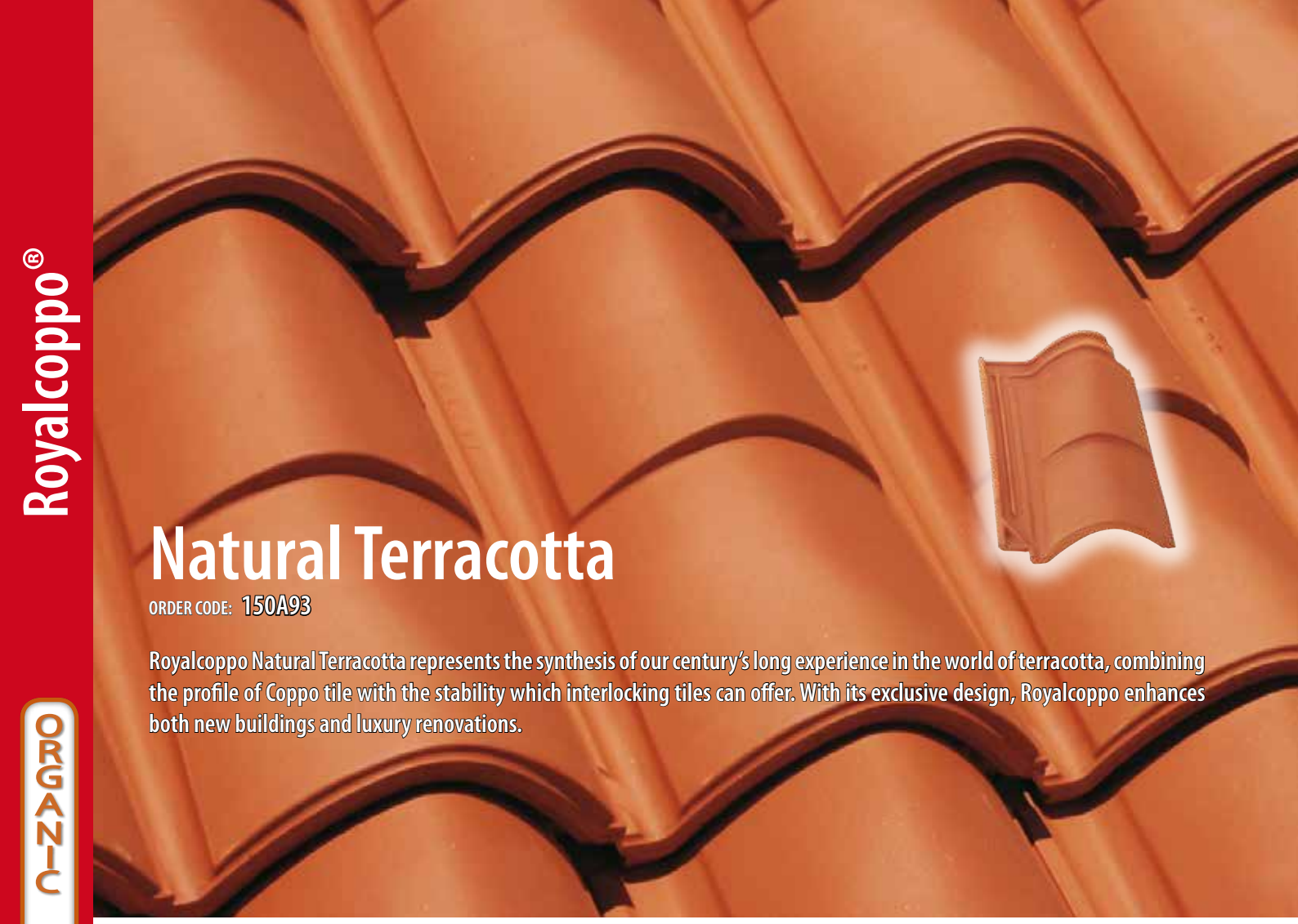
163C02
Left hip tile

163C01
Right hip tile

new

162V01
Half tile

ORGANIC PRODUCT

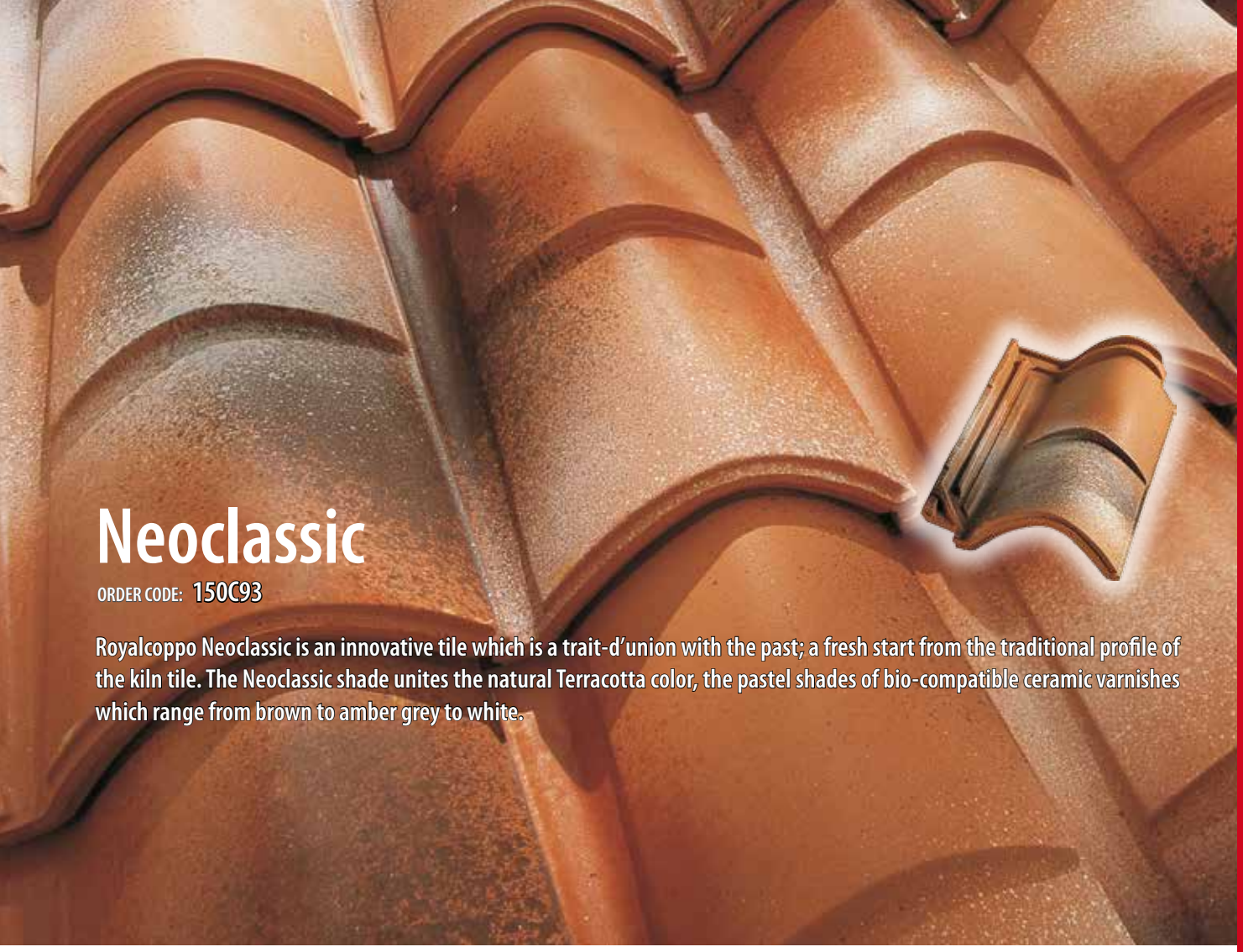


Natural Terracotta

ORDER CODE: 150A93

Royalcoppo Natural Terracotta represents the synthesis of our century's long experience in the world of terracotta, combining the profile of Coppo tile with the stability which interlocking tiles can offer. With its exclusive design, Royalcoppo enhances both new buildings and luxury renovations.

Royalcoppo®



Neoclassic

ORDER CODE: 150C93

Royalcoppo Neoclassic is an innovative tile which is a trait-d'union with the past; a fresh start from the traditional profile of the kiln tile. The Neoclassic shade unites the natural Terracotta color, the pastel shades of bio-compatible ceramic varnishes which range from brown to amber grey to white.

Neobaroque

ORDER CODE: 150B93

The Neobaroque shade unites the natural Terracotta color and pastel shades of bio-compatible ceramic varnishes which range from brown to amber grey to white.

ORGANIC PRODUCT

Royalcoppo®

Finishing elements

166B91
SuperRidge

167A01
SuperRidge Right Terminal

167A02
SuperRidge Left Terminal

168A01
Three-way superridge
for joints between three ridges

169A01
Four-way superridge
for joints between four ridges

171A01
Aerator
You need 1 pieces every 25 m² of roof

170A01
Snow guard tile
with lunette

172A01
Antenna / Satellite Tile

197A01
Bearing base
for chimney ∅ 12 cm. approx.

163B01
Right and left hip tile

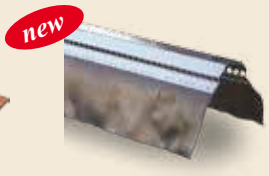
164B01
Joint for hip tile

0902..
Waterproof underlay at high transpiration

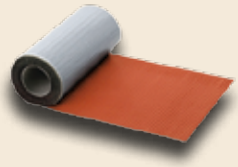
090105
Hook for ridge

090085
Joist holder
(go to page 15 for fixing detail - #30)

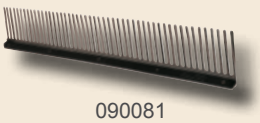
090100



0900..
Ventilated Under-ridge system



090160
Rain gutter



090081
Bird dissuader in pvc
H 110 mm.

090083
Bird dissuader in copper
H 110 mm.

147A01
Chimney-pot
∅ 12 cm. approx. to vent bathrooms and kitchens

147N01
Chimney-pot moorish style

142A01
Chimney-pot
∅ 12 cm. approx. to vent bathrooms and kitchens

090090
Metal bird stop

Royalcoppo®

ORGANIC PRODUCT

Royalcoppo®

ORGANIC PRODUCT

new

Hot Red

ORDER CODE: 160A96

Portoghese hot red gives a brilliant color to the roof.
The glazed finishing makes the difference to all other tiles.

Portuguese Tile

new

Emarat

ORDER CODE: 160A88

ORGANIC PRODUCT

Portuguese Tile

Natural Terracotta

ORDER CODE: 160A93

The profile of the Portuguese Tile has become a classical feature in the panorama of building. It associates a pleasant design with a remarkable ability to drain rainwater. Moreover, Tognana Portuguese guarantees: easy laying with perfect tile alignment, making large roof installation extremely quick, a decisive factor where installation costs rise steadily.

Portuguese Tile

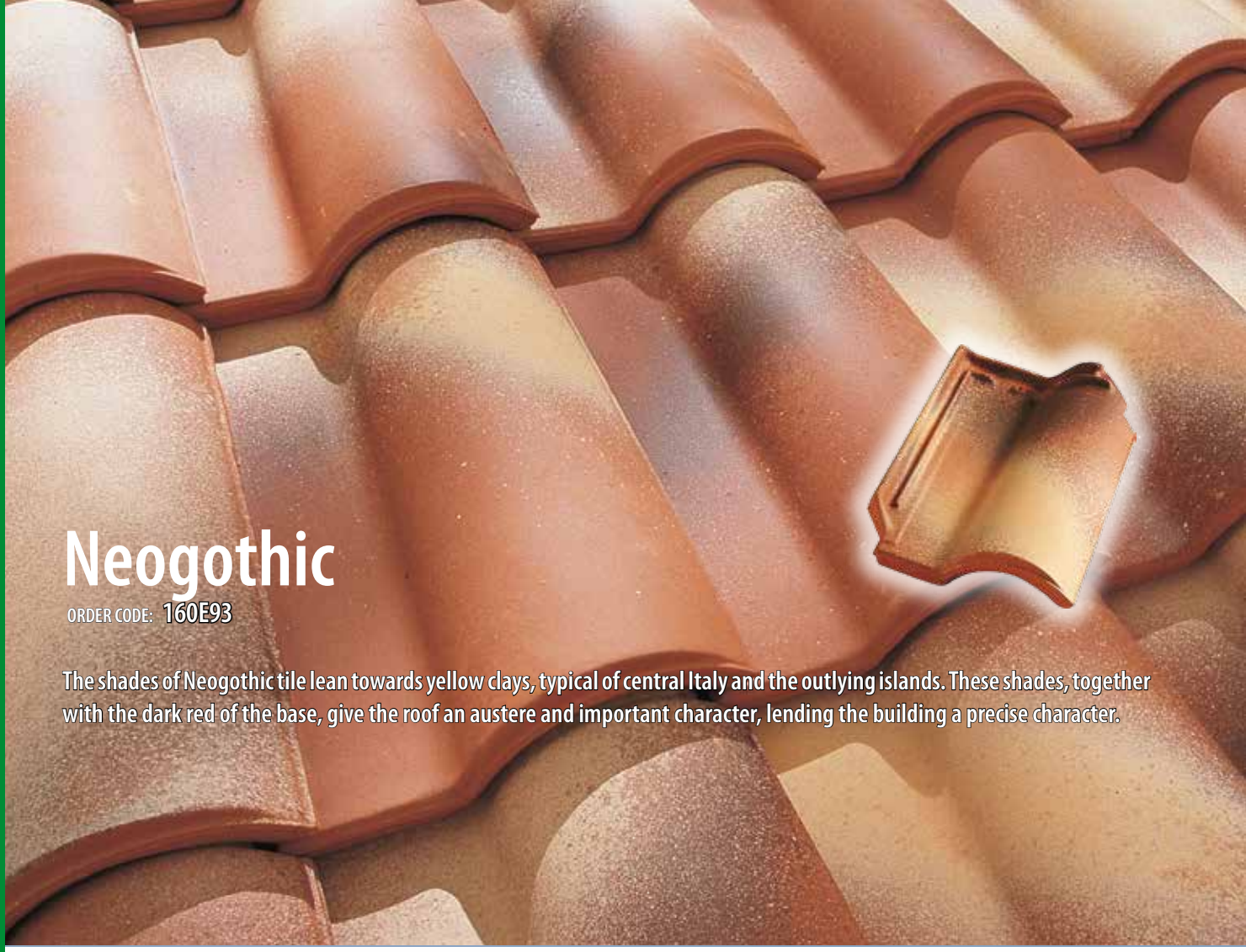
Neoclassic

ORDER CODE: 160C93

The Neoclassic design blends the warm shades of burnt sienna, beige and white to recreate the natural look of antique terracotta. This traditional blend shows its true colors typical of antique Italian roofscapes.

ORGANIC PRODUCT

Portuguese Tile



Neogothic

ORDER CODE: 160E93

The shades of Neogothic tile lean towards yellow clays, typical of central Italy and the outlying islands. These shades, together with the dark red of the base, give the roof an austere and important character, lending the building a precise character.

ORGANIC PRODUCT

Portuguese Tile

Neoromanesque

ORDER CODE: 160F93

The Neoromanesque design incorporates a straw-colored tone typically found in the Tuscan region of Italy to represent the many nuances of tradition. The amberlike yellow combined with brown and sienna, makes your roof come alive leaving an unforgettable impression.

ORGANIC PRODUCT

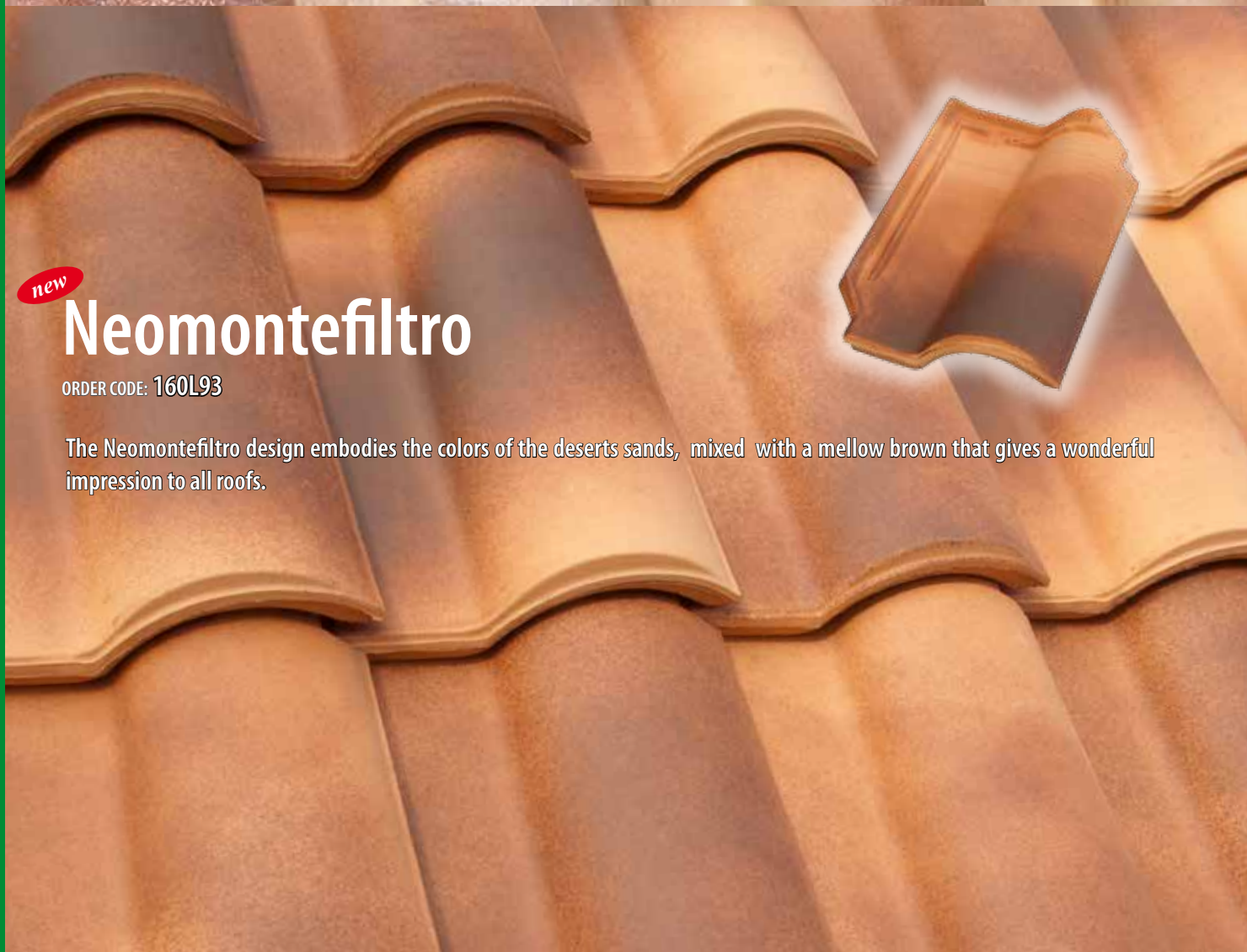
Portuguese Tile

ORGANIC PRODUCT

Portuguese Neodoric

ORDER CODE: 160B93

Doric is the oldest architectural order. It originated in Peloponnesus and quickly spread throughout the Greek islands, mountains, as well as the Italian colonies. Portuguese Neodoric continues the traditional architectural designs with light colors that adapt equally to open well-lit spaces and soft shades. Its precise form and detail, as well as its ability to adapt to any surrounding, guarantee maximum safety.



new

Neomontefiltro

ORDER CODE: 160L93

The Neomontefiltro design embodies the colors of the deserts sands, mixed with a mellow brown that gives a wonderful impression to all roofs.

Portuguese Tile

Finishing elements

166B91
SuperRidge

167A01
SuperRidge Right Terminal

167A02
SuperRidge Left Terminal

168A01
Three-way superridge
for joints between three ridges

169A01
Four-way superridge
for joints between four ridges

165B91
Ridge

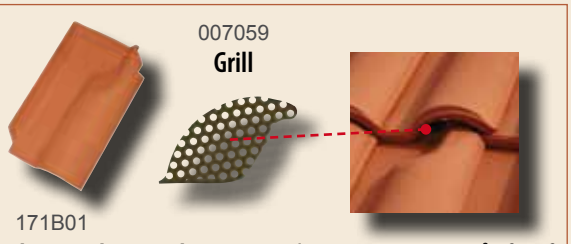
174A01
Terminal with shell

175D01
Left terminal

175A01
Right terminal

176A01
Three-ways

177A01
Four-ways



007059
Grill

171B01
Flat ventilation tile

You need 3 pieces every 25 m² of roof

162B01
Double portoghese

163B01
Right and left hip tile

new

164B01
Joint for hip tile

160200
Glass tile

171D01
Classic ventilation tile

170B01
Snow guard tile
with lunette

172B01
Antenna/ Satellite tile

090105
Hook for ridge

new

090100
Ventilated Under-ridge system

new

0900..

090089
Metal bird stop

new

142T01
Tower plus
base 16 cm, H 43 cm, kg. 1,8

090085
Joist holder
(go to page 15 for fixing detail - #30)

090160
Rain gutter

new

0902..
Waterproof underlay at high transpiration

090083
Bird dissuader in copper
H 110 mm.

090080
Bird dissuader in pvc
H 80 mm.

new

142V01
Lollipop
base 16 cm, H 48 cm, kg. 3,6

197B01
Small base for chimney
∅ 12 cm. approx.

197E01
197H01
Large base for chimney
∅ 15 cm. approx.
and ∅ 20 cm. approx.

147A01
147B01
Chimney-pot
∅ 12 cm. approx.
and ∅ 15 cm. approx.
to vent bathrooms and kitchens

147C01
Chimney-pot
∅ 20 cm. approx.
to vent bathrooms and kitchens

147N01
Chimney-pot moorish style

142A01
Chimney-pot
∅ 12 cm. approx.
to vent bathrooms and kitchens

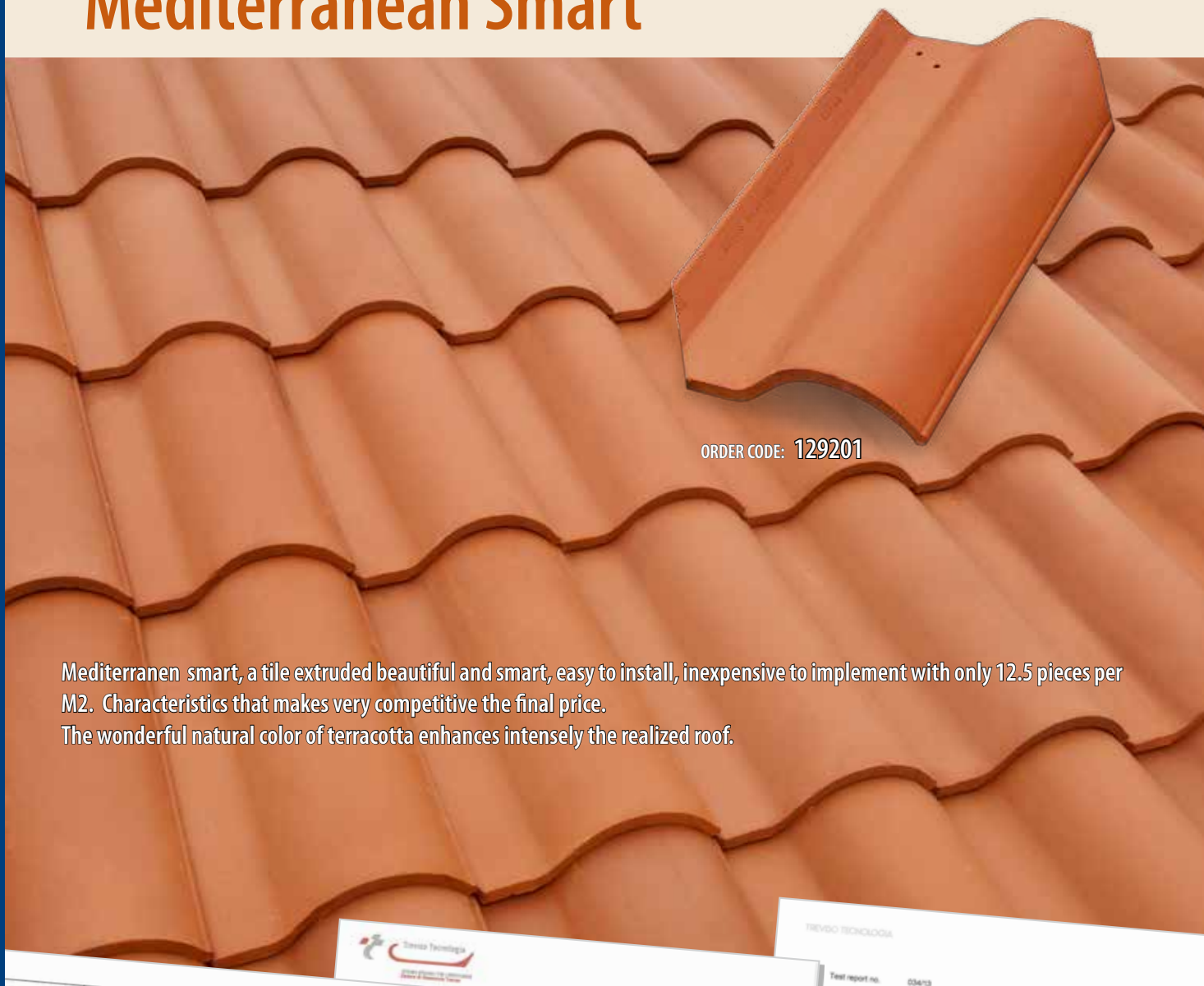
Portuguese Tile

ORGANIC PRODUCT

Portuguese Tile

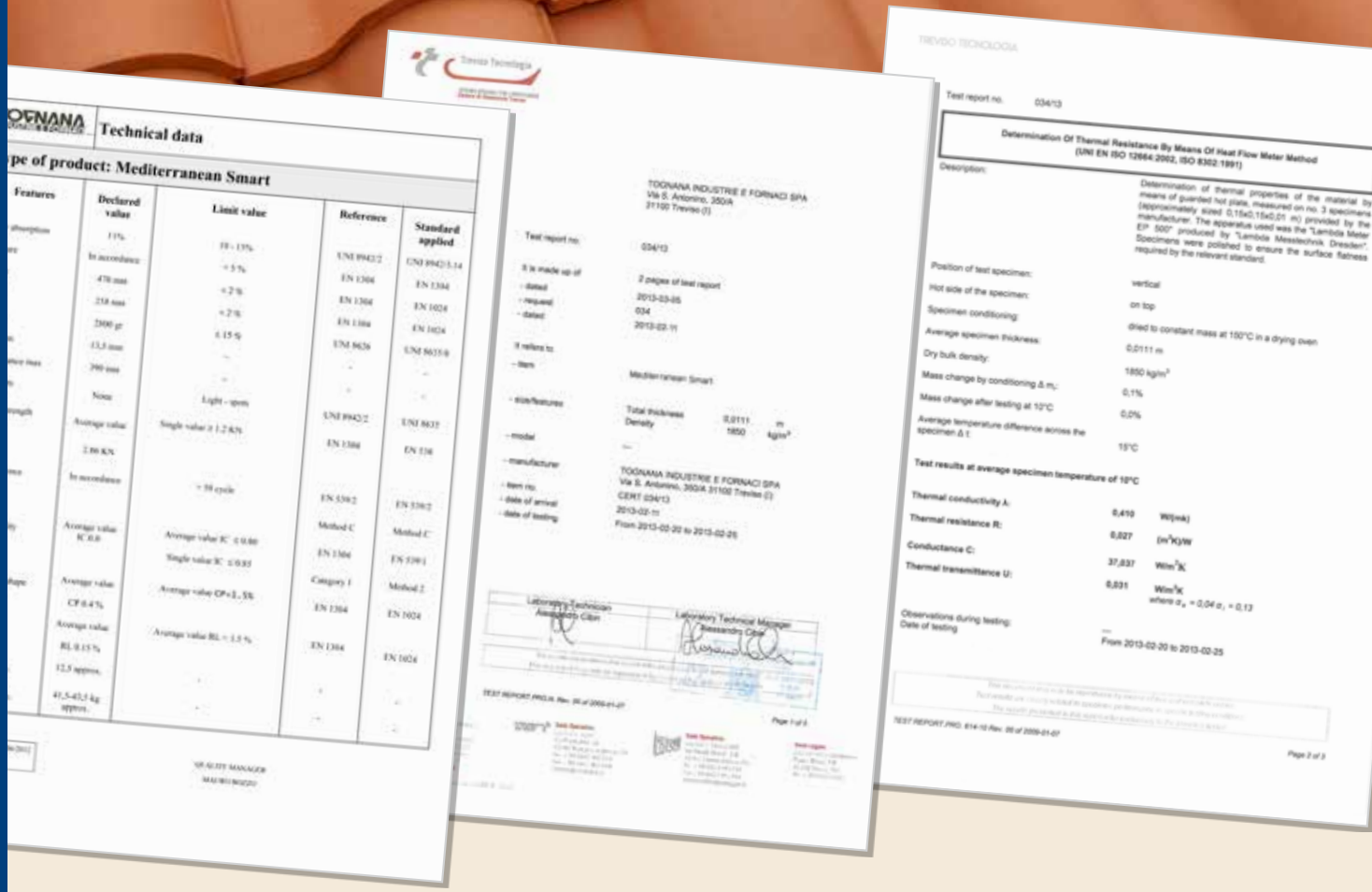
new

Mediterranean Smart



ORDER CODE: 129201

Mediterranen smart, a tile extruded beautiful and smart, easy to install, inexpensive to implement with only 12.5 pieces per M2. Characteristics that makes very competitive the final price.
The wonderful natural color of terracotta enhances intensely the realized roof.



Technical data

pe of product: Mediterranean Smart

Features	Declared value	Limit value	Reference	Standard applied
	11%	10 - 15%	UNI 8942/2	UNI 8942/3.14
	In accordance	< 5 %	EN 1304	EN 1304
	476 mm	< 2 %	EN 1304	EN 1024
	238 mm	< 2 %	EN 1304	EN 1024
	2800 gr	≤ 15 %	UNI 8626	UNI 8635/6
	13,5 mm	–	–	–
	290 mm	–	–	–
	None	Light - spots		
	Average value 2.86 KN	Single value ≥ 1.2 KN	UNI 8942/2 EN 1304	UNI 8635 EN 538
	In accordance	> 50 cycle	EN 539/2	EN 539/2
	Average value IC ≤ 0.8	Average value IC ≤ 0.80 Single value IC ≤ 0.93	EN 1304	Method C EN 539/1
	Average value CP 0.4 %	Average value CP+1..5%	EN 1304	Method 2 EN 1024
	Average value RL 0.15 %	Average value RL < 1.5 %	EN 1304	EN 1024
	12,5 approx.			
	41,5-43,5 kg approx.			

QUALITY MANAGER
MAURO BOZZO

Treviso Tecnologia

TOGNANA INDUSTRIE E FORNACI SPA
Via S. Antonino, 350/A
31100 Treviso (I)

Test report no. 034/13

It is made up of
- dated 2 pages of test report
- request dated 2013-03-05
- dated 034
2013-02-11

It refers to
- Item Mediterranean Smart
- size/features Total thickness 0,0111 m
Density 1850 kg/m³
- model —
- manufacturer TOGNANA INDUSTRIE E FORNACI SPA
Via S. Antonino, 350/A 31100 Treviso (I)
- item no. CERT 034/13
- date of arrival 2013-02-11
- date of testing From 2013-02-20 to 2013-02-25

Laboratory Technician Alessandro Cibin
Laboratory Technical Manager Alessandro Cibin

TEST REPORT PRO.R. Rev. 00 of 2009-01-07 Page 1 of 3

TREVISO TECNOLOGIA

Test report no. 034/13

Determination Of Thermal Resistance By Means Of Heat Flow Meter Method
(UNI EN ISO 12664:2002, ISO 8302:1991)

Description: Determination of thermal properties of the material by means of guarded hot plate, measured on no. 3 specimens (approximately sized 0,15x0,15x0,01 m) provided by the manufacturer. The apparatus used was the "Lambda Meter EP 500" produced by "Lambda Messtechnik Dresden". Specimens were polished to ensure the surface flatness required by the relevant standard.

Position of test specimen:	vertical	
Hot side of the specimen:	on top	
Specimen conditioning:	dried to constant mass at 100°C in a drying oven	
Average specimen thickness:	0,0111 m	
Dry bulk density:	1850 kg/m³	
Mass change by conditioning Δ m:	0,1%	
Mass change after testing at 10°C	0,0%	
Average temperature difference across the specimen Δ t:	15°C	
Test results at average specimen temperature of 10°C		
Thermal conductivity λ:	0,410	W/(mK)
Thermal resistance R:	0,027	(m²K)/W
Conductance C:	37,037	W/m²K
Thermal transmittance U:	0,031	W/m²K where α_e = 0,04 α_i = 0,13
Observations during testing:	—	
Date of testing	From 2013-02-20 to 2013-02-25	

TEST REPORT PRO. 614-10 Rev. 00 of 2009-01-07 Page 2 of 3

ORGANIC PRODUCT

Natural Terracotta

ORDER CODE: 153A93

With over 196 years experience and today's innovation, we have merged the epitomy of technology and classical design. Its shape brings together the luster of our ancestral upbringing with the convenience of today's practical application. The variable step in spacing from 347 mm to 353 mm when completely stretched allows for ultimate control over pieces per square meter. With the flexibility of 13.4 pieces to 14 pieces per square meter, Tuscany Coppo is easily managed on any project, regardless of size, and adds not only beauty, but also value to any structure. This is the first time in our generation that the ease of installation and efficient cost of materials are combined to allow a budget-friendly solution to your roofing needs.

Tuscany Coppo

new

Dolomite

ORDER CODE: 153Q93

Tuscany Dolomite combines the profile of the old Coppo di Fornace (kiln tile) and the strong pasty colour of the rocks which forms the Alpine mountains chains. The natural red base of the Terracotta (baked clay) is antiqued with yellow and brown powders that give brightness and attractive appearance to the roof.
Also in this case it should be noted the value of the variable pitch that makes the installation quicker and cheaper.

ORGANIC PRODUCT

Tuscany Coppo

ORGANIC PRODUCT

new

Moonlight

ORDER CODE: 153P93

Tuscany Moolight is born with the ancient profile of the Coppo di Fornace (kiln tile), also encloses an innovative surface treatment made with humid dispersion for the base colouring, while the antiquing is made with yellow and brown powders. The clear typical Mediterranean base makes it suitable for villas, "Borghi" villages and yards made with modern technology but with the innate charm of the tradition. This must be added the advantage of variable pitch which facilitates the installation and therefore makes it economic.

Tuscany Coppo

Medieval

ORDER CODE: 153M93

The Medieval Tuscany Coppo speaks for itself by displaying the pallette and shapes typical of the central part of Italy such as Tuscany, Umbria, Marche and Latium. Its unique personality is suitable both with traditional and contemporary architecture.
The pastel colors are made of biofriendly glaze and pastel clays (every Tognana product is biofriendly), once these flashings are applied and fired at more than 1000 °C they are permanent and will last forever.

ORGANIC PRODUCT

Tuscany Coppo

ORGANIC PRODUCT

Liberty

ORDER CODE: 153193

Its shape is the classical Coppo, which has been the real protagonist of the pitch roof for thousands of years. Its pastel colors are reminiscent of those seen adorning homes built in the last century: burnt brown, light terracotta and white gull spots. The random pattern on each tile allows us to create the perfect blend that usually only time can create.

Tuscany Coppo

Etruscan

ORDER CODE: 153L93

Light and amber shades are those typical of the Mediterranean area, with this inspiration the tile is suitable for all Italian style buildings blend well with classic architecture and refined style. Bursts of Pastel confirm this tile has great aesthetic appeal.

ORGANIC PRODUCT

Tuscany Coppo

ORGANIC PRODUCT

Renaissance

ORDER CODE: 153N93

This special style displays the palest shades typically laid in Middle-age villages and courts of Italy and France centuries ago. Its curved profile and its special flashings make Tuscany Coppo Renaissance suitable to efficiently repair any historical roofscape while maintaining authentic quality.

Tuscany Coppo

Finishing elements

166B91
SuperRidge

167A01
SuperRidge Right Terminal

167A02
SuperRidge Left Terminal

168A01
Three-way superridge
for joints between three ridges

169A01
Four-way superridge
for joints between four ridges

163B01
Right and left hip tile

164B01
Joint for hip tile

170F01
Snow guard tile
with lunette

171F01
Aerator tile
It is useful to keep the roof ventilated. You need one aerator tile every 25 m² of roof.

142T01
Tower plus
base 16 cm, H 43 cm, kg. 1,8

090100
Ventilated Under-ridge system

0900..

090105
Hook for ridge

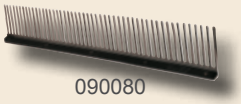
090085
Joist holder
(go to page 15 for fixing detail - #30)

142V01
Lollipop
base 16 cm, H 48 cm, kg. 3,6

0902..
Waterproof underlay at high transpiration

090160
Rain gutter

172F01
Antenna/ Satellite tile



090080
Bird dissuader in pvc
H 80 mm.

090091
Metal bird stop

090083
Bird dissuader in copper
H 110 mm.

197N01
Bearing base
for chimney
∅ 15 cm. approx.

197M01
Bearing base
for chimney
∅ 12 cm. approx.

147A01 147B01
Chimney-pot
∅ 12 and ∅ 15 cm. approx.
to vent bathrooms and kitchens

147N01
Chimney-pot moorish style

142A01
Chimney-pot
∅ 12 cm. approx.
to vent bathrooms and kitchens

new

Fully brown Portuguese

ORDER CODE: 160A98

The dark brown color, durable over time, is produced through a mixture in clay mass and manganese oxide.

Finishing elements

175D98
Left terminal

175A98
Right terminal

165B98
Ridge

171D98
Classic ventilation tile

new

Fully brown Marsigliese

ORDER CODE: 155i97 (pallet 240)
155i93 (pallet 300)

The dark brown color, durable over time, is produced through a mixture in clay mass and manganese oxide.

Finishing elements

175D98
Left terminal

175A98
Right terminal

165B98
Ridge

171C98
Ventilation tile

new

Fully grey Portuguese

ORDER CODE: 160M93

We are proud to introduce, on the roof tiles market, an interesting grey color that we can now realize on Portoghesi and Marsigliesi roofing tiles.
Of course we offer with the tiles also all the standard basic accessories.

Finishing elements

175D06
Left terminal

175A06
Right terminal

165M91
Ridge

171D06
Classic ventilation tile

new

Fully grey Marsigliese

ORDER CODE: 155M97 (pallet 240)
155M93 (pallet 300)

Finishing elements

175D06
Left terminal

175A06
Right terminal

165M91
Ridge

171C06
Ventilation tile

new

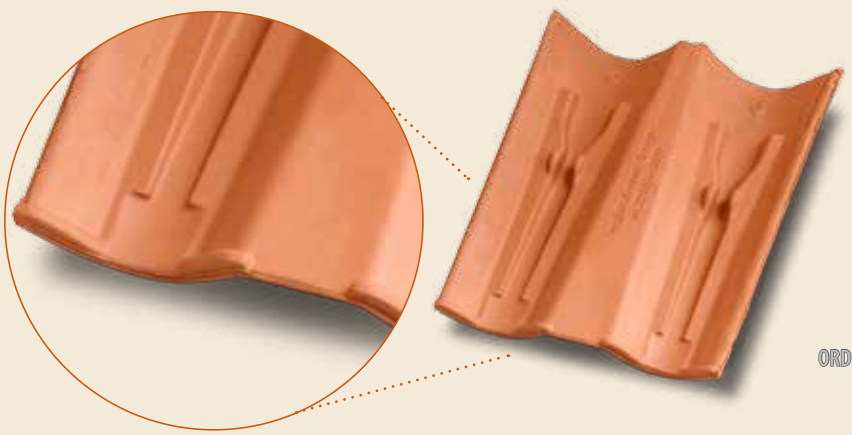
DCS - Double Coppo Stopper

a new solution for Coppi roofs.

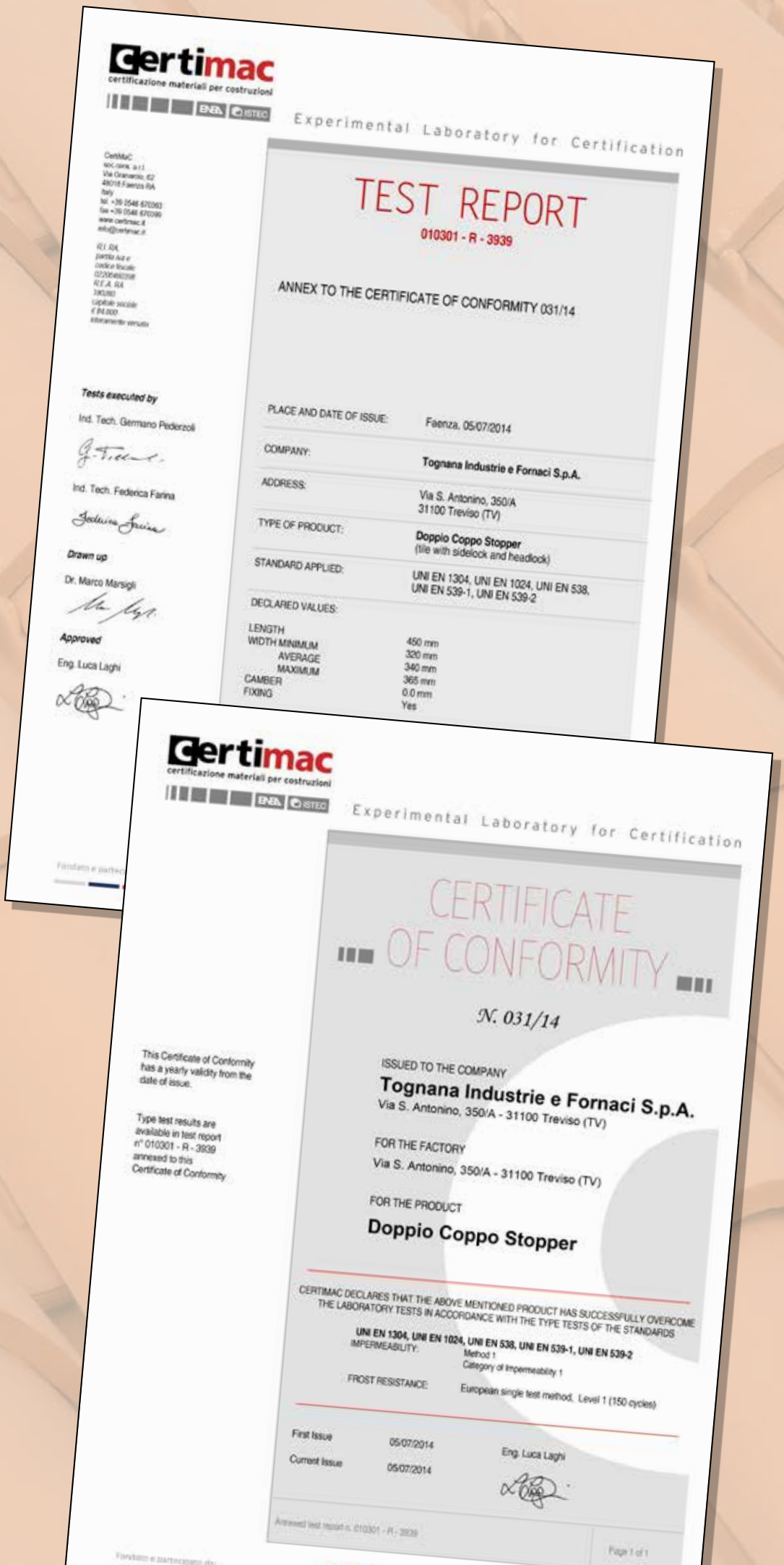
REGISTERED DESIGN

ORDER CODE: 158 A93 (DCS)

Double Coppo Stopper (DCS) is an important innovation, always waited for, which facilitates and simplifies the assembly of terracotta Coppi.
DCS is posed on wooden laths and is secured through the prepared holes, has profiles that guide the assembly of the Coppi without the need of specialized staff, such opportunities reduces costs and speeds up the pose.
The single Coppi are mechanically locked by the stoppers prepared in the profile of the base tile. On the eaves line is used a 3/4 Coppo tile also stopped mechanically.
DCS prevents the sliding of the Coppi, the use of restraint hooks, the use of mortar or locking foam making a total competitive in the construction of roofs with Coppi tiles.
The open drains and easily inspected ensures an optimal flow of water.
DCS a PATENTED PRODUCT in 28 countries, an innovation that will be distributed in many countries in the world by " Tognana Industrie e Fornaci since 1820 - Treviso ITALY"



ORDER CODE: 159 A01 (DCS gutter only)



Certimac
certificazione materiali per costruzioni
ENEA ISTEC
Experimental Laboratory for Certification

CertiMaC
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info@certimac.it

R.I. RA
partita iva e
codice fiscale
02126460398
R.E.A. RA
180393
capitale sociale
€ 84.000
interamente versato

TEST REPORT
010301 - R - 3939

ANNEX TO THE CERTIFICATE OF CONFORMITY 031/14

PLACE AND DATE OF ISSUE:	Faenza, 05/07/2014
COMPANY:	**Tognana Industrie e Fornaci S.p.A.**
ADDRESS:	Via S. Antonino, 350/A 31100 Treviso (TV)
TYPE OF PRODUCT:	**Doppio Coppo Stopper** (tile with sidelock and headlock)
STANDARD APPLIED:	UNI EN 1304, UNI EN 1024, UNI EN 538, UNI EN 539-1, UNI EN 539-2
DECLARED VALUES:	
LENGTH	450 mm
WIDTH MINIMUM	320 mm
AVERAGE	340 mm
MAXIMUM	365 mm
CAMBER	0.0 mm
FIXING	Yes

Tests executed by

Ind. Tech. Germano Pederzoli

Ind. Tech. Federica Farina

Drawn up

Dr. Marco Marsigli

Approved

Eng. Luca Laghi

Certimac
certificazione materiali per costruzioni
ENEA ISTEC
Experimental Laboratory for Certification

CERTIFICATE OF CONFORMITY

N. 031/14

This Certificate of Conformity has a yearly validity from the date of issue.

Type test results are available in test report n° 010301 - R - 3939 annexed to this Certificate of Conformity

ISSUED TO THE COMPANY
Tognana Industrie e Fornaci S.p.A.
Via S. Antonino, 350/A - 31100 Treviso (TV)

FOR THE FACTORY
Via S. Antonino, 350/A - 31100 Treviso (TV)

FOR THE PRODUCT
Doppio Coppo Stopper

CERTIMAC DECLARES THAT THE ABOVE MENTIONED PRODUCT HAS SUCCESSFULLY OVERCOME THE LABORATORY TESTS IN ACCORDANCE WITH THE TYPE TESTS OF THE STANDARDS

UNI EN 1304, UNI EN 1024, UNI EN 538, UNI EN 539-1, UNI EN 539-2

IMPERMEABILITY:	Method 1 Category of Impermeability 1
FROST RESISTANCE:	European single test method, Level 1 (150 cycles)

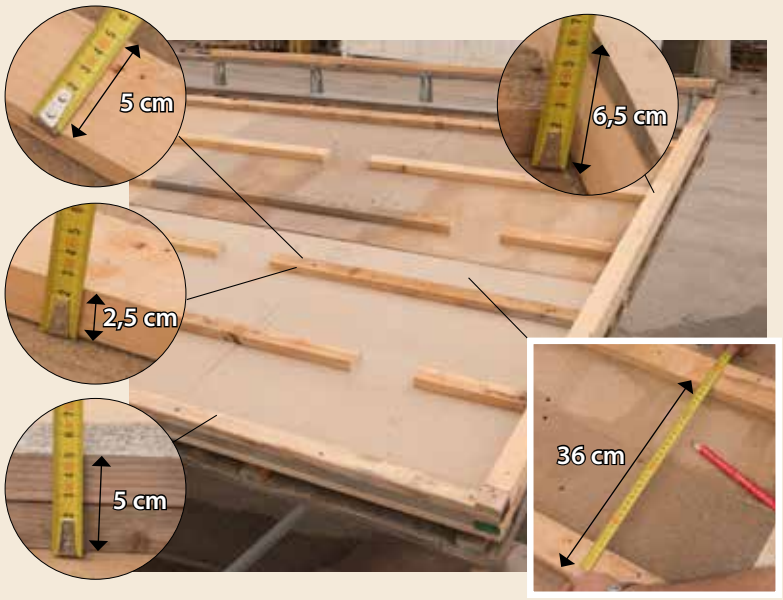
First Issue	05/07/2014	Eng. Luca Laghi
Current Issue	05/07/2014	

Annexed test report n. 010301 - R - 3939 — Page 1 of 1

LAYING OF DOUBLE COPPO STOPPER TILE SYSTEM

It must be prepared the laying plan and proceed with the drafting of any sheeting or waterproof insulation having the characteristics as to support the load resulting from the roof. Then proceed with the following explanations:

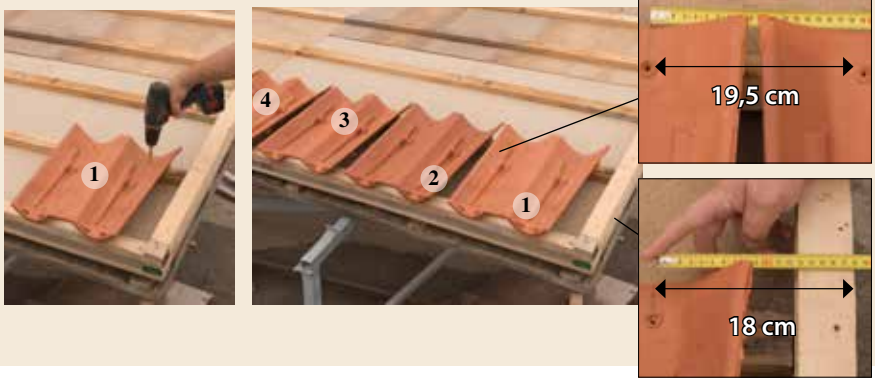
1- Fix warping of wood laths with screws (size cm. 5x2,5) parallel to the eaves line with a distance between them (step) of 36 cm. and interrupted at different points for the drainage of any condensation or water droplets infiltrated and also help the circulation of the air under the tile. The lath on the gutter line shall be cm. 5x5 in order to achieve the required slope the others will have dimensions cm. 5.00 x 2.50. On the lateral edge of the pitch it must be posed a lath of 6.5 cm. and 5 cm. wide, it is essential to perfectly close the roof on the side edge with a tile, while, if you want to use the lateral tile, the lath must be 5 cm. x 2.5.



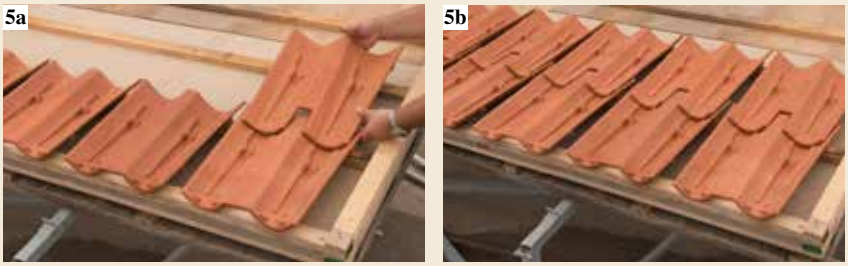
2 - The lath step can be calculated as to reach the ridge line with a whole number of pieces. After reaching the ridge line, and when the pitch is covered with a whole number of DCS, a cut on size DCS can be insert as to complete the pitch, or you can close the pitch using the traditional 45 coppi-tiles.

3 - In order to simplify the calculations of the DCS that you need, based on the width of the pitch, we suggest the following procedure as an example: pitch width 19.8 ML:, subtract 47 cm from this width for the package on the right side of the pitch (made of DCS + the lateral closing coppo-tile) subtract another 47 cm. for the left pitch, remain 18,86 ML. each DCS occupy a space of 0,37ml: included the toleration so 51 DCS are needed for width of the pitch.

4 - Start from the right part and leave 18 cm of space for the installation of the lath or a lateral tile, the same thing must be done on the left side leaving always 18 cm. of space for the laying of the lath or lateral tile. For the gutter line should only be used a gutter DCS that has the stoppers for the 3/4 coppo-tile. The second DCS is adjacent to the first, making sure that the distance between the holes of the first and second DCS is 18.5 cm. Proceed in the same manner to cover the entire line of the eaves. Each DCS must be secured with stainless steel screws.



5 - Begin to lay the second line of standard DCS proceeding exactly as for the line of the eaves and so on until you have covered the whole pitch of the roof.



6 - Then it must be mounted the coppi-tiles starting from the gutter line, using the 3/4 coppi-tiles supplied by the producer or by cutting properly the 45 coppi-tiles by bringing them to a length of cm. 33,5. They should be leaned on the DCS and the hake present in the base will lock the coppo-tile.

7 - Proceed posing another DCS line.




8 - Proceed posing the 45 cm coppi-tiles by laying them on the molded profiles and the clamps present in the DCS will lock the coppo-tile preventing it from slipping. After which pose another line of DCS and then cover with the 45 coppi-tiles. Continue placing alternately DCS first and then the 45 coppi-tiles.

9 - In order to cover completely the pitch in the lateral bands, there are two hypotheses: the 1st (9a – 9d) by proceeding to fix the lateral tiles laying them on the cm 5x2,5 lath, as explained in the instruction n. 1. The lateral will be nailed to the side of the lath. The second hypotheses (9e) is to fix a traditional coppo-tile laying it on a 6,5x5,0 cm lath, as explained alternatively in the instruction n. 1, as to protect the lateral edge of the wooden lath we recommend to mount a flashing.

Hypothesis lateral tile mounting

Hypothesis traditional coppo-tile mounting

10 - We recommend to put the ventilation-coppi-tiles instead of coppi-tiles by using the spaces in the DCS.


Hypothesis closure with traditional coppo-tile (instead cutting the DCS)

11 - When you get to the ridge line and the distance between the last DCS and the ridge line thereof is less than the 36 cm. of the DCS is suggested to use the traditional coppi-tiles suitably cut to size as to completely close the pitch.

12 - Attach the laths holders needed to assemble the ventilated under ridge. This concludes the laying by placing the ridges on the under-ridge and fasten them with aluminum hooks (code 090105). If provided install the finals on the ends of the ridge line.

DCS / Double Coppo Stopper

Glazed Portuguese


Azure Labuan


Grey Monaco


Grey Mat


Best Red


Black Night


Brown Mat


Deep Blu


Green Al-Gesira

Glazed Marsigliese


White Star


Brown Mat

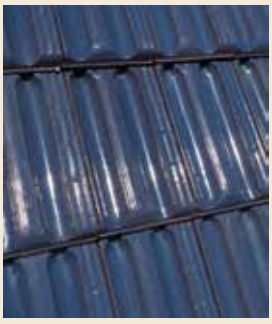

Green Al-Gesira


Grey Mat


Azure Labuan


Grey Monaco


Best Red


Deep Blu

The Production Process

At our factories we begin with the selection of raw materials, which we then work on in order to render them homogeneous, suitable for extrusion and for subsequent pressing. After pressing the tiles are placed on wooden frames and enter a drier, controlled by a processing computer. The drier gets rid of the residual water in the tiles in the course of a 24 hour cycle. At this point in the process, the dried tiles are taken from the wooden frames with the help of a robot system and sent to the setting machine following which they are loaded onto the furnace trucks. During the firing at more than 1000 degrees centigrade, the surface of the tiles merges with the glaze ensuring a permanent finish. In this setting machine there is also a glazing machine which works both with ceramic discs and with aerographs, allowing us to produce both glazed tiles in different colours and aged mat tiles. The system described above allows costs to be greatly reduced in comparison with the traditional "double-firing" system, but obviously means light colour blotches are possible in the contact points between the tiles when they were on the packaging machine, before the firing. Obviously once these tiles lie on the roof of the building, these imperfections are absolutely invisible, while the benefits which result from only one firing and from the reduced cost are lasting.

Coppo / Coppo Mediterraneo Installation Guide

1. At roof pitches of 3:12 and steeper, install Type 35 SBS modified asphalt underlayment (or approved self adhesive membrane if using foam adhesive option) on top of 1 cm. sheathing or as is required by UBC or local requirements.
2. Lay out horizontal and vertical chalk lines using a minimum of 37 cm. for Coppo or 42 cm. for Coppo Mediterranean for horizontal spacing and a maximum of 20 cm. for Coppo and 25 cm. for Coppo Mediterraneo for vertical spacing.
3. Begin installing pan tiles with a No. 12 gauge/ minimum 8 mm. head galvanized (equivalent corrosive resistant) nail or use foam adhesive in accordance with FRSA/TRI 07320 allowing a minimum of 4 cm. overhang. If gutters are not present begin with 8 cm. overhang. Ensure that tile nail is long enough to penetrate 2 cm. of sheathing.
4. Install bird stops.
5. Install booster tile above birdstop and continue to install starter tiles above booster tiles.
6. Install cap tile using tile nail.
7. It is recommended that vent tiles be used every 25 m^2 near the ridge in order to expel trapped heat.
8. Install 5 x 15 cm. treated wood nailer on hips and ridges. Cover treated wood with waterproof membrane. Seal area under hip and ridge tiles using cement mortar. Tile adhesive should be used under butt ends of tile to inhibit wind damage.
9. Install valley flashing in accordance with UBC chapter 15 or local requirements.

Tile Specifications:	
Exposure	**37/42 approx.**
kg per sq. m.	**54/52 approx.**
kg per piece	**1,8/2,7**
Pieces per sq. m.	**30/19 approx.**

Note: In geographic areas prone to hurricane force winds approved adhesive tile foam is the only manufacturer recommended installation method.

Portuguese / RoyalCoppo® / Tuscany Installation Guide

1. At roof pitches of 3:12 and steeper, install Type 35 SBS modified asphalt underlayment (or approved self adhesive membrane if using foam adhesive option) on top of 1 cm. sheathing or as is required by UBC or local requirements.
2. Install first 5 x 5 cm. batten (treated wood) at eave or elevated fascia to boost first course of tile.
3. Continue installation of 120 cm. lengths of 2,5 x 5 cm. battens (treated wood) at required dimensions to the top of the roof plane/ridge point. Assure that 120 cm. batten lengths are separated by a 1 cm. waterway. Ensure that battens are installed with a galvanized nail long enough to penetrate 2 cm. of sheathing or foam adhesive.
4. Begin installing tile with a No. 12 gauge/ minimum 8 mm. head galvanized (equivalent corrosive resistant) nail allowing a minimum of 4 cm. overhang or use foam adhesive in accordance with FRSA/TRI 07320. If gutters are not present begin with 8 cm. overhang.
5. It is recommended that vent tiles be used every 300 square feet near the ridge in order to expel trapped heat.
6. Install 5 x 15 cm. treated wood nailer on hips and ridges. Cover treated wood with waterproof membrane. Seal area under hip and ridge tiles using cement mortar or foam adhesive. Tile adhesive should be used under butt ends of tile to inhibit wind damage.
7. Install valley flashing in accordance with UBC chapter 32 or local requirements.

Tile Specifications:	
kg per sq. m.	**39/45 approx.**
kg per piece	**2,8/3,3**
Pieces per sq. m.	**14/13,4 approx.**

Note: In geographic areas prone to hurricane force winds approved adhesive tile foam is the only manufacturer recommended installation method.

Guarantee

For a period of ten years, TOGNANA INDUSTRIE E FORNACI SPA undertakes to substitute, ex-works, any Terracotta tiles which do not conform to UNI EN 1304, UNI EN 1024, UNI EN 538, UNI EN 539-1, UNI EN 539-2 standards on layered roofing in brick.
The guarantee is valid only if:

- the tiles have been laid in accordance with UNI 9460 standard (REGULATIONS FOR THE PLANNING AND EXECUTION OF LAYERED ROOFING IN BRICK AND CEMENT TILES);
- the roof has a minimum pitch of 30-35 (thirty-thirtyfive) %
- THE ROOF INCLUDES A VENTILATION TILE VERY 25 SQUARE METERS OF ROOFING
- the guarantee is valid on the condition that written notification of complaint is received on a timely basis, and that it is feasible to carry out on adequate inspection of the site.
- Only for the following articles natural terracotta: Royalcoppo, Portuguese, Marsigliese, Marsigliese Classic, Marsigliese Flexi, Tuscany, Plain tile, DCS, the guarantee, in the manner set out above, is extended to the period of 20 years (Twenty).

Certifications

Certification UNI EN ISO 14001

Since year 2001 Tognana Spa obtained the UNI EN ISO 14001 certification, from the certification authority ICMQ (certification quality mark institute for products and services for construction), of the environmental management system of the plant in Treviso.
The adoption of an environmental management system, conform to the UNI EN ISO 14001 consist to realize, inside the firm, a mechanism for monitoring and continuously improving environmental performances. The UNI EN ISO 14001 norm is the certification, issued by an independent certification organisation, that the firm is accordant to the requirements of the norm and properly applied. In the implementation phase the environmental analysis has been developed as to identify all the environmental aspects of the production and management activities of the company. In this phases also has been analyzed the environmental norms identifying the most interesting ones for Tognana spa. The second stage of the certification project saw

UNI EN ISO 9001
ICMQ
Certificazione sistema qualità
CERTIFICATO N. 99273

MANAGEMENT SYSTEM
UNI EN ISO 9001:2008.

Certimac

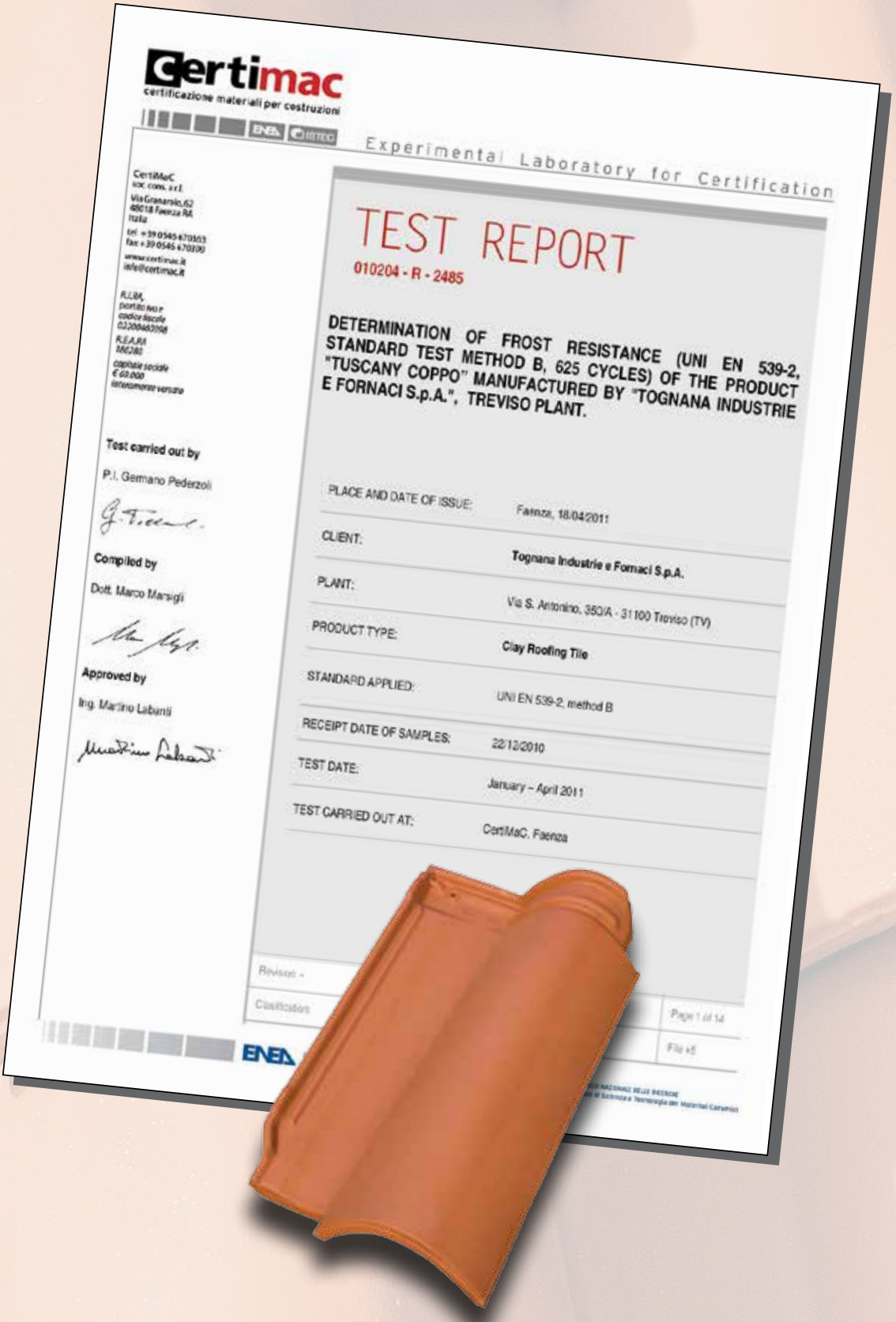
the formalization, with particular attention to health policy, safety and environment, the identification and planning of interventions, the definition of environmental management manuals and all the system documentation elaboration. The third step toward the certification included the execution of the system with the diffusion of documentation and the execution state control through internal audits.
The last stage of the process was the real certification that has seen, by the certifying institute, inspections to verify:
- the system documentation;
- legislative conformity of the plant;
- the conformity of all environmental management system to the UNI EN ISO 14001 norms.
Certification is valid for 3 years during which are expected internal audits and audits from the certifying institute for the maintenance of it. During all certifying process was also made the dedicated training for the staff concerning various aspects of the environmental management.

ICMQ
CERTIFICAZIONE AMBIENTALE
CERTIFICATO N. 01016A

MANAGEMENT SYSTEM UNI EN ISO 14001.

Tognana Industrie e Fornaci has recently received, for Tuscany Coppo in natural terracotta, the frost resistance certification (UNI EN 539-2 method B) for

625 defrost/frost cycles

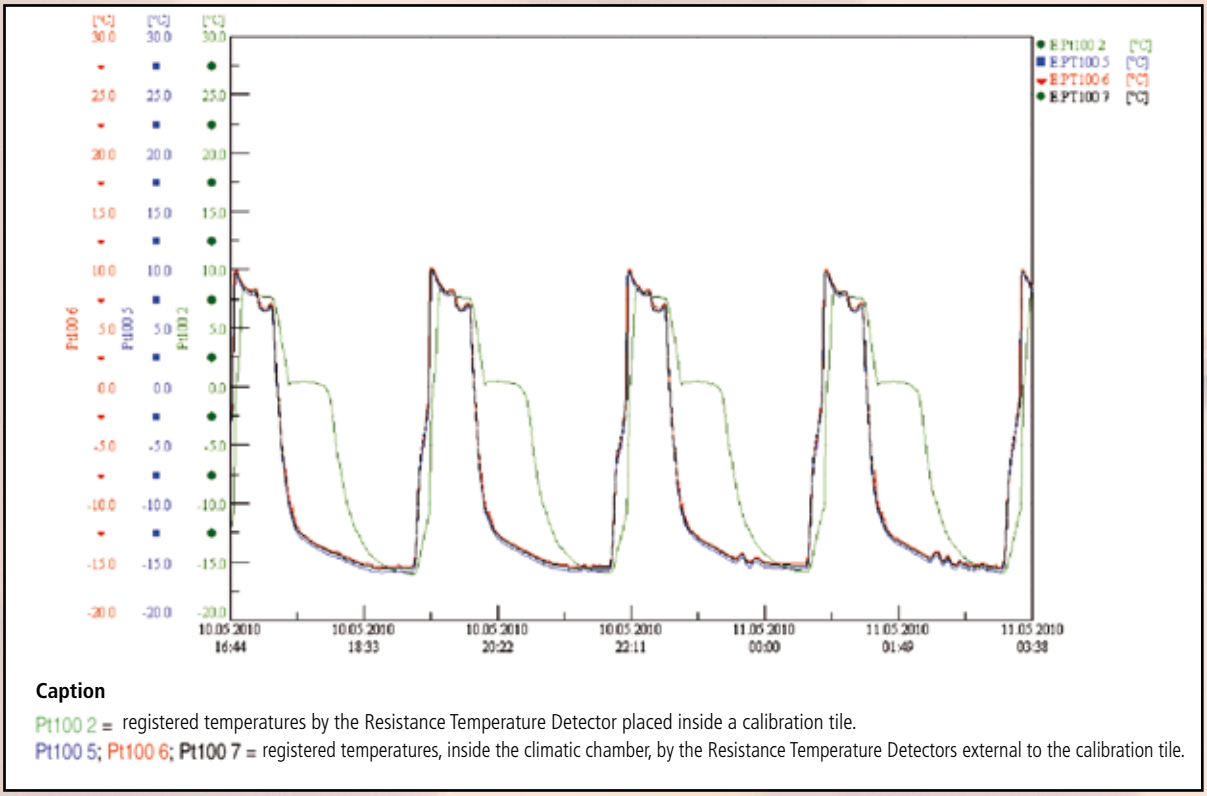


Tuscany Coppo
natural terracotta

Schedule: water absorption $W_{u'}R$ (%) of the six tiles after the preconditioning phases, spraying and water immersion. These samples will then be subjected at 625 frost/defrost cycles.

Samples	Dry mass M_{tr} (g)	Wet mass M_w (g)	Water absorption W_u R (%)	Defects present before the test
2	3097.0	3482.0	12.43	--------
9	3095.0	3488.5	12.71	--------
13	3175.5	3556.5	12.00	--------
14	3097.5	3493.0	12.77	--------
19	3073.5	3450.5	12.27	--------
22	3094.0	3469.5	12.14	--------
Average and standard deviation (%)			*12.39* ± 0.31	

Schedule: detail of n. 4 frost/defrost cycles made during the calibration phase on six reference tiles with density 2 + 0,5 kg/dm3 and water absorbing $W_{u'}$ 8,5% + 0,5%.



Caption

Pt100 2 = registered temperatures by the Resistance Temperature Detector placed inside a calibration tile.
Pt100 5; Pt100 6; Pt100 7 = registered temperatures, inside the climatic chamber, by the Resistance Temperature Detectors external to the calibration tile.

The frost resistance test has been done in the Certimac of Faenza laboratory according to the norm reported in Rif. 2-c. This norm describes four different test methods as to determinate the frost resistance of the roofing tile products, to be applied according to different geographical areas of use of the product. The B method, object of the present test report, is binding for products used in Austria, Denmark, Finland, Germany, Iceland, Norway, Czech Republic, Sweden, Switzerland, Hungary (Rif- 2-d).

At the end of the 625 frost/defrost cycles the six tested tiles were free from not acceptable defects.

Technical data	unit	Coppo Tile	Coppo Mediterraneo
Dimension	cm.	45 x 18 x 13,5 (ridge 6,7)	50 x 22,0 x 18 (ridge 7,5)
Weight	Kg.	1,8 approx.	2,7 approx.
Thickness	cm.	1,2	2
Weight per 100 sq. m.	kg.	54 kg/m²	52 kg/m²
Pieces per sq. m.		30 approx.	19 approx.
Pieces per pallet		270	136
One container		12.960	7344
		equal to 432 sq. m.	equal to 386 sq. m.

Technical data	unit	DCS
Dimension (DCS)	cm	45 x 32 / 36,5 approx.
Dimension (DCS gutter only)	cm	45 x 32 / 36,5 approx.
Weight per piece	Kg	4,7 approx.
Thickness	mm	14
Joist distance	mm	360 approx.
Joist lateral	mm	370 approx.
Pieces per sq. m.		7,5 approx.
Coppi per sq. m.		15 approx.
Pieces per pallet		120

Technical data	unit	Royalcoppo
Dimension	cm.	42,2 x 25,6 approx.
Weight	Kg.	3,3 approx.
Thickness	cm.	Variable
Weight per sq. m.	Kg.	45 approx.
Joist distance	mm.	359 approx.
Pieces per sq. m.		13,8 approx.
Weight of four-hand pallet	Ql.	8,2 approx.
Pieces per four-hand pallet		248
One container		6636 approx.
		equal to 480 sq. m.

Technical data	unit	Portoghese Tile
Dimension	cm.	41,5 x 25,5 approx.
Weight	Kg.	2,8 approx.
Thickness	cm.	Variable
Weight per sq. m.	Kg.	39 approx.
Joist distance	mm.	345 approx.
Pieces per sq. m.		14 approx.
Weight of four-hand pallet	Ql.	7 approx.
Pieces per four-hand pallet		248
One container		6944
		equal to 496 sq. m.

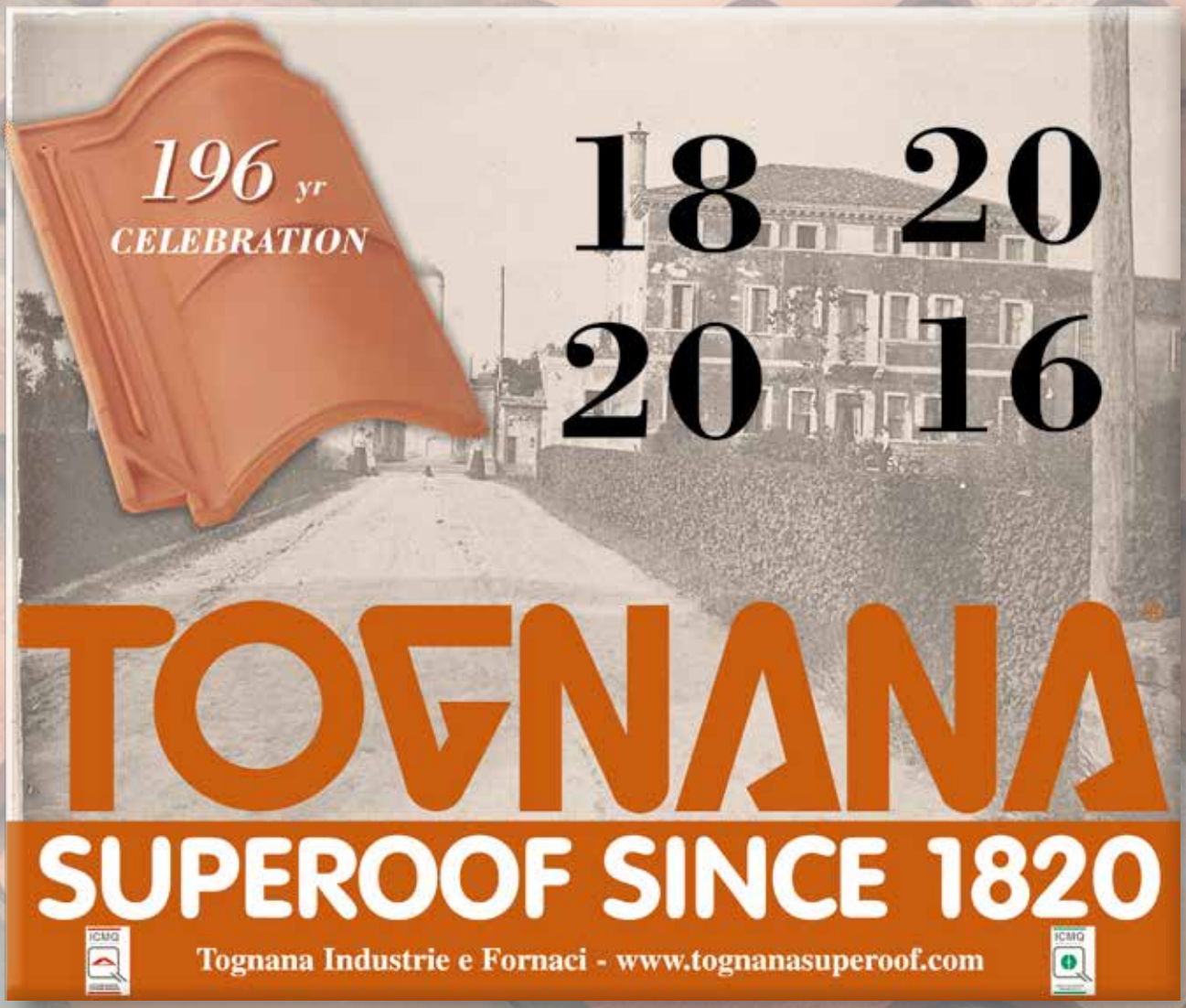
Technical data	unit	Tuscany Coppo
Dimension	cm.	41,5 x 25,5 approx.
Weight	Kg.	3,1 approx.
Thickness	cm.	Variable
Weight per sq. m.	Kg.	41,5-43,5 approx.
Joist distance	mm.	347-353 approx.
Pieces per sq. m.		13,4-14 approx.
Weight of four-hand pallet	Ql.	7,5 approx.
Pieces per four-hand pallet		240
One container		6720
		equal to 501 sq. m.

Technical data	unit	Marsigliese Tile	Marsigliese Classic
Dimension	cm.	41,5 x 24 approx.	41,5 x 24 approx.
Weight	Kg.	2,8 approx.	2,8 approx.
Thickness	cm.	Variable	Variable
Weight per sq. m.	Kg.	39 approx.	37,8-40,6 approx.
Joist distance	mm.	350 approx.	345-360 approx.
Pieces per sq. m.		14 approx.	13,5-14,5 approx.
Weight of four-hand pallet	Ql.	6,3 approx.	6,8 approx.
Pieces per four-hand pallet		240	240
Pieces per five-hand pallet		300	300
One container		7440	7440
		equal to 531 sq. m.	equal to 531 sq. m.

Technical data	unit	Marsigliese Diamond	Marsigliese Flexi
Dimension	cm.	41,5x25 approx.	41,6 x 25 approx.
Weight	Kg.	2,85 approx.	2,95 approx.
Thickness	cm.	Variable	Variable
Weight per sq. m.	Kg.	39,5	37,4-44,2 approx.
Joist distance	mm.	340 approx.	315-365 approx.
Pieces per sq. m.		13,7 approx.	12,7-15 approx.
Weight of four-hand pallet	Ql.	6,9 approx.	6,6 approx.
Pieces per four-hand pallet		240	232
Pieces per five-hand pallet		300	-
One container		7440	6496
		equal to 543 sq. m.	equal to 511 sq. m.

Technical data	unit	Mediterranean Smart
Dimension	cm.	47 x 25,8 approx.
Weight	Kg.	2,8 approx.
Thickness	cm.	13,5
Weight per sq. m.	Kg.	41,5-43,5 approx.
Joist distance	mm.	390 approx.
Pieces per sq. m.		12,5 approx.
Weight of pallet	Ql.	4,8 approx.
Pieces per pallet		168
Pallet dimension	cm	75x106x58
One container		9744
		equal to 779 sq. m.

Technical data	unit	Plain Tile
Dimension	cm.	41,8 x 24,5 approx.
Weight	Kg.	3,15 approx.
Thickness	cm.	Variable
Weight per sq. m.	Kg.	44 approx.
Joist distance	mm.	350 approx.
Pieces per sq. m.		14 approx.
Weight of four-hand pallet	Ql.	7,5 approx.
Pieces per four-hand pallet		240
One container		6720 approx.
		equal to 480 sq. m.



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