

TOGNANA

SUPEROOF SINCE 1820



*Quality, tradition
& innovation 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 FORCARI Il Sig. Romanico Matteo & figli per le seguenti materie costituenti della Fornace per la fabbricazione D. D.					
Data	Q U A N T I T A	Quantità	Valore	Importo	
1872	Carichi Tognana n. 5	10	100,00	7,00	
	Carichi Tognana n. 5	100	100,00	13,00	
	Carichi Tognana n. 5			10,00	
					100,00

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



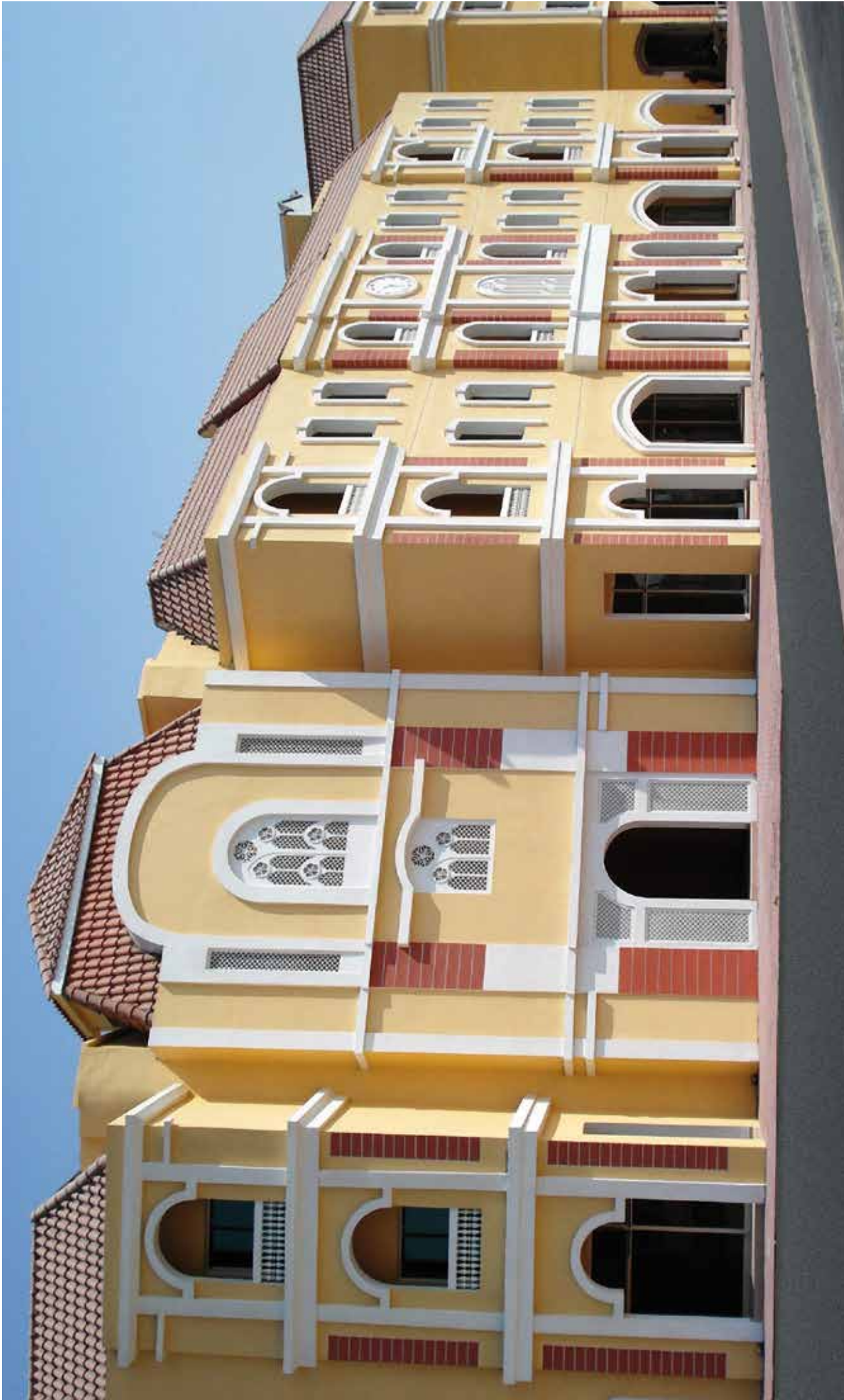
Project: 300 VILLAS, MIRDIFF, DUBAI Consultant: King



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

Tognanasuperroof 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.**

Tognanasuperroof 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.

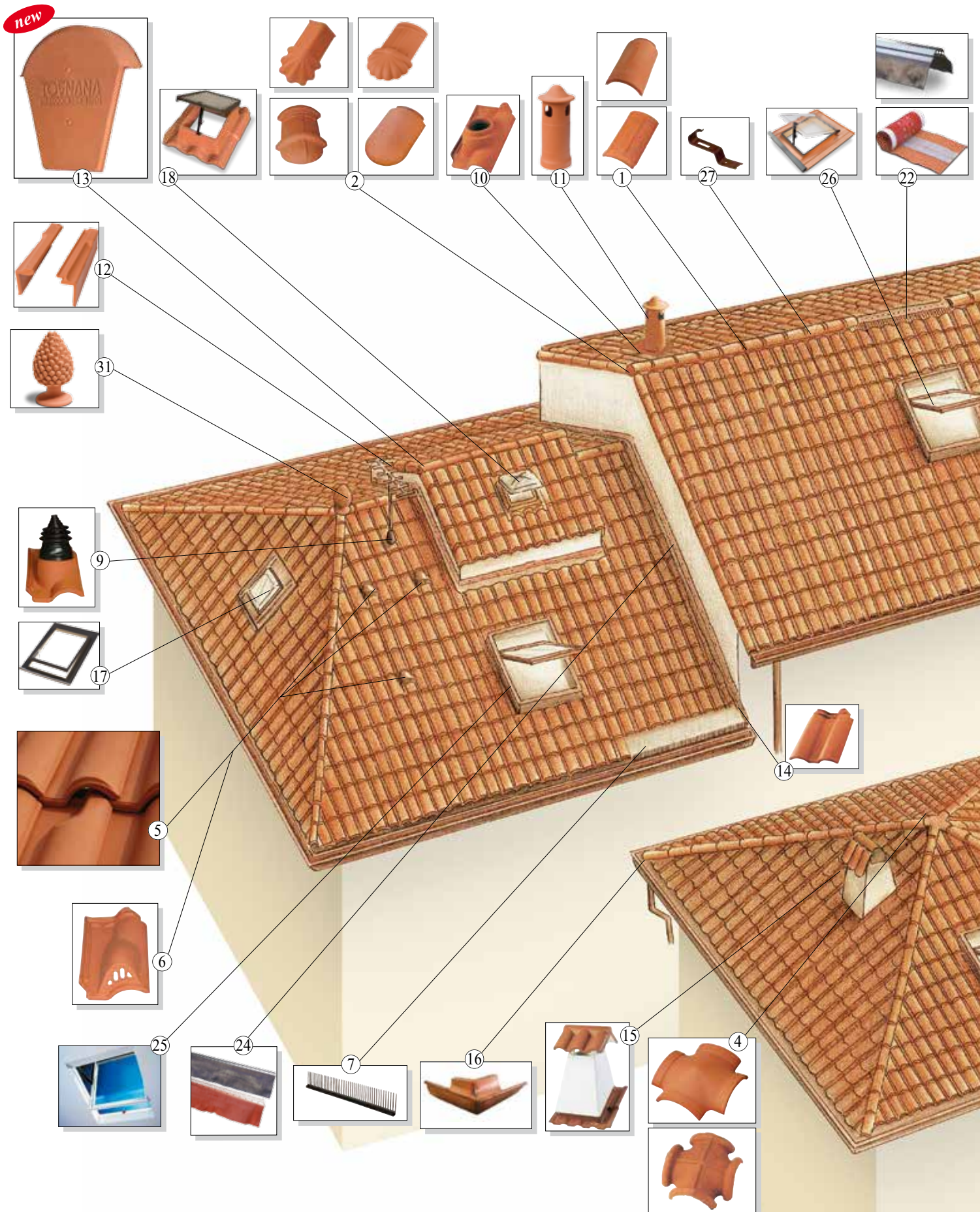
In our catalogue we have also **the cool roof system** that can reduce the temperature below the tiles and reduces the use and cost of the air conditioning.

The main object is to protect, with our systems, buildings and houses against damage caused by natural forces.

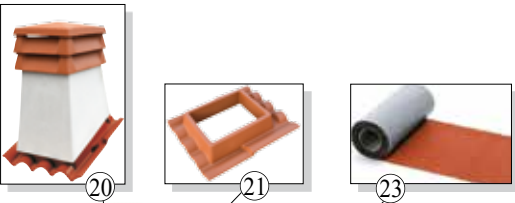


Venice (ITALY)

EXAMPLES AND APPLICATIONS



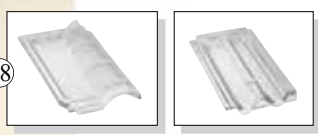
OF ROOFING RANGE



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



- Super Ridge / Ridge 1
- Right / Left Terminal / Angular / Terminal
with Shell for Super Ridge / Ridge 2
- Three-ways for Super Ridge / Ridge 3
- Four-ways for Super Ridge / Ridge 4
- Integrate ventilation tile 5
- Classic ventilation tile 6
- Bird dissuader 7
- Snow guard tile 8
- TV tile 9
- Base for Chimney 10
- Chimney-pot 11
- Right and left lateral tiles 12
for Royalcoppo, Portoghese, Tuscany and Marseille
- Joint for hip tile 13
- Double-wave portoghese tile 14
- Decor Turrets 15
- Ramex Eaves System 16
- Universal skylight 17
- Concrete skylight 18
- Borgo Turrets 19
- Jolly Turret A / Jolly Turret B 20
- Base for turret 21
- Ventilated Under-ridge system 22
- Rain gutter 23
- Flushing 24
- Attic window 25
- Copper skylight 26
- Hook for ridge 27
- Glass tile 28
- Chimney-pot 29
- Joist holder 30
- Pinetop 31



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 150°F (66°C) or more in the summer sun.

A cool roof under the same conditions could stay more than 50°F (28°C) 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 become 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 (66°C) 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.

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.

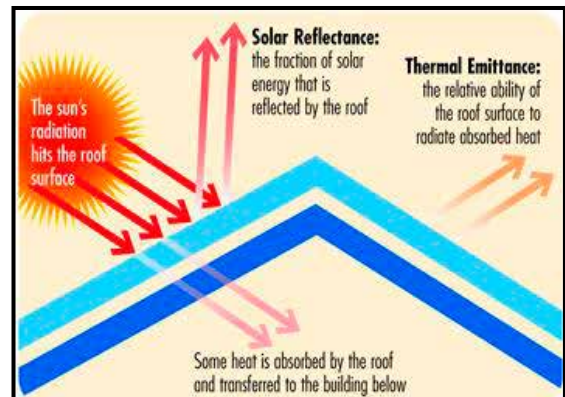
Thermal Emission describes how efficiently a surface cools itself by emitting thermal radiation. Thermal emission is measured on a scale of 0 to 1, where a value of 1 indicates a perfectly efficient emitter.

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. It is calculated 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 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*

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 Commission²

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.

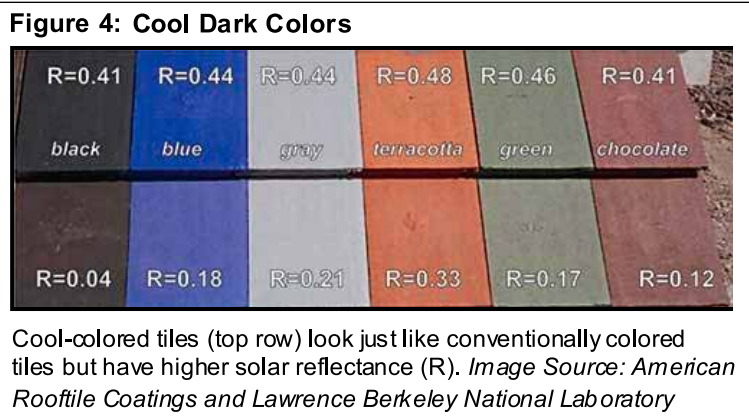
Solar Reflectance Index (SRI) is another metric for comparing the “coolness” of roof surfaces 1 . It is calculated from solar reflectance and thermal emission values. The higher the SRI, the cooler the roof will be in the sun. For example , a clean black roof could have an SRI of 0, while a clean white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

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.

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.



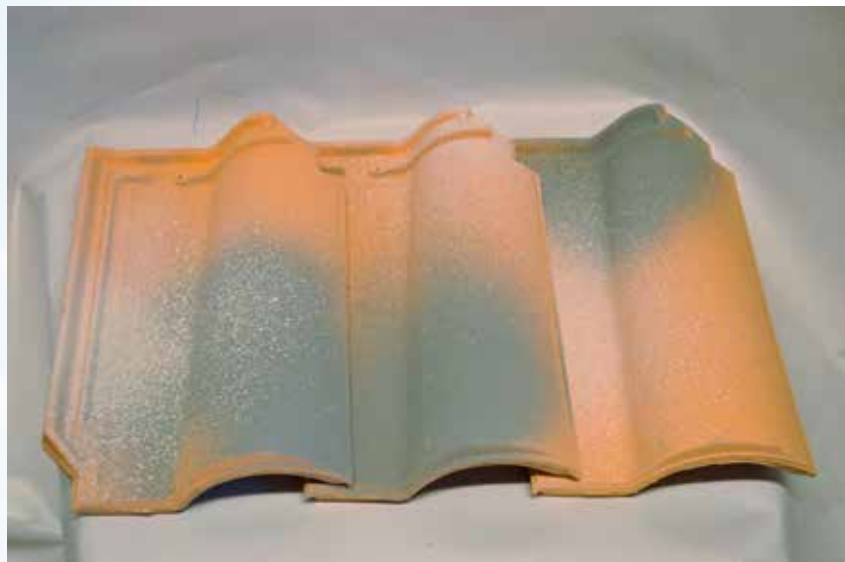
Cool roof white



Cool roof green light



Cool roof yellow light



Cool roof mix colors

CERTIFICATIONS



Department of Engineering Enzo Ferrari
University of Modena and Reggio Emilia



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



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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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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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
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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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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.



Liscio chiaro pastello

ORDER CODE: 120A02C

Rigato chiaro pastello

ORDER CODE: 120B02C

Coppo 45

INCIDORP C-ZAGRO

Coppo 45

Liscio bruno

ORDER CODE: 120A03C



Rigato bruno

ORDER CODE: 120B03C



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.

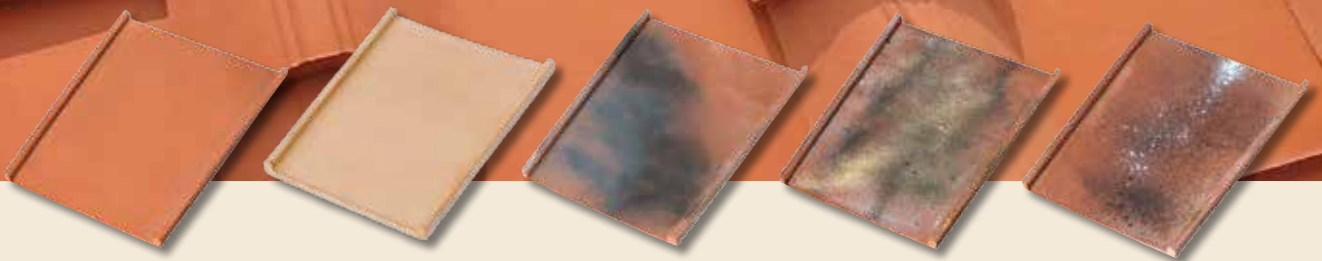
Coppo 45

INCIDORP C-ZAGRO

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.



Coppo 45 Antique Finishes



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.



Vecchio chiaro

ORDER CODE: 121C82C top tile

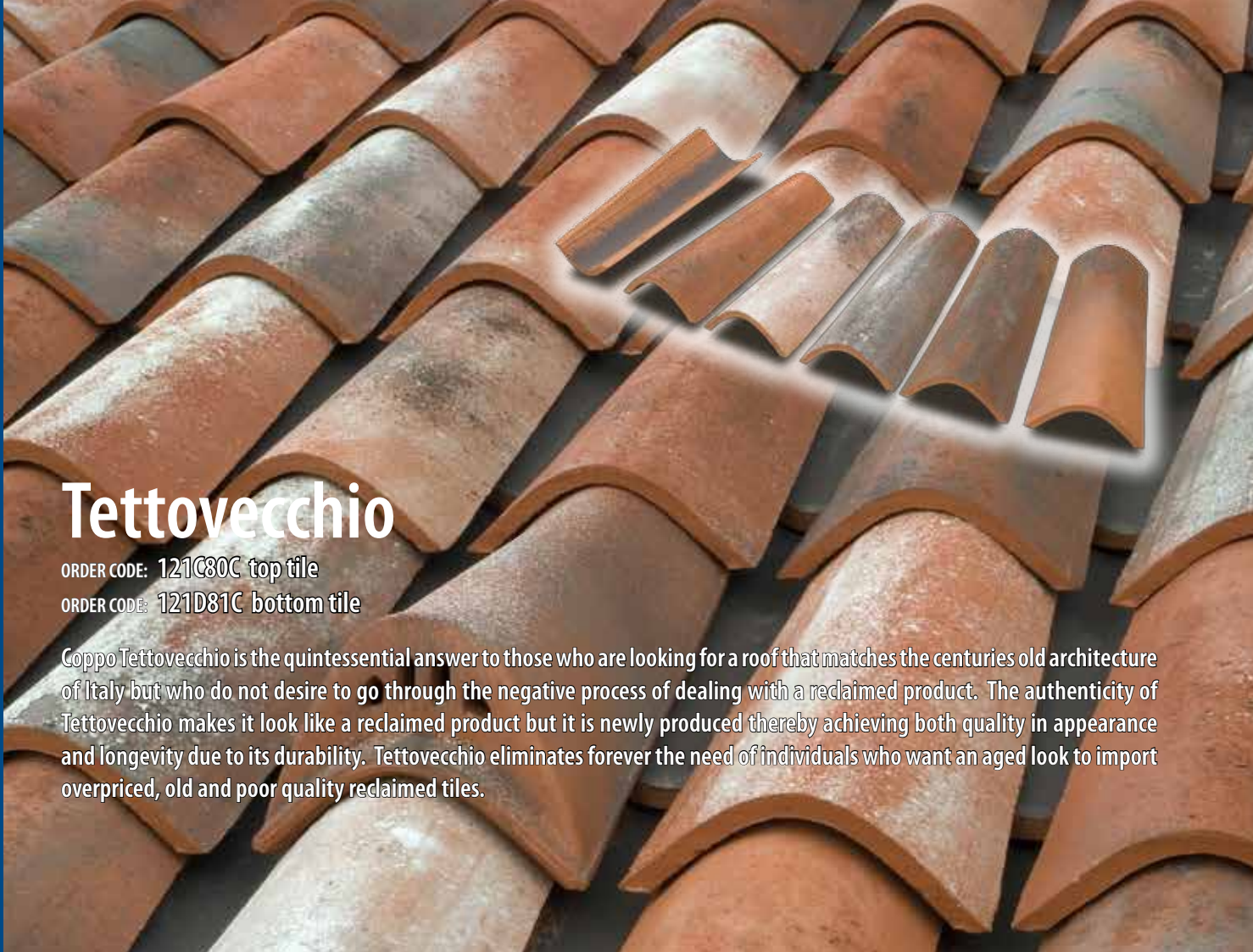
ORDER CODE: 121D82C bottom tile



Coppo 45 Antique Finishes



Coppo 45 Antique Finishes



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.





Tettoantico

ORDER CODE: 121C85C top tile

ORDER CODE: 121D82C bottom tile



Coppo 45 Antique Finishes



Coppo 45 Antique Finishes



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.





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

INCORPORA IL ZAGRO

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)



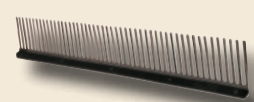
090103
Hook for ridge



090114
Inox hook
for cover coppo



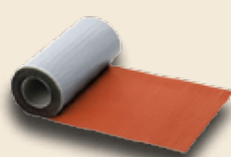
090116
Inox hook
for coppo with hole



090081
Bird dissuader in pvc
H 110 mm.



new
0902..
Waterproof underlay
at high transpiration



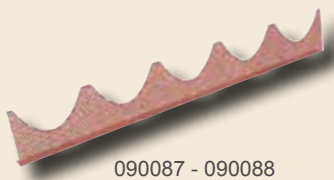
090160
Rain gutter



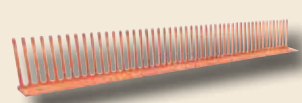
new
090100
Ventilated Under-ridge system



new
0900..



090087 - 090088
Metal bird stop



090083
Bird dissuader in copper
H 110 mm.



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



147N01
Chimney-pot
moorish style



142A01
Chimney-pot
Ø 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



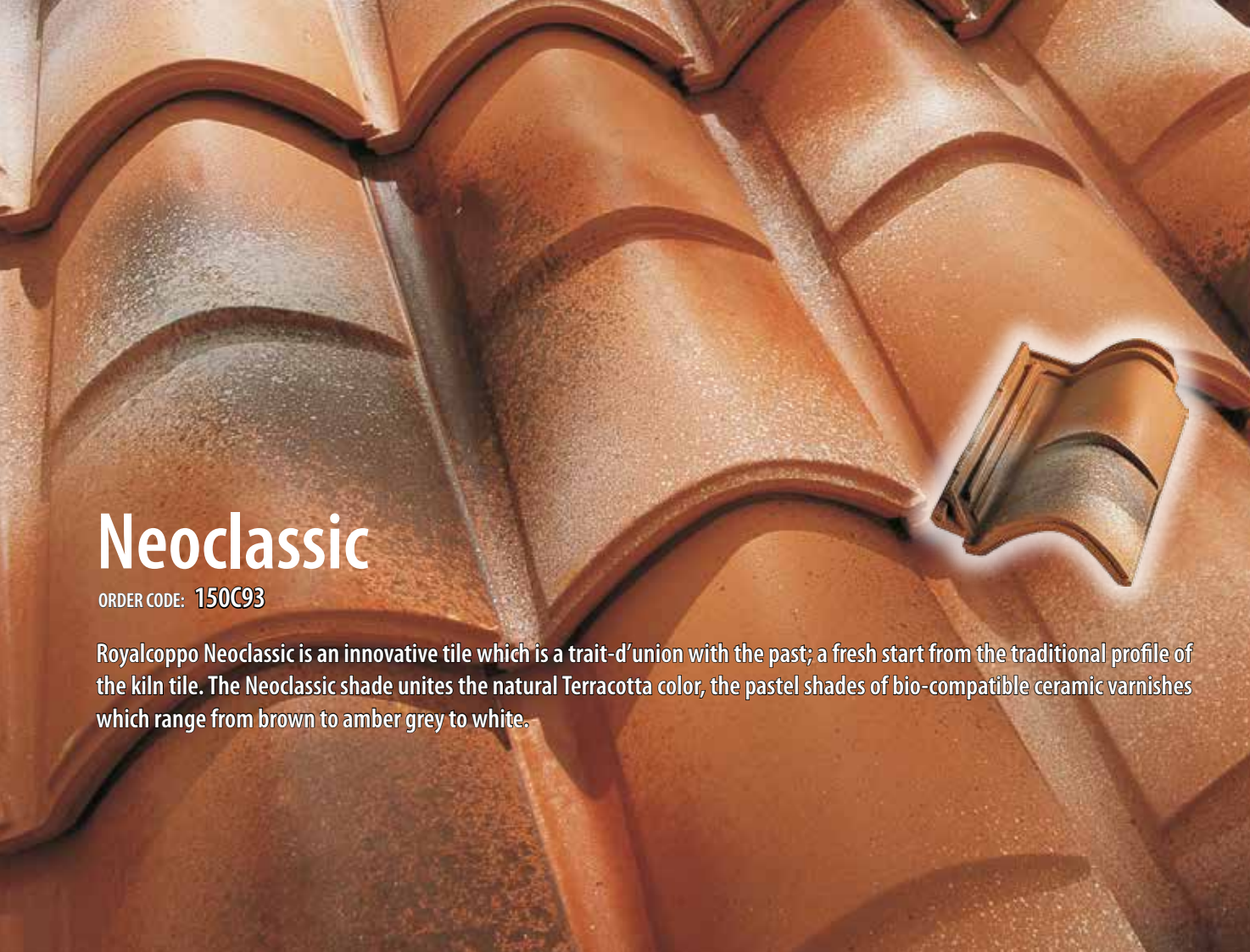
new
162V01
Half tile

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.





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.



Royalcoppo®

INCORPORAZIONE

Royalcoppo®

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.



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 Ø 12 cm. approx.



163B01
**Right and left
hip tile**



new
164B01
**Joint for
hip tile**



new
0902..
Waterproof underlay
at high transpiration



090105
Hook for ridge



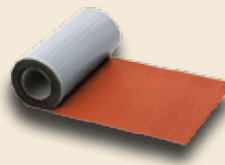
090085
Joist holder
(go to page 15 for
fixing detail - #30)



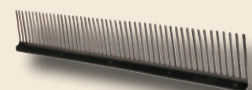
new
090100
Ventilated Under-ridge system



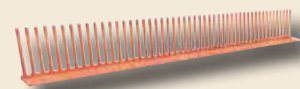
new
0900..



090160
Rain gutter



090081
Bird dissuader in pvc
H 110 mm.



090083
Bird dissuader in copper
H 110 mm.



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



147N01
**Chimney-pot
moorish style**



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



090090
Metal bird stop

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.



new

Emarat

ORDER CODE: 160A88

Portuguese Tile



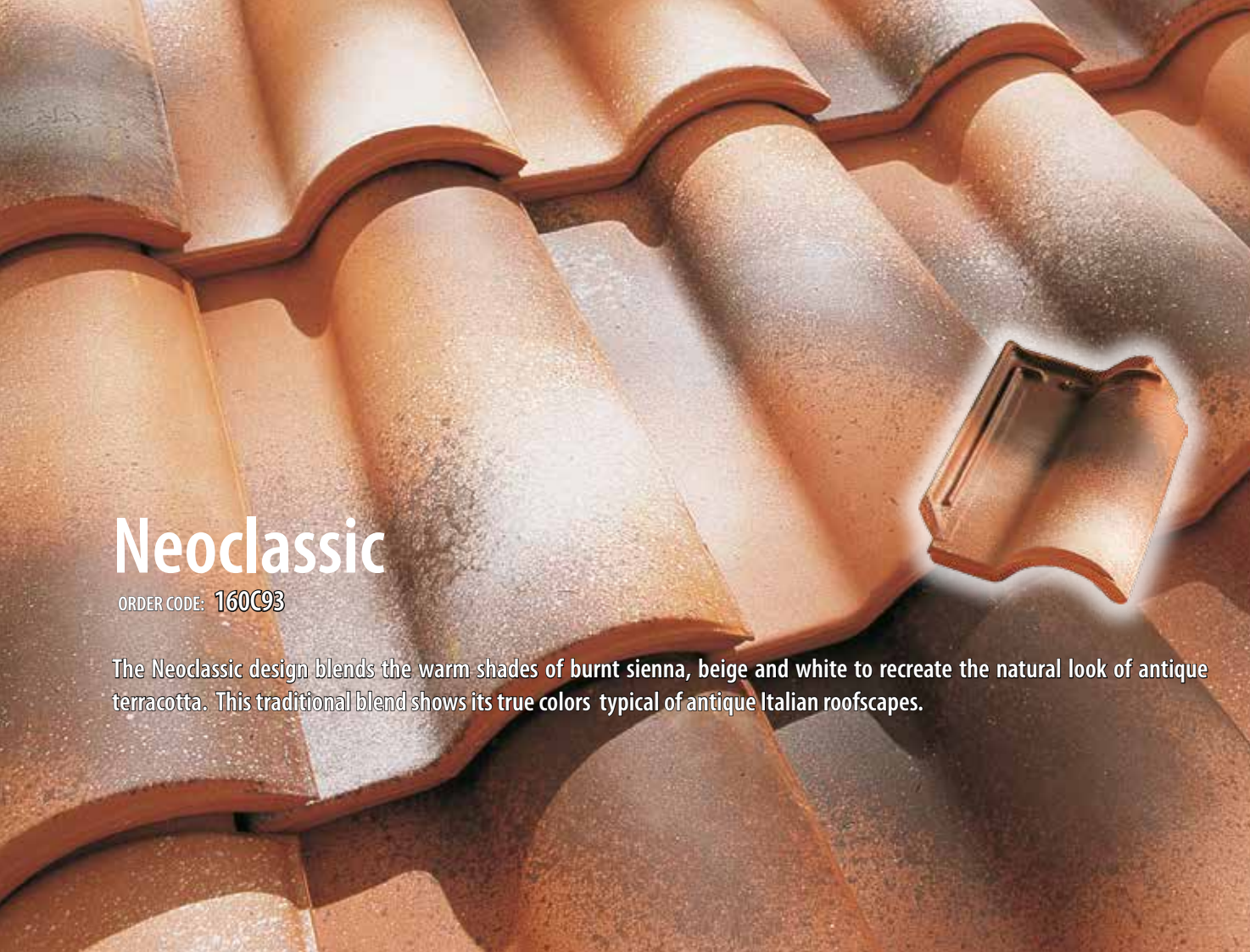
Portuguese Tile

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.





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.



Portuguese Tile

INCORPORA ZAGRO

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.





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.



Portuguese Tile

INCORPORA ZAGRO

Portuguese Tile

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.

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**



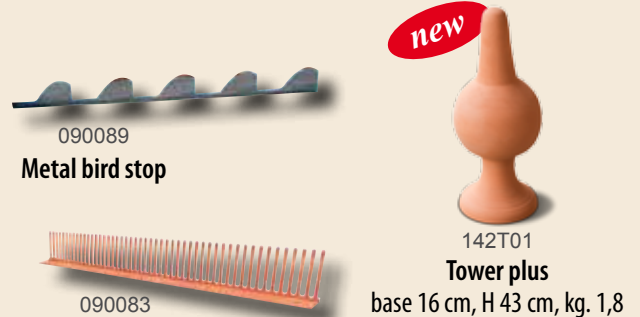
007059 **Grill**
 171B01 **Flat ventilation tile** You need 3 pieces every 25 m² of roof



162B01 **Double portoghese**
 163B01 **Right and left hip tile**
 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**
 090100 **Ventilated Under-ridge system**
 0900..



090089 **Metal bird stop**
 142T01 **Tower plus** base 16 cm, H 43 cm, kg. 1,8
 090083 **Bird dissuader in copper** H 110 mm.



090085 **Joist holder** (go to page 15 for fixing detail - #30)
 090160 **Rain gutter**
 0902.. **Waterproof underlay at high transpiration**



090080 **Bird dissuader in pvc** H 80 mm.
 142V01 **Lollipop** base 16 cm, H 48 cm, kg. 3,6



197B01 **Small base for chimney** Ø 12 cm. approx.
 197E01 197H01 **Large base for chimney** Ø 15 cm. approx. and Ø 20 cm. approx.
 147A01 147B01 **Chimney-pot** Ø 12 cm. approx. and Ø 15 cm. approx. to vent bathrooms and kitchens
 147C01 **Chimney-pot** Ø 20 cm. approx. to vent bathrooms and kitchens
 147N01 **Chimney-pot moorish style**
 142A01 **Chimney-pot** Ø 12 cm. approx. to vent bathrooms and kitchens

new

Mediterranean Smart

Mediterranean Smart

ΛΑΜΒΔΑ ΜΕΣΟΓΕΙΩΝ

Mediterranean Smart

ORDER CODE: 129201

Mediterranean 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				
Type of product: Mediterranean Smart				
Features	Declared value	Limit value	Reference	Standard applied
Absorption	11%	18 - 13%	UNI 9942:2	UNI 9942:3,14
In accordance	-	-	EN 1304	EN 1304
470 mm	+2%	-	EN 1304	EN 1024
238 mm	+2%	-	EN 1304	EN 1024
2000 gr	± 15%	-	UNI 9629	UNI 9629
13,3 mm	-	-	-	-
290 mm	-	-	-	-
Notes	Light - open	-	-	-
Strength	Average value	Single value ≥ 1,2 kN	UNI 9942:2	UNI 9037
2,90 kN	-	-	EN 1304	EN 134
In accordance	-	-	EN 592	EN 1302
Average value	Average value K' ≤ 0,80	-	Method C	Method C
K' ≤ 0,8	Single value K' ≤ 0,93	-	EN 1304	EN 1301
Average value	Average value CP ± 0,5%	-	Category I	Method 2
CP ± 0,4%	-	-	EN 1304	EN 1024
Average value	Average value RL = 1,5%	-	EN 1304	EN 1024
RL ≤ 1,5%	-	-	-	-
12,5 kg/m ²	-	-	-	-
41,5-42,5 kg/m ²	-	-	-	-

Delta Tecnologia
 ANALISI E CERTIFICAZIONE
 S.p.A. - Via S. Antonio, 3500A - 31100 Treviso (TV)

Test report no. 03413

It is made up of:
 - stated: 2 pages of test report
 - required: 034
 - stated: 2013-02-11

It refers to:
 - item: Mediterranean Smart

Characteristics:
 - model: Total thickness 0,0111 m
 Density 1850 kg/m³

Manufacturer:
 TOGNANA INDUSTRIE E FORMAZIONI SPA
 Via S. Antonio, 3500A, 31100 Treviso (TV)
 CERT 03413
 2013-02-11
 From 2013-02-20 to 2013-02-25

Laboratory Technician: Alessandro Ciani
 Laboratory Technical Manager: [Signature]

TEST REPORT PROD. Rev. 01 of 2009-01-07

DELTA TECNOLOGIA

Test report no. 03413

Determination Of Thermal Resistance By Means Of Heat Flow Meter Method (UNI EN ISO 12664:2002, ISO 8502:1991)

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 & m: 0,1%
 Mass change after testing at 12°C: 0,0%
 Average temperature difference across the specimen ΔT: 15°C

Test results at average specimen temperature of 12°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 σ_u = 0,04 σ_λ = 0,13

Observations during testing:
 Date of testing: From 2013-02-20 to 2013-02-25

TEST REPORT PROD. 014-10 Rev. 01 of 2009-01-07

new

Marsigliese Diamond

ORDER CODE: 155F97 (pallet 240)
155F93 (pallet 300)

Marseille Diamond offers a new aesthetics, the well imprinted joint makes the roof safe also in case of huge rainfalls.



Marsigliese Tile

INCORPORA IL LOGO

Marsigliese Tile

Natural Terracotta

ORDER CODE: 155A97 (pallet 240)
155A93 (pallet 300)



Sure and reliable, suitable to recovering old buildings, the Tognana Marsigliese Tile is a particularly strong product. It is extremely easy to lay thanks to its joints. Moreover, Tognana Marsigliese Tiles do not need, upon laying, to be aligned every three rows: the precise and deep joints make it self-aligning. It too, like the other Tognana tiles is complete with all accessories necessary to make a good roof, both in case of a renovation in town or a new building anywhere in the world.





Classic

ORDER CODE: 155D97 (pallet 240)
155D93 (pallet 300)

This classic design is stamped in the traditional way as it was in the beginning of the century in the French city of Marseilles. It is practically universal, and allows even the partial renovation of Antique roofs. Its flexible variable pitch easily adapts to different joists.



Marsigliese Tile Classic



Marsigliese Tile

Finishing elements



165B91
Ridge



178A01
Angular Ridge



176A01
Three-ways



177A01
Four-ways
for junction among four ridges



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



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



175D01
Left terminal



175A01
Right terminal



174A01
Terminal with shell



173A01
Angular terminal with shell



163C02
Left hip tile



163C01
Right hip tile



155200
Glass tile



170C01
Snow guard tile for Marsigliese



170D01
Snow guard tile for Marsigliese Classic



172C01
Antenna/Satellite tile



171C01
Ventilation tile
You need 1 pieces every 25 m² of roof



162Z01
Half tile for Marsigliese



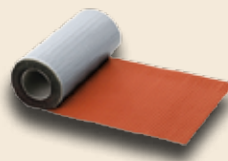
090085
Joist holder
(go to page 15 for fixing detail - #30)



new
090100
Ventilated Under-ridge system



new
0900..



090160
Rain gutter



new
0902..
Waterproof underlay at high transpiration



090105
Hook for ridge



197C01
197F01
Bearing base for chimney
Ø 12 cm. approx.
Ø 15 cm. approx.



197L01
Bearing base for chimney
Ø 20 cm. approx.



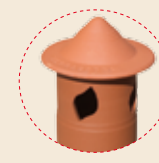
147A01
Chimney-pot
Ø 12 cm. approx. and Ø 15 cm. approx.
to vent bathrooms and kitchens



147B01
Chimney-pot
Ø 20 cm. approx. to vent bathrooms and kitchens



147C01
Chimney-pot
to vent bathrooms and kitchens



147N01
Chimney-pot moorish style



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

Flexi Natural Terracotta

ORDER CODE: 155E97

The Marsigliese Tile is very popular throughout Europe. With appreciation to its easy design, it is often used in wide roofs, with steep slopes. These characteristics are amplified with the new Marsigliese Flexi. The Flex design allows for ultimate flexibility with the variable step which can space from 315 mm to 365 mm when completely stretched. With the ability to use 12,5 pieces to 15 pieces per square meter, it offers the versatility of blending the Flexi tile with traditional Marsigliese tile.

Finishing elements



165B91
Ridge



178A01
Angular Ridge



176A01
Three-ways



177A01
Four-ways
for junction among four ridges



174A01
Terminal with shell



173A01
Angular terminal with shell



175D01
Left terminal



175A01
Right terminal



170E01
Snow guard tile



171E01
Ventilation tile
You need 1 pieces every 25 m² of roof



163C02
Left hip tile



163C01
Right hip tile



090100
Ventilated Under-ridge system



090160
Rain gutter



0902..
Waterproof underlay at high transpiration



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



172D01
Antenna/Satellite tile



197D01
Bearing base for chimney
Ø 12 cm. approx.



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



147N01
Chimney-pot moorish style



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



090105
Hook for ridge

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.





new

Dolomite

ORDER CODE: 153093

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.



Tuscany Coppo

INCODOR U-ZAGRO

Tuscany Coppo

new

Moonlight

ORDER CODE: 153P93

Tuscany Moonlight 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.





Medieval

ORDER CODE: 153M93

The Medieval Tuscany Coppo speaks for itself by displaying the palette 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.



Tuscany Coppo

TIGNANA
COPPO

Tuscany Coppo



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.





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.



Tuscany Coppo

INCIDORR U-ZAGRO

Tuscany Coppo



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.



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**



new
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.



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



new
090100
**Ventilated
Under-ridge system**



new
0900..



090105
Hook for ridge



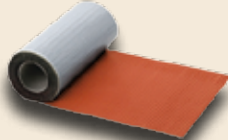
090085
Joist holder
(go to page 15 for
fixing detail - #30)



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



new
0902..
**Waterproof underlay
at high transpiration**



090160
Rain gutter



new
172F01
**Antenna/
Satellite tile**



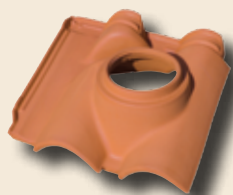
090080
Bird dissuader in pvc
H 80 mm.



090091
Metal bird stop



090083
Bird dissuader in copper
H 110 mm.



197N01
**Bearing base
for chimney**
Ø 15 cm. approx.



new
197M01
**Bearing base
for chimney**
Ø 12 cm. approx.



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



147N01
**Chimney-pot
moorish style**



142A01
Chimney-pot
Ø 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



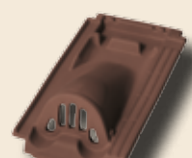
175D98
Left terminal



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 **Portoghese** 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

Portuguese Tile

INCODOP C-ZAGRO

Marsigliese Tile

new

DCS - Double Coppo Stopper

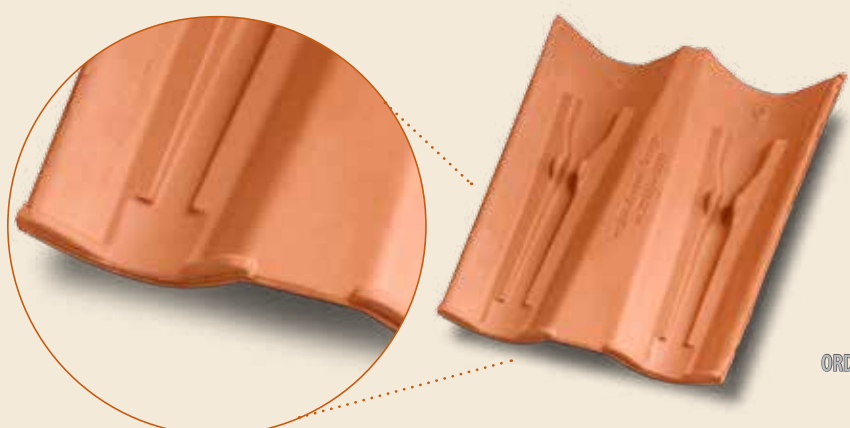
a new solution for Coppi roofs.

REGISTERED DESIGN

Proudly made in Italy

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)

CertMac
snc (s.p.a.) s.r.l.
Via Gramicci, 62
46018 Faenza RA
Italy
Tel. +39 0548 670363
Fax +39 0548 670399
www.gertimac.it
info@gertimac.it

R.T. 04
partita IVA n.
codice fiscale
02206460398
R.E.A. RA
383883
Capitale sociale
€ 10.000
stranamente versato

Tests executed by

Ind. Tech. Germano Pedercoli

G. Pedercoli

Ind. Tech. Federica Farina

Federica Farina

Drawn up

Dr. Marco Marsigli

M. Marsigli

Approved

Eng. Luca Laghi

L. Laghi

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**
(file 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

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
Current Issue 05/07/2014

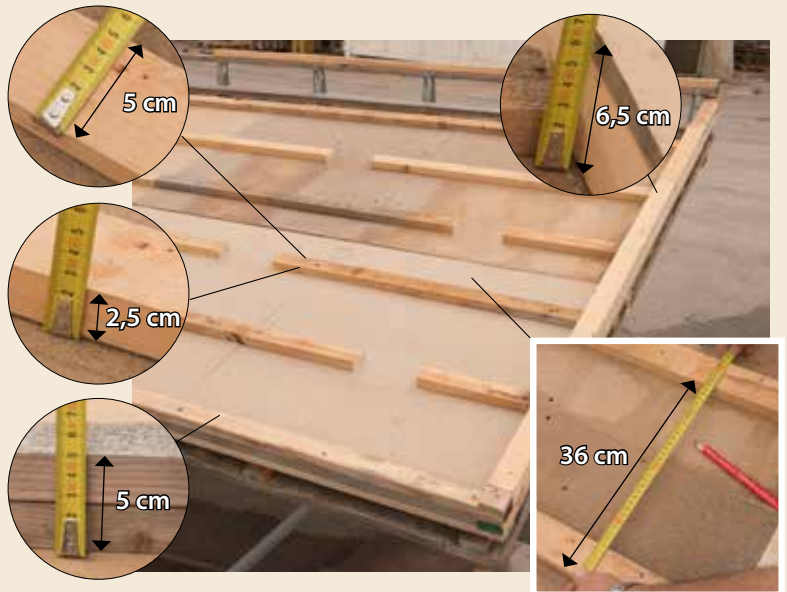
Eng. Luca Laghi

L. Laghi

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:

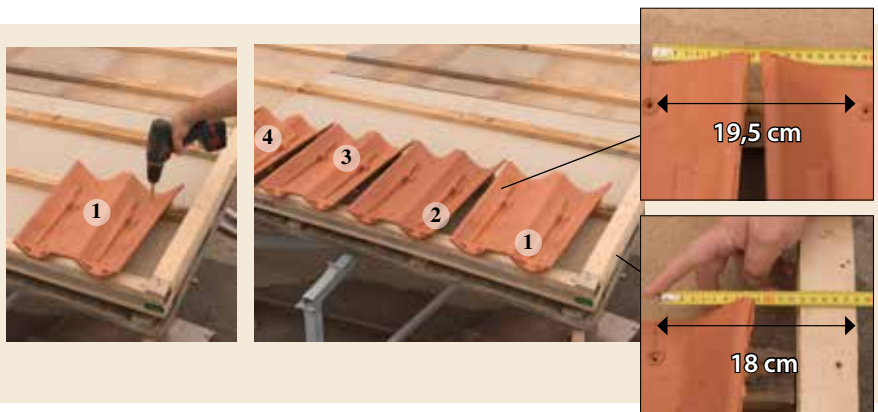
1- Fix warping of wood laths with screws (size cm. 5x2,5) parallel to the eaves line with a distance between them (step) of 36 cm. and interrupted at different points for the drainage of any condensation or water droplets infiltrated and also help the circulation of the air under the tile. The lath on 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.



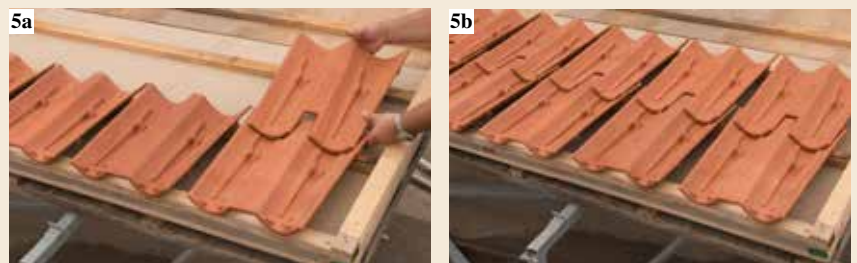
2- The lath step can be calculated as to reach the ridge line with a whole number of pieces. After reaching the ridge line, and when the pitch is covered with a whole number of DCS, a cut on size DCS can be insert as to complete the pitch, or you can close the pitch using the traditional 45 coppo-tiles.

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 coppo-tiles starting from the gutter line, using the 3/4 coppo-tiles supplied by the producer or by cutting properly the 45 coppo-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.

Glazed Portuguese



Azure Labuan



Grey Monaco



Grey Mat



Best Red



Black Night



Brown Mat



Deep Blu



Green Al-Gesira

Glazed Marsigliese



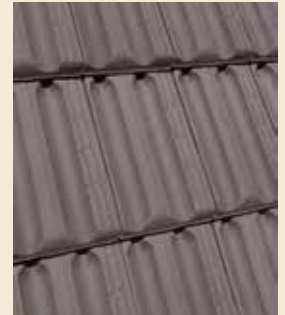
White Star



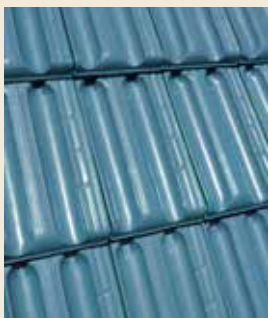
Brown Mat



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

- 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.
- Lay out horizontal and vertical chalk lines using a minimum of 37 cm. for Coppo or 42 cm. for Coppo Mediterraneo for horizontal spacing and a maximum of 20 cm. for Coppo and 25 cm. for Coppo Mediterraneo for vertical spacing.
- 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.
- Install bird stops.
- Install booster tile above birdstop and continue to install starter tiles above booster tiles.
- Install cap tile using tile nail.
- It is recommended that vent tiles be used every 25 m² near the ridge in order to expel trapped heat.
- 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.
- 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

- 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.
- Install first 5 x 5 cm. batten (treated wood) at eave or elevated fascia to boost first course of tile.
- 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.
- 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.
- It is recommended that vent tiles be used every 300 square feet near the ridge in order to expel trapped heat.
- 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.
- 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 EVERY 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 an 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

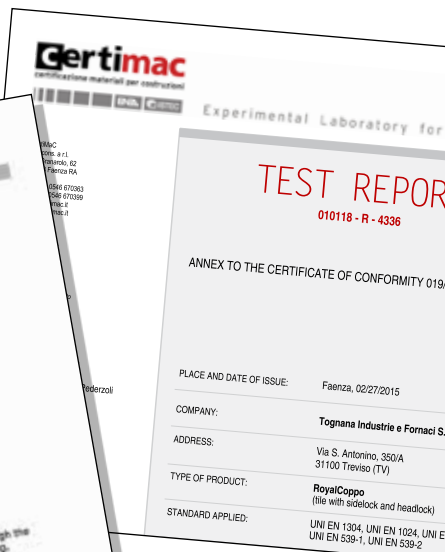
Since year 2001 Tognana Spa obtained the UNI EN ISO 14001 certification, from the certification authority ICMQ (certification quality mark institute for products and services for construction), of the environmental management system of the plant in Treviso. The adoption of an environmental management 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



**MANAGEMENT SYSTEM
UNI EN ISO 9001:2008.**



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

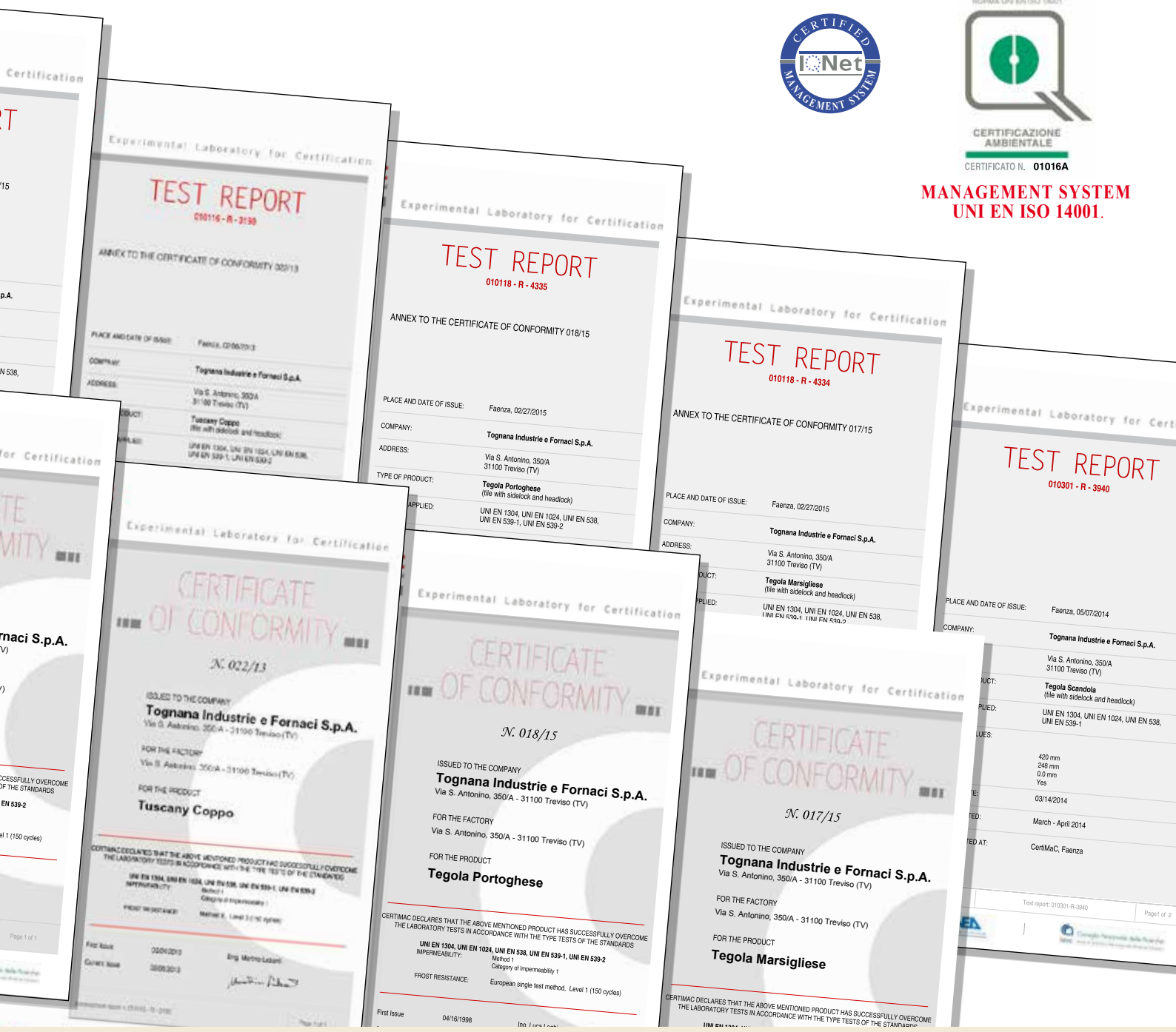
documentation and the execution state control through internal audits. The last stage of the process was the real certification that has seen, by the certifying institute, inspections to verify:

- 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.



**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**

CertiMac
certificazione materiali per costruzioni

Experimental Laboratory for Certification

TEST REPORT
010204 - R - 2485

DETERMINATION OF FROST RESISTANCE (UNI EN 539-2, STANDARD TEST METHOD B, 625 CYCLES) OF THE PRODUCT "TUSCANY COPPO" MANUFACTURED BY "TOGNANA INDUSTRIE E FORNACI S.p.A.", TREVISO PLANT.

Test carried out by
P.I. Germano Pedersoli
G. Pedersoli

Compiled by
Dott. Marco Marsigli
M. Marsigli

Approved by
Ing. Martino Labanti
M. Labanti

PLACE AND DATE OF ISSUE: Faenza, 18.04.2011

CLIENT: Tognana Industrie e Fornaci S.p.A.

PLANT: Via S. Antonino, 350/A - 31100 Treviso (TV)

PRODUCT TYPE: Clay Roofing Tile

STANDARD APPLIED: UNI EN 539-2, method B

RECEIPT DATE OF SAMPLES: 22/12/2010

TEST DATE: January - April 2011

TEST CARRIED OUT AT: CertiMac, Faenza

Revisori -
Classificatori

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File #5

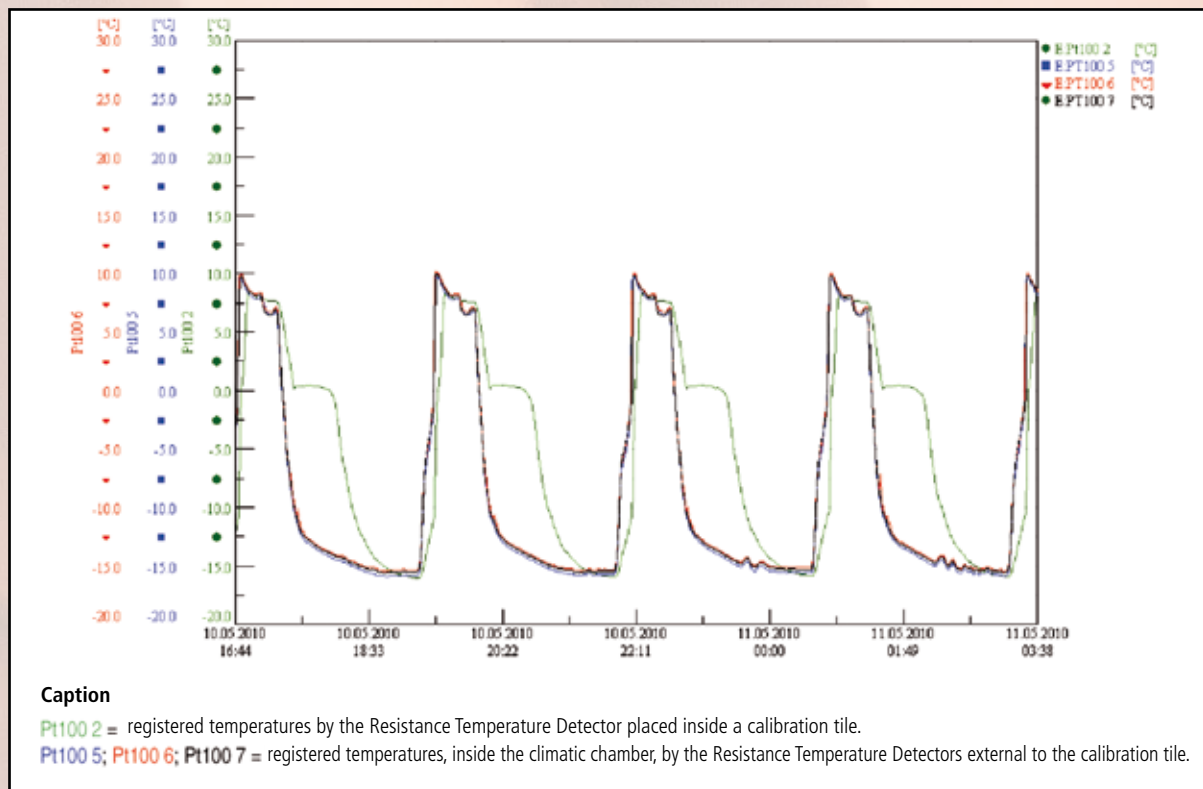
ENEA

**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 $2 + 0,5 \text{ kg/dm}^3$ and water absorbing $W_u 8,5\% + 0,5\%$.



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/m ²	52 kg/m ²
Pieces per sq. m.		30 approx.	19 approx.
Pieces per pallet		270	136
One container		12.960 equal to 432 sq. m.	7344 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 equal to 531 sq. m.	7440 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 equal to 543 sq. m.	6496 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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CELEBRATION

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TOGNANA

SUPEROOF SINCE 1820




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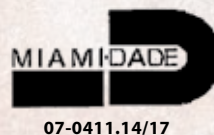
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Certimac