



OUR GROUP: PANARIAGROUP

PANARIAGROUP. THROUGHOUT TIME AND AROUND THE WORLD, CERAMIC EXCELLENCE

To excel in the world of high quality ceramics means knowing how to continuously create highly technological products and how to enhance them through the utmost attention to aesthetics and detail. Panariagroup has always adhered to the highest standards of excellence, combining its history of skilful artisan craftsmanship with cutting edge technology. This approach is intrinsically linked to a fundamental commitment to always act and operate responsibly. With over 40 years of experience, Panariagroup is an international company with a strong Italian soul and an extensive sales network with 9 brands in over 120 countries all over the world.









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k=lite

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BEAUTY IN CERAMICS



THE NEW SURFACE FOR ARCHITECTURE

Cotto d'Este has distinguished itself as one of the most prestigious names in the field of ceramics. Our creations recall beauty, quality and prestige and are the result of our passionate and continuous aesthetic research. Rather than a mission, searching for beauty is a vocation, an imperative that has allowed us to attain a high level of excellence, as attested by the confidence placed in our creations by architects and interior designers all over the world.

SLABS PRESSED ON CONTINUOUS BELTS AND NOT TILES MADE WITH CONVENTIONAL DIES

Kerlite is ultrathin porcelain stoneware based on a new concept, where maximum versatility and ease-of-use are the strong points. Resistant and light, flat and flexible, simple to cut, drill and install, and easy to sanitise too. Developed to fulfil the aesthetic needs of architecture and contemporary design, Kerlite introduces the era of global tiling: not only floors and walls but also furniture and furnishings, doors, kitchens and work tops.





PORCELLANATO CERAMICO ULTRASOTTILE

ULTRA THIN PORCELAIN **STONEWARE**



BLACK-WHITE BLUESTONE EVOLUTION BUXY CLUNY ELEGANCE OAKS OVER WONDERWALL



LAMINATED PORCELAIN STONEWARE REINFORCED WITH FIBREGLASS

A SUPERIOR PRODUCT

MORE RESISTANT

MORE RELIABLE

LIGHTER

and suitable for renovations

EASIER TO WORK WITH and handle

SAFER

MORE FLEXIBLE

Karlite 5plus

THIN PORCELAIN STONEWARE

THICKNESS 5,5mm.
Ideal for installation in
commercial environments
subject to heavy traffic, both
for new construction and
renovations with tiling laid on
pre-existing floors.

Karlite 3plus

ULTRA THIN PORCELAIN STONEWARE

THICKNESS 3,5mm.
Ideal flooring for residential and light commercial applications, both for new construction and renovations with tiling laid on pre-existing floors.





LARGE

A range of slabs with sizes up to 3 x 1 metres. The perfection of the slabs allows for installation with joints of only 1 mm.

100x300 cm

THIN AND LIGHT
Slabs of Kerlite are particularly thin and light.



GUARANTEED FOR 20 YEARS
The beauty and extraordinary
quality of our floors are values
that resist time: resistance of
surfaces to wear and frost is
guaranteed for 20 years.



FLAT AND RESISTANT

The innovative production process of Kerlite, which is pressed on a continuous belt, allows us to produce perfectly flat and compact slabs.

Pressed at a force of 15,000 tons, Kerlite 5plus resists breaking loads of up to 1200 Newton.

PROTECT products, based on silver ions blocks the metabolism of bacteria, eliminating them and preventing their proliferation. Unlike other technologies, such as those based on the use of Titanium Dioxide, the protective shield is always active, day and night, with or without sunlight and it

does not need UV rays for

activation..

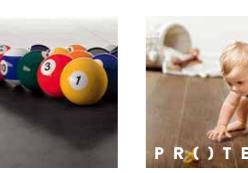
ANTIMICROBIAL SURFACE

The technology used in



ECO-FRIENDLY

An ecocompatible production process: minus 70% on consumption of raw materials and water and minus 50% on natural gas; Emissions of CO₂ that are 20 times lower with respect to the thresholds of Italian laws, as envisaged by the Kyoto Protocol.





EASY TO CLEAN

stains and pollution.
EASY TO INSTALL

to traditional tile.

Kerlite is non-absorbent,

Thin and light, easy to cut

and drill, processing time

reduced by 40% with respect

easy to clean and resists acid,





kalite

ULTRATHIN PORCELAIN STONEWARE

5,5 mm **▼** 11,5 Kg/mq



k=lite	INTENDED USES Installation must be performed in compliance with the standards published on the Kerlite Technical Manual.	k=rlite 3plus	k=lite 5plus	
	FLOOR INSTALLATION For NEW BUILDINGS and REFURBISHING with installation on existing floors.			
	Residential (kitchens, bathrooms, living rooms, common apartment block areas and any other residential environment).	•	•	
INTERIORS	Light commercial (offices, offices open to the general public, waiting rooms, shops, bathrooms, restaurant dining rooms, car showrooms, bars, cinemas, surgeries/clinics).	•	•	
	Intensive commercial (common areas of shopping centres, hotel halls, canteens, fast food restaurants, clubs, hospitals) with the exception of areas subject to heavy concentrated loads (e.g. trolleys with hard wheels).		•	
EXTERIORS	Upon condition that surfaces are sheltered (e.g. loggias, covered balconies, etc.) and made totally impervious. The use of sizes that are not larger than 50x50cm is recommended.	•	•	
	WALL INSTALLATION For NEW BUILDINGS and REFURBISHING with installation on existing walls.			
INTERIORS	Any residential and commercial environment, in situations where holes and/or cuts are not necessary.	•	•	
INTERIORS	Any residential and commercial environment, in situations where holes and/or cuts are necessary.	•	•	
EXTERIORS	In situations where holes and/or cuts are not necessary and with sizes up to 100x100cm.	•	•	
	In situations where holes and/or cuts are necessary and/or for large sizes.	•	•	
	SPECIAL USES			
Ventilated Facades Systems		•	•	
Thermal Insulation Systems	Depending on project specifications and in combination with the construction systems	•	•	
Pool and Swimming Pool Tiling	recommended by Cotto d'Este and approved by the Installation Supervisor.	•	•	
Furniture Surfaces		•	•	

⁽ullet) In situations where holes and/or cuts are not necessary and with sizes up to 100x100cm.

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Green . MISSION OUR COMMITMENT TOWARDS ECOCOMPATIBLE PRODUCTION

FOR A PLANET THAT LIVES

Cotto d'Este has a green heart. Along with our passion for beauty, we cultivate an inborn sensitivity for the environment. Our company has made excellence its mission. We know that this implies concern for the environment and for protection of our planet. Our commitment is effective and binding and is the result of practical choices. Our target is a highly ecocompatible production process that is recognised at an international level by the most preeminent environmental certification bodies. How do the beauty and quality of our products gain added value? They are the result of respect for our planet. A planet that lives.



The continuous search for excellence has led Cotto d'Este to invest in the latest technology. Amongst the many advantages, the latter has permitted us to reduce emission of gas into the atmosphere to the minimum levels possible: at least ten times lower than the strict thresholds of Italian laws. Emission levels also fulfil the requirements of the Kyoto Protocol for reduction of GHG.



By means of extremely modern plant, Cotto d'Este can convey the heat produced during the tile firing stage to the equipment used for preparing mixtures. By doing so, the consumption of natural gas is reduced by at least 25%.



All discarded green material - i.e. green material that does not fulfil our high standards of quality - is recycled. Since this material is not fired, it can be fed back into the initial stages of the production process hence reducing the amount of raw materials needed. Fired rejects that cannot be fed back into the production cycle, since they would adversely affect the characteristics of the mixture, are recycled externally. In other words, they are used for the production of bricks or road substrates thus reducing the natural materials generally used for these purposes.



The tile production process calls for a significant amount of water. To save such an important resource, Cotto d'Este recycles all the water employed during the production cycle. This reduces the consumption of water by 60%. Furthermore, the water used during the production process is in no manner disposed of in the environment.



All materials used for packing our products (cardboard boxes, plastic, wooden pallets, etc.) can be recycled. As a further environmental guarantee for the forests of countries importing our products, all our pallets are made without bark (in accordance to the IPPC / FAO ISPM 15 standard).



Apart from keeping a constant control on the work environment, Cotto d'Este invests in training courses for staff concerning the environmental and safety aspects of the production activities. We promote the reduction of noise levels both inside and outside our factories, as established by the laws in force.



To continuously improve its policy, Cotto d'Este periodically checks its entire environmental protection package by means of Environmental Audits performed by independent certifying bodies and by qualified in-house personnel.

OUR ENVIRONMENTAL CERTIFICATIONS



ISO 14001



EMAS





LEED



CE

All environmental certificates, declarations of conformity and environmental declarations can be found on the Cotto d'Este web site.



PR()TECT

The exclusive Panariagroup technology for floor and wall coverings with the highest perfomance. To live healthy, safe and secure.



POWERFUL ACTION

eliminates microbes and prevents their reproduction



CONTINUOUS PROTECTION

always active, 24 hours a day, with and without sunlight



ETERNAL EFFECTIVENNES
thanks to the technology permanently
integrated into the product



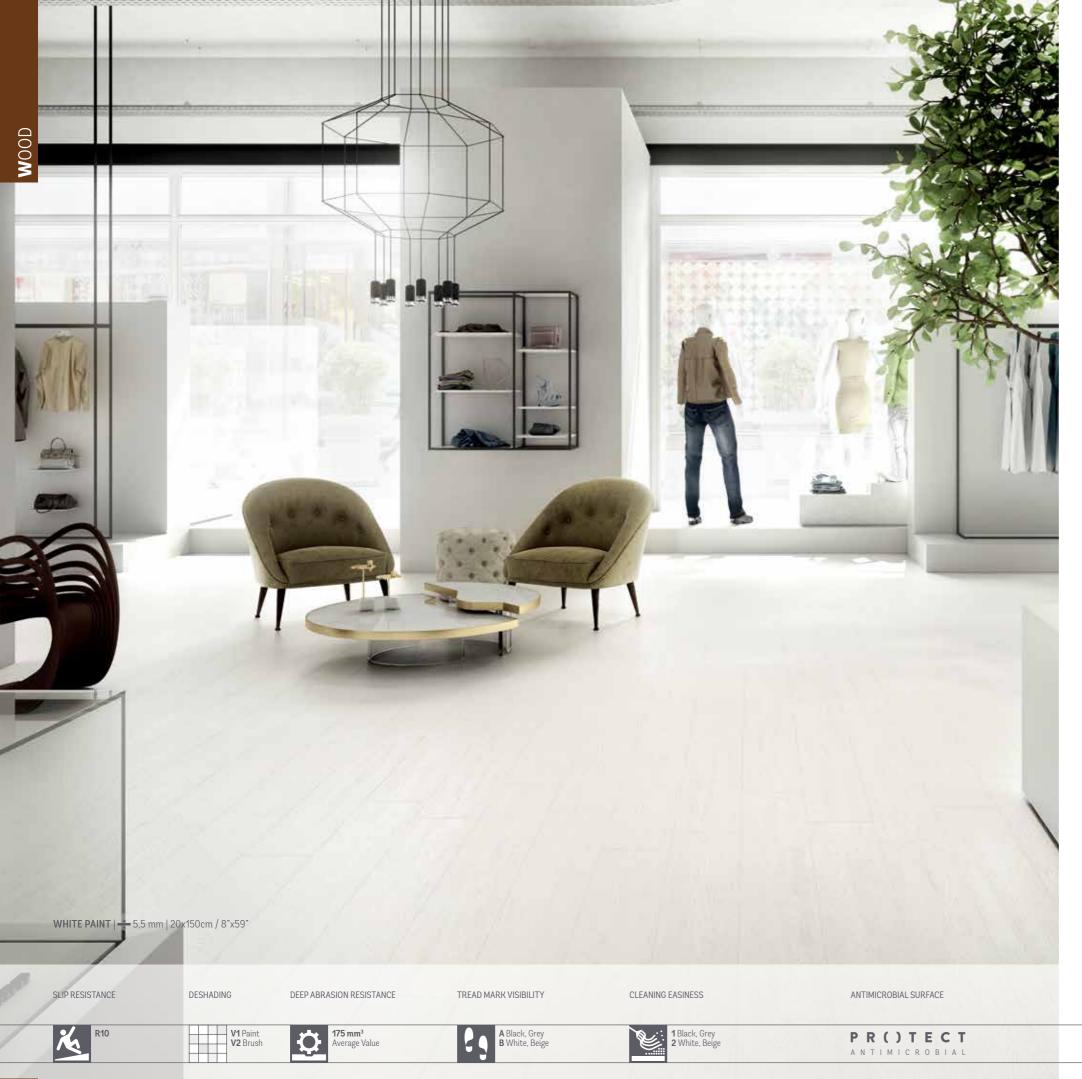
GUARANTEED QUALITY by the partnership with MICROBAN

PANARIAgroup[®]



THE LANGUAGE OF WOOD

Wood talks to our heart. The colour of fibre, the pattern of veins and the pleasure of touch are a direct and timeless language. The wood selected by Cotto d'Este and collected in two well-structured collections talks about life and relations to give shape to warm environments that are elegantly simple, in the balance between tradition and modernity.



B A C K S T A G E

THE WOOD SHOW

COLOURS

WHITE

BEIGE

GREY

BLACK

FINISHING

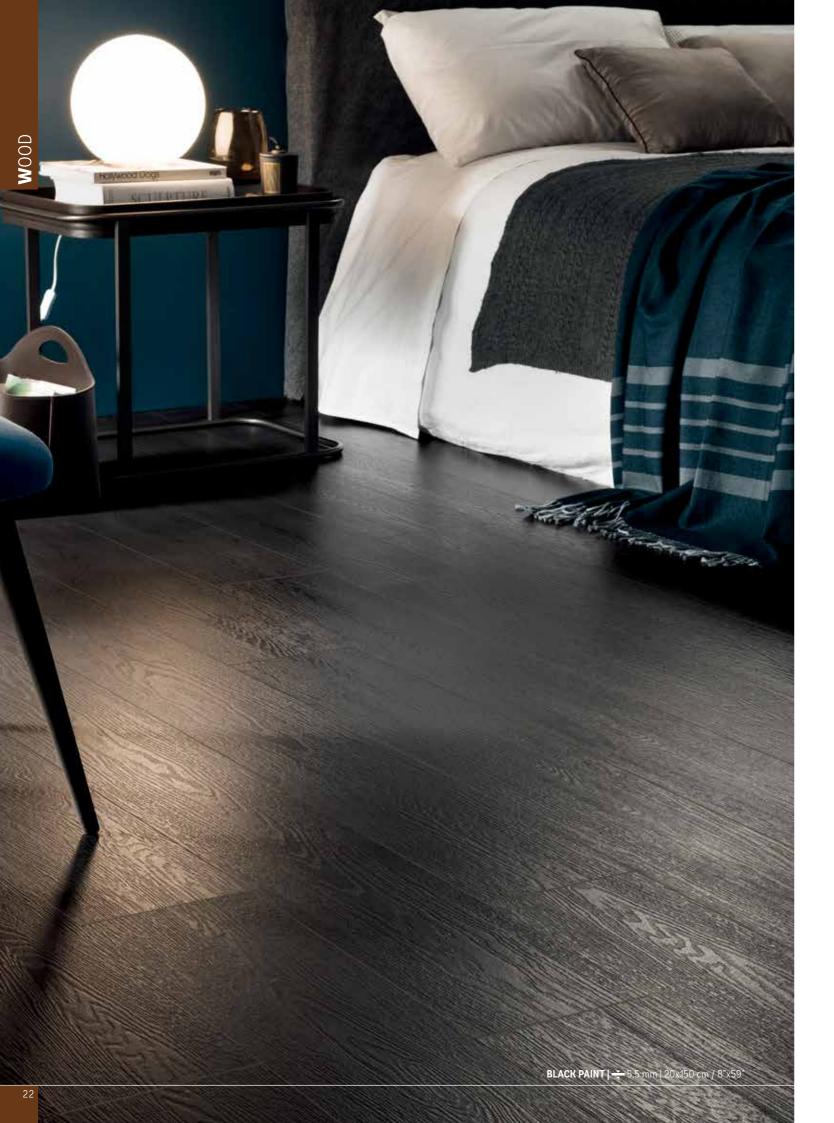
RECTIFIED

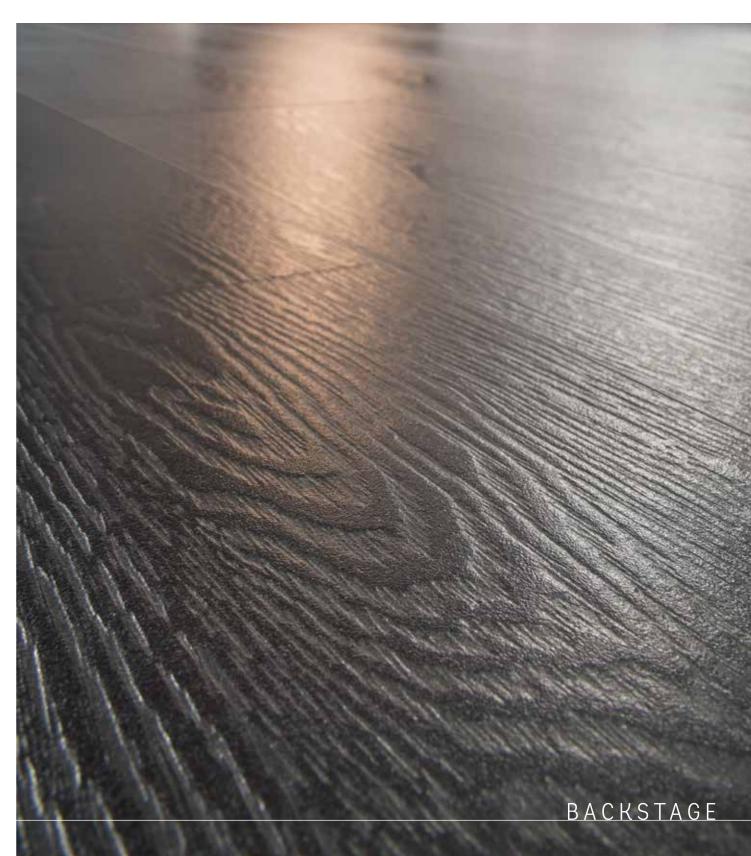
THICKNESS SURFACE S

Karlite 5plus Paint (P)
Brush (P)

20X150cm 8"x59"









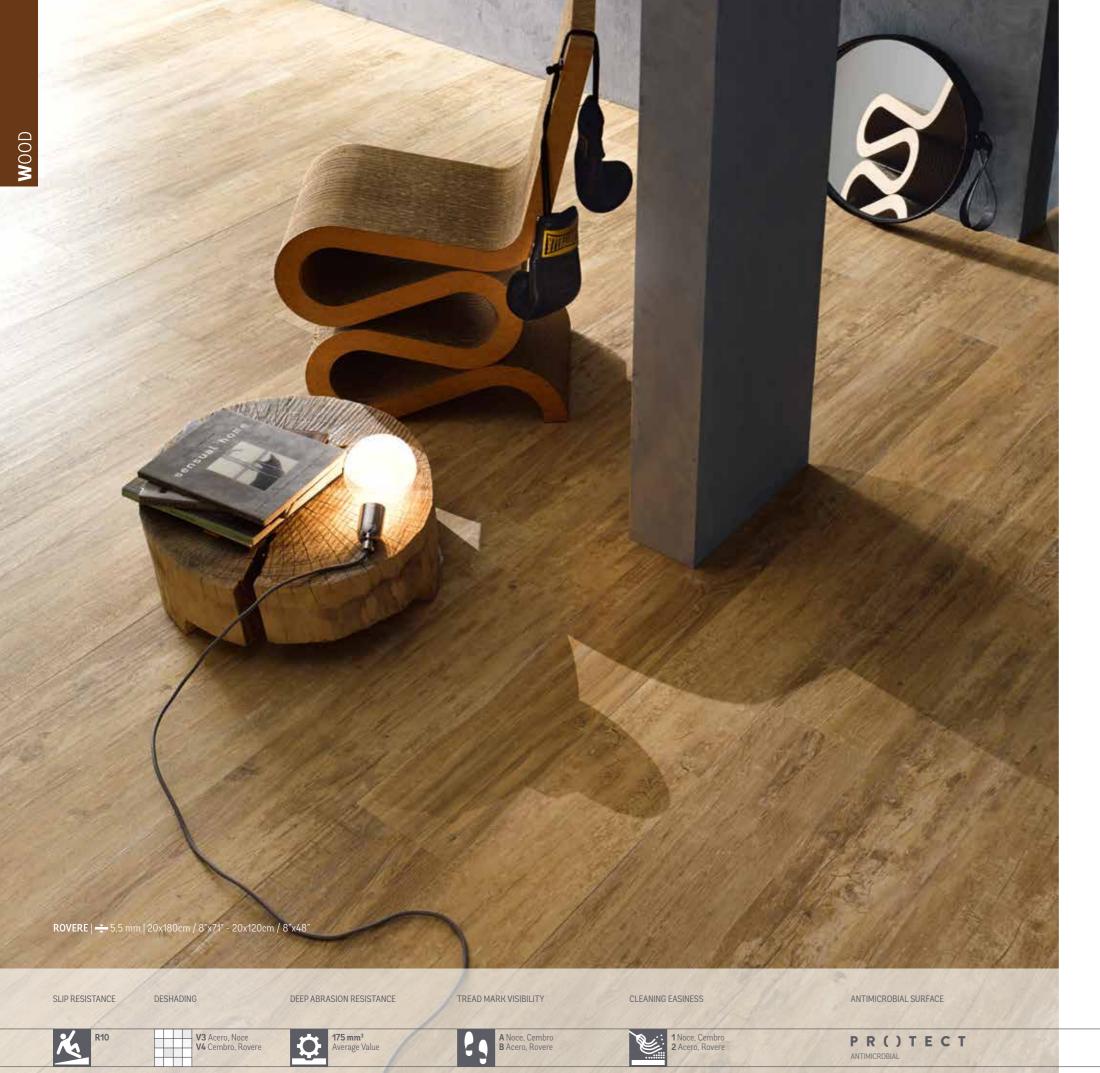












OREST

ESSENCE OF WOOD

COLOUR







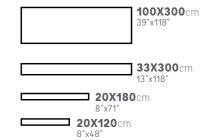
FINISHING

RECTIFIED

THICKNESS SURFACE SIZES

Karlite5plus

Naturale (P)

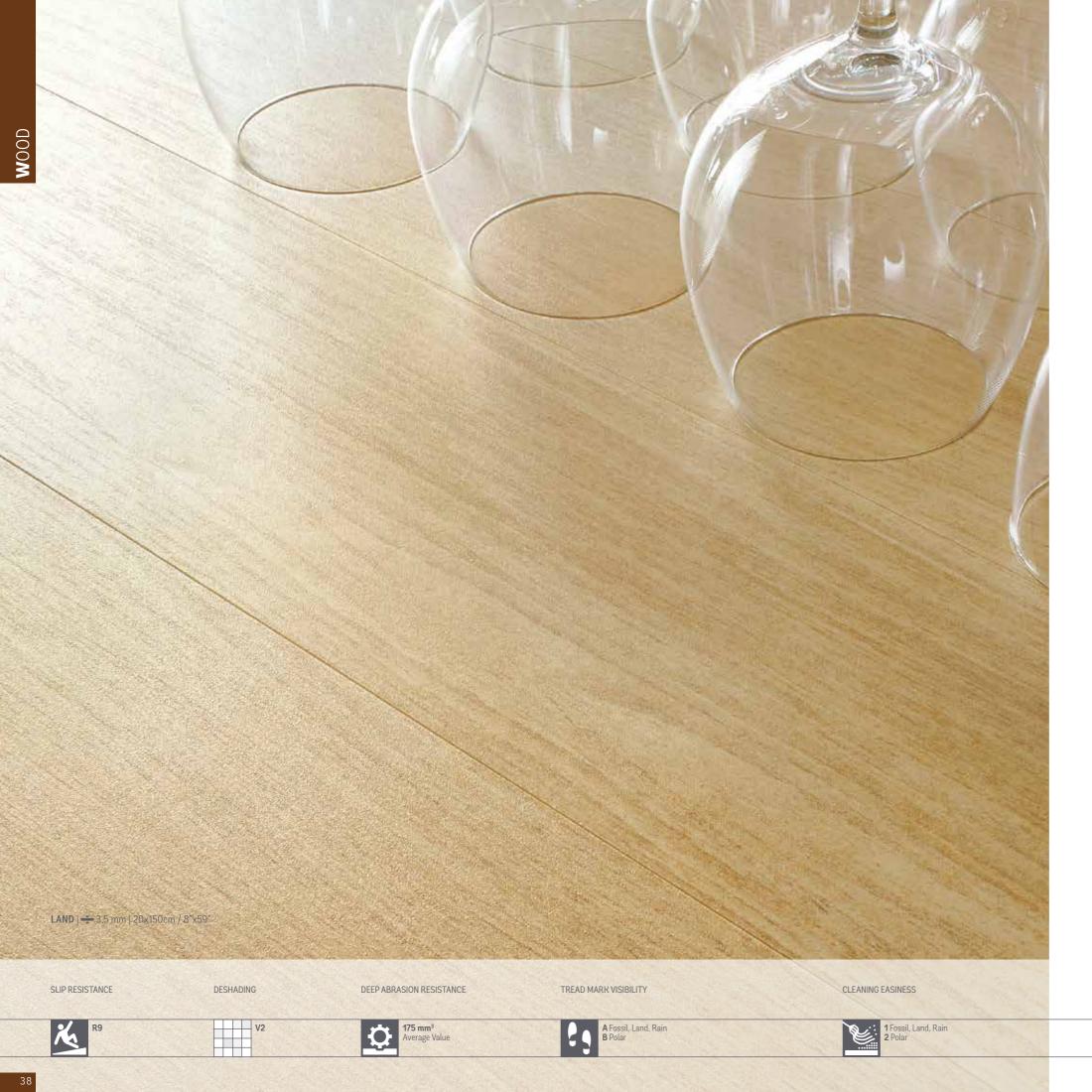












) A K 9

THE KERLITE WOOD

COLOURS / 颜色

POLAR

LAND

RAIN

FOSSIL

FINISHING

RECTIFIED

THICKNESS

SIZES

100X300cm
39"x118"

20X150cm
8"x59"

100X100cm 39"x39"





POLAR | - 3,5mm | 20x150cm / 8"x59"







RAIN | 🛈 3,5mm | 20x150cm / 8"x59"



THE TWO SOULS OF ARCHITECTURE

If rock is the bone structure of the world, stone and marble are the two souls of human architecture. As inspiration for its creations, Cotto d'Este has selected the most beautiful stone and marble in the world: elegant and modern marble, with soft and delicate tones, veined or marbled surfaces, with a silky sheen; modern and minimalist stone, with a particularly striking depth-effect due to the inclusion of accurately selected and refined minerals in the body. Marble and stone presented as Kerlite ultrathin porcelain stoneware, made more precious still by the passion for beauty that distinguishes Cotto d'Este. A wide range of finishes and surfaces that combine beauty with practicality and easy cleaning, in accordance to the tradition of the best Italian ceramics.

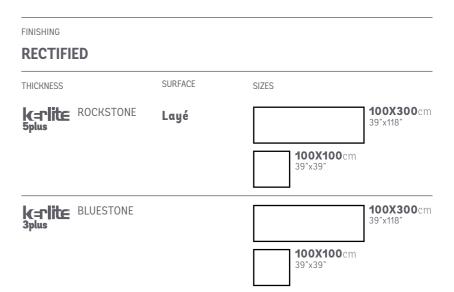
MARBLE AND STONE **ROCKSTONE** | 5,5mm | 100x100cm / 39"x39" SLIP RESISTANCE DEEP ABRASION RESISTANCE TREAD MARK VISIBILITY CLEANING EASINESS DESHADING

BLUESTONE EVOLUTION

THE EXCLUSIVE CHOICE

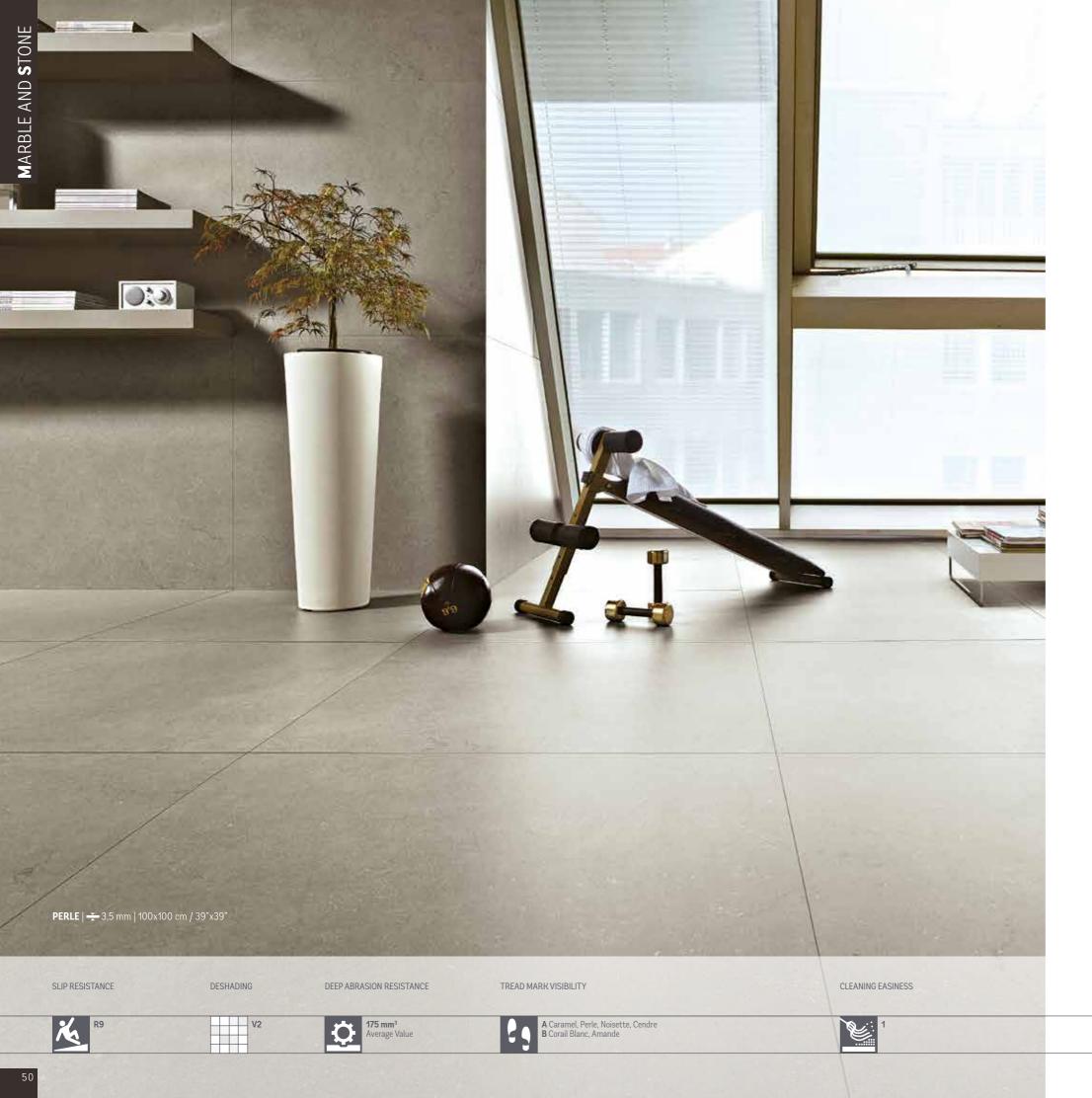
COLOURS

ROCKSTONE BLUESTONE







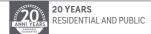


U X Y

NATURAL SPIRIT



50X50cm 191/2"x191/2"



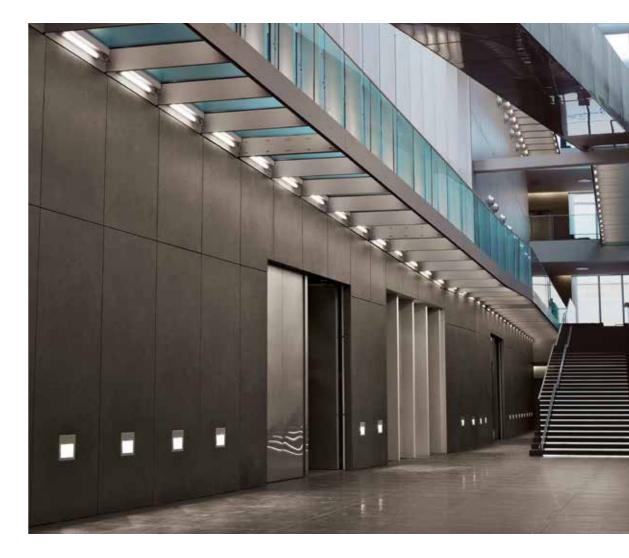


CARAMEL - NOISETTE | ★ 3mm | 40x100cm / 16"x39" - 5x100cm / 2"x39"



CARAMEL | - 3,5mm | 100x100cm / 39"x39"







ESPRIT NATUREL

COLOURS			
ARGEROT	AUVERGNE		
CHAMPAGNE	BOURGOGNE		
FINISHING RECTIFIED			
THICKNESS	SURFACE	SIZES	
K=lite 5plus	Layé		100X300 cm 39"x118"
		100X100 cm 39"x39"	
K= rlite 3plus	Naturale (P)		100X300 cm 39"x118"
		100X100 cm 39"x39"	_

COTTO D'ESTE GUARANTEE





175 mm³ Average Value - 平均价值

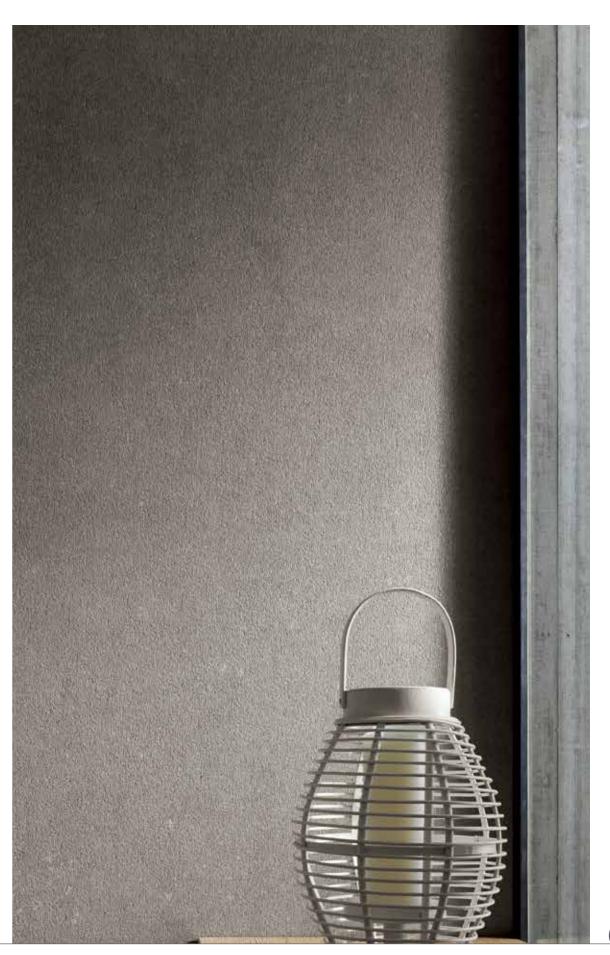




PR()TECT

3PLUS NATURALE











ELEGANCI

SUPERIOR CLASS





PR()TECT



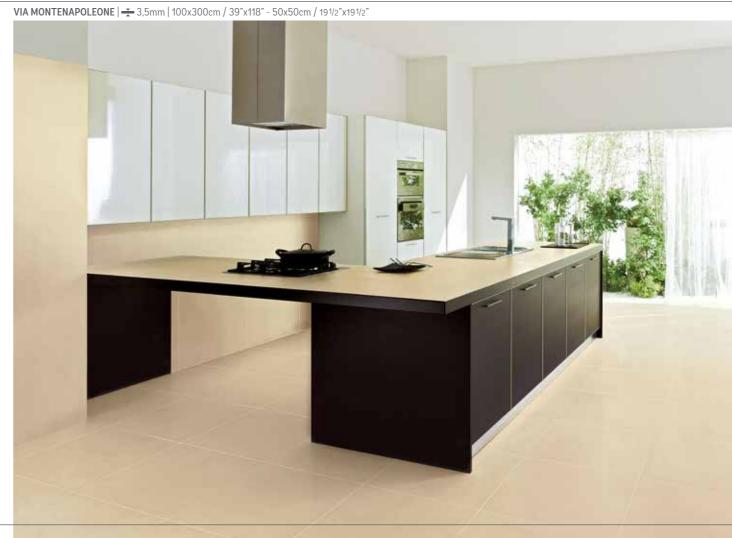
175 mm³ Average Value



VIA TORNABUONI | 3,5mm | 100x100cm / 39"x39"



VIA FARINI | 🚣 3,5mm | 100x300cm / 39"x118" - 50x50cm / 191/2"x191/2"



E X E D R A

LUXURY STONE

ALBIS ONYX EXTRA CALACATTA **ESTREMOZ MARFIL TRAVERTINO RIVERSTONE RAIN GREY AMADEUS PULPIS** FINISHING **RECTIFIED** THICKNESS SURFACE SIZES **K=rlite**5plus **100X300**cm 39"x118" Silk (P) **100X100**cm 39"x39" **50X100**cm 191/2"x39" **K=rlite**5plus **100X300**cm 39"x118" Glossy (P) **100X250**cm 39"x98" **100X100**cm 39"x39" **50X100**cm 191/2"x39"















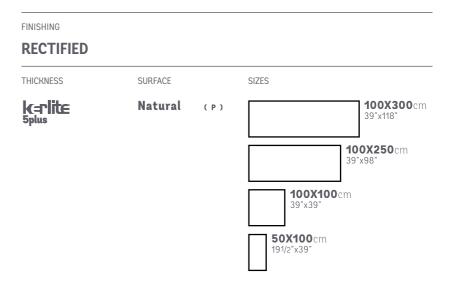


MARBLE AND STONE Floor: SLATE NATURAL | 🛨 5,5mm | 100x300cm / 39"x118" - Wall: CLAY NATURAL | 🛨 5,5mm | 100x300cm / 39"x118" SLIP RESISTANCE CLEANING EASINESS ANTIMICROBIAL SURFACE DESHADING DEEP ABRASION RESISTANCE TREAD MARK VISIBILITY

LIMESTONE

STONE SURFACE

COLOURS **CLAY AMBER OYSTER SLATE**



COTTO D'ESTE GUARANTEE







175 mm³ Average Value









LIMESTONE

CONCRETE AND RESIN CONCRETE AND CEMENT PROJECT MATERICA OVER Floor: COLOR-30 LAND NATURALE | - 14 mm | 90x90 cm 36"x36" 84 Wall: COLOR-10 WORK | 5.5 mm | 100x300 cm 39"x118" - COLOR-20 WORK | 5.5 mm | 100x300 cm 39"x118"

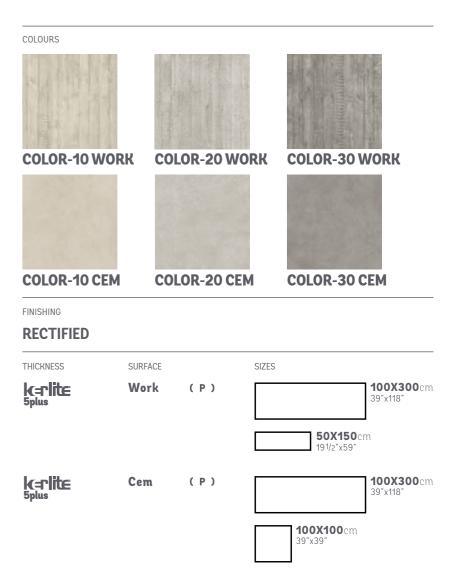
METROPOLITAN SURFACES

Designed for metropolitan environments, the Over and Materica series turn essentiality into a style, in line with the trends of contemporary minimalism. Surfaces inspired by hand-smoothed plaster and large polished concrete surfaces to create clear-cut and rigorous spaces that maintain a truly personal touch. Apparently monochrome, at a closer glance Materica reveals a subtle light-and-shade effect, which is a result of the waves recapturing the texture of hand-smoothed surfaces.

CONCRETE AND RESIN Floor: METAL, IRON | $\stackrel{\star}{\leftarrow}$ 5,5 mm | 100x100 cm 39"x39" Wall: COLOR-30 WORK | $\stackrel{\star}{\leftarrow}$ 5,5 mm | 100x300 cm 39"x118" - Ceiling: COLOR-10 WORK | $\stackrel{\star}{\leftarrow}$ 5,5 mm | 100x300 cm 39"x118"

CEMENT PROJECT

URBAN SPACE



COTTO D'ESTE GUARANTEE



SLIP RESISTANCE

DESHADING

DEEP ABRASION RESISTANCE

TREAD MARK VISIBILITY

CLEANING EASINESS

ANTIMICROBIAL SURFACE



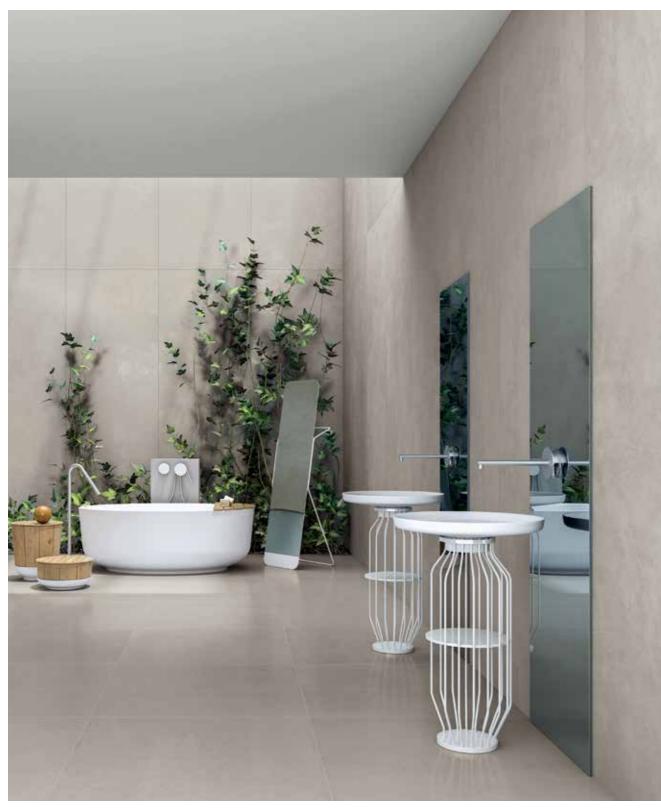


verage Value









Wall: COLOR-20 CEM ★ 5,5 mm | 100x300 cm 39"x118"











ATERI

NATURAL COLORS



COTTO D'ESTE GUARANTEE

















V E R

THE URBAN SKIN

COLOURS







OPENSPACE

CE LOFT

OFFICE

ROAD

Soft

100X300em 39"x118"

100X100cm 39"x39"

COTTO D'ESTE GUARANTEE



RESIDENTIAL AND PUBLIC Naturale RESIDENTIAL Soft (Road)

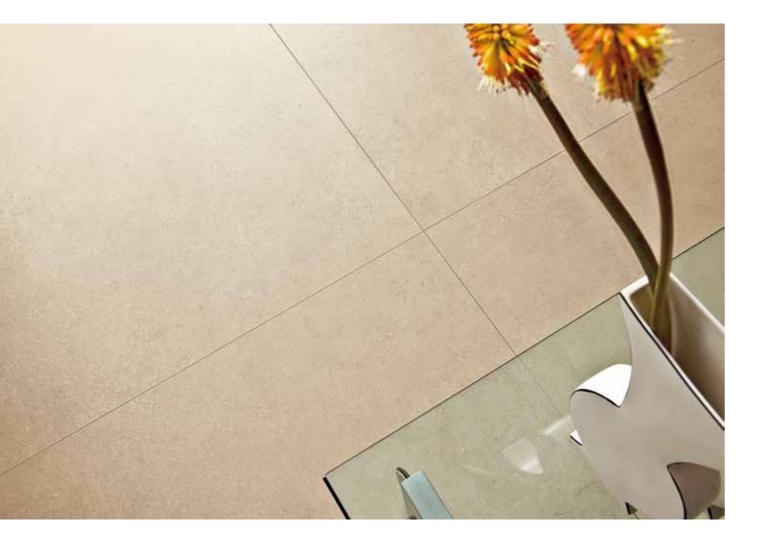


R9 Natura

Ç

175 mm³ Average Value A M B S C S

A Naturale
B Soft (Road)
C Soft (Openspace, Office, Loft)









RIGOUR AND ELEGANCE

The depth of black and the brightness of white; the realistic crude sheet effect of Iron and the intense rust-coloured Corten. Solid colours, elegant and authentic, alongside three metallic surfaces perfectly in keeping with the trends of contemporary architecture, highlighted by the large size and versatility of Kerlite.

OTHER SURFACES ULTRAWHITE GLOSSY | ₹ 5,5 mm | 100x100 cm / 39"x39" DESHADING DEEP ABRASION RESISTANCE TREAD MARK VISIBILITY CLEANING EASINESS ANTIMICROBIAL SURFACE

BLACK-WHITE

ABSOLUTE STYLE

COLOURS				
ULTRAV	/HITE W	HITE		
SNOW	BL	ACK		
FINISHING				
RECTIFI	ED			
THICKNESS		SURFACE	SIZES	
K=rlite 3plus	ULTRAWHITE WHITE SNOW BLACK	Naturale		100X300 cm 39"x118"
			100X100 cm 39"x39"	
			50X100 em 191/2"x39"	
K=lite 5plus	ULTRAWHITE	Glossy (P)		100X300 cm 39"x118"
			100X100 cm 39"x39"	-

COTTO D'ESTE GUARANTEE









B Black, White, Snow **C** Ultrawhite





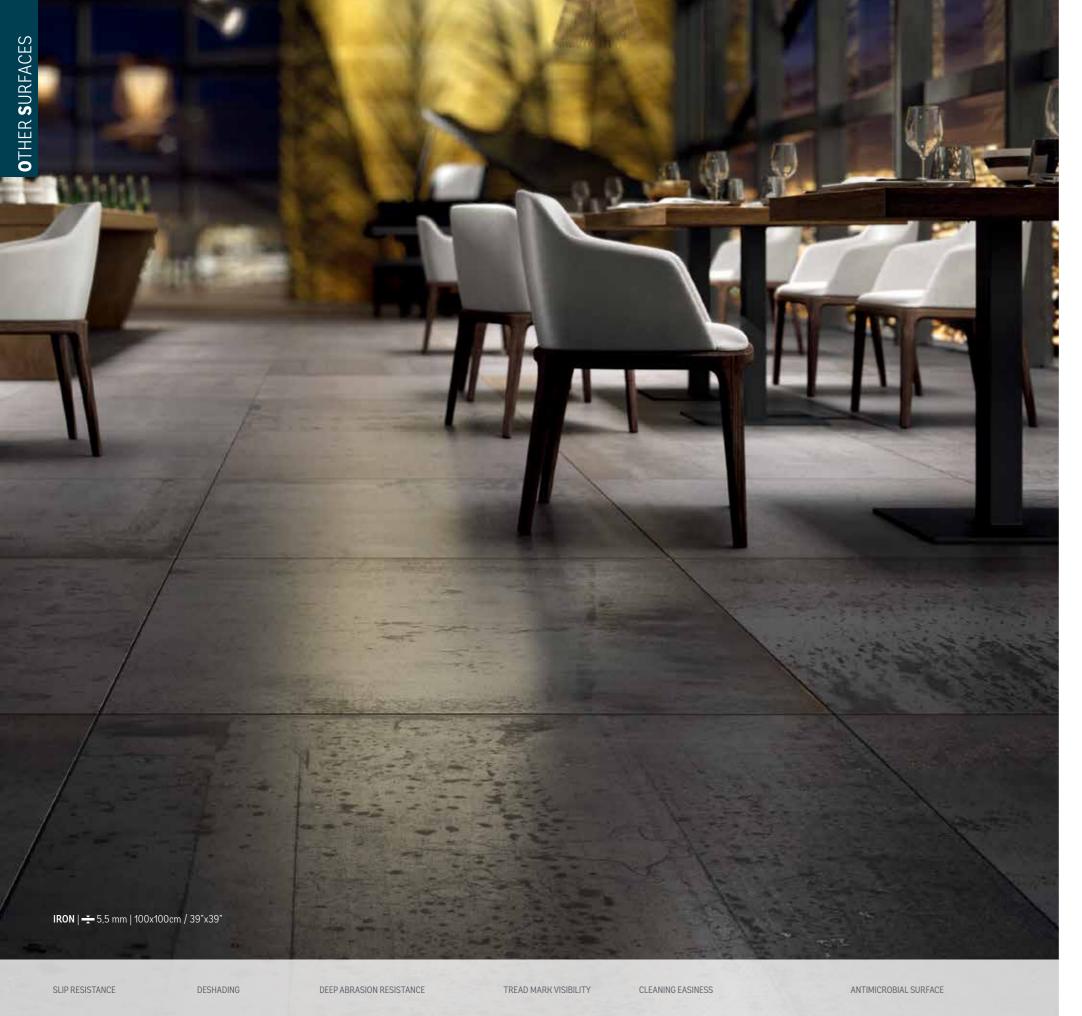




Wall: **WHITE** | ★ 3,5mm | 100x100cm / 39"x39"



ULTRAWHITE | 🗻 3,5mm | 100x100cm / 39"x39"



M

METALLIC SLABS

COLOURS



FINISHING

RECTIFIED

THICKNESS

Karlite (P)
5plus

SIZES

100X300cm

100X100cm 39"x39" (Corten, Iron)

COTTO D'ESTE GUARANTEE







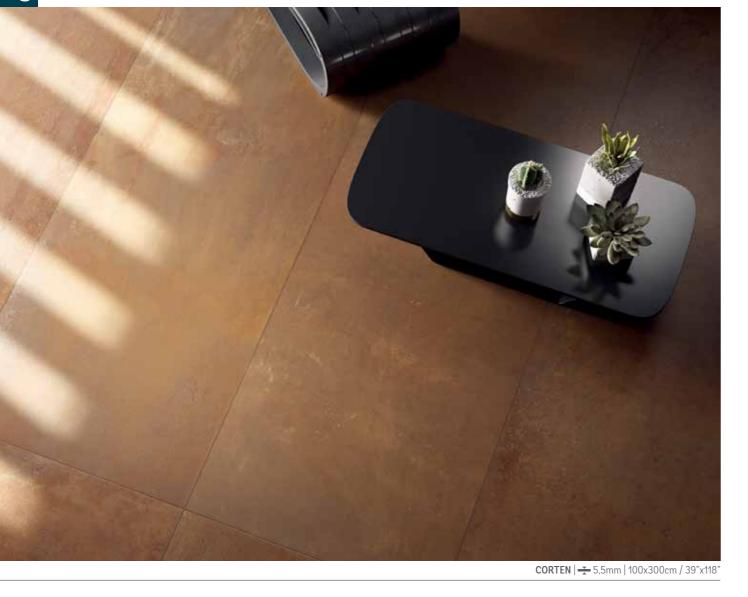












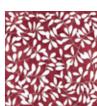


WONDERWAL

KERLITE ART







MATRIX

RITMI









VENICE

NEOCLASSIC

LOTUS

COLOR BALLET



SKETCH FREESTYLE

FINISHING

RECTIFIED

THICKNESS

K=rlite
3plus

100X300cm 39"x118"

100X100cm 39"x39" (Matrix)

DESHADING

DEEP ABRASION RESISTANCE

TREAD MARK VISIBILITY

CLEANING EASINESS

ANTIMICROBIAL SURFACE

PR()TECT Matrix Ritmi

COTTO D'ESTE GUARANTEE













MATRIX

This texture is inspired by the gentle and soft texture of the canvases used by the great painters. This product is sintered and therefore is suitable for installation on floors and walls and is guaranteed for 20 years. It is also the base and the compositional element of the ritmi decorative theme.





FREESTYLE

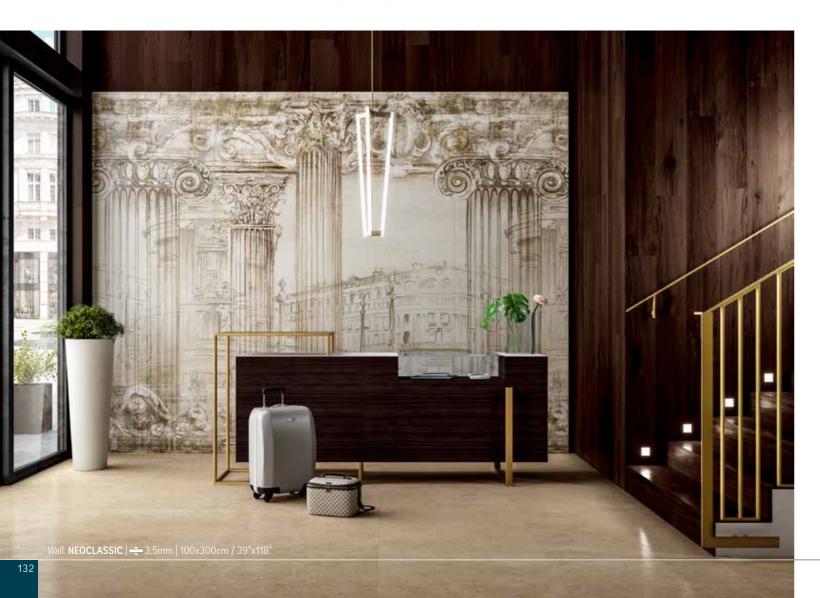
WONDERWALL

This surface, created using a special resin applied by hand by expert craftsmen, is cold-decorated using a new digital technology. Each piece is unique. In addition to being a cladding material in and of itself, it is also the base for the decorative motif "Sketch".

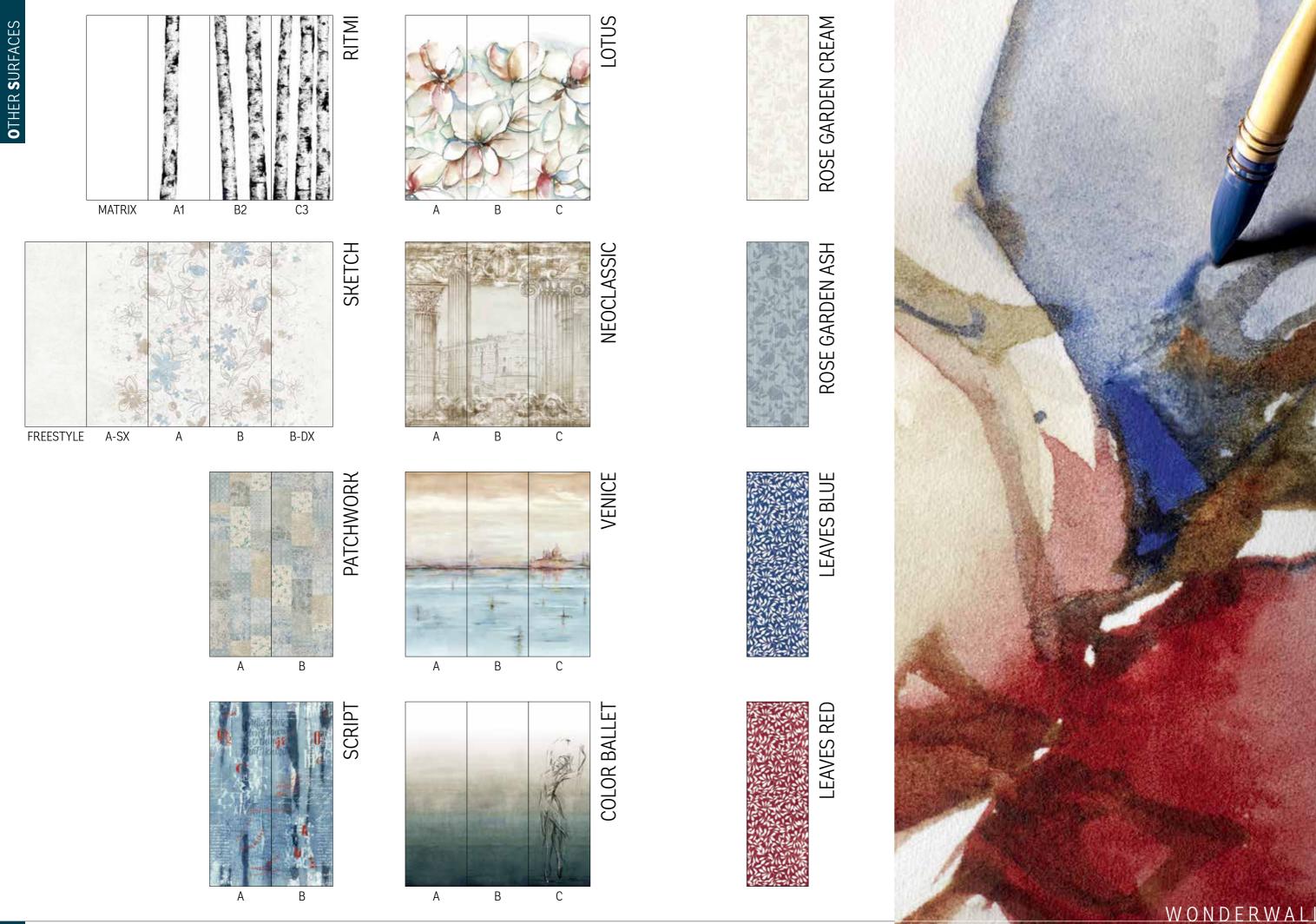




Floor: FOREST - NOCE | + 5,5mm | 20x120 - 20X180cm / 39"x39"







REFERENCES





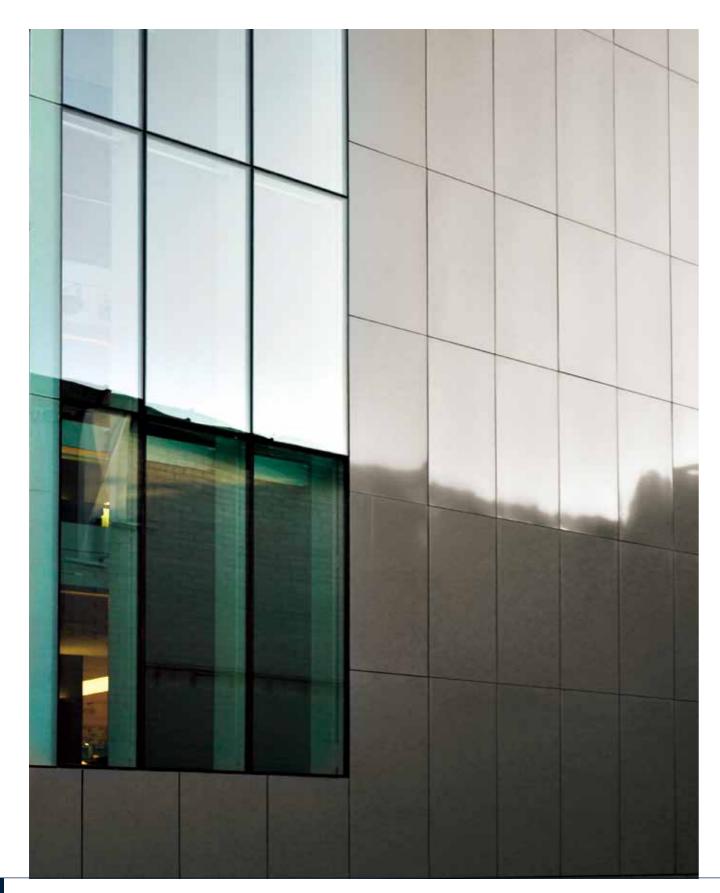
PALMIERI ELEMENTARY SCHOOL

Year: 2011
Location: Magreta di Formigine (MO), Italy
Design: Alessandro Malavolti Architect, Laura Reggiani
Engineer, Claudio Tavoni Engineer
Product: Kerlite Colors Sand 20x100cm
Laying system: ventilated facade

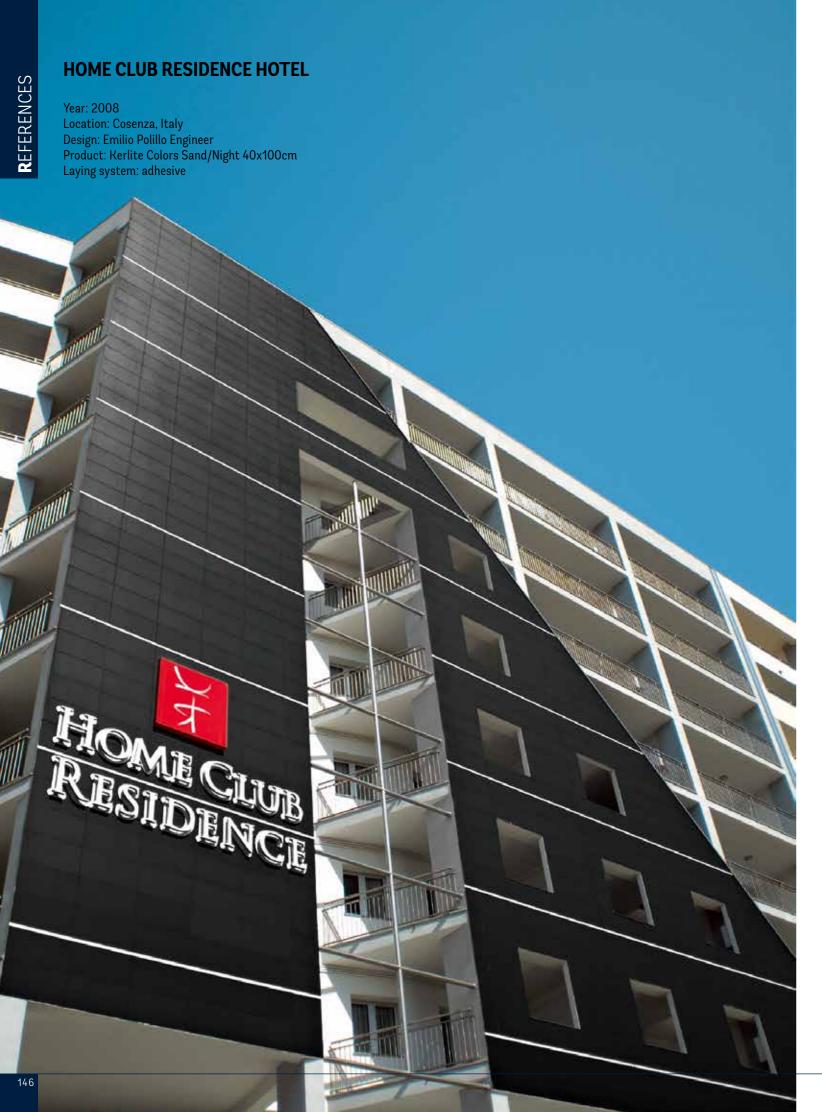


ERMENEGILDO ZEGNA HEADQUARTER

Year: 2008 Location: Milan, Italy Design: Antonio Citterio and Partners with Beretta Associati Product: Kerlite Buxy Cendre 100x300cm Laying system: ventilated facade





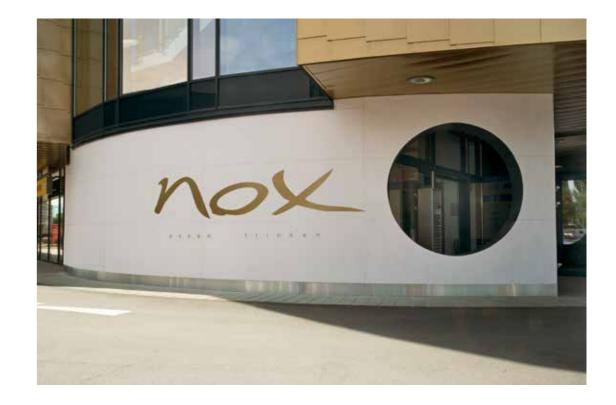






NOX RESTAURANT

Year: 2011 Location: Salzburg, Austria Design: Jürgen Matzer Architect Product: Kerlite Colors Snow 100x300cm Laying system: adhesive

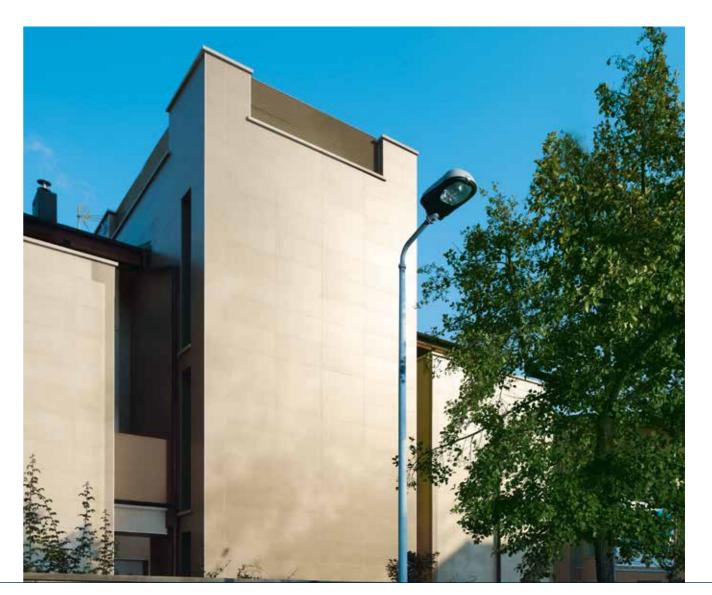






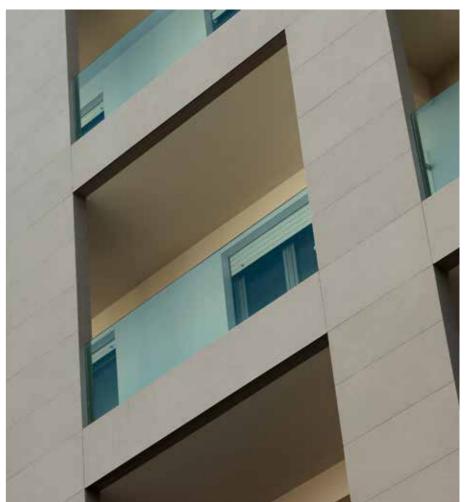






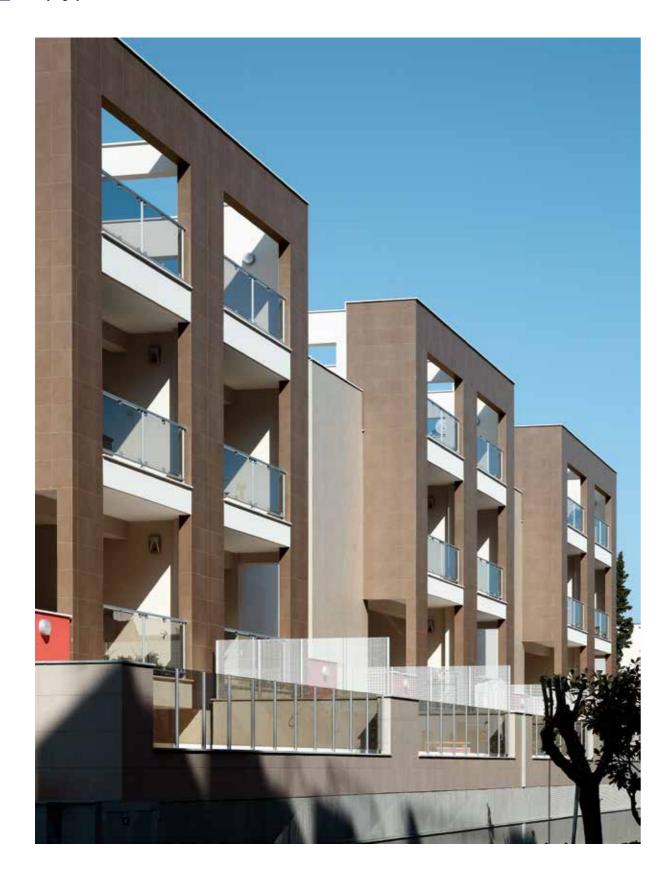






RESIDENTIAL BUILDING

Year: 2011 Location: Matera, Italy Design: Clam Costruzioni Product: Kerlite Elegance Via Tornabuoni/Via Farini 40x100cm Laying system: adhesive





PRIVATE HOUSE

Year: 2008 Location: Vitoria-Gasteiz, Spain Design: Ignazio Ojarzabal Architect Product: Kerlite Colors Snow 100x300cm Laying system: adhesive

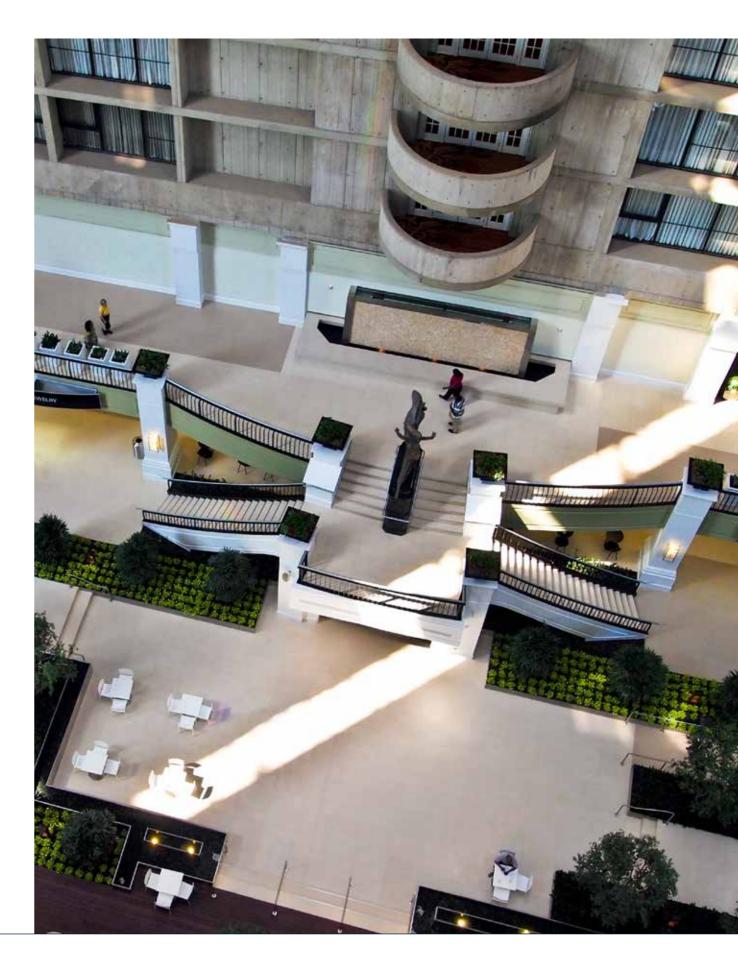








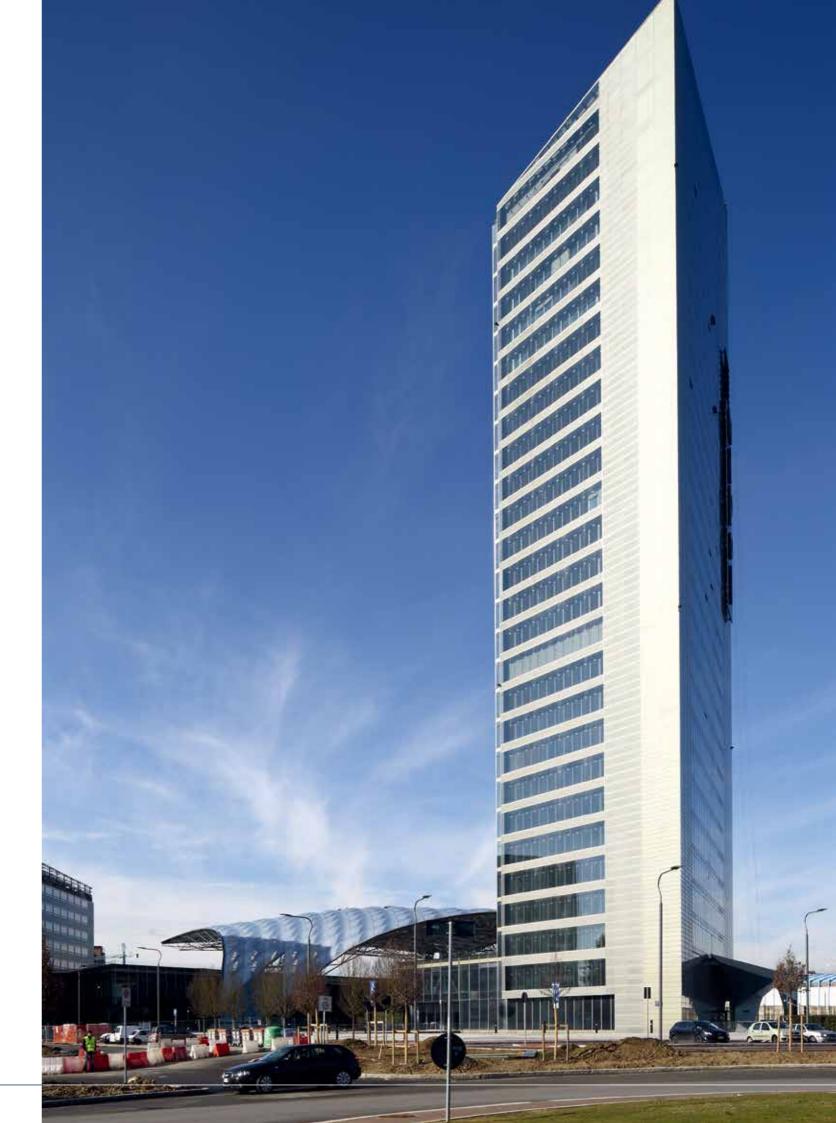




UNIPOL TOWER

Year: 2012 Location: Bologna, Italy Design: Open Project Product: Kerlite Over Road/Office Laying system: adhesive



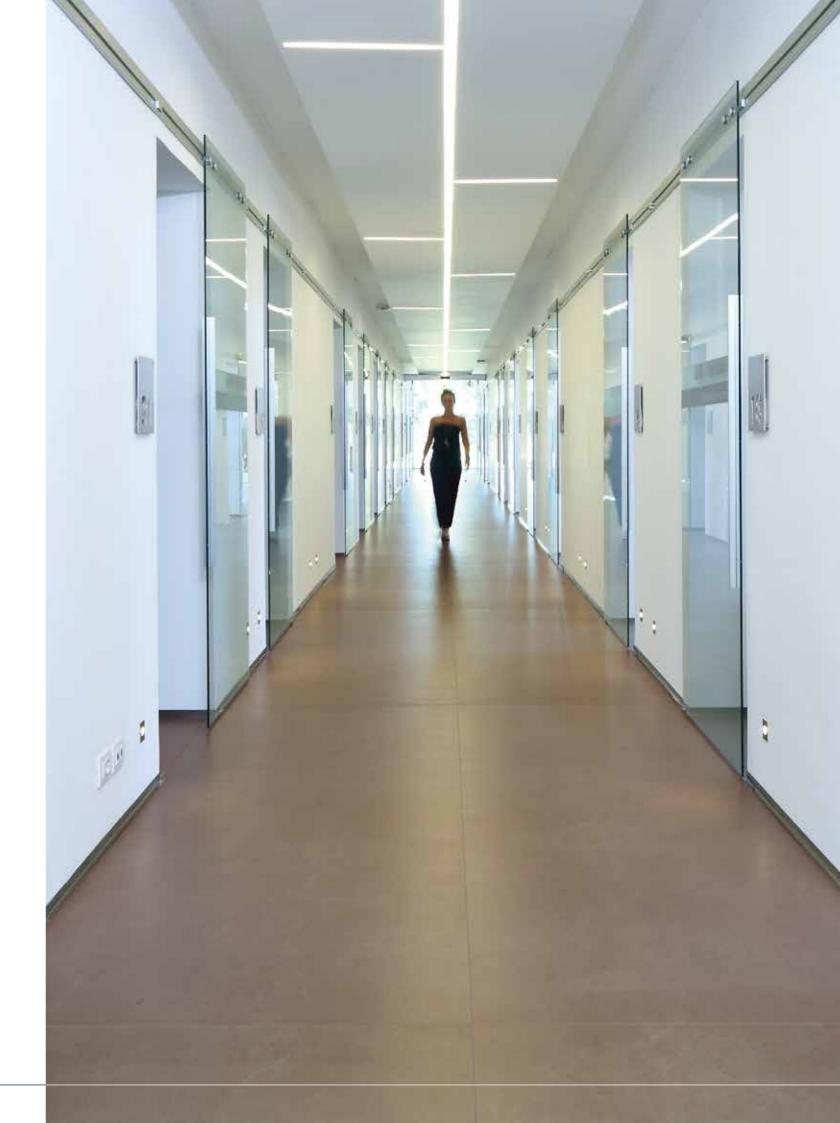


EURO PROGEA HEADQUARTER

Year: 2011 Location: Bitonto (BA), Italy Design: Studio Cara Product: Kerlite Elegance Via Farini 100x300cm Laying system: adhesive





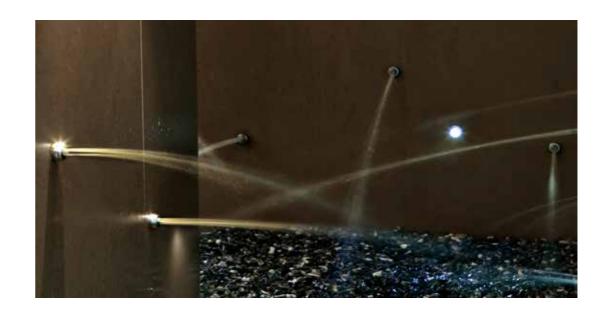














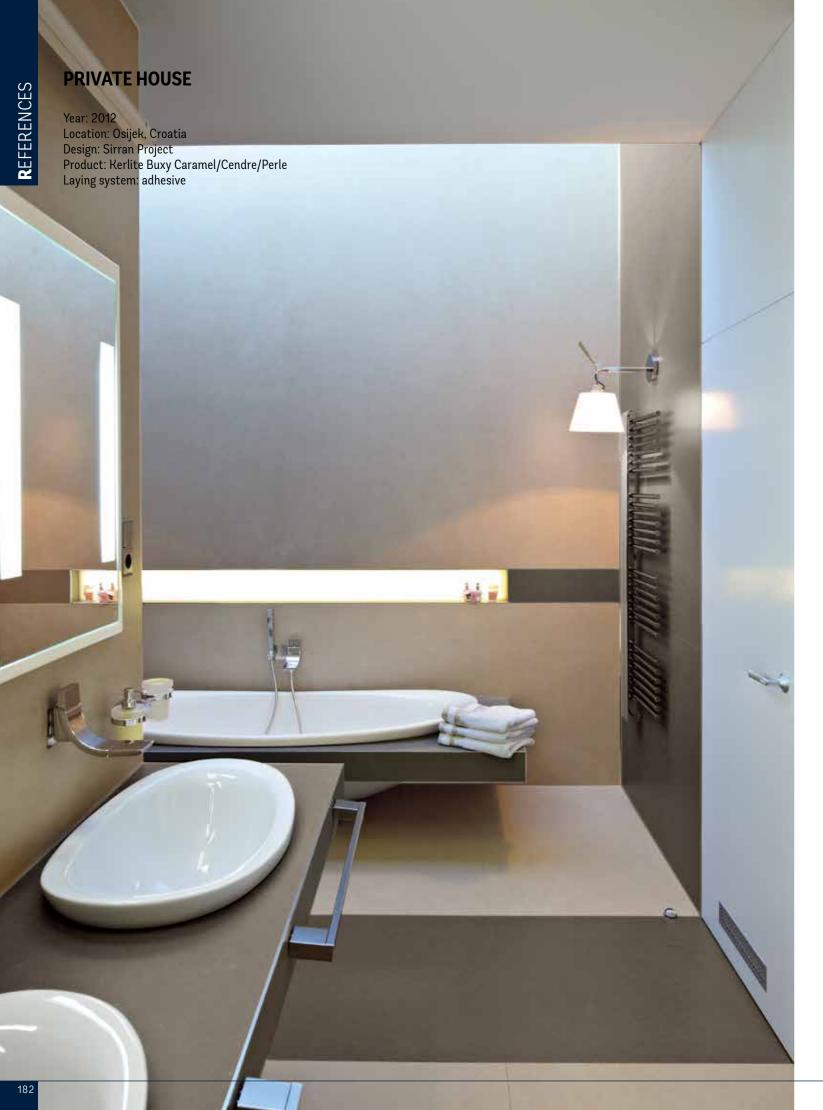


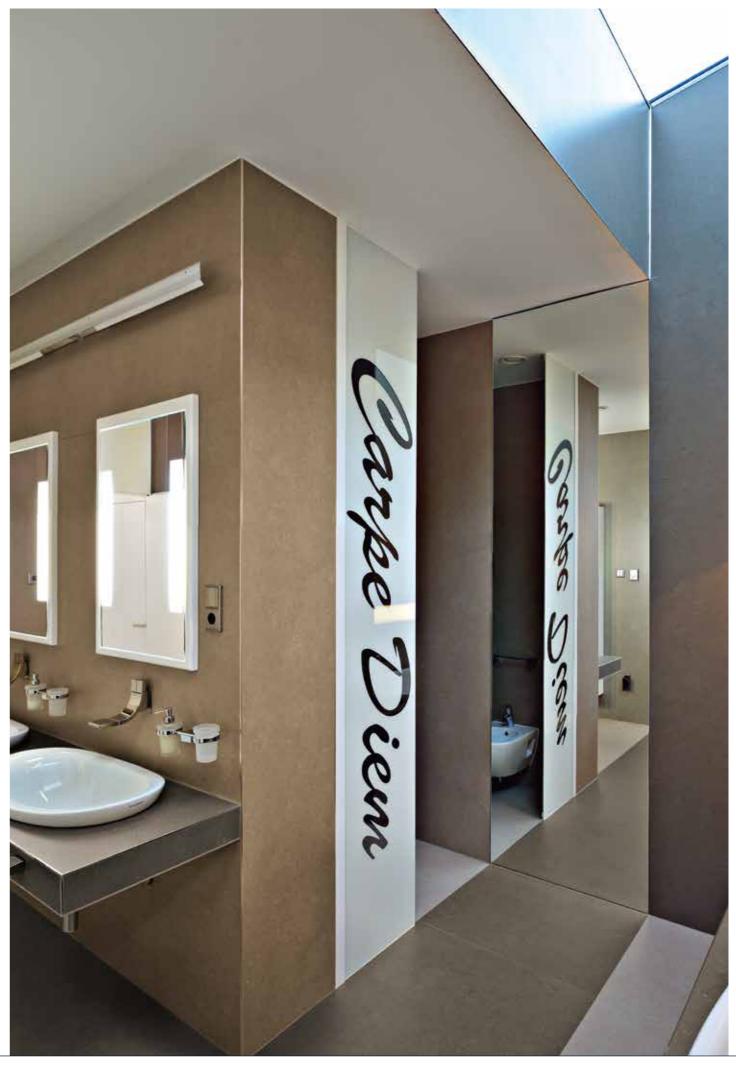
PRIVATE HOUSE

Year: 2012 Location: Zoagli (GE), Italy Design: Stefania Garibotto Architect, Chiara Viale Architect, Bruno Caroni Architect Product: Kerlite Elegance Via Tornabuoni 100x100cm Laying system: adhesive









TECHNICAL BOOKLET







"LUNA SLOT" VENTILATED FACADE SYSTEM

SYSTEM TYPE:

Hidden anchors

CLADDING SLABS TYPOLOGY: SLIMTECH TWIN 5+3

WORKING ON TILES:

Slot on the horizontal tile edges

COVERING SLAB SIZES:

-100x100cm -100x200cm

-100x150cm -100x300cm







SYSTEM COMPONENTS:

The "LUNA Slot" hidden system is made of these components:

- extruded profile type "L3" in aluminium alloy EN 6060 T5 (or similar, when needed);
- hooks type T6/V3dx" and "T6/V3sx in stainless steel EN 1.4310 (AISI 301); standard supporting brackets type "A12" e "B12", from extruded profile in aluminium alloy EN 6060;
- nuts and bolts to fix "L3" profile on the brackets, in stainless steel
- anchors to fix the brackets on the wall, mechanical or epoxy-resin based, as needed;
- neoprene gasket strips, to gauge the panels, the hooks and the aluminium profile, in different thickness as needed;
- points of structural adhesive where and if needed;

SYSTEM DESCRIPTION:

The vertical mullion "L3" is put in place on the wall with a pace

depending on the panels width and the design vertical joint between the tiles. The "L3" profile is designed and shaped in order to fit without drillings the following components:

- the brackets supporting the mullions on the wall, put in place with their design pace;
- the hooks type T6/V3dx" and "T6/V3sx to support the tiles

The tiles are supported by the hooks T6/V3, they have to be inserted in the proper groove of the vertical profile, put in place with a pace depending on the tiles high and the design horizontal joint;

This arrangement of the components protects the coatings (oxidation or painting) from corrosion and assure the structure a longer lifetime.

The main characteristic of this "LUNA Slot" hidden system is that each tile must have a slots in the superior and inferior edge, so that the hooks can insert into the slots and are not visible from outside the façade.

Each tile is solidarized with the hooks and the vertical profile using $% \left(1\right) =\left(1\right) \left(1\right) \left($

neoprene gasket strips of useful thickness and silicon drops, when ${\tt pooded}$

When all the components are put in place, each tile can be set up or

dismantled one at a time.

The supporting structure makes possible any type of regulation and it is able to protect from wind action and to allow the thermal expansion of all the components.

SYSTEM SIZE:

- The standard distance between the wall and the back side of the panels is 111 mm, with a standard regulation of 25mm.
- The standard thickness of the slabs for this system is minimum 8,5mm Here you can find a standard details of the system.





"LUNA" SYSTEM

SLIMTECH TWIN 5+3 DETAIL: ANGLE



"LUNA" SYSTEM

SLIMTECH TWIN 5+3
DETAIL: ANGLE AND STARTING SOLUTION



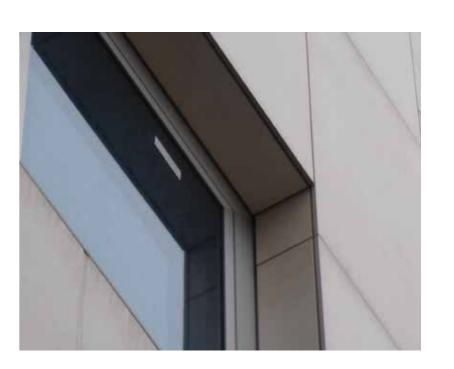
"LUNA" SYSTEM

SLIMTECH TWIN 5+3
DETAIL: UPPER CLOSING SOLUTION



"LUNA" SYSTEM

SLIMTECH TWIN 5+3 DETAIL: WINDOW



TECHNICAL CHARACTERISTICS

SLIP RESISTANCE



DIN 51130

In this test, an operator stands on a surface covered with tiles for testing.

The surface, initially horizontal, is gradually tilted until the moment when the operator starts to slip.

The angle of tilt of the surface when slipping starts provides the rating.

 $\dot{\mathbf{x}}$ α < 6° = not classified

 $6^{\circ} \le \alpha \le 10^{\circ} = R9$

 10 10°< α ≤ 19° = R10

19°< α ≤ 27° = R11

27°< α ≤ 35° = R12

 $\alpha > 35^{\circ} = R13$

DIN 51097

The method aims to measure the tiles' suitability for laying in locations where people walk barefoot (e.g. edges of swimming-pools, showers, etc.).

An operator walks barefoot over a tilting surface laid with the tiles for testing, wet with a soap and water solution. The surface is gradually tilted and the angle of tilt at which the operator starts to slip provides the tiles' rating, as shown in the table below.

α < 12°	not classified
12° ≤ α < 18°	Α
18° ≤ α < 24°	B (A+B)
α ≥ 24°	C (A+B+C)

ANSI A326.3

Dynamic Coefficient of Friction (DCOF): Sometimes called kinetic coefficient of friction. This is the ratio of the force necessary to keep a surface already in motion sliding over another divided by the weight (or normal force) of an object. This force is a materials property of the two surfaces. DCOF is usually less than SCOF for the same materials. Contaminants such as dirt, water, soap, oil, or grease can change this value.

Unless otherwise specified, tiles suitable for interior spaces expected to be walked upon when wet shall have a wet DCOF of 0.42 or greater when tested using SLS solution. However, tiles with a DCOF of 0.42 or greater are not necessarily suitable for all projects. The specifier shall determine tiles appropriate for specific project conditions, considering by way of example, but not in limitation, type of use, traffic, expected contaminants, expected maintenance, expected wear2, and manufacturers' guidelines and recommendations.

BCRA TORTUS

English method for determining the coefficient of friction of surfaces based on the resistance opposed to the movement of a tester instrument (Tortus) that traverses the surface to be tested.

The method is based on the use of a mobile device to determine the coefficient of friction that standard materials, such as rubber and leather, have in wet or dry conditions further to contact with a certain floor covering material. As explained above, the "Tortus test" is the reference method for National legislation under paragraph 8.2.2 of Ministerial Decree 236/89, which envisages a coefficient equal to >0.40 in dry Dry Rubber and Wet Leather conditions. The friction coefficient testing machine for wet surfaces is the Digital Sliptester Floor Slide Control FSC 2000 system,

≤ 0,20 µ	Dangerous sliding
0,20 ÷ 0,40 μ	Excessive sliding
0,40 ÷ 0,75 μ	Satisfaction friction

≥ 0,75 µ Excellent friction

which is computer-controlled.

BREAKING STRENGHT (S)



ISO 10545-4

This parameter is used to assess the ceramic tile's capacity to withstand static and dynamic loads after laying. The standard considers the tile as a beam, placed on two rollers some distance apart, while a third roller applies a force to its centre.

The breaking strength is the weight the tile withstands before breaking. The actual breaking strength of a tile after laying is considerably higher than the value measured in the laboratory.

ASTM C 648

The test method consists of supporting the tile on the ends of three cylindrical rods, or on three ball bearings for tiles having a facial area of 6.25 in² (40 cm²) or less, arranged in an equilateral triangle, and applying force at a definite rate to the centre of the triangular support, until the specimen breaks.

 19

STAIN RESISTANCE



ISO 10545-14

The operating surface is subject to three staining agents, olive oil, iodine alcohol solution and chromium green in light oil; after 24 hours the surface is cleaned.

Class 5 - stain removed with warm water running for 5 minutes;

Class 4 - stain removed by manual cleaning with mild detergent;

Class 3 - stain removed by mechanical cleaning with strong detergent;

Class 2 - stain removed by dipping in suitable thinner for 24 hours;

Class 1 - stain not removed.

RESISTANCE TO CHEMICAL ETCHING



ISO 10545-13

The method measures the chemical resistance of both glazed (GL) and unglazed (UGL) tiles, using acids (hydrochloric, citric and lactic) and bases (potassium hydroxide) at low (L) and high (H) concentration. The classification is as follows:

DEEP ABRASION RESISTANCE



ISO 10545-6

Unglazed (UGL) surfaces are subjected to the deep abrasion method; this test measures the value of material removed from the surface with an abrasive disc after 150 rotations cycles. The lower the volume removed, the more resistant the material.

WATER ABSORPTION



ISO 10545-3

A ceramic material's capacity to absorb water depends on its porosity.

Thanks to the choice quality raw materials used and the state-of-the-art production technologies, Cotto d'Este products are always outstandingly compact, meaning that their porosity values are minimal. The value expresses the percentage water absorption by weight.

FROST RESISTANCE



ISO 10545-12

Ceramic materials laid outdoors suffer frost damage if their porosity is above a certain level. When any water absorbed freezes, it increases in volume, generating strong internal mechanical stresses which may cause the material to detach from the underlying surface.

Cotto d'Este tiles are frostproof because, thanks to their porosity value of virtually nil, they always pass the ISO 10545-12 test comprising 100 freeze/thaw cycles between -5°C and +5°C without suffering any damage.

DIFFERENCES IN TONE 色差

ANSI A137.1

Aesthetic classification and shade variations. Tiles may vary in color, texture, or appearance according to the manufacturer's design for that particolar tile series or product line. The following aesthetic class designations have been provided in the Table, so that the manufacturer may communicate the aesthetic characteristics of a particular tile product.

V0

NONE

Very uniform appearance.

Pieces of the same shade value are very uniform.



V1

MINOR

Uniform appearance.

Differences among pieces from the same production run are minimal.



<u>V2</u>

LOW

Slight variation.

Clearly distinguishable differences in texture and/or pattern within similar colors.



٧3

MEDIUM

Moderate variation.

While the colors and or texture present on a single piece of tile will be indicative of the colors and or texture to be expected on the other tiles, the amount of colors and or texture on each piece may vary significantly. It is recommended that the range be viewed before selection.



V4

MAJOR

Substantial variati

Random color and or texture differences from tile to tile, so that one tile may have totally different colors and or texture from that on other tiles. Thus, the final installation will be unique. It is recommended that the range be viewed before selection.

TREAD MARK VISIBILITY



Cotto d'Este Method

This classification specifies the visibility degree of the tread marks left on the floor after walking with shoes dirty of dust.

- A Tread mark not visible
- B Tread mark not very visible
- C Tread mark very visible.

Ideal for wall installation and recommended for floor installation in residential areas only

CLEANING EASINESS



Cotto d'Este Method

The method consists in classifying the easiness grade in removing general dirt by manual cleaning with mild detergent.

Grade 1

Very easy, no resistance of the dirt, immediate removal.

Grade 2

Easy, light resistance of the dirt, fast removal.

Grada 3

Less easy, higher resistance of the dirt, slow removal. A strong detergent is recommended. Ideal for wall installation and recommended for floor installation in residential areas only.

TECHNICAL CHARACTERISTICS

CAL		SLIP RESISTANCE					BENDING STRENGHT		BREAKING STRENGHT (S)	STAIN RE	STAIN RESISTANCE		RESISTANCE TO CHEMICAL ETCHING		WATER ABSORPTION	FROST RESISTANCE	DESHADING
TECHNICAL B			X	6						3		A		Ö		**	
In compliance with: ISO 13006-G, EN 14411-G, ANSI A137.1	DIN 51130	DIN 51097	ANSI A326.3	BCR TORTUS	Pendulum UNE ENV 12633	British Pendulum Test BS 7976	ASTM C 1505	ISO 10545-4	ASTM C 1505	ASTM C 1378	ISO 10545-14	ASTM C 650	ISO 10545-13	ASTM C 1243 ISO 10545-6	ASTM C 373 ISO 10545-3	ASTM C 1026 ISO 10545-12	ANSI A137.3
VIII Ultra thin porcelain stoneware 3,	ckness mm																
BLACK-WHITE (Bla UGL)	turale						≥ 6.000 PSI	50 N/mm ²	≥ 85 lbf	A RESISTANT	5 RESISTANT	A RESISTANT	RESISTANT	175 mm³	0,1%	RESISTANT	V1
BLUESTONE EVOLUTION (Bla UGL)	stone R9		DCOF ≥ 0,42	μ>0,40			≥ 6.000 PSI	50 N/mm ²	≥ 85 lbf	A RESISTANT	5 RESISTANT	A RESISTANT	RESISTANT	175 mm³	0,1%	RESISTANT	V2
BUXY (Bla UGL)	R9		DCOF ≥ 0,42	μ>0,40	Clase 1		≥ 6.000 PSI	50 N/mm ²	≥ 85 lbf	A RESISTANT	5 RESISTANT	A RESISTANT	RESISTANT	175 mm³	0,1%	RESISTANT	V2
CLUNY (Bla UGL)	turale R9		DCOF ≥ 0,42	μ>0,40			≥ 6.000 PSI	50 N/mm ²	≥ 85 lbf	A RESISTANT	5 RESISTANT	A RESISTANT	RESISTANT	175 mm³	0,1%	RESISTANT	V2
ELEGANCE (Bla UGL)	R9		DCOF ≥ 0,42	μ>0,40			≥ 6.000 PSI	50 N/mm ²	≥ 85 lbf	A RESISTANT	5 RESISTANT	A RESISTANT	RESISTANT	175 mm³	0,1%	RESISTANT	V2
OAKS (Bla UGL)	R9		DCOF ≥ 0,42	μ>0,40			≥ 6.000 PSI	50 N/mm ²	≥ 85 lbf	A RESISTANT	5 RESISTANT	A RESISTANT	RESISTANT	175 mm³	0,1%	RESISTANT	V2
OVER (Bla UGL)	turale R9		DCOF ≥ 0,42	μ>0,40	Clase 1		≥ 6.000 PSI	50 N/mm²	≥ 85 lbf	A RESISTANT	5 RESISTANT	A RESISTANT	RESISTANT	175 mm³	0,1%	RESISTANT	V2
	Soft ³						≥ 6.000 PSI	50 N/mm²	≥ 85 lbf	CLASS C	23	A RESISTANT	RESISTANT	175 mm³	0,1%	RESISTANT	V2
WONDERWALL (Bla UGL) ⁶ Matrix	Ritmi						≥ 6.000 PSI	50 N/mm²	≥ 85 lbf	A RESISTANT	5 RESISTANT	A RESISTANT	RESISTANT	175 mm³	0,1%	RESISTANT	V1
WONDERWALL (Bla GL) 7 Freestyle - Sketch - Lotus - Neoclassic - Patchwork - Venice - Color Ballet - Rose (eaves						≥ 6.000 PSI	50 N/mm²	≥ 85 lbf	3	4	CLASS C	LA-HB	**	0,1%	RESISTANT	V1
Karlite Thin porcelain stoneware 5,	ckness mm																
BACKSTAGE (Bla UGL)	R10		DCOF ≥ 0,42	μ>0,40			6.000 PSI	50 N/mm ²	≥ 175 lbf	A RESISTANT	5 RESISTANT	A RESISTANT	RESISTANT	175 mm³	0,1%	RESISTANT	V1 Paint V2 Brush
BLACK-WHITE (Bla UGL) Ultrawhite 0	ossy ²						6.000 PSI	50 N/mm²	≥ 175 lbf	CLASS C	≥3	CLASS C	LB-HB	175 mm³	0,1%	RESISTANT	V1
BLUESTONE EVOLUTION (Bla UGL) Roc	stone R10	B (A+B)	DCOF ≥ 0,42	μ>0,40	Clase 1		6.000 PSI	50 N/mm²	≥ 175 lbf	A RESISTANT	5 RESISTANT	A RESISTANT	RESISTANT	175 mm³	0,1%	RESISTANT	V2
CEMENT PROJECT (Bla UGL) Wo	R9 Cem R10 Work		DCOF ≥ 0,42	μ>0,40			6.000 PSI	50 N/mm²	≥ 175 lbf	A RESISTANT	5 RESISTANT	A RESISTANT	RESISTANT	175 mm³	0,1%	RESISTANT	V2
CLUNY (Bla UGL)	Layé R10	B (A+B)	DCOF ≥ 0,42	μ>0,40	Clase 1		6.000 PSI	50 N/mm ²	≥ 175 lbf	A RESISTANT	5 RESISTANT	A RESISTANT	RESISTANT	175 mm³	0,1%	RESISTANT	V2
ELEGANCE (Bla UGL)	Silk ¹		DCOF ≥ 0,42				6.000 PSI	50 N/mm²	≥ 175 lbf	A RESISTANT	5 RESISTANT	A RESISTANT	RESISTANT	175 mm³	0,1%	RESISTANT	V2
EXEDRA (Bla UGL)	ossy ²						6.000 PSI	50 N/mm²	≥ 175 lbf	CLASS C	≥3	CLASS C	LB-HB	175 mm³	0,1%	RESISTANT	V2
	Silk ¹		DCOF ≥ 0,42				6.000 PSI	50 N/mm²	≥ 175 lbf	A RESISTANT	5 RESISTANT	A RESISTANT	RESISTANT	175 mm³	0,1%	RESISTANT	V2
FOREST (Bla UGL)	R10	B (A+B)	DCOF ≥ 0,42	μ>0,40	Clase 1		6.000 PSI	50 N/mm²	≥ 175 lbf	A RESISTANT	5 RESISTANT	A RESISTANT	RESISTANT	175 mm³	0,1%	RESISTANT	V3 Acero, Noce V4 Cembro, Rovere
LIMESTONE (Bla UGL)	atural R10	B (A+B)	DCOF ≥ 0,42	μ>0,40	Clase 2	PTV 36+ Wet 4S (Slider 96)	6.000 PSI	50 N/mm²	≥ 175 lbf	A RESISTANT	5 RESISTANT	A RESISTANT	RESISTANT	175 mm³	0,1%	RESISTANT	V2
MATERICA (Bla UGL)	R9		DCOF ≥ 0,42	μ>0,40			6.000 PSI	50 N/mm ²	≥ 175 lbf	A RESISTANT	5 RESISTANT	A RESISTANT	RESISTANT	175 mm³	0,1%	RESISTANT	V1
METAL (Bla UGL)	R9 Corten, Platinum	1	DCOF ≥ 0,42 Corten, Iron	μ>0,40 Corten			6.000 PSI	50 N/mm ²	≥ 175 lbf	A RESISTANT	5 RESISTANT	A RESISTANT	RESISTANT	175 mm³	0,1%	RESISTANT	V1 Platinum V2 Iron V3 Corten
¹ Ideal for wall installation and recommended for flooring in residential and low-traffic commercial spaces. ² The sporadic presence of sn to be considered characteris for wall installation and reco	ll non-uniformities or dot ic of the material and of it nmended for floor installa	s on the surface is s finishing. Ideal tion in residential	³ Ideal for wall ins and recommend installation in re only.	tallation led for floor esidential areas	⁴ Excluding hydro derivatives. ⁵ Average refers t material.		⁶ Sintered and decorations.	l printed using	ink-jet Decorated usi on Kerlite 3plu interior walls; spaces.	ng a new cold digi us. Intended exclu do not use as floo	tal printing techno sively for the clad ring or to clad ext	ology * Class- ding of stains erior methy	5 resistance to fo . Not resistant to llene blue, or perm	anent marker	sharp objects such as Be extremely careful y	tion is not scratch resis metal, stone, glass, and when handling the produ are not to bump or slide the surface.	stoneware. Ict during

COTTO D'ESTE GUARANTEE PROTECT		COTTO D'ESTE GUARANTEE RESIDENTIAL PUBLIC			FIRE REACTION			PR()TECT	INFORMATION ABOUT CLEANING				
PROTECT INFORMATION ABOUT CLEANING	G	GUARANTEED 20 YEARS 20 ANNI YEARS	GUARANTEED 10 YEARS	GUARANTEED 20 YEARS 20 ANNI YEARS	GUARANTEED 10 YEARS	EN 13823	EN 9239-1	FLAME SPREAD ASTM E84	ANTIMICROBIAL SURFACE	TREAD MARK VISIBILITY COTTO D'ESTE METHOD	CLEANING EASINESS COTTO D'ESTE METHOD		
Karlite Ultra thin porcelain stoneware 3 plus	Thickness 3,5 mm												
BLACK-WHITE (Bla UGL)	Naturale	•			•	Class A2-s1, d0 (WALL)	Class A1 _{fl} -s1 (FLOOR)	Class A		B Black, White, Snow C Ultrawhite ¹	1 Black, White, Snow 3 Ultrawhite ¹		
BLUESTONE EVOLUTION (Bla UGL)	Bluestone	•		•		Class A2-s1, d0 (WALL)	Class A1 _{fl} -s1 (FLOOR)	Class A		A	1		
BUXY (Bla UGL)		•		•		Class A2-s1, d0 (WALL)	Class A1 _{fl} -s1 (FLOOR)	Class A		A Caramel, Perle, Noisette, Cendre B Corail Blanc, Amande	1		
CLUNY (Bla UGL)	Naturale	•		•		Class A2-s1, d0 (WALL)	Class A1 _{fl} -s1 (FLOOR)	Class A	•	В	2		
OAKS (Bla UGL)		•		•		Class A2-s1, d0 (WALL)	Class A1 _{fl} -s1 (FLOOR)	Class A		A Fossil, Rain, Land B Polar	1 Fossil, Rain, Land 2 Polar		
OVER (Bla UGL)	Naturale	•		•		Class A2-s1, d0 (WALL)	Class A1 _{fl} -s1 (FLOOR)	Class A		A	1		
	Soft	● Road	Openspace, Loft, Office		● Road	Class A2-s1, d0 (WALL)	Class A1 _{fl} -s1 (FLOOR)	Class A		B Road C ¹ Openspace, Loft, Office	2 Road 3 ¹ Openspace, Loft, Office		
WONDERWALL (Bla UGL)	Matrix - Ritmi	•		•		Class A2-s1, d0 (WALL)	Class A1 _{fl} -s1 (FLOOR)	Class A	•	A	1		
WONDERWALL	Freestyle - Sketch - Lotus Neoclassic - Script- Patchwork Leaves Blue - Leaves Red /enice - Color Ballet - Rose Garden								Use water or generic neutral detergent Do not use alcohol, acetone, or solvents	s or degreasers available over the counter in g s in general	or degreasers available over the counter in general stores. In general		
K=PlitE Thin porcelain stoneware 5 plus	Thickness 5,5 mm												
BACKSTAGE (Bla UGL)		•		•		Class A2-s1, d0 (WALL)	Class A1 _{fl} -s1 (FLOOR)	Class A	•	A Black, Grey B White, Beige	1 Black, Grey 2 White, Beige		
BLACK-WHITE (Bla UGL)	Ultrawhite Glossy ³		•			Class A2-s1, d0 (WALL)	Class A1 _{fl} -s1 (FLOOR)	Class A	•	C Ultrawhite ³	3 Ultrawhite ³		
BLUESTONE EVOLUTION (Bla UGL)	Rockstone	•		•		Class A2-s1, d0 (WALL)	Class A1 _{fl} -s1 (FLOOR)	Class A		A	1		
CEMENT PROJECT (Bla UGL)	Work-Cem	•		•		Class A2-s1, d0 (WALL)	Class A1 _{fl} -s1 (FLOOR)	Class A	•	A Cem B Work	1 Cem 2 Work		
CLUNY (Bla UGL)	Layé	•		•		Class A2-s1, d0 (WALL)	Class A1 _{fl} -s1 (FLOOR)	Class A		В	2		
ELEGANCE (Bla UGL)	Silk²		•		•	Class A2-s1, d0 (WALL)	Class A1 _{fl} -s1 (FLOOR)	Class A	•	A ²	1 ²		
EXEDRA (Bla UGL)	Glossy ³		•			Class A2-s1, d0 (WALL)	Class A1 _{fl} -s1 (FLOOR)	Class A	•	C ₃	3³		
	Silk²		•		•	Class A2-s1, d0 (WALL)	Class A1 _{fl} -s1 (FLOOR)	Class A	•	B ²	2 ²		
FOREST (Bla UGL)		•		•		Class A2-s1, d0 (WALL)	Class A1 _{fl} -s1 (FLOOR)	Class A	•	A Noce, Cembro B Acero, Rovere	1 Noce, Cembro 2 Acero, Rovere		
LIMESTONE (Bla UGL)	Natural	•		•		Class A2-s1, d0 (WALL)	Class A1 _{fl} -s1 (FLOOR)	Class A	•	В	2		
MATERICA (Bla UGL)		•		•		Class A2-s1, d0 (WALL)	Class A1 _{fl} -s1 (FLOOR)	Class A	•	B Cemento, Ardesia C Bianco, Avorio, Tortora	2		
METAL (Bla UGL)		•			•	Class A2-s1, d0 (WALL)	Class A1 _{fl} -s1 (FLOOR)	Class A	•	A Iron, Platinum B Corten	1 Iron, Platinum 2 Corten		
196		¹Ideal for wall installat for floor installation i only.	ion and recommended n residential areas	² Ideal for wall installation a flooring in residential and spaces.	and recommended for low-traffic commercial	characteristic	oresence of small r of the material an for floor installati	nd of its finishing. I	r dots on the surface is to be considered deal for wall installation and ıreas only.			197	

TECHNICAL BOOKLET	400, 200		400.050		F0.450			400,400	F0.400		
cm inches	100x300 39"x118"	33x300 13"x118"	100x250 39"x98"	20x180 8"x71"	50x150 19 ^{1/2} "x59"	20x150 8"x59"	20x120 8"x48"	100x100 39"x39"	50x100 19 ^{1/2} "x39"	50X50 19 ^{1/2} x 19 ^{1/2} "	
	39 X116	13 X116	39 X98	8 X/ I	19 ³² X59	8 x59	8 X48	39 X39	19 ¹⁷⁻ X39	19 ⁹ -X 19 ⁹⁻	
Vitra thin porcelain stoneware Thickness 3,5 mm											
BLACK-WHITE	•							•	•		
BLUESTONE EVOLUTION Bluestone	•							•			
BUXY	•							•	•	•	
CLUNY Naturale	•							•			
ELEGANCE Rett.	•							•	•	•	
OAKS	•					•		•			
OVER Naturale	•							•	•	•	
Soft	•							•			
WONDERWALL	•							● Matrix			
K=rlite Thin porcelain stoneware Thickness 5,5 mm											
BACKSTAGE						•					
BLACK-WHITE Glossy	•							•			
BLUESTONE EVOLUTION Rockstone	•							•			
CEMENT PROJECT Work-Cem	•				● Work			● Cem			
CLUNY Layé	•				110.11			•			
ELEGANCE Silk	•							•			
EXEDRA Glossy	•		•					•	•		
Silk	•							•	•		
FOREST	•	•		•			•				
LIMESTONE Natural	•		•					•	•		
MATERICA	•		•					•	•		
METAL	•							•			
198								Corten, Iron			199

CERTIFICATIONS



EMAS



EMAS APPROVED ENVIRONMENTAL MANAGEMENT SYSTEM OF PRODUCTION SITES

EC Regulation no. 1221/2009 of the European Parliament and of the Council introduced the EMAS eco-management and audit scheme for organisations. Cotto d'Este has obtained EMAS Registration for Fiorano Modenese (MO) production site (registration n.I-000401 on December 2005). This registration is of major importance, since it requires a proper Environmental Management System to be created, based on the continual improvement of environmental performance within organisations. The scheme is based on the creation of an open dialogue with local institutions (Agencies, Authorities, Associations, Trade Union Representatives, Schools, Press) and with the public, and it is expected that all employees will play an active part. The Environmental Statement is the end document that describes the environmental and safety aspects in the workplace, the environmental performance of the site and the environmental targets that the Company sets itself within the framework of continual improvement. The statement is validated by an Accredited Environmental Verifier, following audits carried out in the plant. Cotto d'Este is one of the very few ceramics companies to have EMAS registration which, together with ISO 14001 quality certification, bear witness to the management's utmost commitment and readiness to engage with the ethical, environmental, safety and quality issues. The Environmental Statements of all company's sites are available on the web site www.cottodeste.it.



UNI EN ISO 14001



ENVIRONMENTAL CERTIFICATION FOR PRODUCTION SITES



LEED



Cotto d'Este is a member of the U.S. Green Building Council, organisation of the USA demonstrating that a building is environmentally responsible, profitable and a healthy place to live and work. Purpose of LEED (Leadership in Energy and Environmental Design Green Building Rating System™) is assessing the environmental, social and economic sustainability of buildings on the basis of criteria such as energy efficiency, polluting emissions and the use of recycled materials. LEED supplies professionals of the building trade (designers, architects, etc.) the tools needed to calculate the impact of their buildings in terms of eco-sustainability.

CONTRIBUTI ALL'OTTENIMENTO DI CREDITI LEED - CONTRIBUTION TO OBTAINING LEED CREDITS

SS CREDIT 7.1 HEAT ISLAND EFFECT / NON ROOF (NC, CI, CS, SCHOOLS LEED Rating Systems): 1 LEED point is granted for the use of hardscape materials with SRI≥29. The great majority of Cotto d'Este products do not contribute to change the energy balance of the environments where they are installed. They do not produce any Urban Heat Island Effect, thanks to their very good physical

properties, i.e. Solar Reflectance Index SRI229.

EA CREDIT 1OPTIMIZE ENERGY PERFORMANCE (NC, CI, CS, SCHOOLS LEED Rating Systems). The Thermal conductivity λ of Cotto d'Este porcelain tiles is 0.75 Btu/ft h °F (1,3 Watt/m °K or 1,1 Kcal/m h °C). For this reason it is ideal for heating floor systems and external cladding. The Thermal conductivity λ of Cotto d'Este wall tiles is 0.4 Btu/ft h °F (0,7 Watt/m °K or 0,6 Kcal/m h °C).

MR CREDIT 2 CONSTRUCTION WASTE MANAGEMENT (NC, CI, CS, SCHOOLS LEED Rating Systems): 2 LEED points are granted if at least 75% of the weight of Raw materials – tiles and packing - will be recycled. Cotto d'Este tiles and their packing material (carton boxes, plastic packaging materials, wooden pallets, straps, etc.) are 100% recyclable. The management of the waste on the building site is also easier because the quantity of waste is very small (weight of packaging is around 2-3% of weight of total material).

MR CREDIT 5 REGIONAL MATERIALS (NC, CS, SCHOOLS LEED Rating Systems): 2 LEED points are granted if the use of local raw materials is equal to 20% of the total materials value, based on cost.

- These Credits are applicable for buildings constructed within 500 miles (804,5 km) from Cotto d'Este production site (Fiorano Modenese MO, Italy).
- The % contribution based on cost of Cotto d'Este tiles to a single LEED project is calculated based on the geographical position of the construction site.
- MR CREDIT 5 REGIONAL MATERIALS (CI LEED Rating System only):
 - 1 LEED Point: use a minimum of 20% of the combined value of construction and Division 12 (Furniture) materials and products that are manufactured regionally within a radius of 500 miles from Cotto d'Este production site (Fiorano Modenese MO, Italy).
 - **2 LEED points**: meet the previous criterion requirement and use a minimum of 10% of the combined value of construction and Division 12 (Furniture) materials and products extracted, harvested or recovered, as well as manufactured, within 500 miles of the LEED project
- IEQ CREDIT 4.1 LOW EMITTING MATERIALS, ADHESIVES AND SEALANTS (NC, CI, CS, SCHOOLS LEED Rating Systems): 1 LEED point is granted if all adhesives and sealants used on the interior of the building comply with SCAQMD Rule #1168 (VOC limit of ceramic adhesives not more than 65 g/l less water).
- LOW EMITTING MATERIALS, FLOORING SYSTEMS (NC, CI, CS, SCHOOLS LEED Rating Systems): **1 LEED point** is granted if all flooring complies with the requirements indicated in IEQ Credit 4.3 Section.

 Cotto d'Este tiles obtain 1 LEED point because they do not contain any Volatile Organic Compounds VOC (see LEED 2009 NC, CI, CS, SCHOOLS Rating Systems).
- LOW EMITTING MATERIALS, CEILING and WALL SYSTEMS (SCHOOLS LEED Rating System only): **1 LEED point.** Cotto d'Este tiles obtain 1 LEED point because they do not contain any Volatile Organic Compounds VOC (see Addenda of LEED Reference Guide for Green Building Design and Construction, 2009 Edition).

ID CREDIT 1

INN OVATION IN DESIGN: 1-5 LEED points for NC, CI and CS, 1-4 LEED points for SCHOOLS.

- "Innovation in Design": the main collections of Cotto d'Este have got the prestigious ecological mark ECOLABEL (CE 1980/2000), based on the product LCA (Life Cycle Assessment) and awarded by the EU only to those products with the lowest environmental impact.
- "Innovation in Design": the main collections of Cotto d'Este have got antibacterial surfaces, that reduce bacterial presence by up to 99.9 % (ISO 22196 test method).
- "Exemplary performances" MR Credit 2 CONSTRUCTION WASTE MANAGEMENT: 1 LEED point may be earned if at least 95% by weight of the Raw Materials material and packing will be recycled. Cotto d'Este tiles and their packing material (carton boxes, plastic packaging materials, wooden pallets, straps, etc..) are 100% recyclable.
- "Exemplary performances" IEQ Credit 4.6 LOW EMITTING MATERIALS, CEILING and WALL SYSTEMS: 1 LEED point may be earned for NC, CI, CS LEED Buildings. No traces of VOC (Volatile Organic Compounds) are present in Cotto d'Este tiles (see Addenda of LEED Reference Guide for Green Building Design and Costruction, 2009 Edition).

RP CREDIT 1

REGIONAL PRIORITY (NC, CI, CS, SCHOOLS LEED Rating Systems): **1-4 LEED points**. Between 1 and 4 credits can be obtained, of the 6 Regional Priority credits identified by the USGBC regional councils and chapters, if the project has an environmental importance for the region, where it is being constructed. A database of Regional Priority credits and their geographic applicability is available on the USGBC website **www.usgbc.org**.

EBOM LEED RATING SYSTEM - EXISTING BUILDINGS OPERATIONS and MAINTENANCE

The cleaning and maintenance procedures in the present catalogue (pages 306-310) can help obtain the following LEED credits.

SS CREDIT 7.1

HEAT ISLAND REDUCTION (Non roof): **1 LEED point** is granted if a maintenance program is organized, that ensures the surfaces are cleaned at least every 2 years to maintain a good reflectance.

IEQ 3.1

GREEN CLEANING, HIGH PERFORMANCE CLEANING PROGRAM: 1 LEED point.

IEQ 3.3

GREEN CLEANING, PURCHASE OF SUSTAINABLE CLEANING PRODUCTS AND MATERIALS: 1LEED point.

MR3

SUSTAINABLE PURCHASING, FACILITY ALTERATIONS AND ADDITIONS: **1 LEED point** is granted if the purchases contain at least 10% post-consumer waste and/or 20 % pre-consumer waste material.

The great majority of Cotto d'Este products are produced with 40% of pre-consumer recycled materials, as certified by a qualified external company. The certificate is available on the website www.cottodeste.it.

NC = LEED 2009 for New Construction;

CI = LEED 2009 for Commercial Interior;

CS = LEED 2009 for Core and Shell Development;

SCHOOLS = LEED 2009 for Schools;

EBOM = LEED 2009 for Existing Buildings Operations and Maintenance.

The new LEED 4 cards for the Cotto d'Este collections will be available as soon as the new LEED Rating System 4 will be published by the U.S. Green Building Council.



LEED ITALIA



COTTO D'ESTE is a member of the **Green Building Council ITALIA**, this is an organization that promotes in Italy buildings that are environmentally friendly, profitable and healthy places to live and work in.

The LEED credits that can be obtained with Cotto d'Este tiles for NC 2009 Italia (New construction) are the same as the ones that can be obtained with USBGC LEED NC 2009 Rating System (please see table). The only differences are regarding credit MR5 - REGIONAL MATERIALS (different method of calculating the distance from the production site and raw materials from the construction site) and IEQ 4.1 - LOW EMITTING MATERIALS, ADHESIVES AND SEALANTS (max emissions VOC = 200 mg/m3, see GEV Emicode EC1 ed. 03.03.2009).



DOPO01EST DOPO04EST DOPO05EST

05

COTTO D'ESTE

Nuove Superfici via Emilia Romagna, 31 - 41049 Sassuolo (MO) - Italy Panariagroup Industrie Ceramiche S.p.A.

EN 14411

Kerlite 3 Plus: Dry pressed ceramic tiles with low water absorption $E \le 0.5\%$, for internal flooiring and internal and external wall applications (DOP004EST). Kerlite 5 Plus: Dry pressed ceramic tiles with low water absorption $E \le 0.5\%$ for internal flooring and internal and external wall applications (DOP005EST).

CE SECURITY

MARK.

The CE mark is the safety product certification required by EU and it is finalized to preserve the people's health and the goods in buildings.

The new Regulation UE N. 305/2011 is valid from the first of July 2013. The most important news is the introduction of the Declaration Of Performance (DOP) with which the supplier communicates the safety requirements concerning own materials.

Cotto d'Este DOP are available on the website www.cottodeste.it.



The trademark of the Italian ceramic industry

Ceramics of Italy is the institutional trademark that represents and promotes Italian ceramic industries on a worldwide level. Through Panariagroup SpA, Cotto d'Este can label its products with the Ceramics of Italy trademark, which confirms their high standard of design, the use of the latest technology, concern for the environment and for safety at work and constant research for optimising the resources employed, in compliance with the highest performance standards. Ceramics of Italy embodies the will of the Italian ceramic tile industry to promote the awareness and esteem of Italian ceramic tiles amongst international users: ceramic tiles are not mere building materials but a reference point for style and creativity and for the development of a new way of living, Made in Italy

Ceramics of Italy, promoted by Confindustria Ceramica, is a registered trademark of Edi.Cer. Spa, the organiser of Cersaie – the International ceramics exhibition.

Headquarter in Italy
Via Emilia Romagna 31
41049 Sassuolo (MO), Italy
www.kerlite.it
www.cottodeste.it
info@panariagrouptrade.it
tel 0039 0536 915415
fax 0039 0536 915400

Mrs Silvia Cicognani 0086 13817938907 silvia.cicognani@panariagrouptrade.it