

DuPont™
CORIAN®

Corian® Solid Surface External Cladding



CDUK

distributors of

DuPont™
CORIAN®
SOLID SURFACES

Corian® Solid Surface External Cladding from CD (UK) LTD

Corian® was introduced into the UK in March 1979 by Geoff Baker, the present Chairman, and Mrs. Toni Hibbert, Director. They have been instrumental in creating the solid surface market in the UK; this combined with the fact that Corian® was the first solid surface, qualifies them as being the most experienced distributors in Europe.

Since that time they have, with the help and assistance of the manufacturers DuPont™, made Corian® into the household brand that it is today.

At the end of 2008, Gary Baker was appointed Managing Director. Combining the years of experience that Geoff and Toni have in the trade together with Gary's background of marketing with several leading Global Brands, CD (UK) has the perfect team to continue to develop the Corian® business in the UK.



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Corian® External Cladding

DuPont™ Corian® external cladding provides a stunning high performance outer envelope for a new development or can upgrade, enhance and transform existing buildings.

Versatile, long lasting and energy saving Corian® cladding systems are designed and produced to meet the most demanding aesthetic and functional requirements. The panels are available in many sizes and can be curved providing architects and their clients with endless design opportunities.

Design and Appearance

DuPont™ Corian® is an extremely versatile material – designers around the world mould, shape, sculpt, cut, join or sandblast it to create inspiring installations. The organic feeling of Corian® coupled with a seamless look, fluid lines and a broad range of colour possibilities, creates a platform for boundless creativity.

Corian® panels can be combined easily with other building materials for contrast, harmony and accent. The result is a façade that transforms and enhances, adding new dimensions to any building design.

Size and Shape

DuPont™ Corian® panels can be produced in panels to virtually any size required and in 12mm and 19mm thicknesses. Corian® can be thermoformed into curves to offer further design options and adding more depth and character to a buildings' exterior.



Versatile, long lasting and energy saving

Rainscreen and Overcladding

The aesthetic, remedial and thermal solution

One of the key ways in which Corian® rainscreen can benefit existing buildings is through overcladding.

Apartment and office blocks, retail and commercial establishments etc. may well require both remedial and aesthetic work to make them suitable for today's environment.

On top of this, the thermal inefficiencies inherent in this legacy building stock will almost certainly need radically upgrading to meet today's exacting regulations.

Overcladding with rainscreen cladding systems achieves all three key requirements.

- Remedial
- Aesthetic
- Thermal

Other Benefits

Minimising Disturbance

Overcladding is carried out entirely from the outside so there is usually minimal disruption.

Balconies

Balconies and walkways can be fully enclosed to create buffer zones. If external wall insulation is not considered then enclosing the balconies etc. will also reduce the effect of the thermal bridges associated with them.

Maintenance

As a non-loadbearing extra 'skin', fixed to the substrate, maintenance or replacement of panels is straight-forward and non-invasive, as is access to loadbearing structure i.e. columns, beams and slabs.

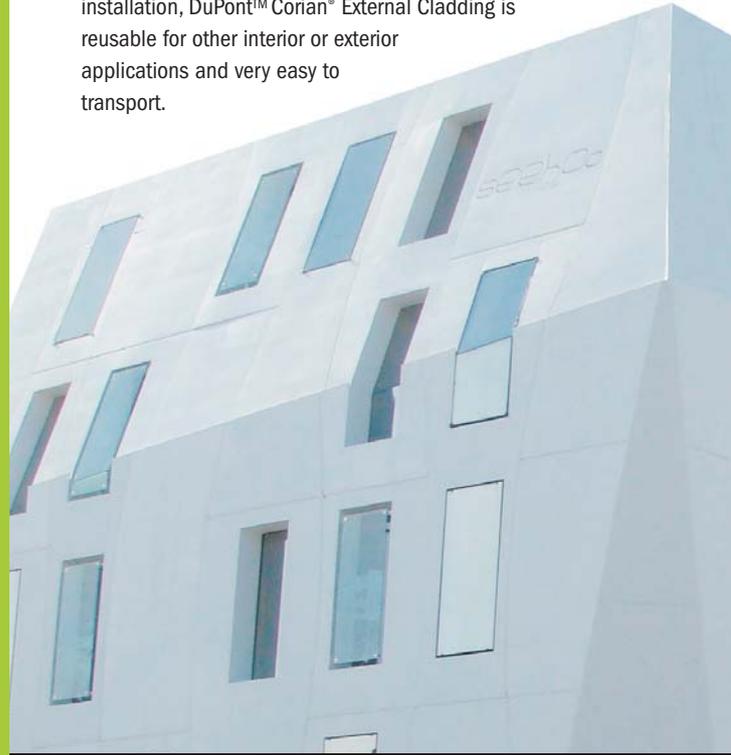
Building life

Whilst overcladding will not reinstate structural integrity of a building, it will, if designed and installed correctly, extend its life by improving weather resistance.



Efficiency

DuPont™ Corian® External Cladding offers a façade solution with low operational costs and superior whole life value. Moreover, when the panel system might meet the end of its initial installation, DuPont™ Corian® External Cladding is reusable for other interior or exterior applications and very easy to transport.



Key Features of Overcladding

- Restoration of existing façade
- Extending the life of the building
- Improving appearance and image
- Provide thermal insulation and weather tightness
- Improve acoustical performance of the building
- Lower maintenance cost

Corian® is adaptable

DuPont™ Corian® EC has many desirable attributes to offer for exterior cladding applications. From major urban constructions to smaller scale projects, Corian® can adapt to any kind of design. Fire rated and proven to be safe for public spaces, the material can also add cachet to private residences and forms an exterior finish the client will never have to repaint.

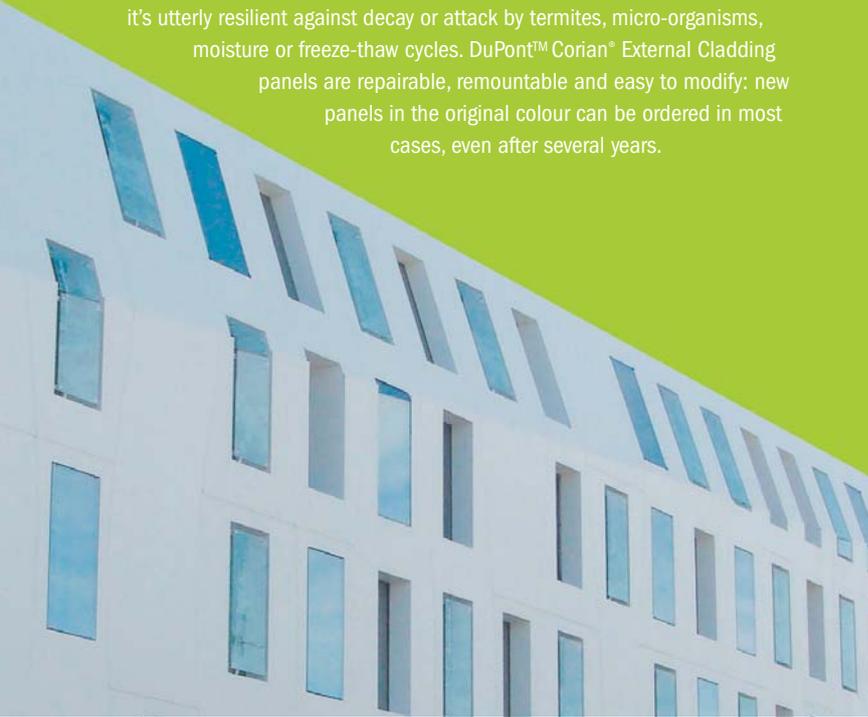
Adding detail:

Indoors or outdoors, as a full façade or sectional wall panel Corian® turns the perception of traditional cladding materials inside out.

Urban durability

Corian® is pliable in design terms, yet strong in application and is resistant to abuse and impact. Graffiti is easy to remove with more potent water-based cleaning agents or by sanding.

This does not affect either the beauty or performance of the product. In addition, it's utterly resilient against decay or attack by termites, micro-organisms, moisture or freeze-thaw cycles. DuPont™ Corian® External Cladding panels are repairable, remountable and easy to modify: new panels in the original colour can be ordered in most cases, even after several years.



Express your design vision through a number of techniques and capabilities with DuPont™ Corian®

Thermoforming: Bend the material to your imagination and create high-impact 3D effects and customised shapes.

Engraving: Etch your ideas into solid reality, via CNC and other techniques.

3D Math Collection: High impact collection of decorative panels inspired by mathematics formulae.

Joining: Create smooth surfaces with inconspicuous seams and monolithic effects, or choose overlapped or open joints.

Finishing: Corian® can be purely bespoke, but it also comes off the shelf with no need for sealants or treatments, offering an inherently smooth, naturally non-porous surface.

Colour: Pristine white has a perennial appeal, but should you require colour there is a select palette to choose from of suitable shades for external applications, displayed later in this brochure.



The artistic possibilities when working Corian® are almost unlimited. There are many different surface treatments that can be applied to DuPont™ Corian® External Cladding to customise its appearance, such as textured and carved effects achieved via sanding, routing, sandblasting, waterjets, thermal moulds and presses, etc., enabling the production of unique designs.

Performance considerations

This brochure offers an overview of performance considerations that, we hope, will inspire you to consider DuPont™ Corian® External Cladding. Especially for projects which would benefit from beautiful, hi-tech, easy-to-install and easy-to-care-for façade or cladding applications. Today's high performance ventilated façade systems (often known as rainscreen cladding) must accommodate a complex interface of materials and design while meeting some of the most demanding regulations.

The ventilated façade system comprises construction elements that provide structural support, weather resistance and the overall architectural expression of the building.

Fixing systems can be mechanically attached or adhered, but must be engineered with sufficient tolerances and flexibility to allow for a variety of differential movements. We recommend the Euro Fox façade technology aluminum support system for rainscreen cladding.

(NBS specification documents are available on request)

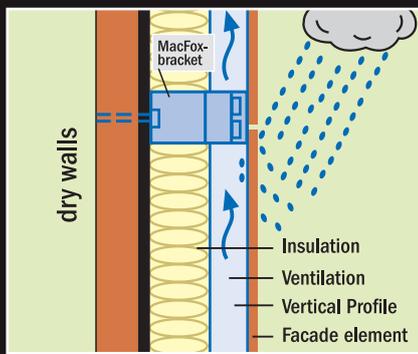
Advantages of DuPont™ Corian® Exterior Cladding:

- Design Flexibility
- High-performance durability
- Excellent UV and weather resistance
- Easy maintenance and repairability
- Structural performance
- Fire rating

Rainscreen Cladding

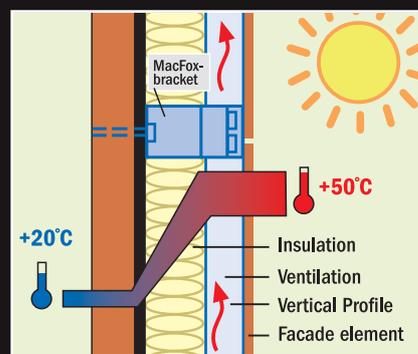
The benefits of ventilated façade systems are well understood. Designed to provide new and existing buildings with effective protection from the elements, they also provide valuable thermal and acoustic insulation by creating an air cavity between the building shell and the façade which dries out the structure and allows the building to ‘breathe’.

The surface of Corian® is impermeable and durable, making it the ideal moisture and weather resistant material for such rain screen cladding. Ultimately the building remains in good condition retaining its original aesthetics and reducing maintenance costs.



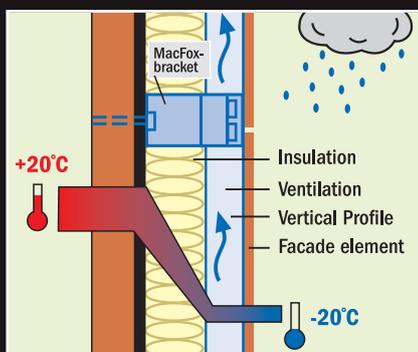
Rain/Humidity/Dew protection

Rainwater and condensation are removed naturally by air flowing through the cavity - so that the insulation material remains in good condition and effective over time. Penetration of rainwater is minimised and condensation is drained out through ventilation inlets and outlets. The ventilated air space serves multiple functions.



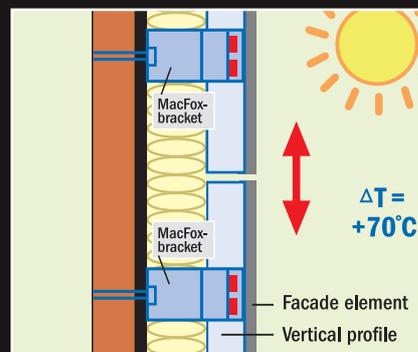
Thermal insulation - Heat

In a warm climate moving air will cool the inner layers of the construction, thus reducing the demand for cooling energy. The building occupants can enjoy a low-maintenance environment with dry and comfortable conditions that can make a positive contribution to wellness and overall comfort.

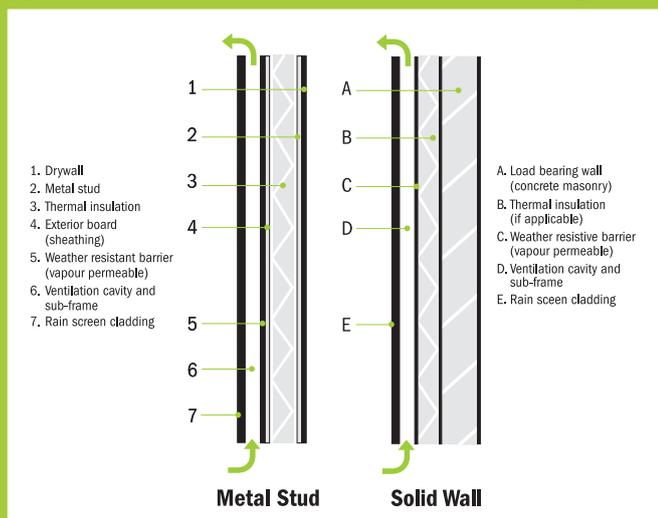


Thermal insulation - Cold

The air in the designed cavity will circulate due to air pressure differentials and thermal differentials over the height of the building. In a cold climate this causes the condensation moisture at the rear of the cladding to dry.



System Elements of Rain Screen Cladding



Easy to work with, easy to install:

Fabrication is taken care of by skilled and approved workshops using hi-tech tools and techniques through certified fabricators.

On-site adaptability: Further fabrication and modification is possible in the field by virtue of the materials compatibility with simple machining methods.

Corian® can offer all the benefits of the noble stones but is light-weight and easy to install so reduces the structural load and need for heavy sub structures.

Standards: CD UK ensures a high level of quality control both with the product and in its application through certified fabricators.

Rainscreen and Wall Insulation

Providing Thermal Insulation for Walls

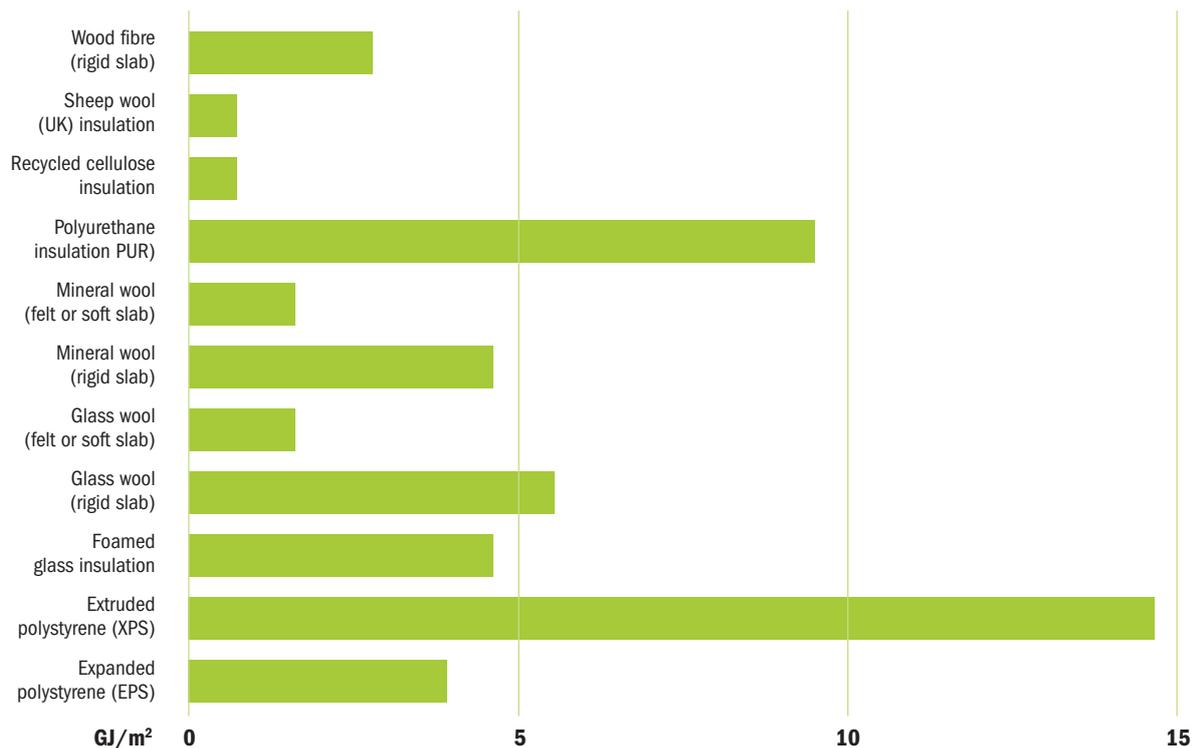
Rainscreen is a high benefit method of providing thermal insulation to external walls for both refurb (overclad) and new projects.

Adding insulation to the external surfaces of the loadbearing structure has key benefits:

- **No loss of internal space - insulation added to wall cavities or inner leaf inevitably consumes internal habitable space**
- **Light weight and easy to fix - insulation can be rapidly and easily fixed to the exterior substrate and adds very little loading to the rainscreen support system**

Embodied Energy for Insulation

The table below shows embodied energy for various installation products. Lower embodied energy will allow the designer to achieve a bigger BREEM rating.



Life Cycle Analysis of Corian®

BRE Global Ltd - The Green Book

Green Book Live is the definitive source of information for the construction industry and enables specifiers, designers and end users to manage the environmental impact of the projects on which they work.

To download the documents on Corian® external cladding visit www.greenbooklive.com and type 'Corian' in the search box.



The Key Environmental Characteristics of DuPont™ Corian® External Cladding are:

DuPont™ Corian® External Cladding ventilated façade system allows for thicker insulation and therefore lower energy costs.

DuPont™ Corian® External Cladding is durable and long lasting, panels can usually be repaired, if necessary, rather than replaced, resulting in less materials being needed or discarded, over the life of the building.

DuPont™ Corian® External Cladding can be used for cladding renovation to reach new thermal regulation requirements.

DuPont™ Corian® is inert, safe in use, certified as hygienic and as having no negative impact on air quality. The material is easy to maintain without the need for sealants or treatments.

DuPont™ Corian® has received important independent certification for its environmental performance such as:



Environmental considerations play a significant role in the ongoing development of DuPont™ Corian® External Cladding. Panels are made of approximately 1/3 high quality acrylic ingredients and 2/3 natural minerals. Pigments used are free of heavy metals, toxic or carcinogenic ingredients. Residual material from the production is rapidly renewable in the process. Some colours have up to 25% recycled post-industrial material.



The Environmental Case for DuPont™ Corian® Solid Surfaces

DuPont™ Corian®, the original solid surface material invented by DuPont, continues to evolve in new and exciting applications where sustainable design and durable building solutions are critical. As a leader in pursuing the mission of sustainable growth through daily business practices, DuPont is committed to creating shareholder and societal value while reducing its environmental footprint throughout the value chain.

Every day, consumers, builders, architects and designers increasingly choose to “build green”. Corian® is available to them as an environmentally friendly choice from a responsible company operating since 1802.

Environmental Considerations DuPont™ Corian® - Created for Life

Over thirty years ago CD UK Ltd first introduced Corian®, a material set to revolutionise surfaces, to the UK. Perhaps one of the best testaments to the sustainability of this durable, renewable and reusable material is just how well some of those earliest installations have performed, still looking fantastic today.

Corian® offers genuine value, reliability and longevity. It's easy to clean with standard household agents and has a lasting non-porous finish that needs no chemical treatments or sealants. Corian® also has important independent certification (e.g. GreenGuard®, U.S. Green Building Council's LEED® Green Building Rating System, ISO 14025 Green Choice, Ecospecifier, etc) and as part of DuPont, benefits from a well-recognised global sustainability programme and from ethical, safe and responsible sourcing and manufacturing. Corian® is completely non-toxic and inert, with no negative impact on indoor air quality.



What Makes Corian® an Environmentally Sustainable Product

Corian® was invented by DuPont scientists in the late 1960s and, since then, it has been progressively marketed and used in a growing number of countries in architectural, decorative and design applications. Today Corian® is a globally recognized brand, a high performance surfacing solution with an extensive track record of successful applications worldwide, in a very diversified range of segments, both in residential and public environments.

Durable, renewable and safe surfacing material : it's proven

DuPont™ Corian® solid surfaces and Corian® adhesive all have low VOC (Volatile Organic Compounds) content, and have proven to be extremely safe as surfacing materials for over 40 years, worldwide. Corian® solid surfaces are made of approximately 1/3 high quality acrylic ingredients and 2/3 natural minerals and are produced in several manufacturing facilities around the world. Once the ingredients of Corian® are fully reacted (polymerized) in the manufacturing process, they become a chemically stable material with minimal impact on air quality, making Corian® an ideal surface for use in countertops, wall cladding, sinks and a wide variety of other applications.

The hygiene performance of Corian® has proven to be superior to those of many conventional surfacing materials.

This has been certified by results of tests done by independent German organization LGA QualiTest GmbH.

- **Corian® lasts a long time. It is heat and stain-resistant. It resists chips, cracks and stands up to high-traffic areas.**
- **Corian® provides a seamless look and feel that is easy to clean.**
- **Corian® is renewable. It can easily be repaired and renewed, thus minimising the desire or need to replace and dispose of it.**
- **Corian® can also be removed, recut and either reinstalled as a new design or reworked into new products.**

Improvement in Industrial Processes

DuPont continues to improve the industrial processes of Corian® through:

Responsible choices in raw materials:

- Pigments used to manufacture Corian® are FDA-listed and selected from materials free of heavy metals, toxic or carcinogenic ingredients;
- We encourage our suppliers to adopt manufacturing processes that are safe and environmentally responsible.

Responsible choices in manufacturing processes:

- Improved processes and technologies are reducing waste generation during the manufacturing process; · Scrap and off-spec Corian® is being used as raw material for new product applications.

Responsible choices in packaging:

- Our policy on packaging waste is, in order of preference: to minimize use, reuse if possible, recycle where practical or incinerate with energy recovery.

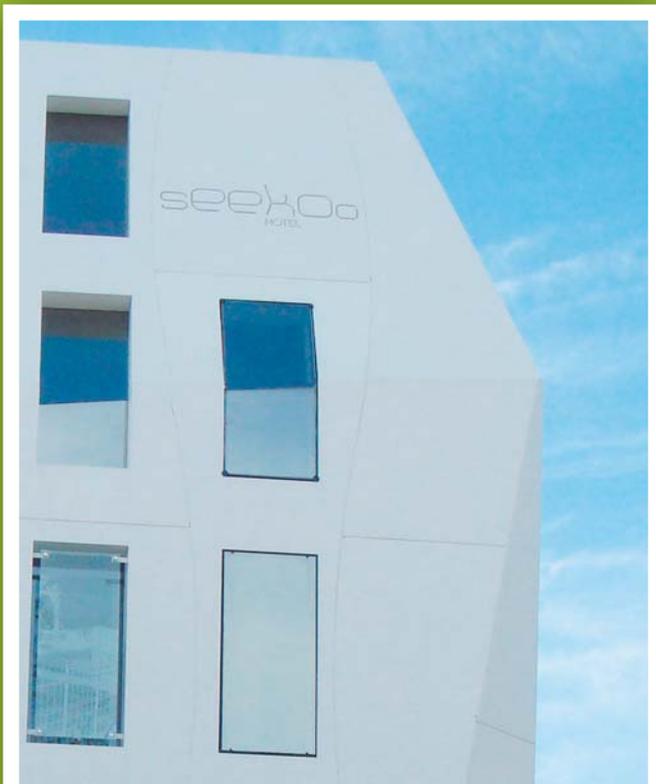
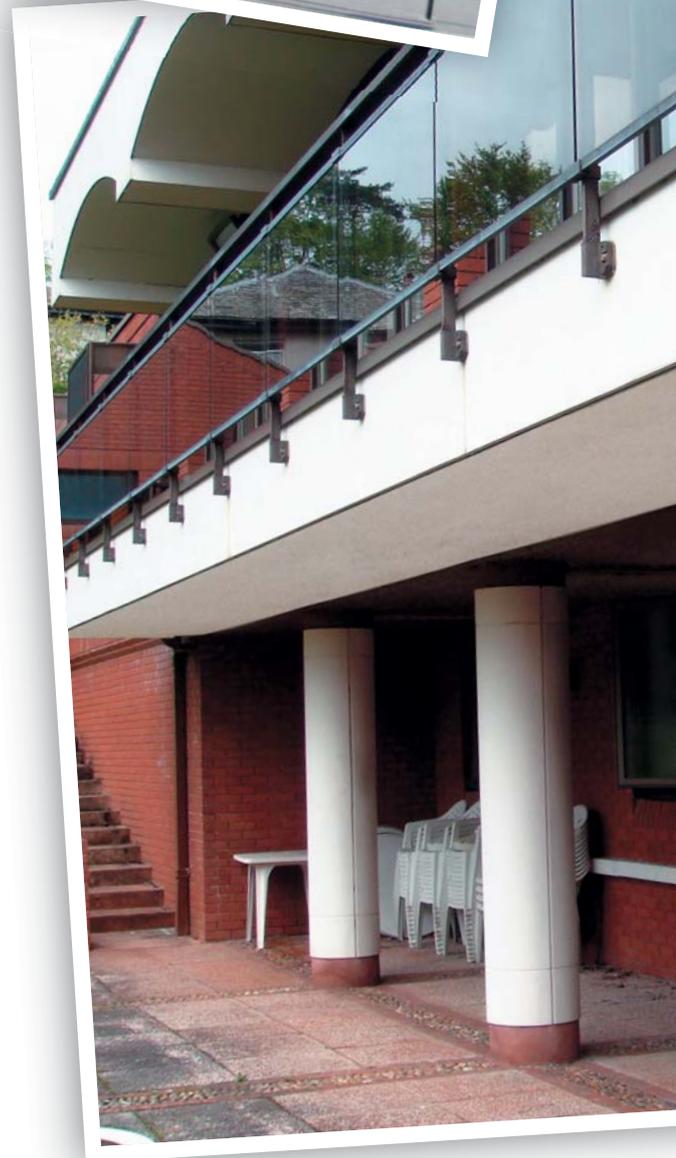
Case Histories

Corian® distributors CDUK are increasingly supplying this wondrous and flexible material for architectural applications. Shown here is the breathtaking Seeko'o Hotel designed by King Kong Architecture and is situated on the corner of the Quai de Bacalan and Cours Édouard-Vaillant in Bordeaux.

Seeko'o Hotel marks a clear break away from the models it pays tribute to, in the form of a whole range of innovative ideas in the twenty-first century on the quays of Bordeaux in style. It was not in the architects' intention here to resort to clearly visible continuities in the facings used (stonework, rendering...) as if playing at make-believe. King Kong architecture workshop is proficient in its use of an almost infinite range of materials and so decided to move off the beaten track for this project and utilise a medium that would be equal to their innovative plans.

They chose DuPont™ Corian® to achieve a particular look. The architects did not want to see a criss-crossing of horizontal and vertical joints running across their façade and so designed a series of vast panels (5.5m high) with flexible contours that the meticulously cut sheets of Corian® are slotted into. The impermeable, heavy-duty nature of the material means it has the advantage over steel in that it proffers contrasting readings thanks to its astounding density.

Stained all the way through at manufacture, it does not require an additional layer of paint and the light streams freely over its smooth, intense surfaces, in an incessant play of clean-cut reflections. Contained by the panels flowing freely over the façade in sinuous lines, in a play of convex and concave forms, are a rhythmical series of openings. The architects' greatest merit, and this is clear when one surveys their achievements as a whole, is the rich depth of their work, a quality which is all the more appreciable here as the building's function is that of a luxury hotel and an iconic landmark.



Case Histories

Examples of the Royal Masonic Benevolent Home in Exeter.

DuPont™ Corian® offers lasting good looks together with piece of mind.

The cladding and columns on this building were installed over 20 years ago and still look as good as new.

A fine testament to the formability, durability and easy care offered by Corian®



Recommended Colours of DuPont™ Corian® External Cladding

DuPont™ offers a selection of colours recommended for exterior cladding. These colours are expected to meet architectural guidelines for a colour change of less than or equal to 5 units (E) in 10 years based on tests according to ASTM standards (ASTM G7 & ASTM G155).

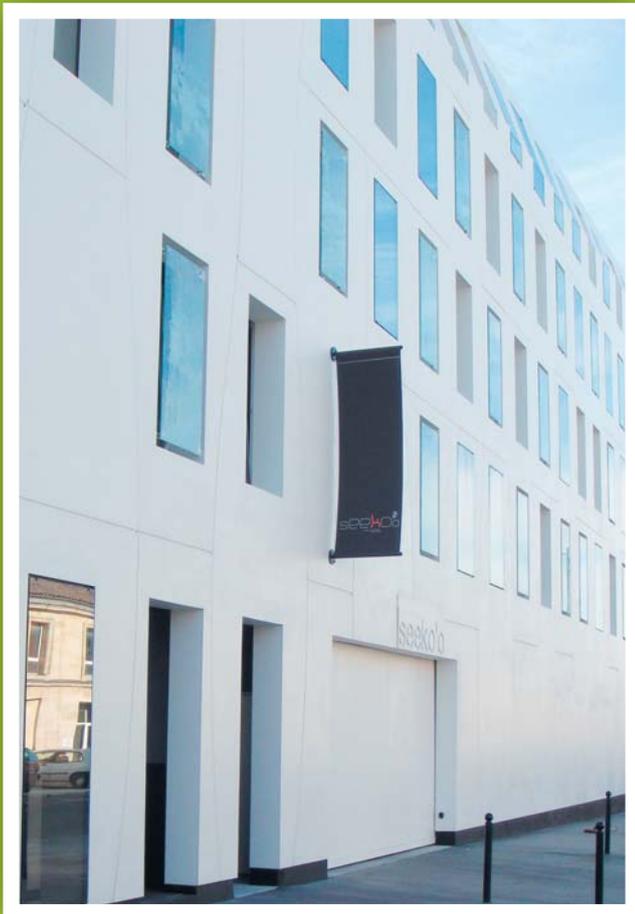
Translucent Effects

DuPont™ Corian® Exterior Cladding can also be fabricated to achieve different levels of light transmission by selectively back-cutting the material to different thicknesses. Where the material is cut thinner, it allows more light to emanate. The effect generated will depend on the combination and variables of colour, thickness and lighting systems.

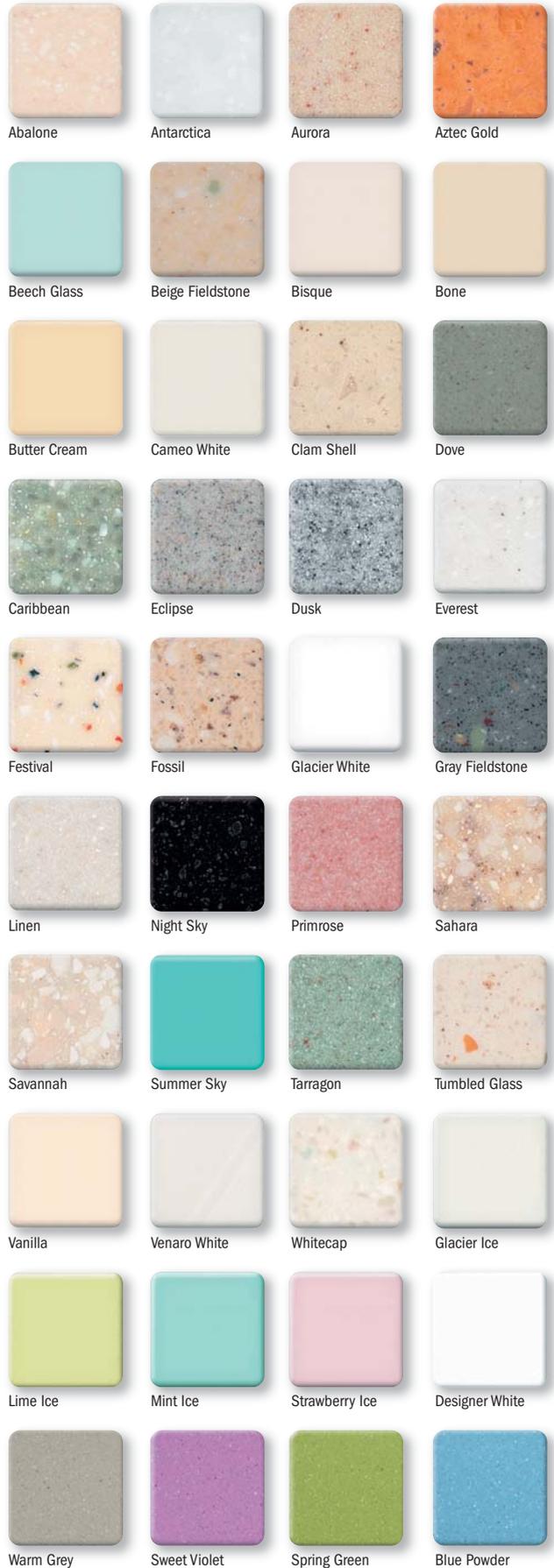
DuPont™ Corian® Exterior Cladding allows for a degree of light diffusion, depending upon both colour and aggregate texture chosen from the palette. In general, plain and light tones such as whites and neutrals and the most translucent, while dark or saturated colours with a matrix of large particles are the least translucent.

Illumination Series

In response to the increasing ingenuity in structural lighting designs, the groundbreaking DuPont™ Corian® Illumination Series of colours has been designed specifically to offer enhanced translucency. These 'Ice' tones subtly alter depending on the level of direct illumination, adding an ethereal beauty to the strength of Corian®



Recommended Corian® colours for use with external cladding:



UV warranty: thanks to practical experience over many years and high quality of Corian® EC, a 10 (ten) year UV warranty, guaranteeing that the colour will not fade or change by more than 5 E CIE L*a*b* units and gloss loss will not exceed 40%, is available both for the product range in general and for specific projects. This limited warranty applies to gloss loss on Corian® EC sold with a semi-gloss or matte gloss only. This warranty is subject to terms and conditions.

DuPont™ Corian® External Cladding Features and Benefits

Features	Benefits
Thermal insulation for walls	Improved energy saving
Flexible design options	More impressive aesthetics
Over cladding carried out externally for minimal disruption	Lower installation costs
Easy to maintain	Low maintenance costs
Mechanical fixing system	Ease of installation
Corian® has low burning characteristics	Fire resistant
UV resistance	Maintains colour stability
Durability of material	Cladding remains in perfect condition for years
Corian® is non-porous	Total weather resistance from freeze/thaw cycles Resistance to chemical detergents and environmental pollutants Building's life extended The interior remains dry
High flexural and tensile strength	Excellent resistance to wind loads
Light weight	Reduces structural load required Reduces the need for heavy sub structures
Jointing System	Better weather resistance



Technical Information

Fixing Systems

The fixing system usually used to mount the Corian® EC cladding panels is a mechanical fixing system based on an aluminium grid system consisting of vertical profiles 'T' or 'L' shape, mounted on aluminium squares connected to the substrate. The supplier has to check the substrate, according to the CISMA recommendations.

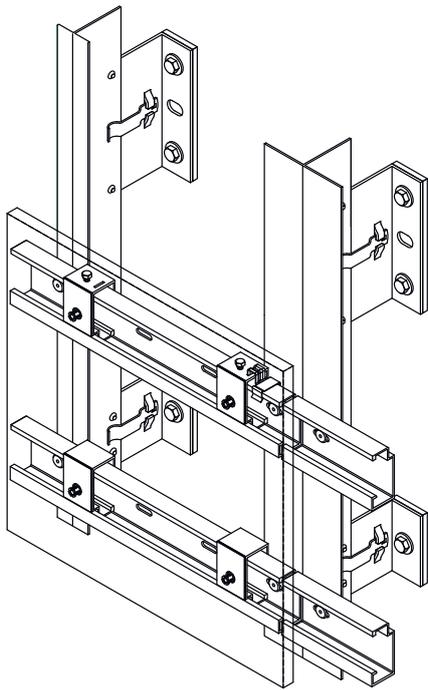
The cladding panels are hung on the horizontal profile 'C' shape by the brackets (or clamps) with reverse 'C' shape that are attached to the back of the panel with a specific undercut anchor from Keil company, making fixings invisible. Cavity between panel and the rear wall is partially filled with insulation, protected by DuPont™ Tyvek® membrane, so air can ventilate behind the profiles. The thickness of the aluminium profiles will be of 20/10 or 25/10, according to whether you fix the profile/square by riveting or screwing. The quality of aluminium is 6060 T5 or similar.

The whole fixing system allows DuPont™ Corian® sheets to dilate in all directions.

We recommend the Euro Fox Façade Technology Aluminium Support System for rainscreen Cladding

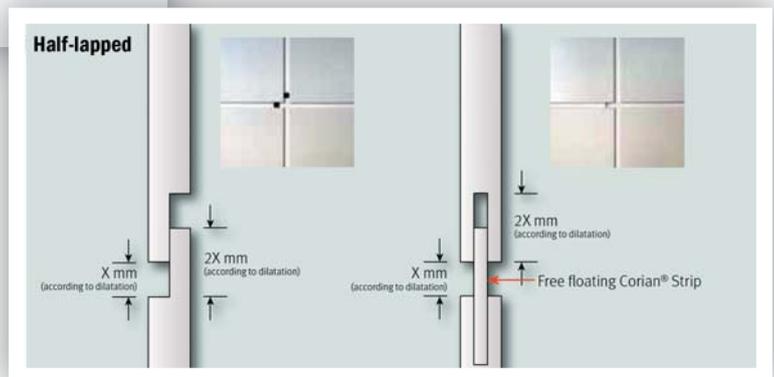
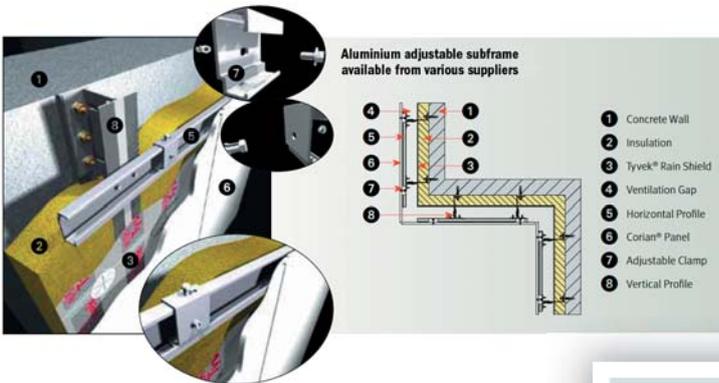
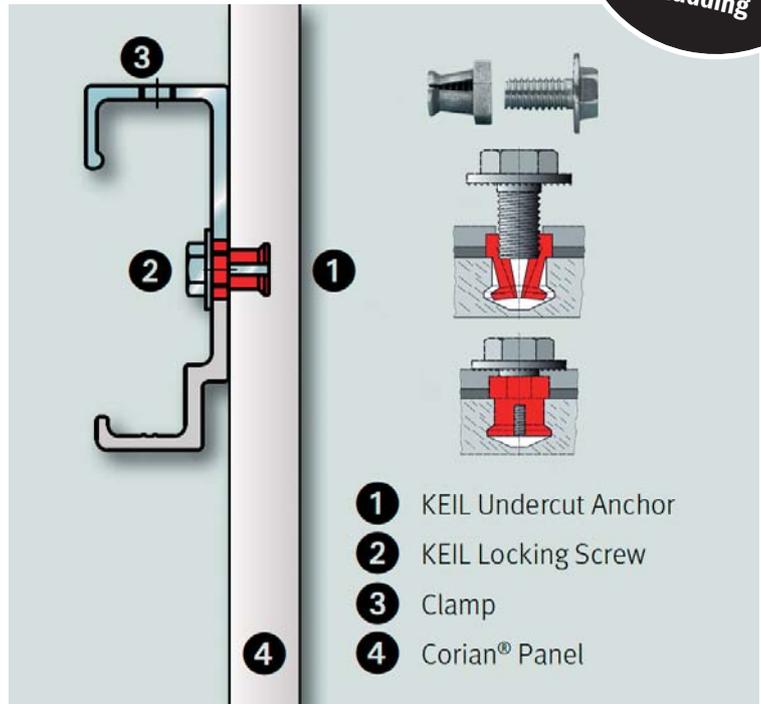
Mechanical fixing system

with visible fixings positioned every 650mm x 650mm



Invisible undercut insert from Keil company

(www.Keil.Eu)



Technical Information

Performance Properties of DuPont™ Corian® Exterior Cladding

Structural performance

- Light-weight** for reduced structural load
- High flexural and tensile strength** providing excellent resistance to wind loads
- Compatibility** with typical building components, structural silicone and sealants
- High resistance** to abuse and graffiti

Fire resistance

- Low burning characteristics**

Weatherability

- UV resistant** colour selections with excellent colourfastness available
- Water-resistant** system minimises leakage from wind-driven rain (fewer joints, ability to form half-lapped joints)
- Excellent** resistance to freeze/thaw, water absorption, chemicals and detergents and environmental pollutants.

Performance Properties of DuPont™ Corian® Exterior Cladding

Property	Typical result	Test
Structural Performance		
Specific gravity	1.7	
Weight	21,5kg/m ²	
Impact	category 1	ISO 7892
Flexural modulus	8040-9229 MPa	DIN EN ISO 178
Flexural strength	57.1-74.0 MPa	DIN EN ISO 178
Elongation at break	0.76 - 0.93%	DIN EN ISO 178
Fire performance		
Euroclass - fire resistance*	B-s1,d0	EN 13501-1
Weatherability		
Coefficient of longitudinal expansion	max. 30.5 x 10 ⁻⁶ K ⁻¹	DIN 51 045
Thermal conductivity ϑ (10°) dry	0.769 W(mK)	DIN 52 612
Colourfastness	see exterior colour recommendations	ASTM G7 & G155
Water absorption, long-term, 30 days	0.6 weight %	ASTM D570
Freeze/thaw Resistance	no observable changes	ASTM C666
Salt fog (concentrated effects of coastal environment exposure)	surface easily renewed	ASTM B117
Sulphur dioxide (SO ₂) resistance	no effect	ASTM G85
Fungus and bacteria resistance	does not support microbial growth	ASTM G21 & G22

*Standard grade, Glacier White, 12mm, 930mm - Applied on aluminium profiles with an airgap and with mineral wool insulation.

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