

Exterior Cladding

Dekton and Facade Systems Inc.



Cosentino Industrial Park



A

Main offices

We welcome you on you visit to our Showroom.

Showroom Auditorium

You'll get to know the Cosentino family through our company video.

Interactive Zone

B

Façades and flooring factory

You'll be able to see the entire manufacturing process for large-format Dekton façades and tiles.

C

Mosaic factory

Here you will see how all of our product samples are manufactured.

D

Museum

In our museum, you will get an exclusive first peek into the new Cosentino colours and products.

E

Cut-to-size factory

You'll see how the different materials are manufactured in our workshop.

F

Silestone

Here you will see the whole process for manufacturing Silestone slabs.

G

Natural stone warehouse

You will get a first-hand look at our Dekton and Silestone material storage system.

Logistics centre

At the logistics centre you will learn about our truck loading process.

H

Natural Stone | Outlet

In this section, you will see an extensive exhibition of materials from the Prexury, marble and granite line; as well as our Outlet.

I

Dekton

Here you will learn about the entire manufacturing process for Dekton slabs.

Cosentino Around the World

Our decidedly global business outlook has led us to establish a presence on all five continents.



Countries

Distribution

116

Implementation

40

Subsidiaries or assets

30

Business units

Factories

10

- SPAIN**
- 4 Silestone® Factories (0, 1, 2 y 3)
 - 1 raw material preparation plant
 - 1 special finishes plant
 - 1 sample factory
 - 1 Dekton® factory

- BRAZIL**
- 1 granite factory

Cutting workshops

13

- 12 workshops for cutting kitchen and bathroom countertops in USA
- 1 production plant in Spain

Logistics platform

1

- Smart logistics platform (Spain)

Business and commercial units

132

- 117 Cosentino Center
- 12 Cosentino City
- 3 Logistics hubs: two in USA and one in Australia.

Logistics operators

5

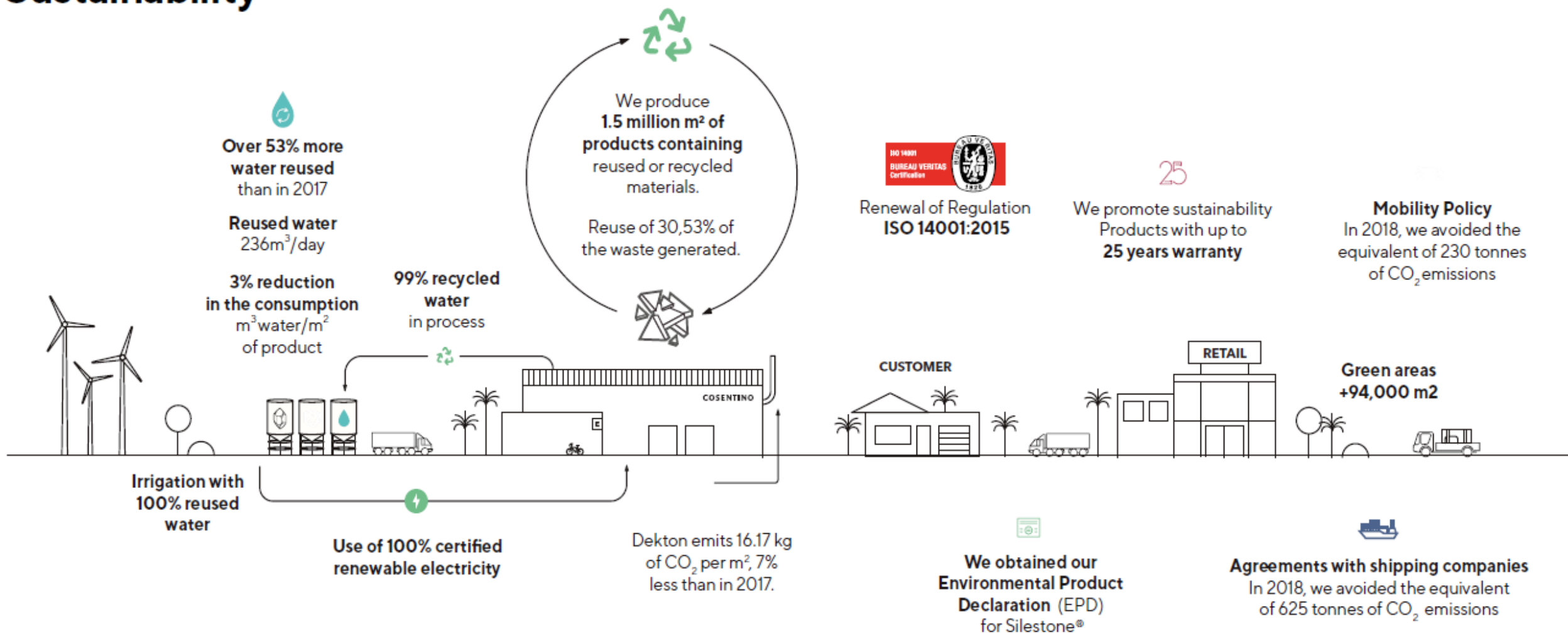
- Opening of a new logistics operator in New Zealand.

Central warehouse

2

- Over 24,000 m² for storing display slabs in our corporate head office.
- One logistics centre that includes a smart warehouse capable of storing up to 300,000 Silestone® and Dekton® slabs and preparing over 6,600 surfaces every 9 hours on shipping frames (sea or land).

Cosentino® Sustainability



Green Strategies

Cosentino is concerned about the environment and we have integrated several energy saving procedures into the manufacturing process.

- 99% water recovery and reprocessing
- dust recovery and reprocessing
- raw material waste recovery and re-use
- heat recovery from furnace saving 5% of fuel (natural gas) consumption
- automated transport system used throughout logistic centers reducing emissions and fuel consumption.
- Factory run off renewable energy – Solar & Wind



Plant Uses Only Renewable Electricity

100%
Solar and Wind
Electricity Sources



Dekton is Carbon Neutral

Dekton, Carbon Neutral product throughout its whole life cycle

- Carbon neutrality of Dekton covers from the extraction of the raw material, till the use of the product and its end of life.
- Dekton has an emissions reduction plan that has achieved a 7% reduction in Greenhouse Gas emissions (GHGs).
- In addition, emissions have been offset through investments in GHG emissions reduction projects, such as the biogas electricity generation project in Loma Los Colorados, Chile.





Leading Edge Surface Technology

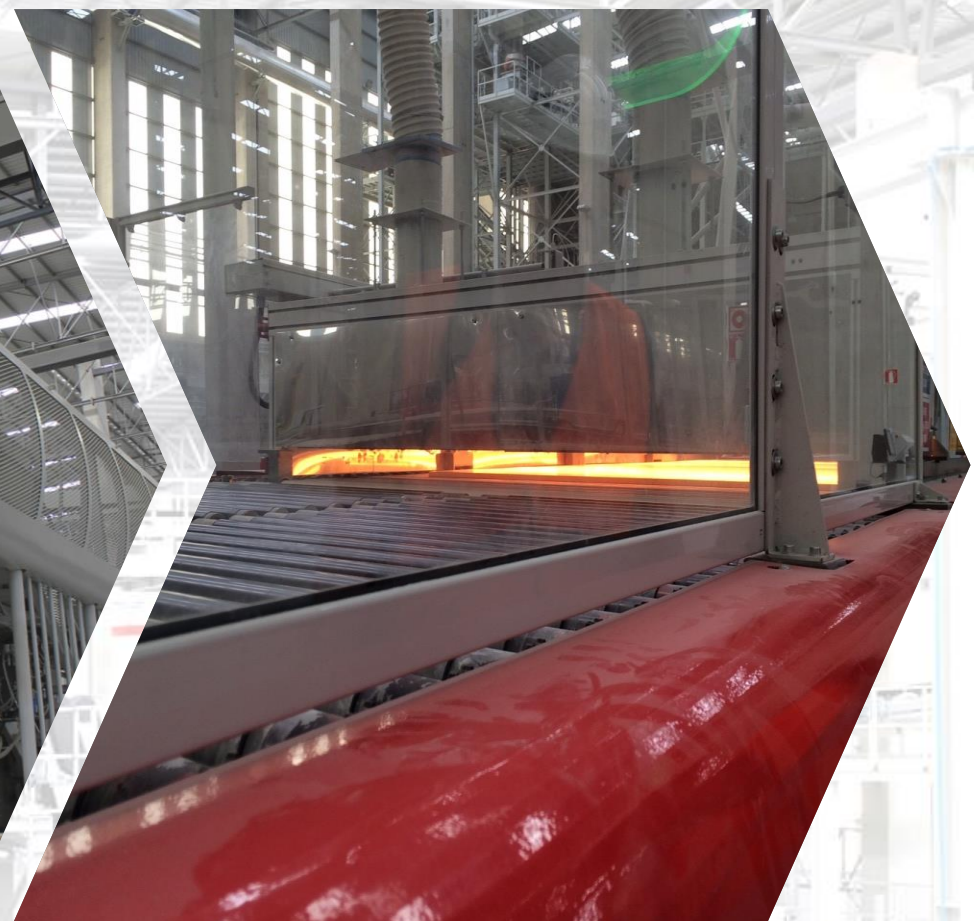
- Ultracompact Surface
- Interior & Exterior Applications
- Premier Surfacing Solution

What is Dekton?

Dekton Uses Only Inorganic Materials

No resin or organic materials are used to bind the material together. This adds to the durability as those can degrade over time.





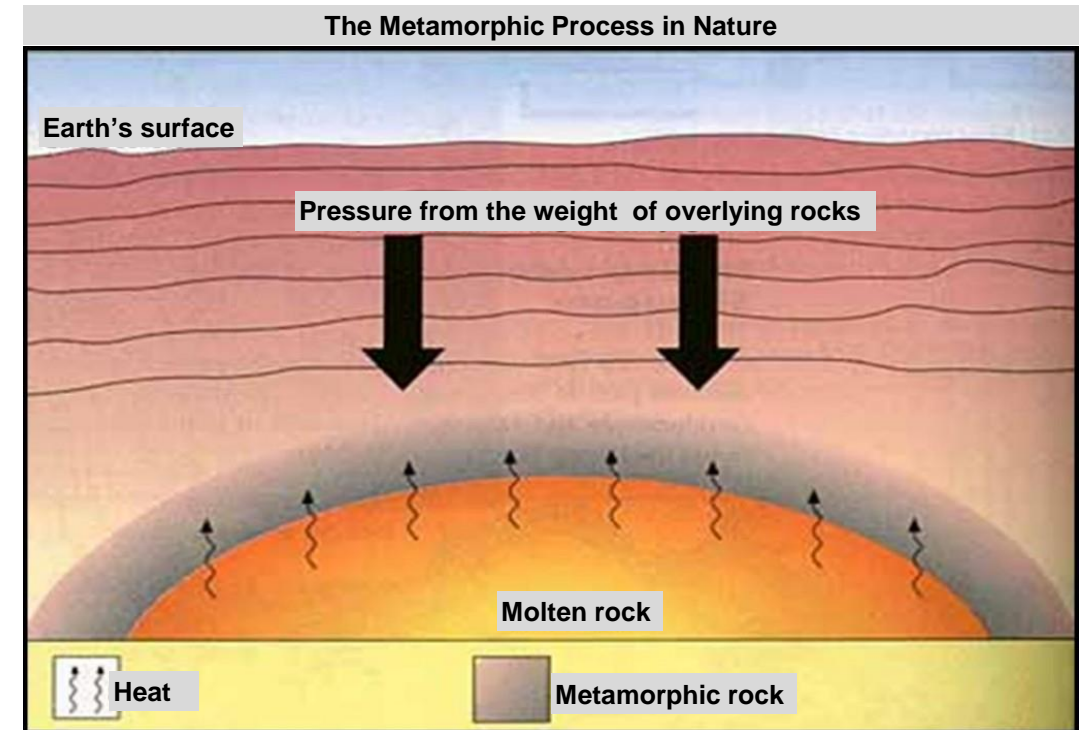
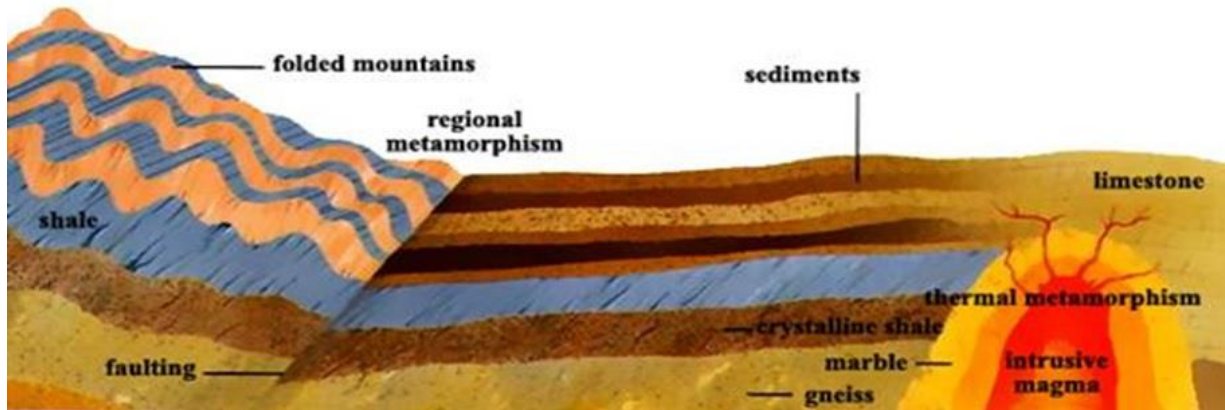
COSENTINO



DEKTON®
ULTRACOMPACT SURFACES

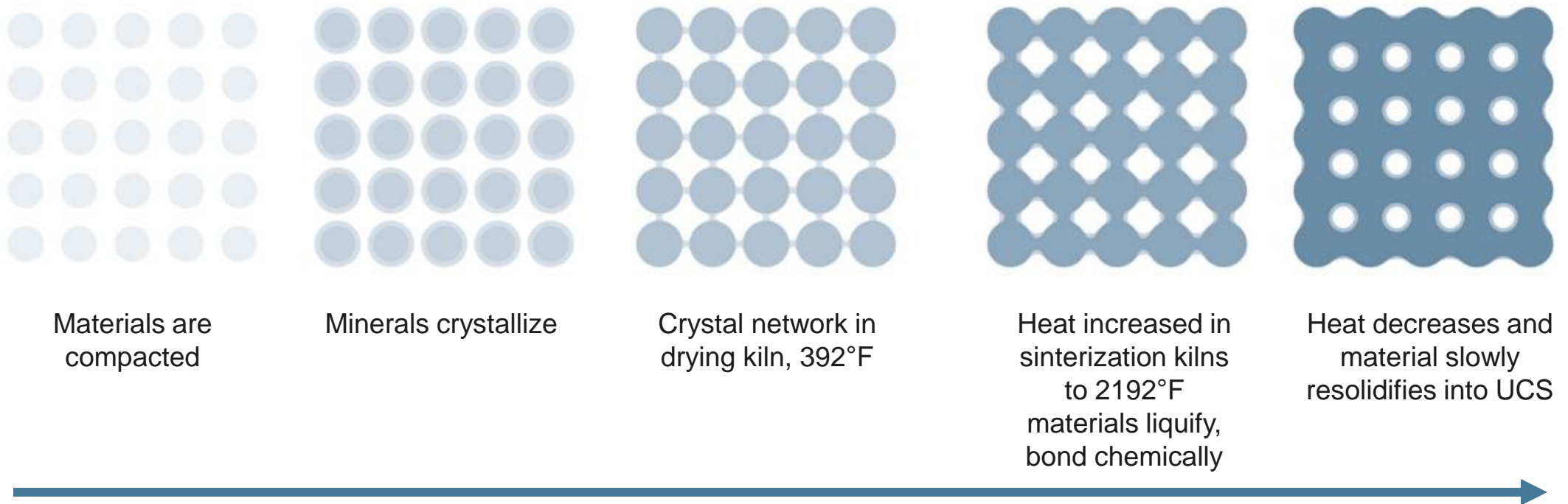
UCS Manufacturing Mimics Nature's Metamorphic Process

The metamorphic process is nature's way of forming minerals into solid rock via high temperature and pressure over time.



Sinterization Process

Below is a flow chart of the sinterization process. During this process, we can see the transformation of the initial raw materials and pigments throughout various stages. By using heat, reactions are controlled so that the correct synthesis path is followed.



Dekton Facades: Performance Attributes

- UV stable
- Non-combustible
- Graffiti and stain proof, low porosity
- Abrasion, scratch, and impact resistance
- Low coefficient of thermal expansion, Freeze/thaw proof
- Dimensional stability
- Large format
- Superior Lifecycle



UV and Thermal Resistance

Ultracompact surfaces are highly resistant to ultraviolet light (UV) and will not fade or degrade over time. Outdoor applications may include wall cladding, kitchens, barbeque areas, swimming pools, hardscaping, tiles, and furniture



Heat Resistant and Non-Combustible

Ultracompact surfacing can withstand high temperatures without burning, scorching, or cracking.

European Standard testing EN 13501, and ASTM E136, “Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750° C,” classifies ultracompact surfaces as noncombustible.

CAN/ULC S-135 Standard Method of Test for Determination of Degrees of Combustibility of Building Materials Using an Oxygen Consumption Calorimeter (Cone Calorimeter). Dekton classified as non-combustible.



Stain/Graffiti Resistance and Low Porosity

While some other surfaces are stain resistant, UCS is completely stain proof according to ASTM C1378:

“Standard Test Method for Determination of Resistance to Staining.”

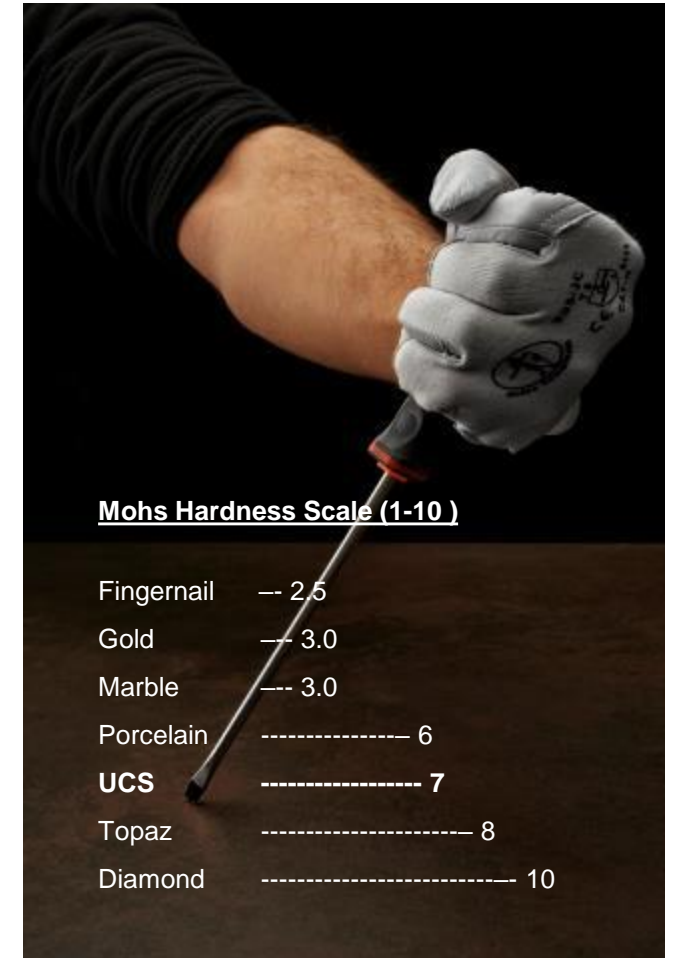
The surface has extremely low porosity, +/- 0.04%, making it extremely chemical resistant, according to ASTM C373, *“Standard Test Methods for Determination of Water Absorption and Associated Properties by Vacuum Method for Pressed Ceramic Tiles and Glass Tiles and Boil Method for Extruded Ceramic Tiles and Non-tile Fired Ceramic Whiteware Products,”*



Scratch, Abrasion, and Impact Resistance

According to ASTM C1243, “*Standard Test Method for Relative Resistance to Deep Abrasive Wear of Unglazed Ceramic Tile by Rotating Disc*,” ultracompact surfaces are even more resistant to abrasion than granite and porcelain, making them the ideal surface for façades or high-traffic flooring in commercial applications.

UCS is one of the most scratch-resistant surfacing materials on the market today. UCS has achieved a score of seven (7) on the Mohs scale of hardness.



Low Coefficient of Thermal Expansion

Ultracompact surfacing has very low expansion and contraction as seen in the ASTM C372, *“Standard Test Method for Linear Thermal Expansion of Porcelain Enamel and Glaze Frits and Fired Ceramic Whiteware Products by the Dilatometer Method.”*

- Smaller joints and seams
- Thermal shock proof
- Freeze/Thaw proof



Dimensional Stability

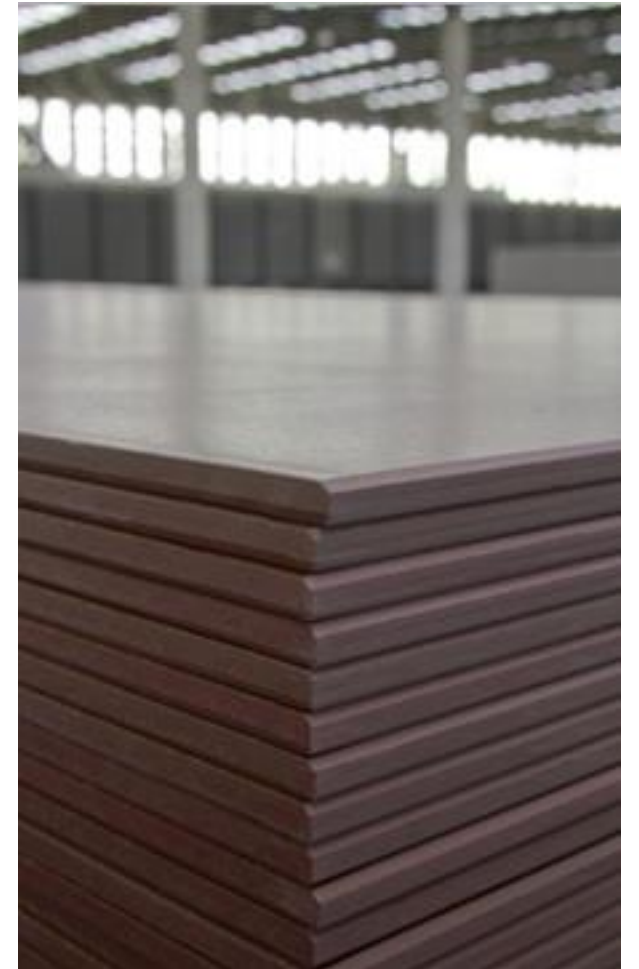
Ultracompact surfacing materials are very consistent in both dimension and thickness throughout the slab which minimizes the need for field corrections.

The unique manufacturing process produces a dead-flat panel as measured by ISO 10545-2, *“Ceramic tiles - Part 2: Determination of Dimensions and Surface Quality.”*

Many different thicknesses of slabs are offered:

Typical thicknesses for facades are 8mm and 12mm

Also available in 20mm, and limited color selection in 30mm and 4mm.



Large Format

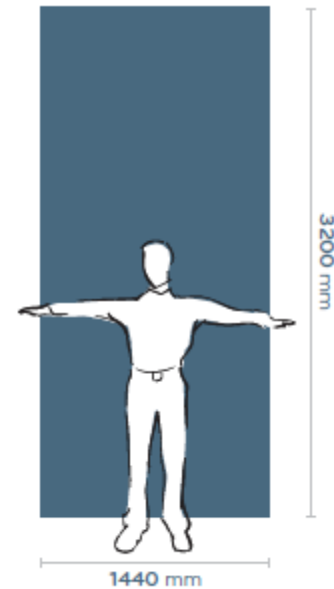
UCS is manufactured in large format slabs, with different thicknesses, to expand the design possibilities. UCS slabs measure approximately 56" x 126" (1440mm x 3200mm), with thicknesses ranging from 4mm to 30mm.

The 3D design of UCS provides an opportunity to design seamless, uninterrupted, and unrivaled spaces, where color and texture flow freely.

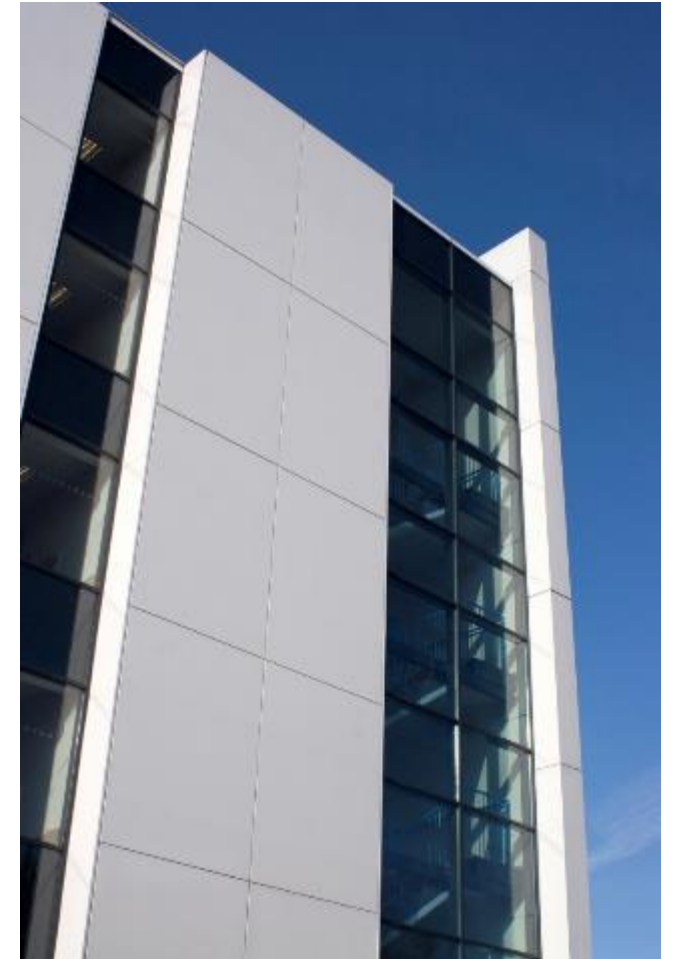
Lightweight

8mm @ 4.3 lbs/ft²

12mm @ 6.4 lbs/ft²

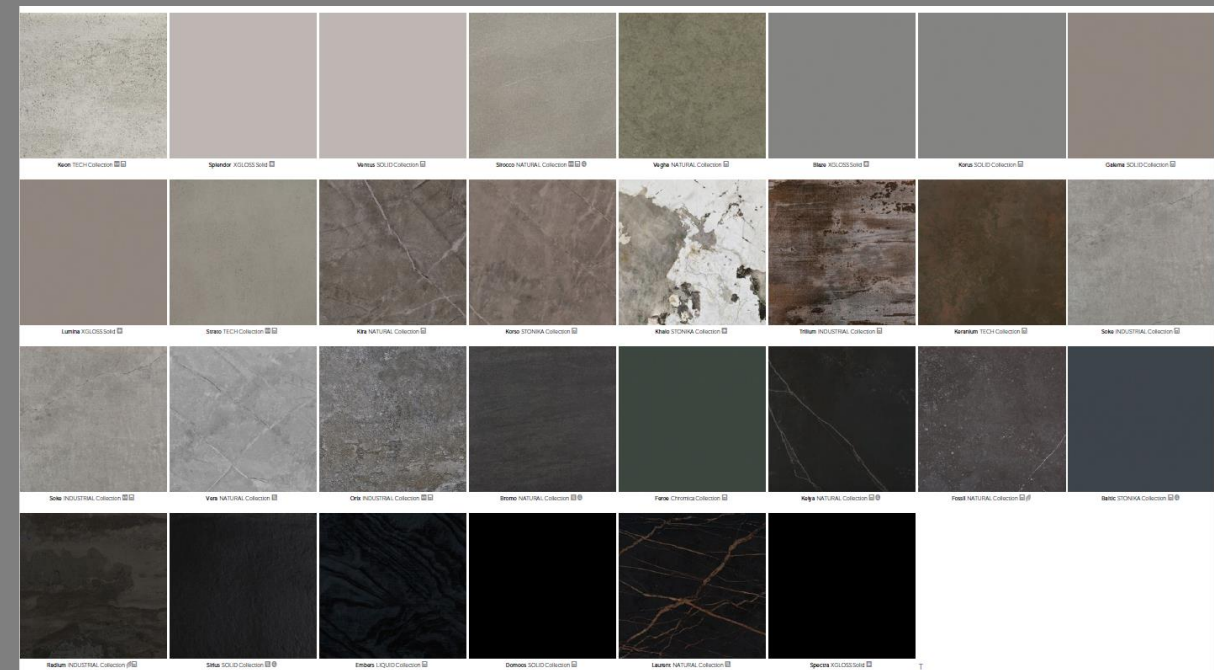
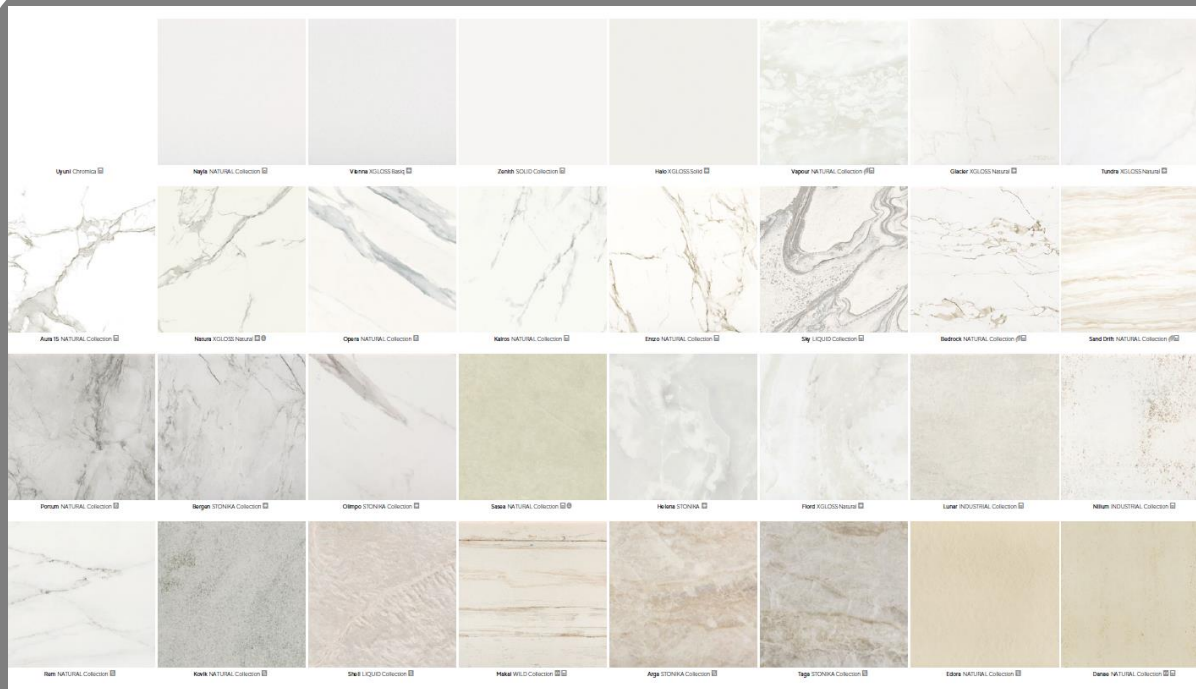


Example: Size of UCS slab



60 + Standard Colors and Patterns

60+ Colors, 4 textures/finishes including X-Gloss (machine polished), many colours 5% - 80% recycled content



Custom Dekton ID Unlimited colors available at minimum order quantity of 25,000 ft² (12mm)

Color Stability

Precise control of the pigmentation and decoration gives better color consistency from slab to slab, resulting in a long-lasting product that will not fade over time.



Custom Options with Dekton ID



Engraving and Milling

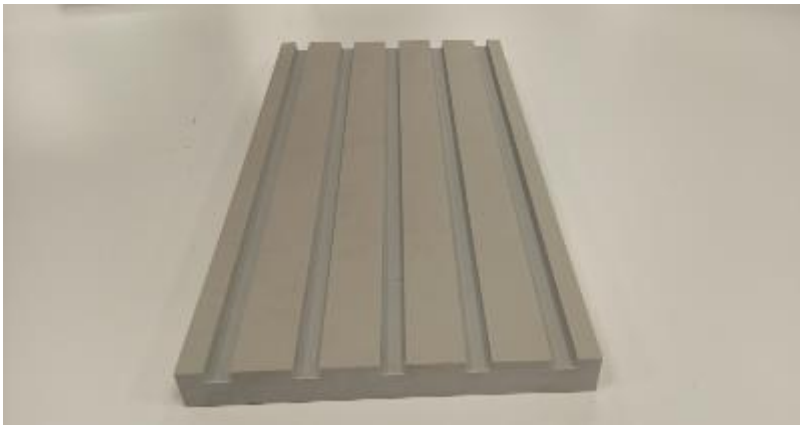


Mineral Printing



Complex Geometries





Engraving and Milling

Custom Design Possibilities



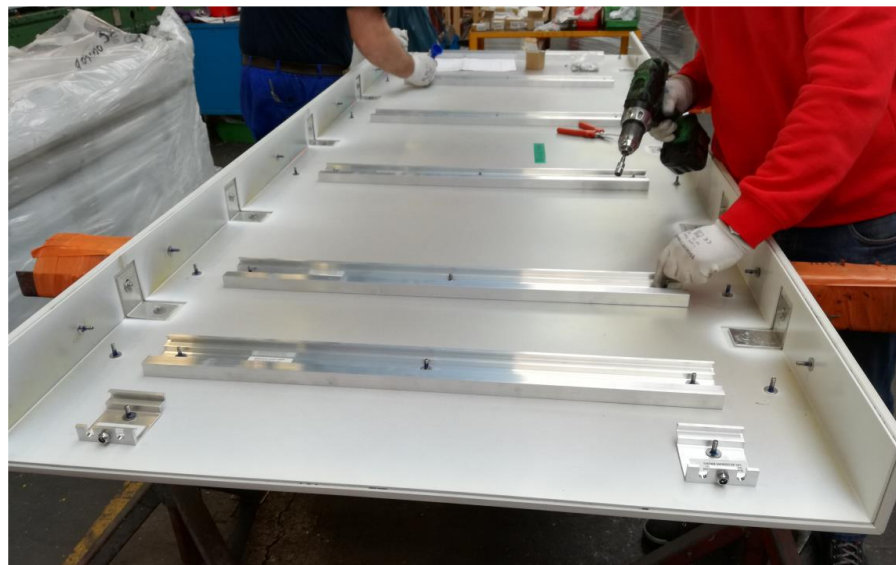
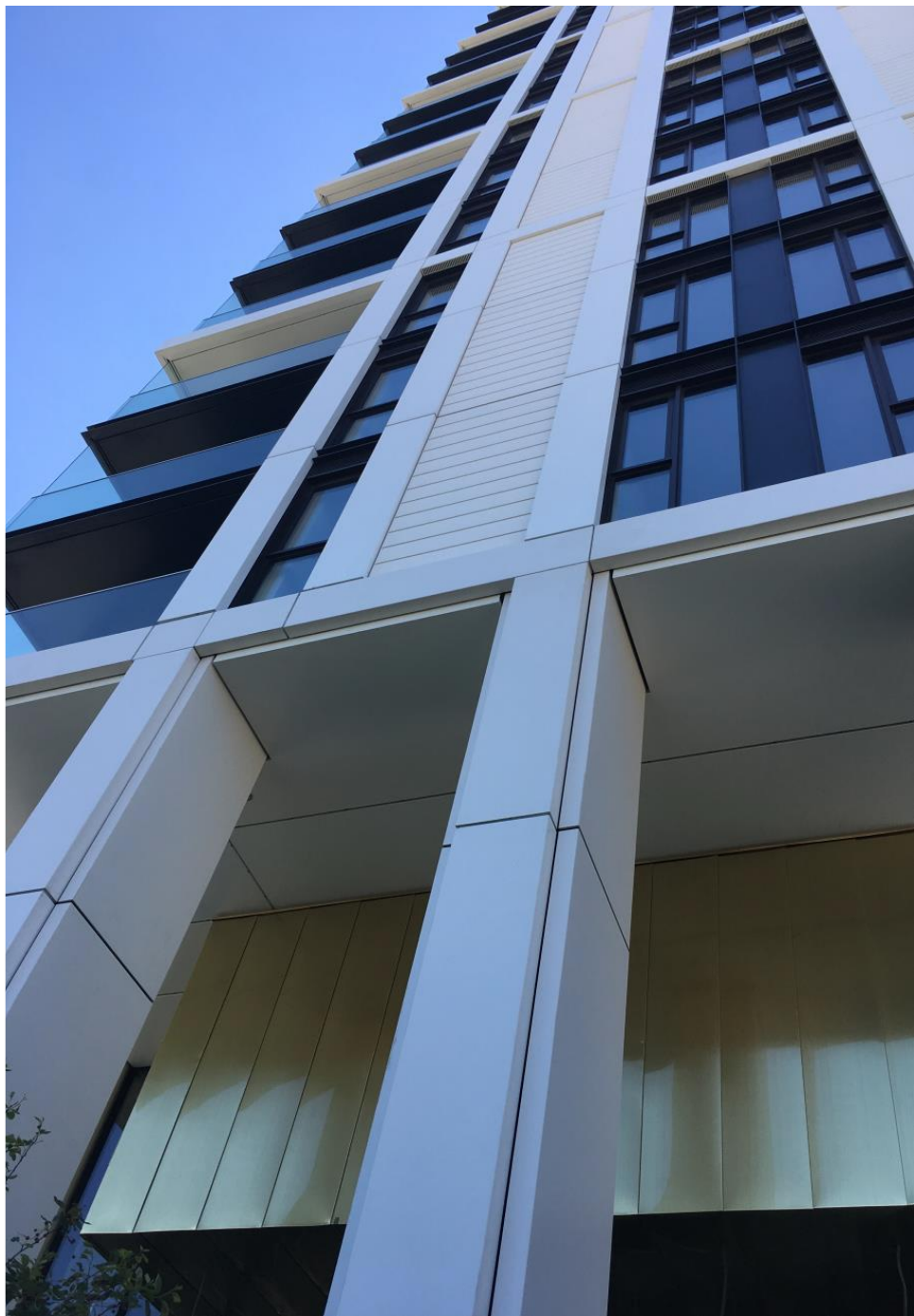
Mineral Printing

Dekton ID Pro

Min Qty 1600 ft²



Spain Pavilion, Milan



Complex Geometries

Greenwich project
London

Dekton as Rainscreen Cladding: Advantages



- Energy savings
- Acoustic insulation
- Prevents thermal bridging
- Protection against water infiltration
- Structural wall protection
- Thermal insulation
- Graffiti & stain proof

Energy Assessment

Case Study: -----

**NASA Center for Human Space
Flight Performance & Research Building
CHSPAR Building 26**

Study conducted by: -----

**NASA &
S&L Ventilated Facade
7620 Washington Avenue
Houston, TX 7707**

Team: -----

**Carl Schiro - Chairman
Barry Tucker - Project Manager**

Installation of VFS: -----

S&L Ventilated Facades

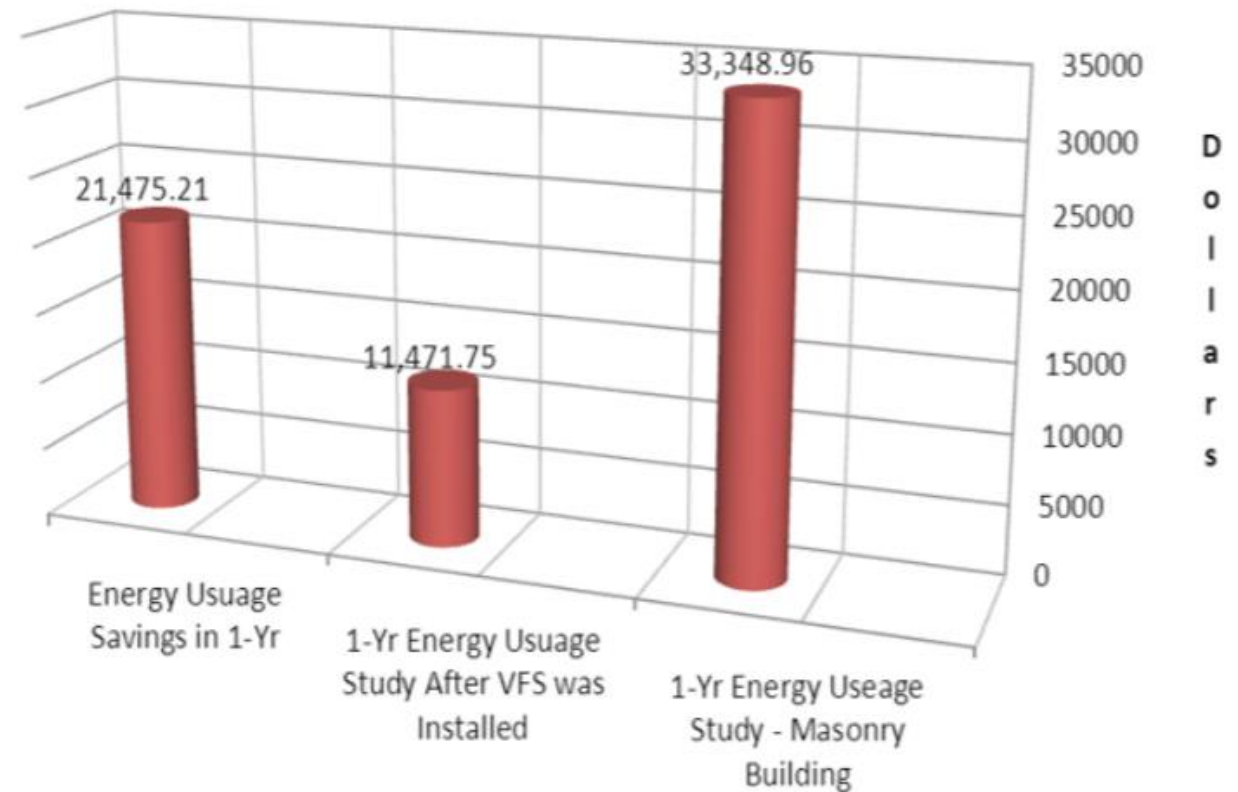


energy cost of the building
\$33,348 per year

2) energy consumption study **with VFS**

energy cost of the building
\$11,471 per year

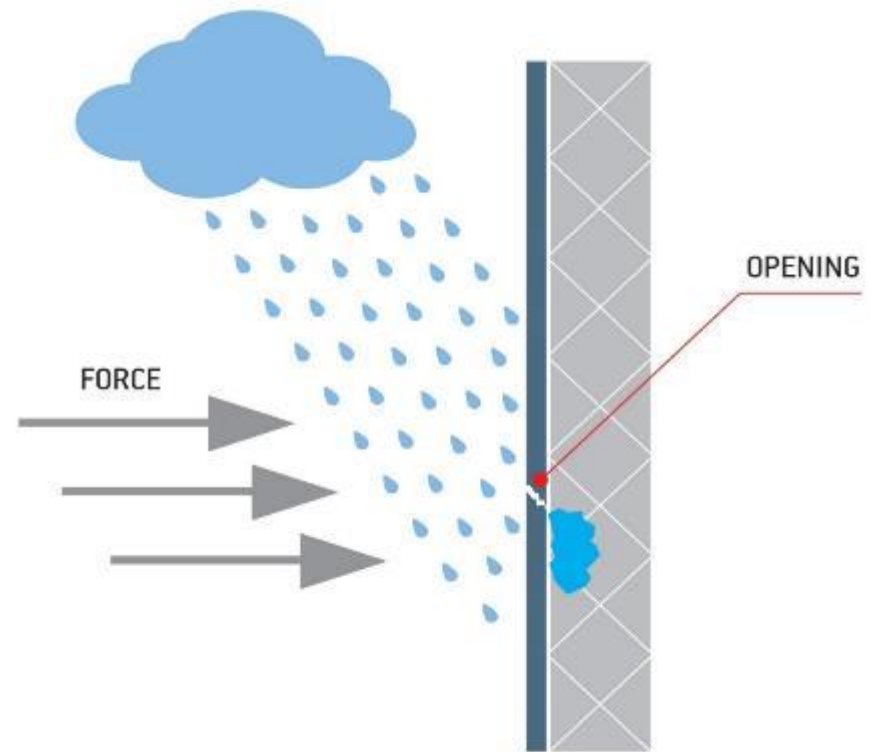
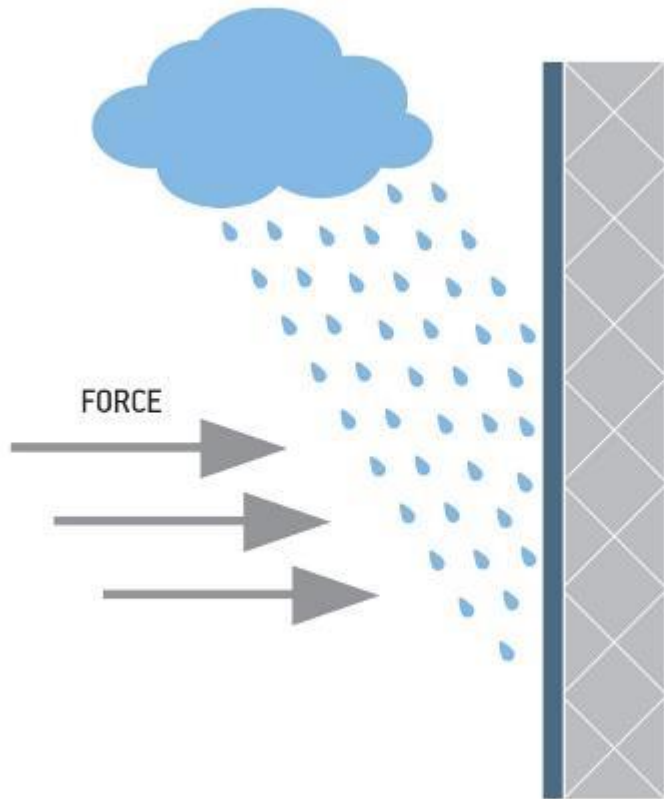
**Economic savings = \$21,475 per year
Energy saving = 268 KWh per year**





Rainscreen Design

Single-Skin Façades



Façade breach with no where for the moisture to go, leading to the growth of mold or structural damage to the wall.

Building Exteriors and Weatherability

The integrity of a structure's interior and exterior is often determined by long term water management and weatherability



Efflorescence



Mold



Freeze/thaw damage

Exterior Cladding

Direct Adhered Facade



Rainscreen Facade

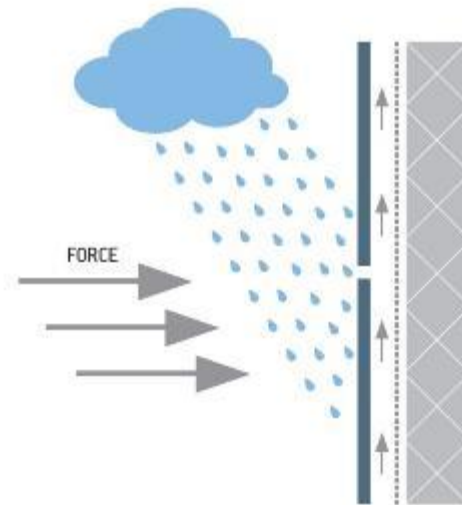


Curtain Wall Cladding

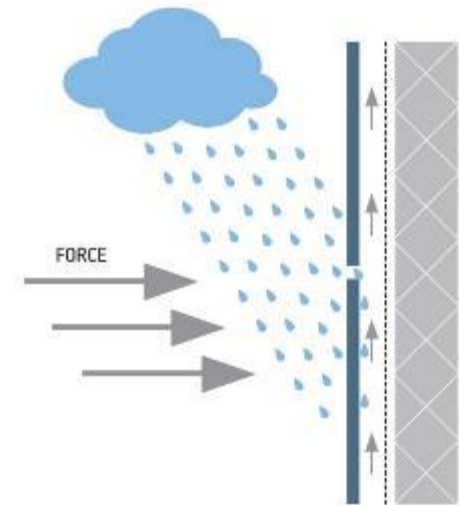


Ventilated Rainscreen Systems

- A drained and back ventilated rainscreen (D/BV) allows for moisture evacuation and vertical airflow.
- A Pressure Equalized Rainscreen establishes equal pressure on both sides of the façade panels through compartmentalization.



Typical D/BV ventilated rainscreen



Ventilated rainscreen key features:

- prevents moisture accumulation
- allows wall to “breathe”
- reduces solar heat gain

Pressure Equalized VS Drained and Back Ventilated Rainscreen

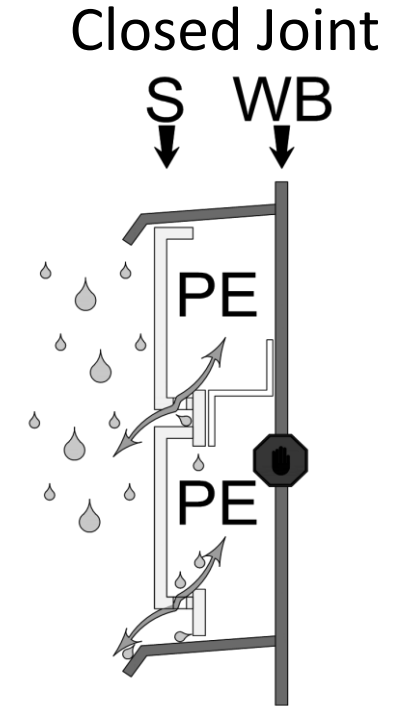
Drained and back-ventilated
rainscreens (D/BV or DBVR)

Pressure-equalized rainscreens
(PERS)

DVBR is an open joint system vs
PERS being a closed joint system.
There is less water penetration in a
pressure equalized system.



D/BV



PERS

D/BV Rainscreen: Undercut Anchor System

Weather Resistant Barrier (WRB)

- Must be UV stable for open joint systems

Exterior Insulation

- Increases the insulation value of the wall
- Moves the “dew point” outside of the weather barrier

Bracket, Undercut Anchor, and Panel

- Top brackets have adjustment bolts for leveling of panel

“T” Rail (or Vertical Rail)

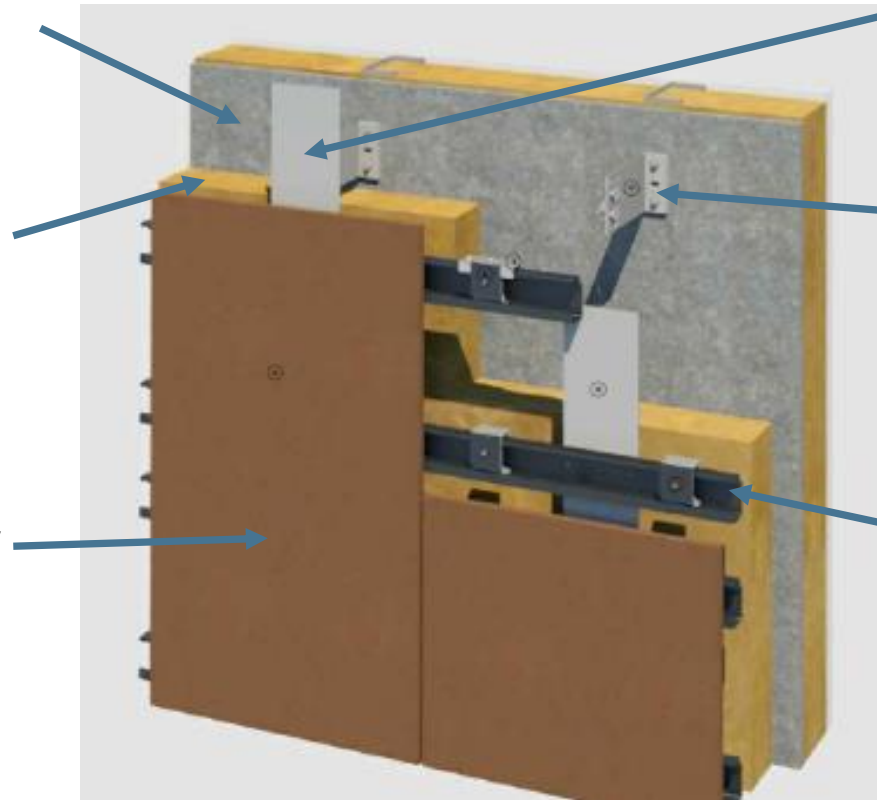
- “Self shimming” or “adjustable” to create plumb and true plane

“L” Clips

- Attaches directly to the structural part of wall system (the stud)

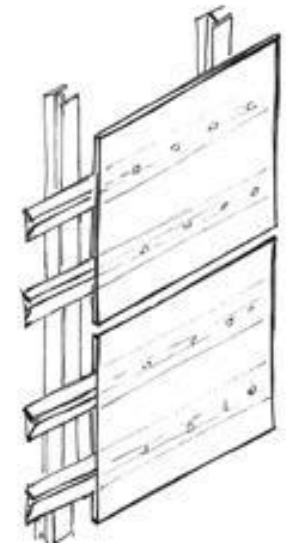
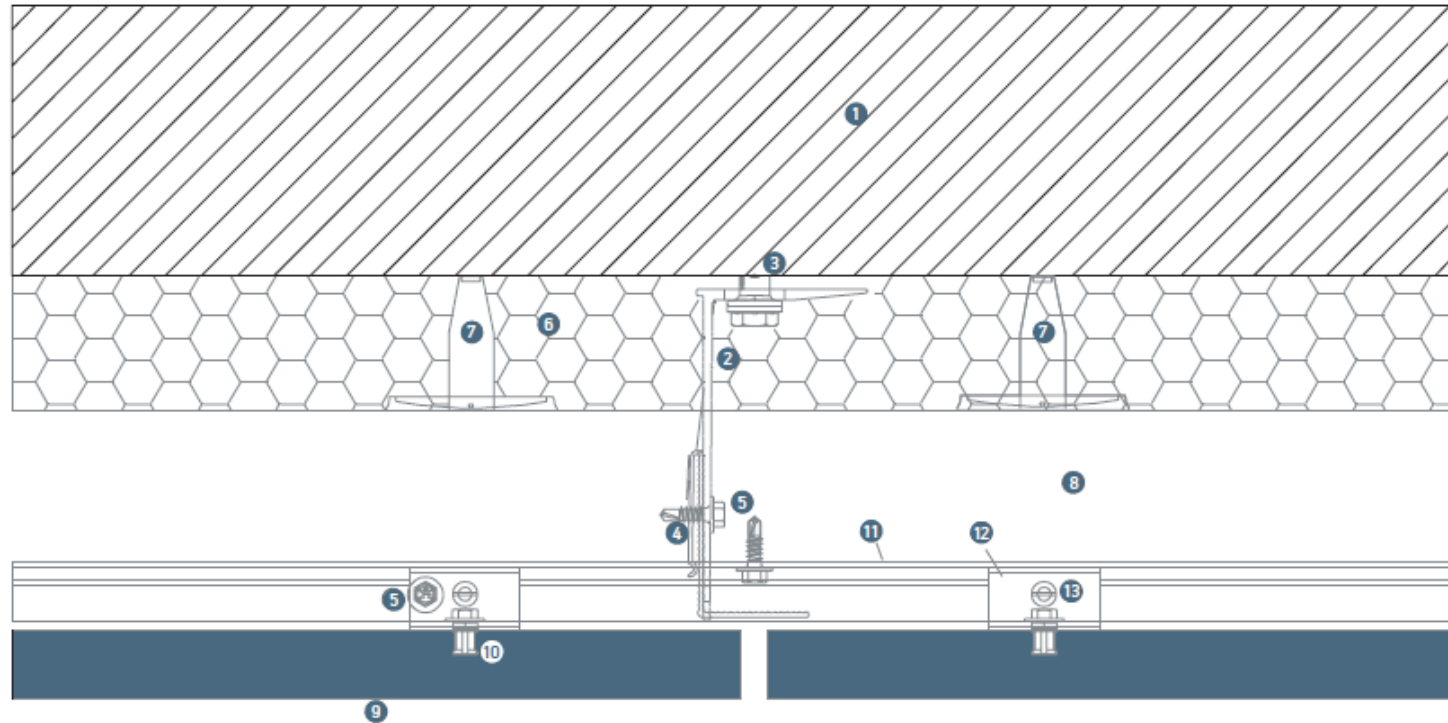
Horizontal Rail

- Vertical airflow cavity located behind the horizontal rail



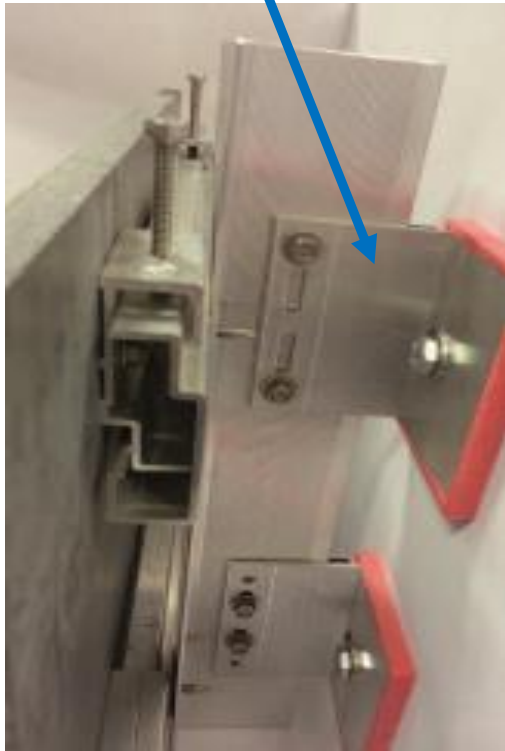
Concealed Fastening through Rear Undercut Anchors

1. Support wall
2. Corbels
3. Anchoring ring
4. Vertical profile
5. Screw
6. Insulation
7. Insulation fixing
8. Air chamber
9. UCS panel
10. Cladding fixing
11. Horizontal hanging guide
12. Levelling nail
13. Hanging nail
14. Regulating screw



Concealed Fastening through Rear Undercut Anchors (D/BV)

Thermally broken L-Clip attached to structure of building and then vertical rail is leveled and attached



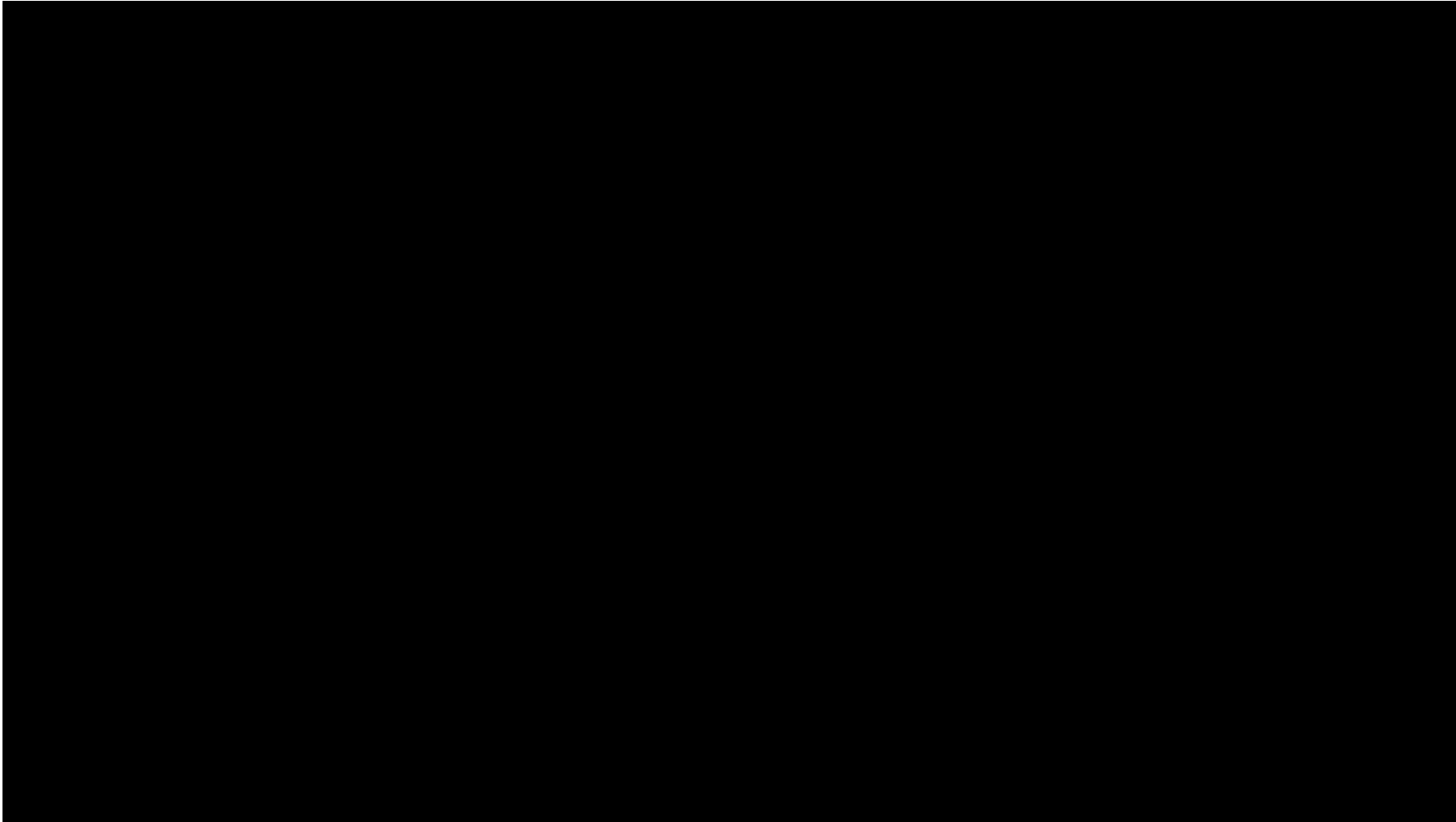
Bracket attached with Undercut Anchor to the Dekton panel. "Hangs" on the horizontal rail, stabilized with set screw.



Top-down view of the D/BV system.



Video Rainscreen Installation- Undercut Anchor System



Design Considerations – Panel Layout Optimization

Panel size impacts panel cost

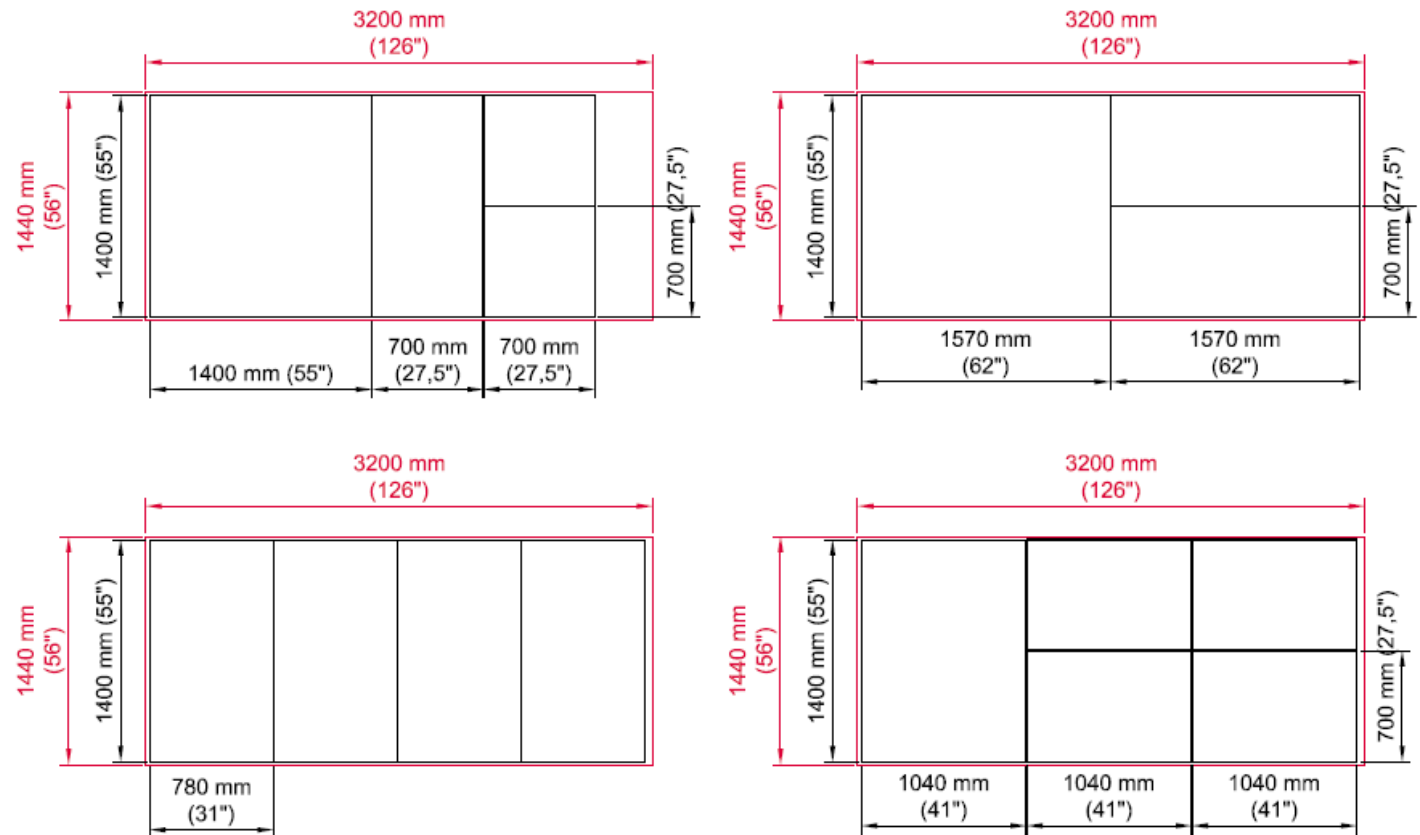
- Larger Panels less \$/ft²
- More cuts increases cost
- Smaller means more fasteners, more framing, more labour

Waste adds to cost of panel

- Reduce waste from blank slab
- Direction patterns have higher waste

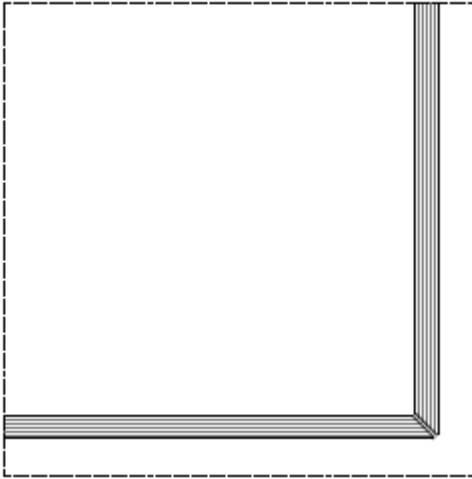
Panel complexity adds cost

- Numbers of miters
- Style of mitered corner

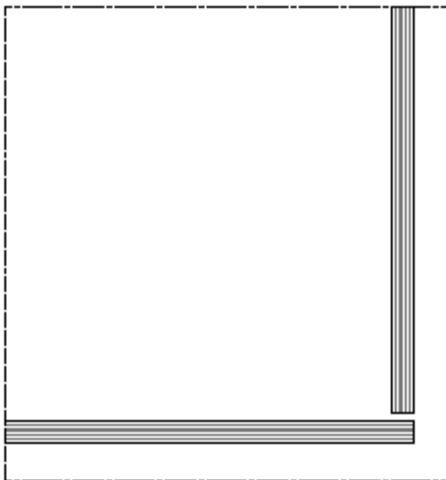


Design Considerations – Mitered Corners

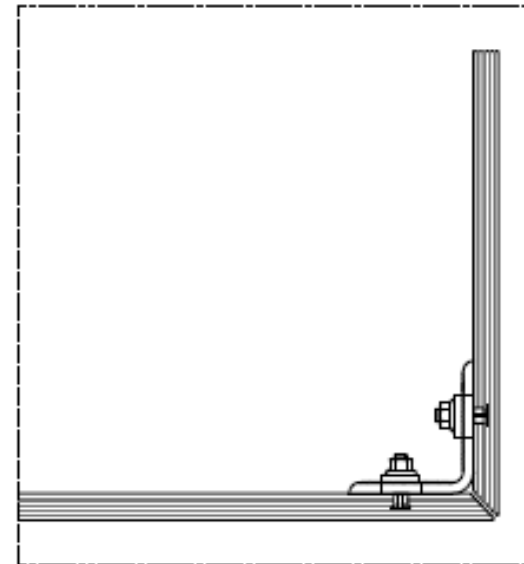
Quirk mitered corner



Open Butt Joint

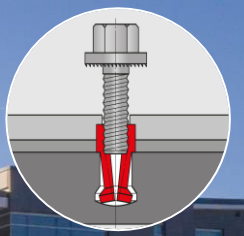


Reinforced mitered return (open joint)



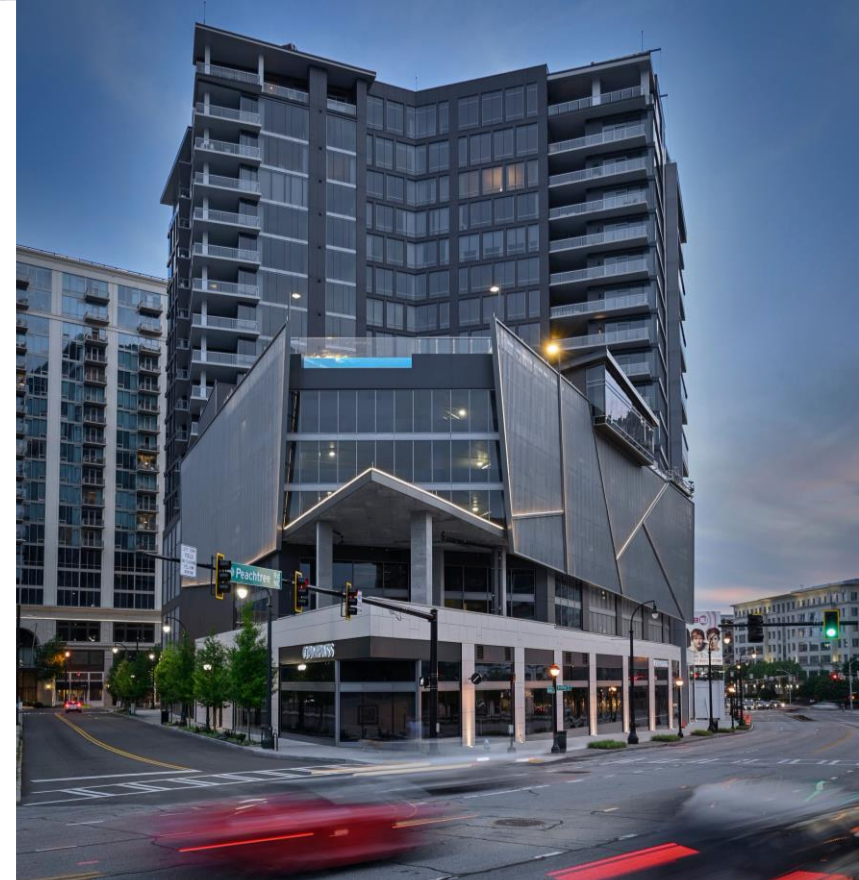
The Charles Atlanta, GA

- Architect: Lord, Aeck & Sargent
 - Installer: Miller Clapperton
 - 17,000 Square Feet, 22 stories
 - Dekton: 1.2cm Domoos and Danae
-
- The Charles is a 22-story, mixed-use building, that utilized Dekton from grade to the top of the building. The ground floor retail space had a custom pattern designed by the architect.
 - When planning the exterior in an urban area, the architect loved the superior performance of Dekton, graffiti resistance, durability, and wide color palette. After the architect came to see Dekton at the local Cosentino showroom, they realized it was the perfect option for this project.



Hidden Undercut
Anchoring





The Charles – Atlanta, GA

7 West 51st Street New York, NY

- Architect: MZA Architects
 - 2,107 square feet
 - UCS: Brown Wood Grain & Beige Travertine
 - Fabricator/Installer: Stone Truss
-
- This façade project was fabricated and installed by Stone Truss out of New Jersey. Because of the age of the building, it was a challenging installation – which included unique shapes, varying depths, and multiple colors.
-
- Ultra compact surface helped transform an old, outdated, and damaged façade into a stunning focal point of the building.





Case Study: 7 West 51st Street, New York, NY

University of Missouri Stadium Columbia, MO

- **Entrance of Champions**
- Architect: Populous
- 5,632 Square Feet
- Dekton: Domoos Matte & Spectra XGloss
- Thickness: 1.2cm Rainscreen
- In conceptualizing the University of Missouri entrance of Champions (south end zone), the architect wanted to create a stunning aesthetic with an extremely durable product. The design of the lower walls was inspired by Mizzou's iconic diamond pattern.
- The extreme stain/graffiti resistance, zero-porosity, UV stability, and dimensional stability of Dekton made it it the ideal solution for this project.



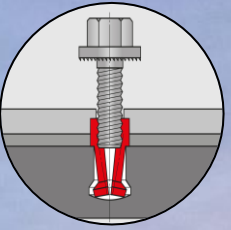
Hidden Undercut
Anchoring



Case Study: University
of Missouri Stadium –
Columbia, MO

The Pacific by Grosvenor Vancouver, BC

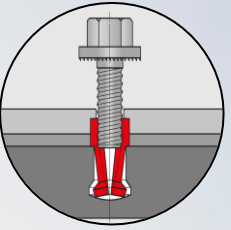
- Developer: Grosvenor
 - Architect: IBI Group Vancouver
 - Installer: Keith Panel Systems
 - 12,000 Square feet
 - Dekton: 1.2cm Aura
- “On the east and west facades, deep balconies in shades of white and grey mimic clouds in the Vancouver sky to create a sense of movement and texture from afar and below.”



Hidden Undercut
Anchoring

1825 Ocean Ave, Brooklyn, NY

- Dekton was recommended by International Stone Collections
 - Developer: Ranco Capital
 - Installer: Lavada
 - 8,500 square feet
 - Dekton: Irok & Kelya
-
- The building is named “02” after the famous “Ocean and Ocean” avenue intersection. Located in Midwood, part of New York’s borough of Brooklyn, this 100-unit residential building is nestled away from the hustle and bustle of Manhattan.
-
- The old building was very out of square, so Dekton was a perfect material to help alleviate these issues with cut to size options for various panel dimensions.
-



Hidden Undercut
Anchoring





Case Study: 1825 Ocean Avenue, Brooklyn, NY

Toha Project – Tel Aviv, Israel

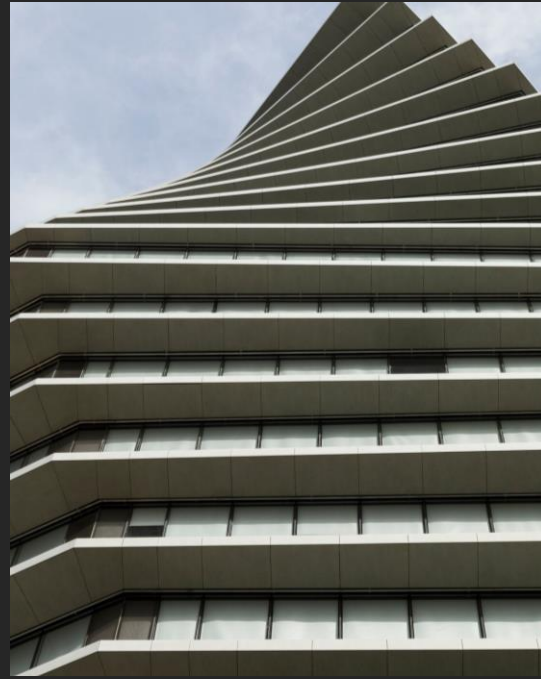
- Architect: Ron Arad
 - 300,000+ square feet
 - 6 Custom colors and 11 colors total
 - Thickness: .04cm, .08cm, 1.2 cm, and 2 cm
 - Cut to size with over 10,000 different cut tickets!
-
- The seven bottom floors were specified to carry all the infrastructure and AC equipment, while clearing the roof to use as an upscale, luxury restaurant, with the view of Tel Aviv and the Mediterranean Sea.
-
- Without Dekton, multiple products would have had to have been used to encompass everything that Dekton was able to achieve!



Case Study: Toha Project – Tel Aviv, Israel

- Unique X-Pattern in some areas of the façade.

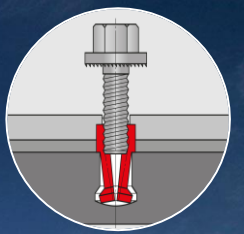




Case Study: Toha Project – Tel Aviv, Israel

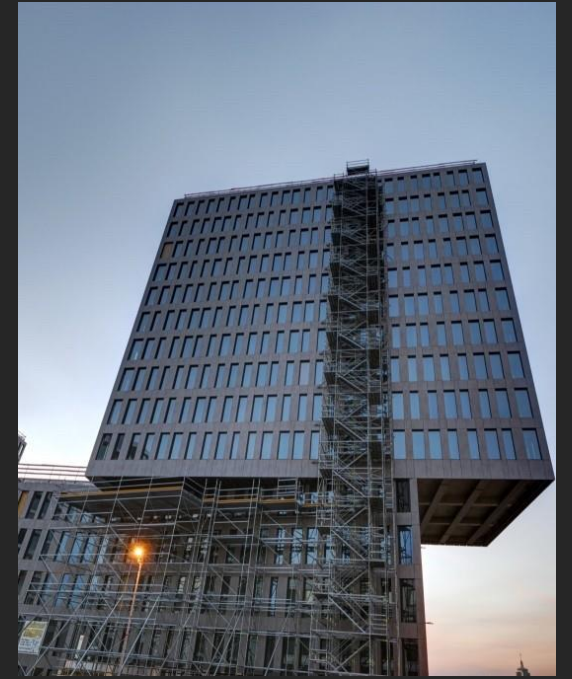
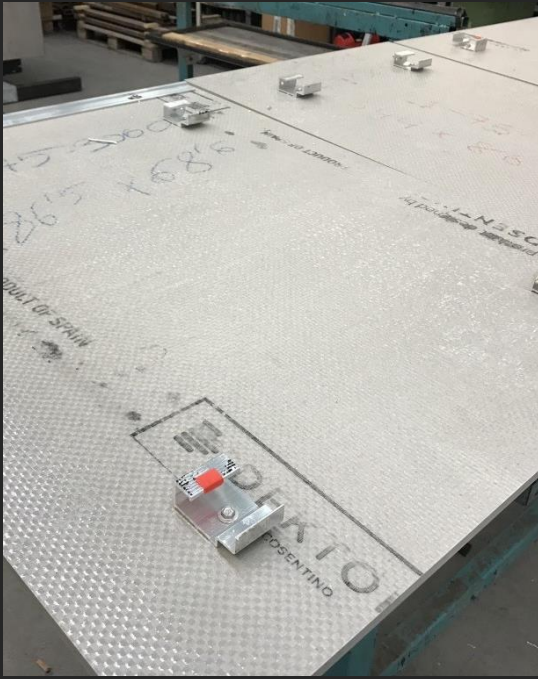
Kap West Munich, Germany

- Architect: Wiel Arets Architects
- 135,000 Square Feet, 2 towers
- Dekton: 1.2cm Keon color
- Unitized construction using undercut anchor system installed in factory.
- Dekton was the ideal material to meet the design and physical requirements of Kap West's flexible, energy-efficient concept.



Hidden Undercut
Anchoring





Case Study: Kap West– Munich, Germany

Rafa Nadal Academy, Manacor, Mallorca

Rafa Nadal Academy by Movistar, came into being in 2016 with the aim of becoming a benchmark centre in the world of tennis. The project has a footprint of more than 258,000 ft² in a range of facilities including the halls of residence, training school, hotel, sports courts, changing rooms, bar, clinic, and outdoor common areas.

The project was fitted with more than **430,000 ft² of Dekton** panels of all thicknesses and for different applications, such as facades, flooring, interior wall cladding, countertops, stairs, baseboards, swimming pools.



THANK YOU!



www.cosentino.com

www.facadesystemsinc.com