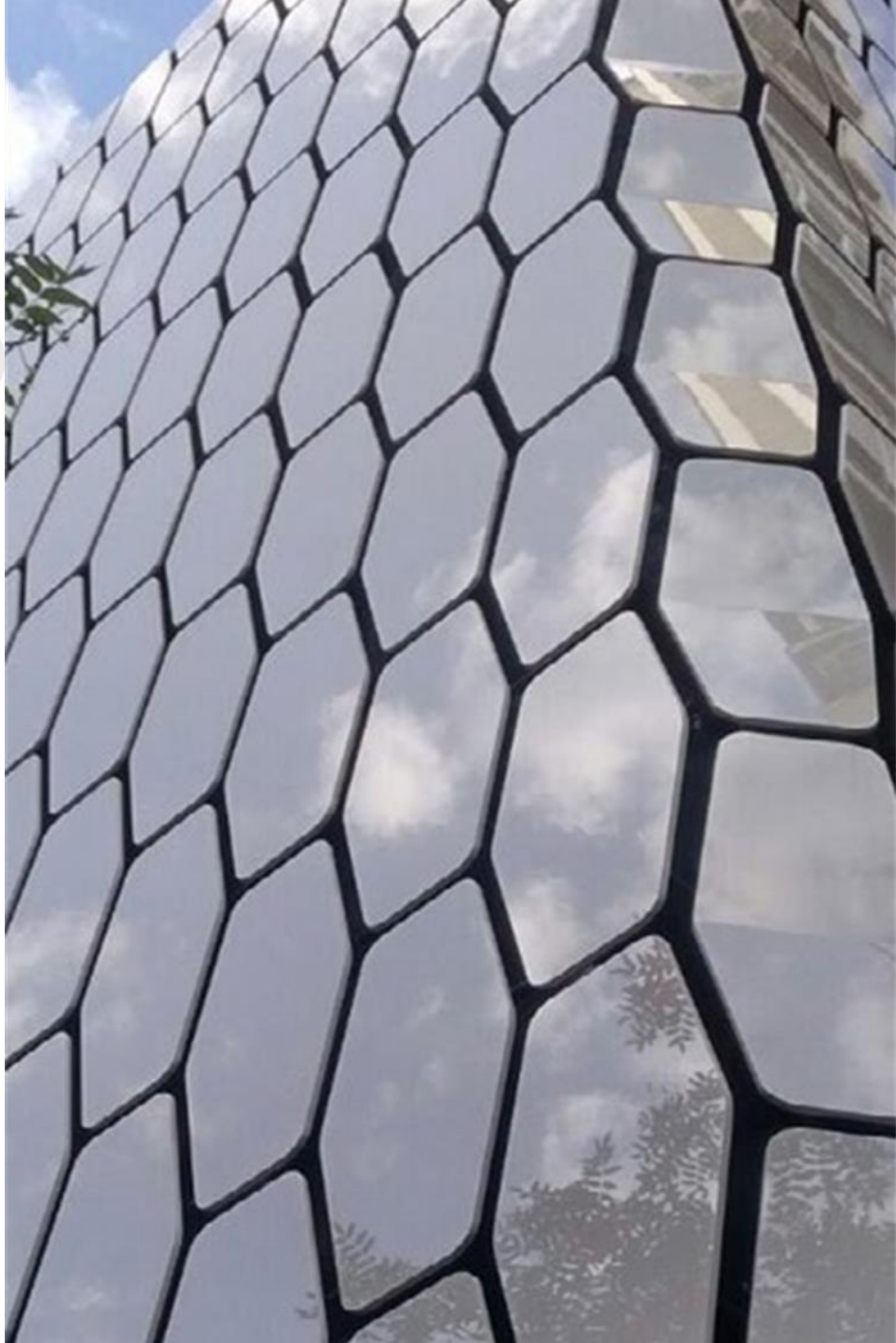
Façade Design
with
Dekton Ultracompact Surface

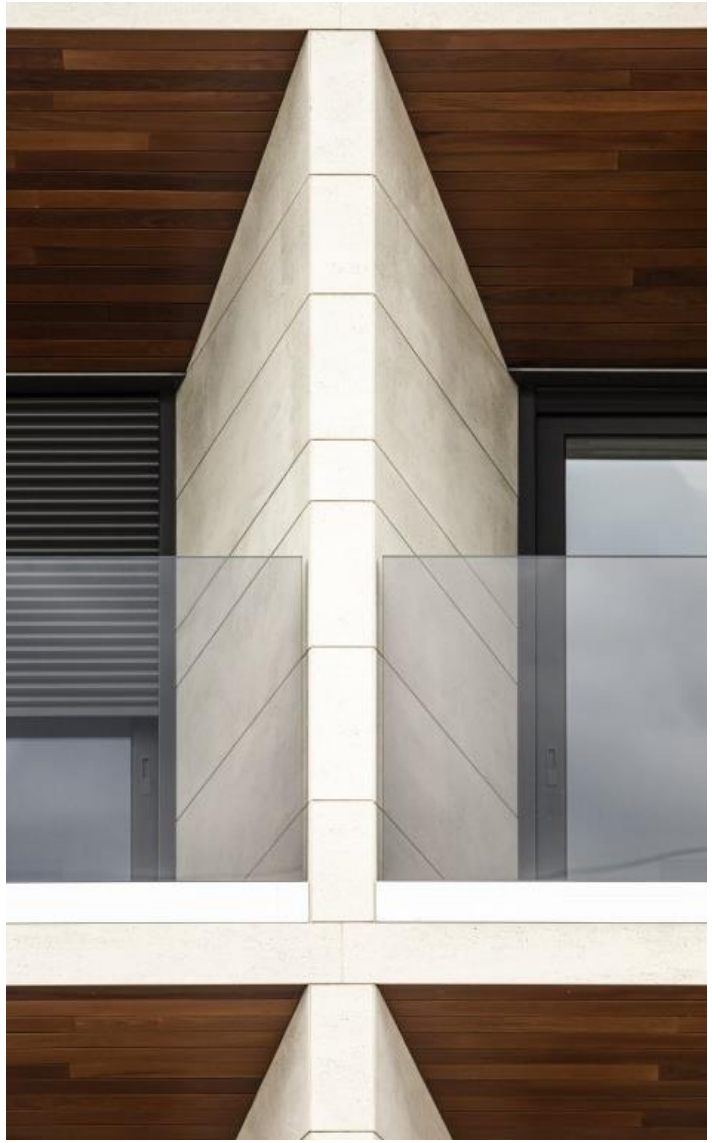
COSENTINO

FSi
FACADE SYSTEMS INC.



Topics

- Dekton Ultracompact Surface
- Dekton as a Façade Solution
- Design Flexibility
- Undercut Anchor System
- Sustainability



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.

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).

Challenges in Architecture Facades

- What challenges do you face when designing facades?
  - Performance and Durability?
  - Aesthetic Flexibility ?
  - Massing / Size?
  - Simplicity?

DEKTON®

ULTRACOMPACT SURFACES

Simple
Buildings
made Iconic

Iconic Buildings Made Simple

Key Attributes

- Large Format 56” x 126” maximum
- 4mm, **8mm, 12mm**, 20mm and 30mm thicknesses
- Hidden attachment
- 64 standard colors
- Unlimited possible Custom colors
- Hundreds of jobs around the world
- Fits iconic and simple, budget conscious buildings

Standard Colors and Patterns

60+ Standard Colors

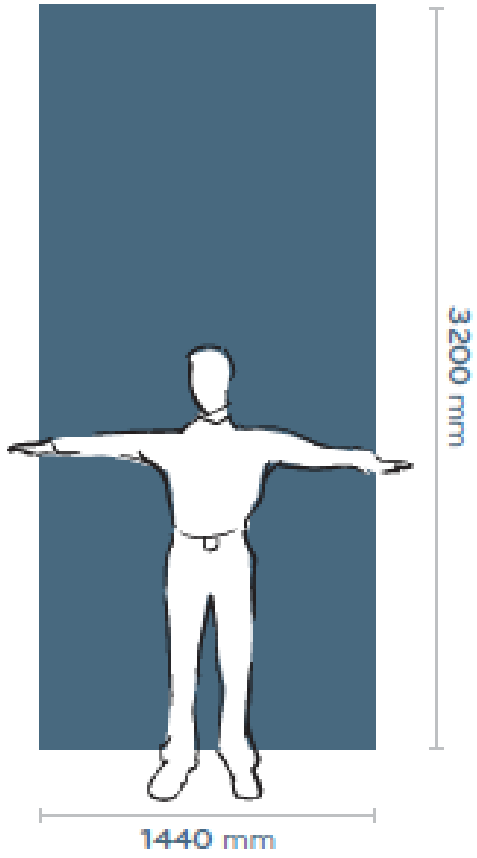
4 textures/finishes including X-Gloss (machine polished)

Many colors 5% - 80% recycled content

Large Format

Manufactured in **large format slabs**, with different thicknesses, to expand the design possibilities. Slabs measure approximately **56″ x 126″ (1440mm x 3200mm**), with thicknesses ranging from 4mm to 30mm.

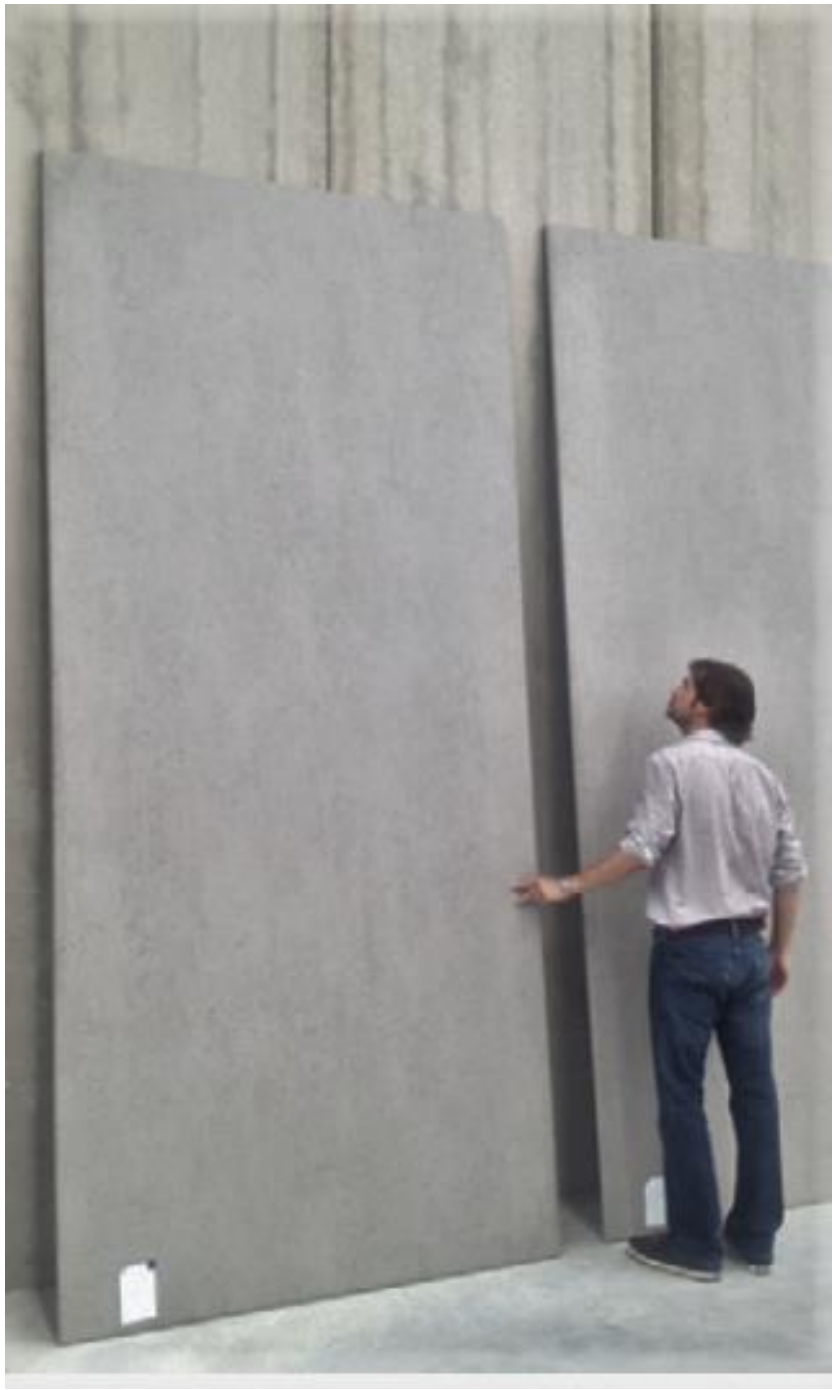
The 3D design of UCS provides an opportunity to design seamless, uninterrupted, and unrivaled spaces, where color and texture flow freely.



Lightweight

8mm @ 4.3 lbs/ft2

12mm @ 6.4 lbs/ft2



Dekton Uses Only Inorganic Materials

Dekton® is made from inorganic minerals naturally existing in over 90% of the Earth's crust.

Dekton® uses natural materials not only for the bulk of the product but also for pigmentation and veining.

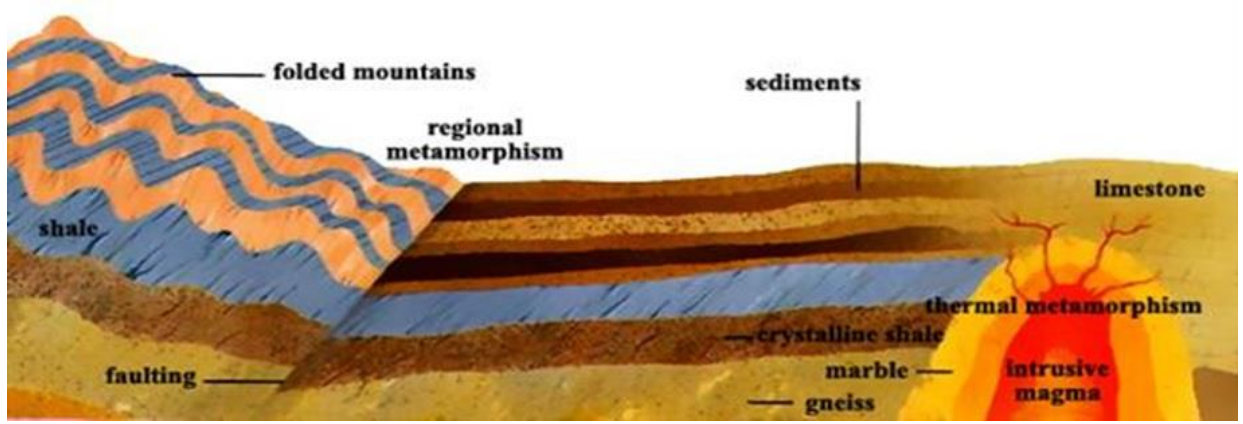
More than 20 natural minerals used to create a Dekton® slab.

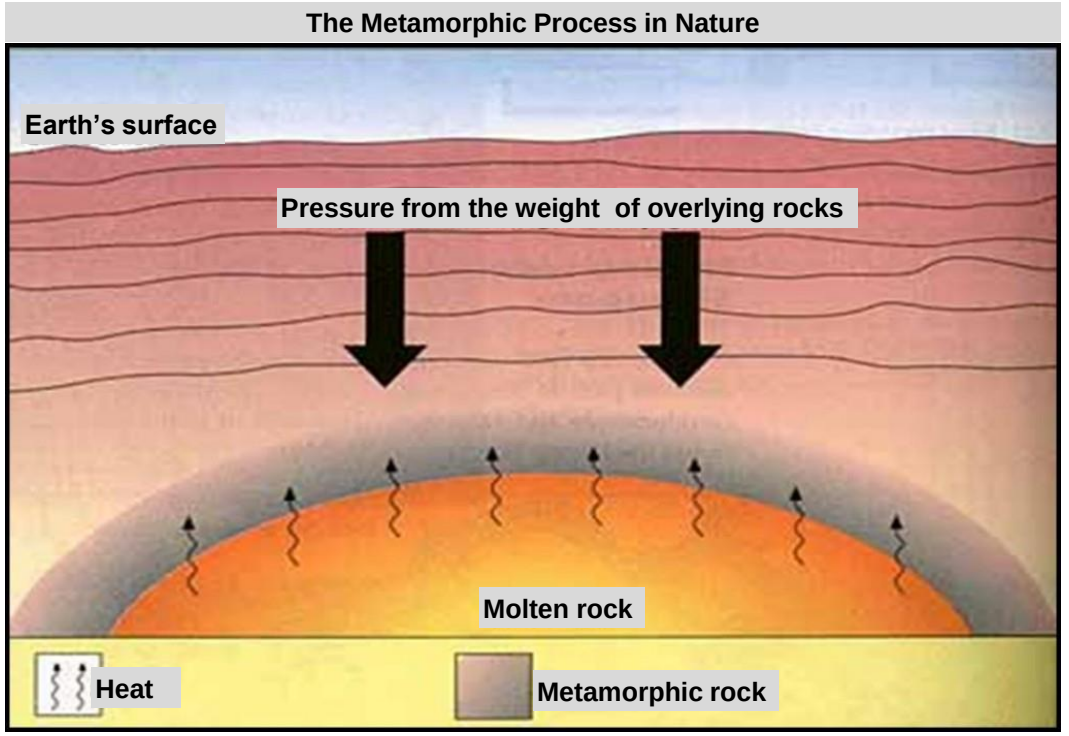
+

DEKTON®
ULTRACOMPACT SURFACES

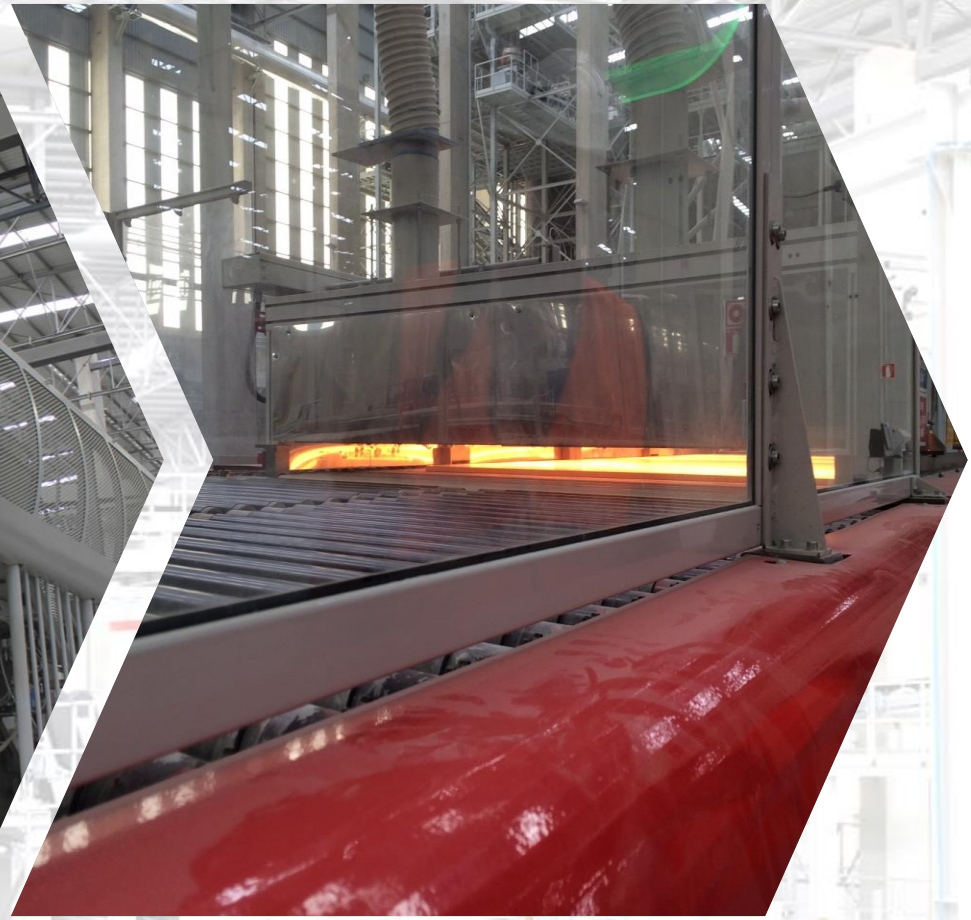
UCS Manufacturing Mimics Nature’s Metamorphic Process

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





DEKTON® ULTRACOMPACT SURFACES



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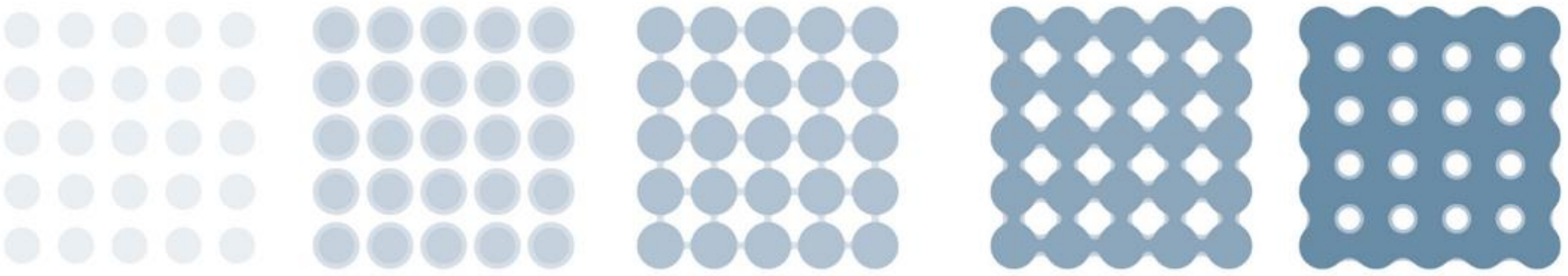
DEKTON®
ULTRACOMPACT SURFACES

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.



Materials are compacted

Minerals crystallize

Crystal network in drying kiln, 392°F

Heat increased in sinterization kilns to 2192°F materials liquify, bond chemically

Heat decreases and material slowly resolidifies into UCS

Dekton

as a

Façade Solution

Performance

- Durable
- Long Life Cycle
- Freeze-Thaw Proof
- Impact Resistant
- UV Stable
- Non-Combustible
- Ease of Install
- Modern Aesthetic
- Graffiti Proof
- Lightweight

Dekton is Carbon Neutral

Dekton, Carbon Neutral product throughout its whole life cycle

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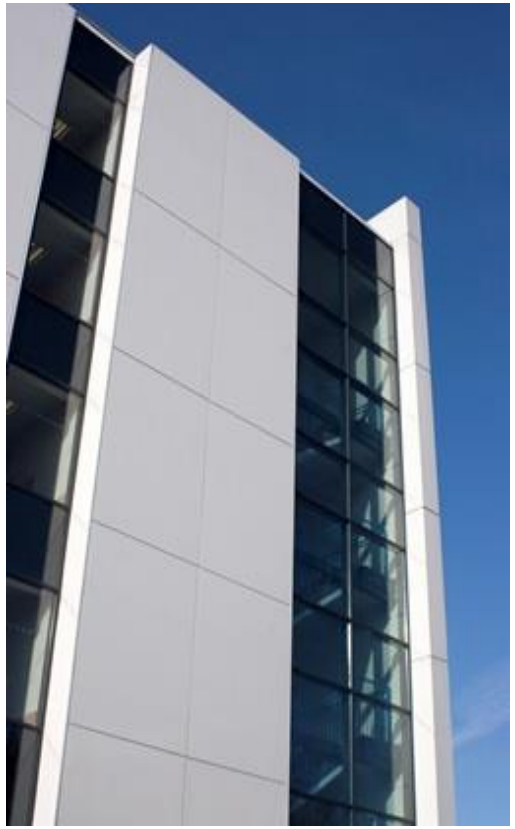
UV and Thermal Resistance

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



Stain/Graffiti Resistance and Low Porosity

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

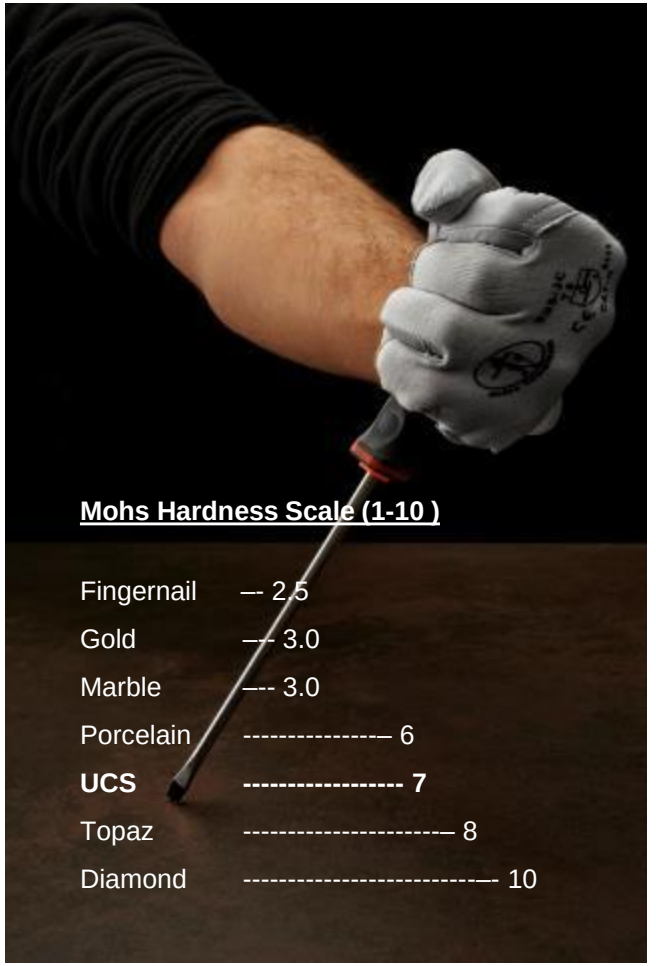
“Standard Test Method for Determination of Resistance to Staining.”

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

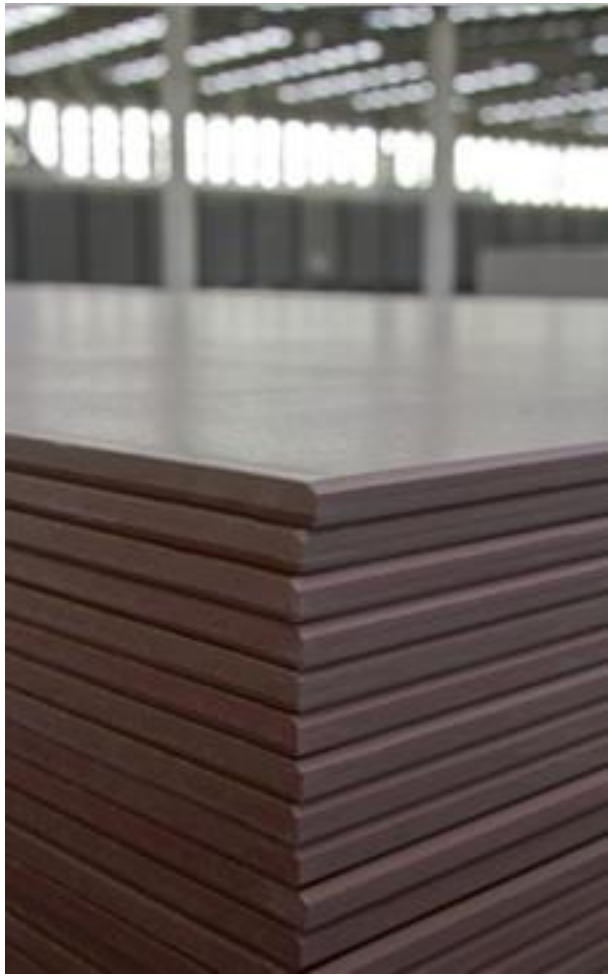
Ultracompact surfacing materials are very consistent in both dimension and thickness throughout the slab which minimizes the need for field corrections.

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.”*

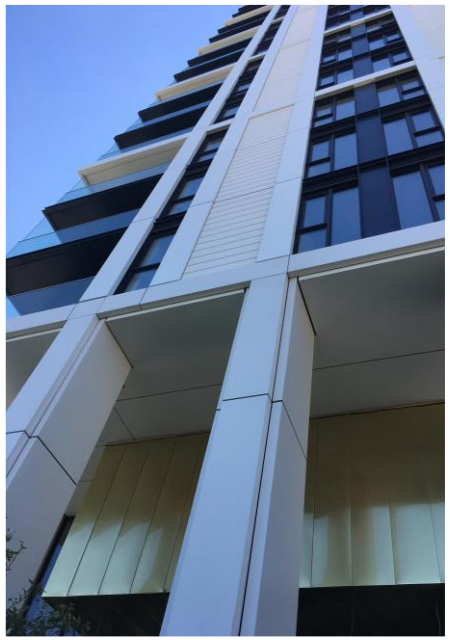
Many different thicknesses of slabs are offered:

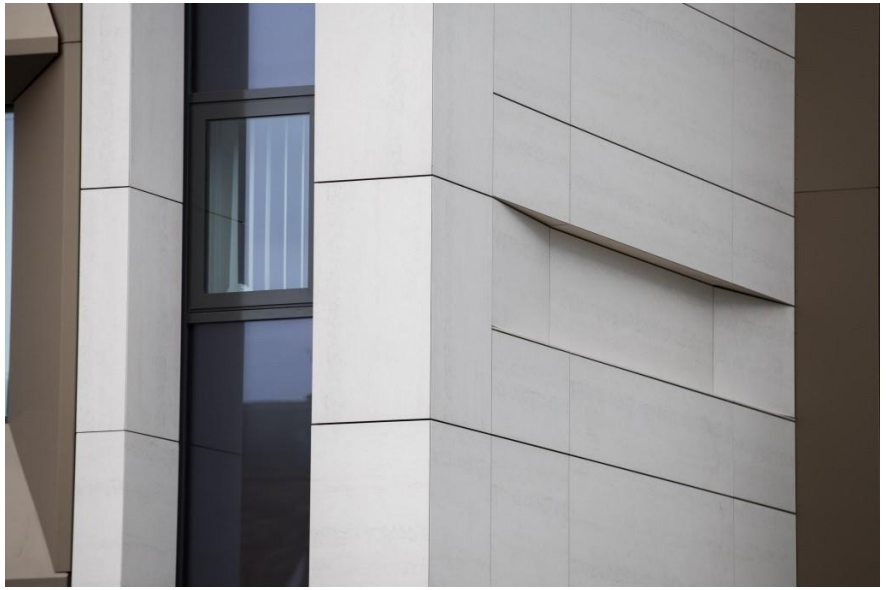
Typical thicknesses for facades are 8mm and 12mm

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



Design Flexibility





Geometric Designs

Standard Colors and Patterns

60+ Standard Colors

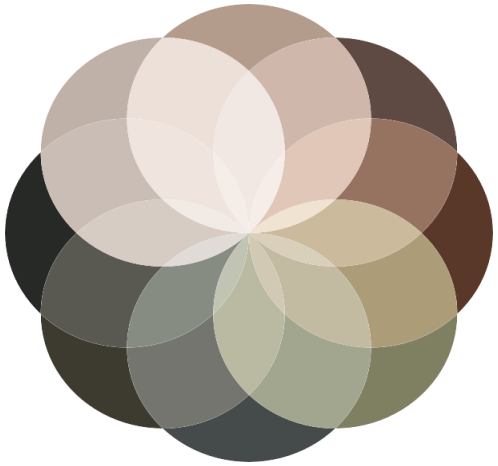
4 textures/finishes including X-Gloss (machine polished)

Many colors 5% - 80% recycled content

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 Colors

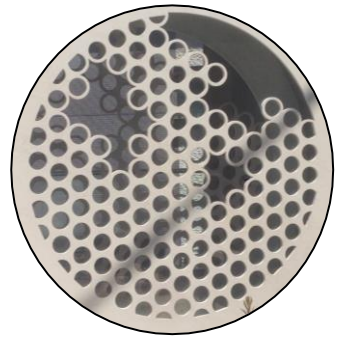


Infinite Design and Color Possibilities

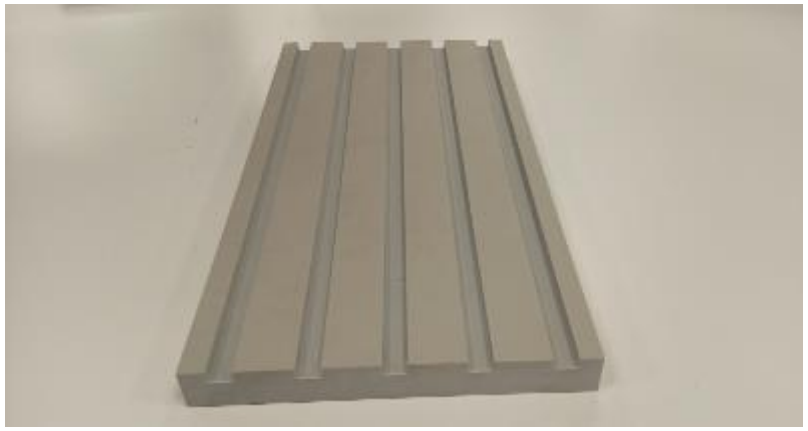
DEKTON D

INDIVIDUALLY DESIGNED

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



Engraving and Milling



Custom Design Possibilities

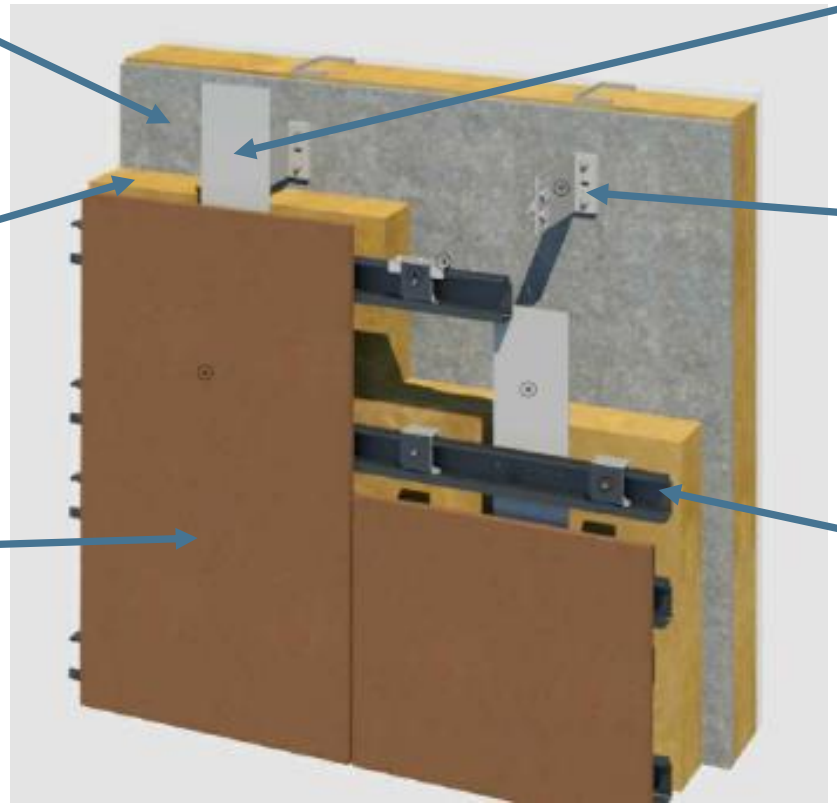
Installing Dekton
with
Undercut Anchor Systems

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

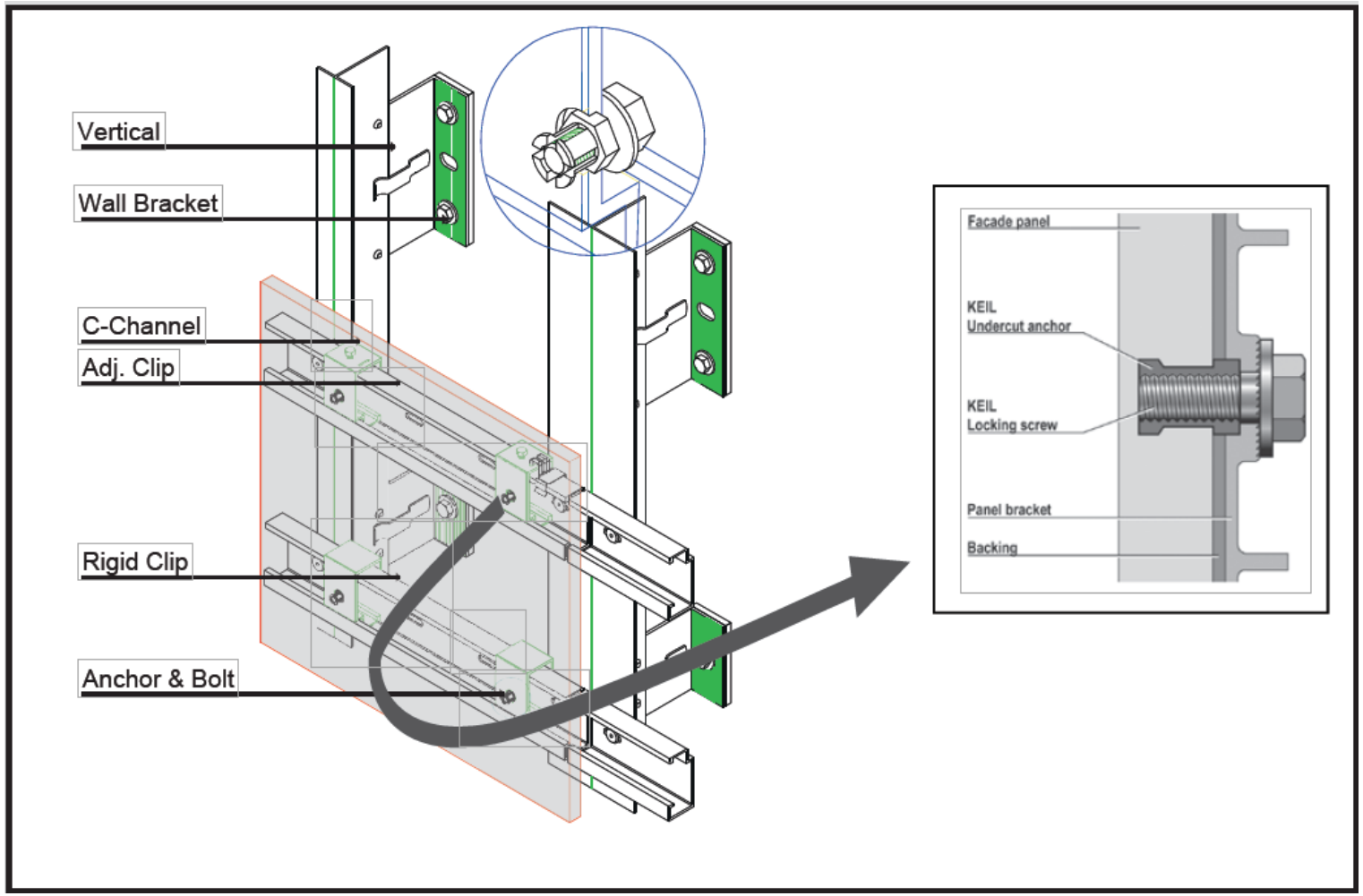


“T” Rail (or Vertical Rail)
- “Self shimming” or “adjustable” to create plumb and true plane

“L” Clips
- Attaches directly to the structural part of wall system (the stud)

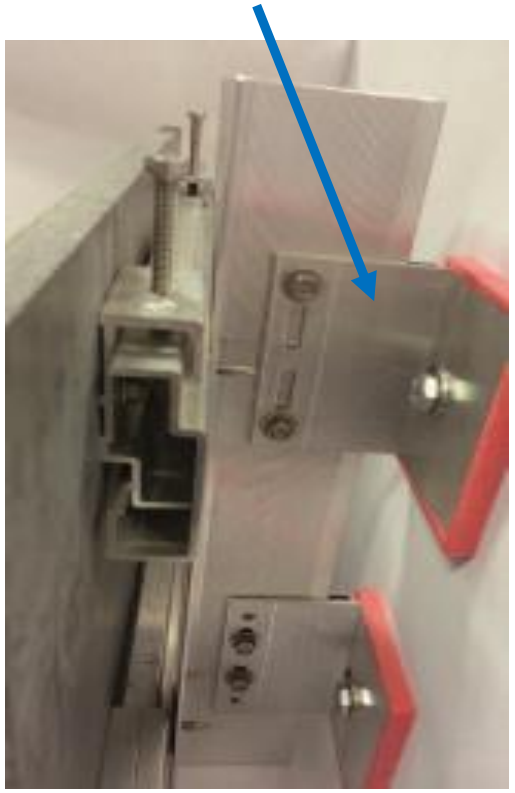
Horizontal Rail
- Vertical airflow cavity located behind the horizontal rail

Rear Undercut Anchor: Keil



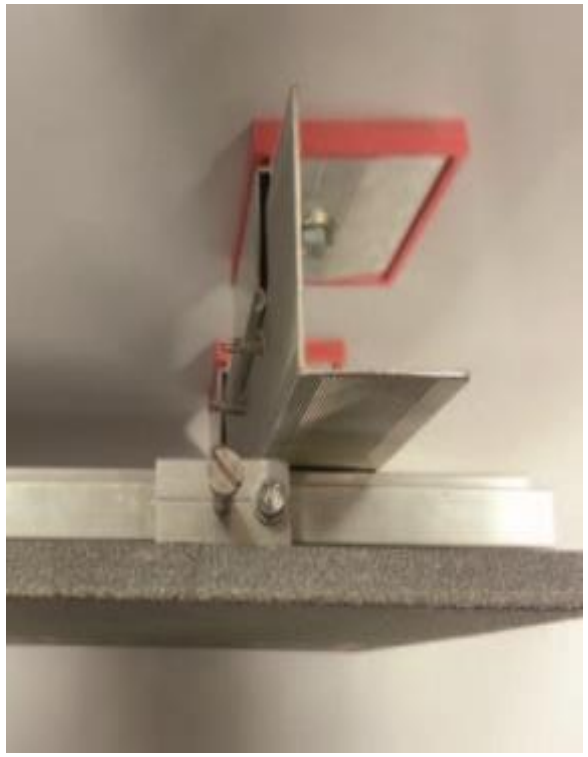
Concealed Fastening through Rear Undercut Anchors (D/BV)

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



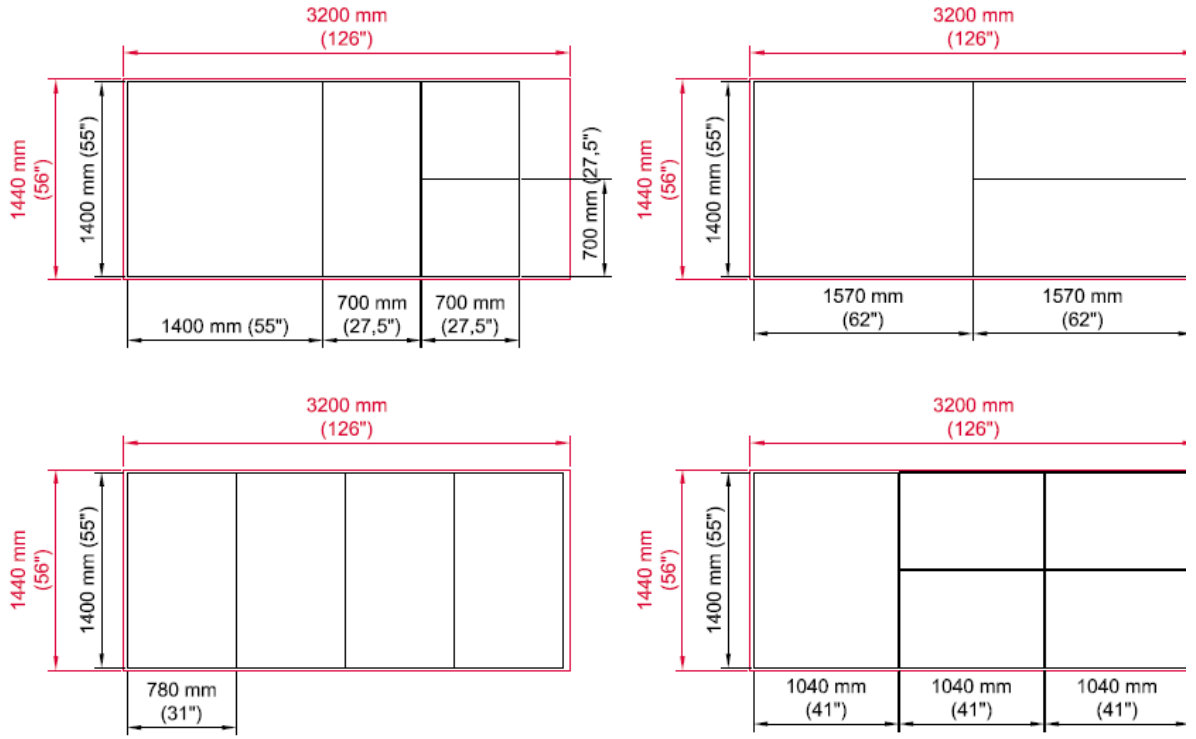
Bracket attached with Undercut Anchor to the Dekton panel. “Hangs” on the horizontal rail, stabilized with set screw.

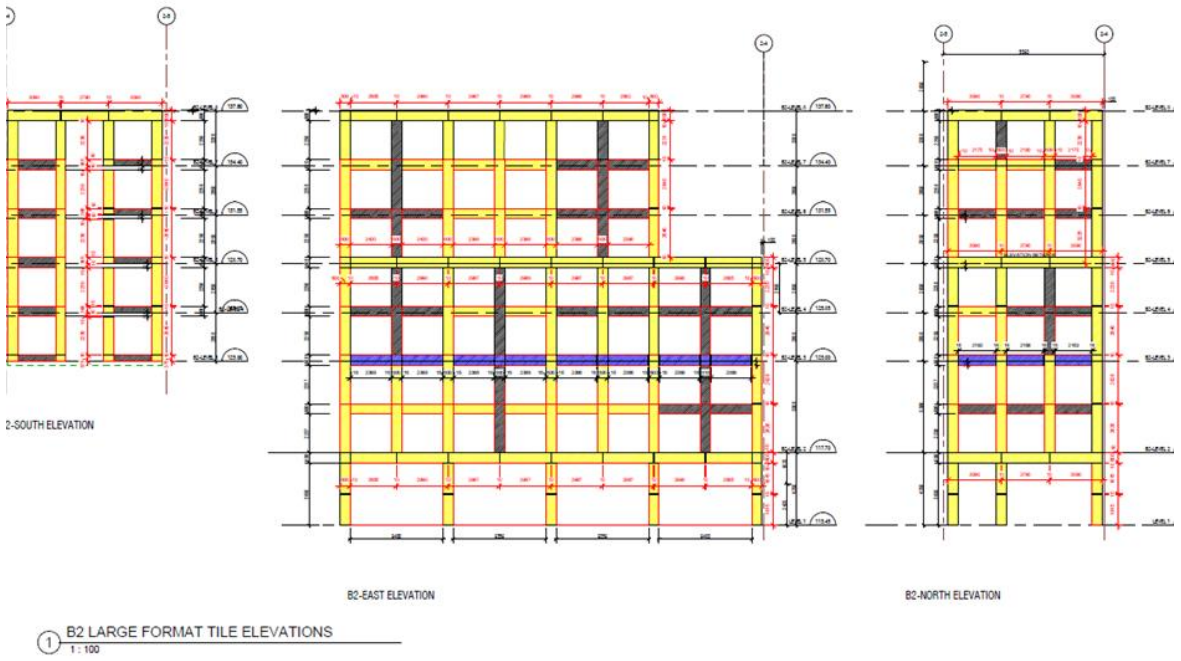
Top-down view of the D/BV system.



Design Assist

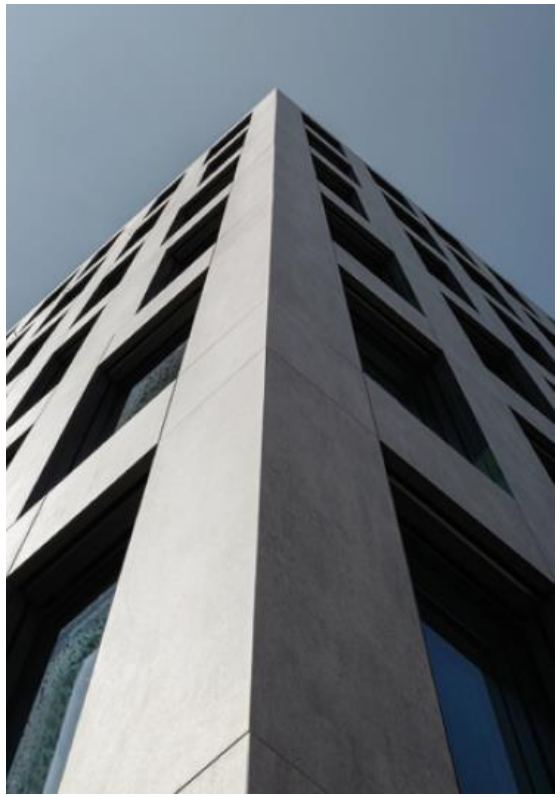
- **Cosentino and Façade Systems Inc support**
- **Panel size** impacts panel cost
  - Larger Panels less $/ft2
  - More cuts increases cost
  - Smaller means more fasteners, more framing, more labour
- **Waste** adds to cost of panel
  - Reduce waste from blank slab
  - Directional patterns have higher waste
- **Panel complexity** adds cost
  - Numbers of miters
  - Style of mitered corner



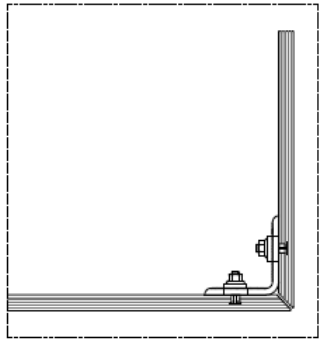


Façade Study

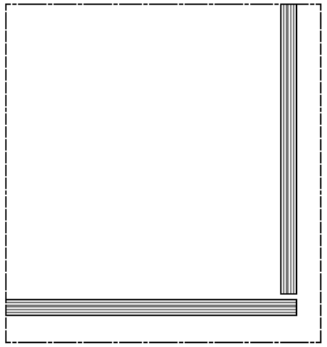
Cosentino can do a Façade Study to optimize layouts and minimize waste as part of the design process or when providing budget numbers and quotes.



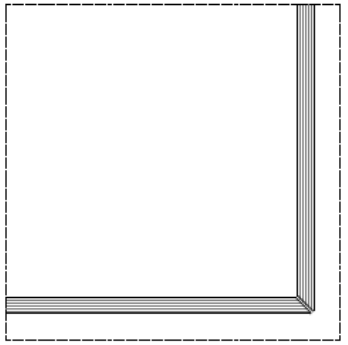
Reinforced mitered return (open joint)



Open Butt Joint



Quirk mitered corner



Design Considerations – Mitered Corners

Unitized and Curtain Wall Applications

COSENTINO

- Design Assist
- Wide Color Offering
- Specification Support
- Façade Study
- Cut-to-Size Panels
- Pre-Drilled Panels
- Customization
- Project Support

FSi FACADE SYSTEMS INC.

- Design Assist
- Specification Support
- Attachment System
- Sub-System (Profiles/Clips)
- Installer Network
- Budget Guidance
- Project Support

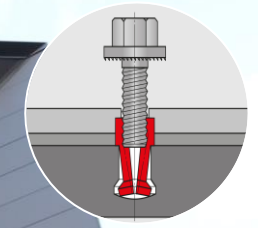
Support

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.

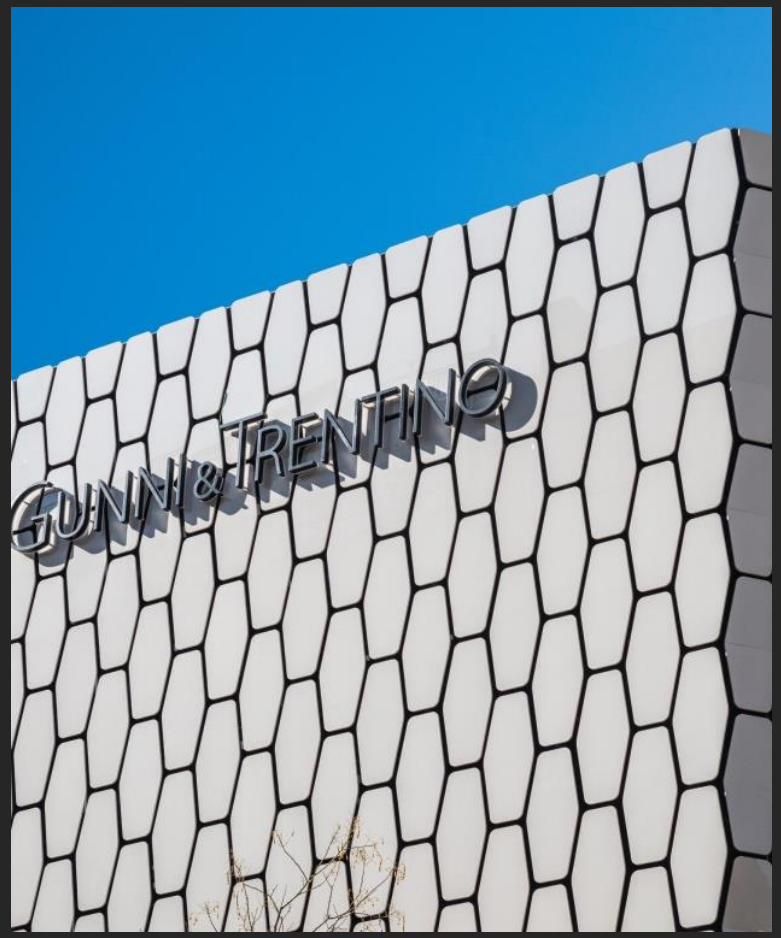
- The extreme stain/graffiti resistance, zero-porosity, UV stability, and dimensional stability of Dekton made it the ideal solution for this project.

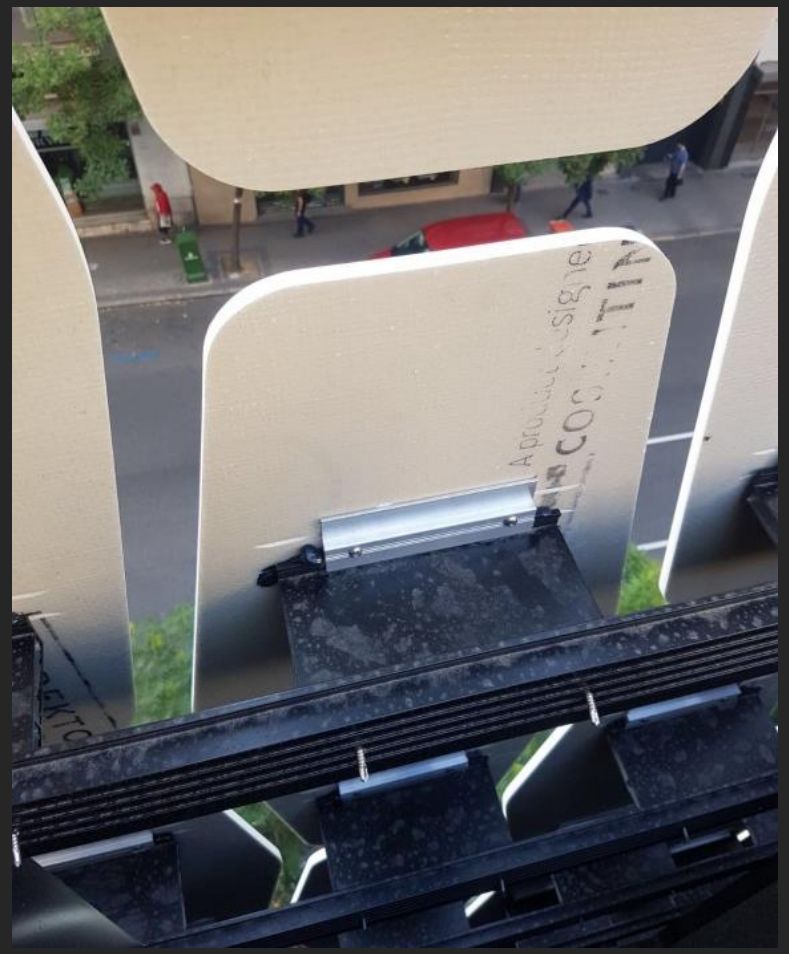


Hidden Undercut Anchoring

Case Study: Gunni & Trentino Project – Madrid

- Unique shape
- Simple install



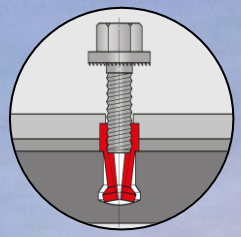


Case Study: Gunni & Trentino, Madrid

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.”



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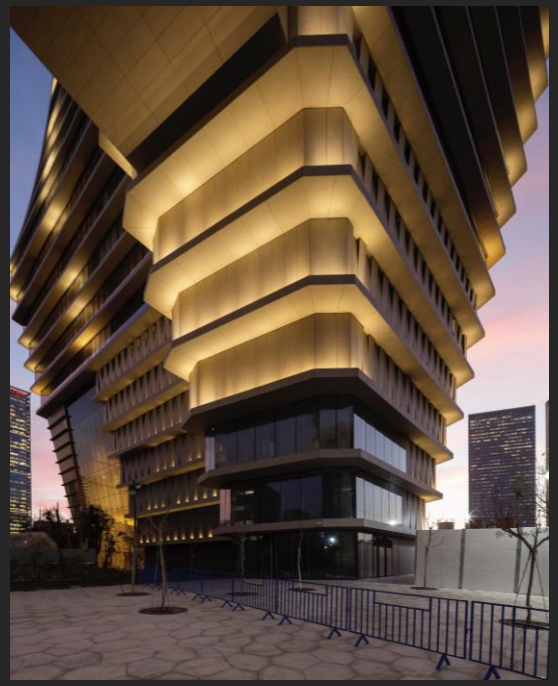
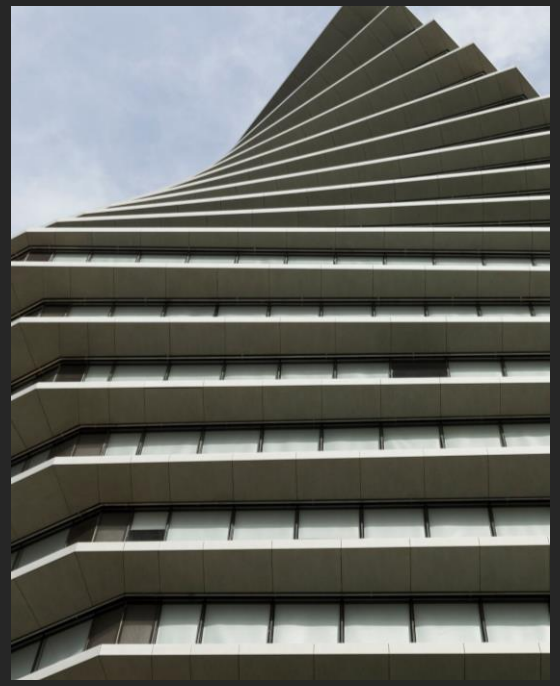
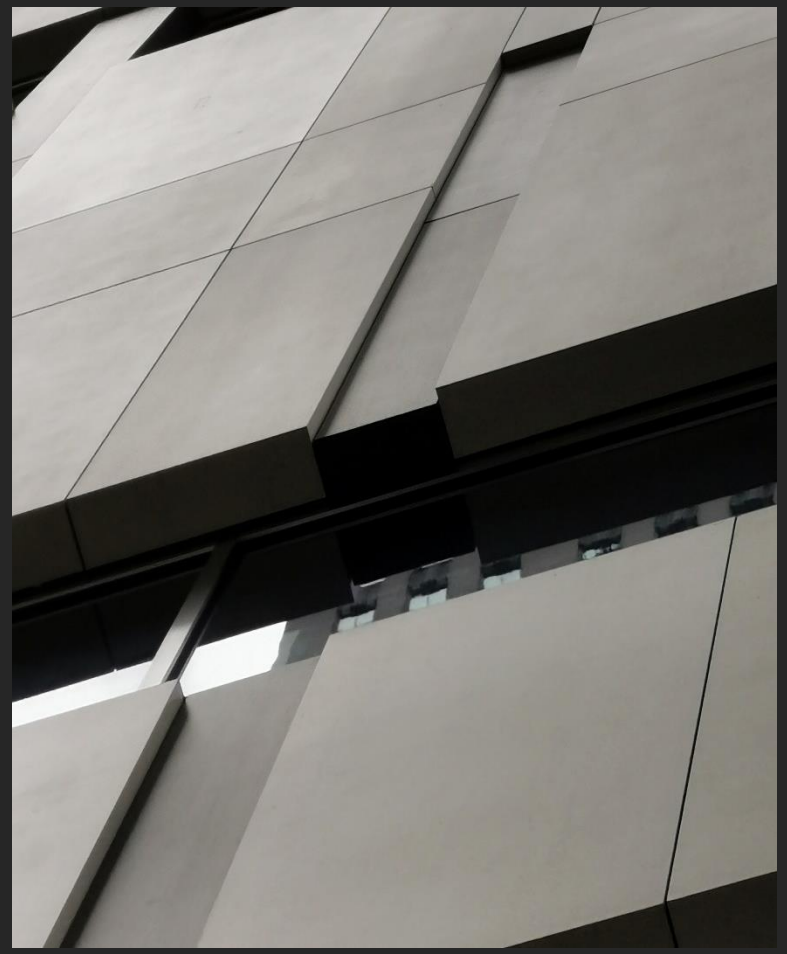




Case Study: Toha Project – Tel Aviv, Israel

Case Study: Toha Project – Tel Aviv, Israel

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



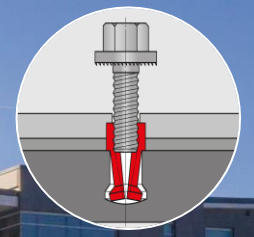
Case Study: 7 West 51st Street, New York, NY

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.

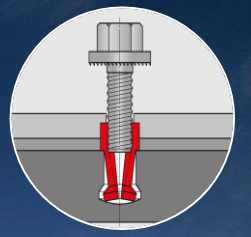


Hidden Undercut Anchoring

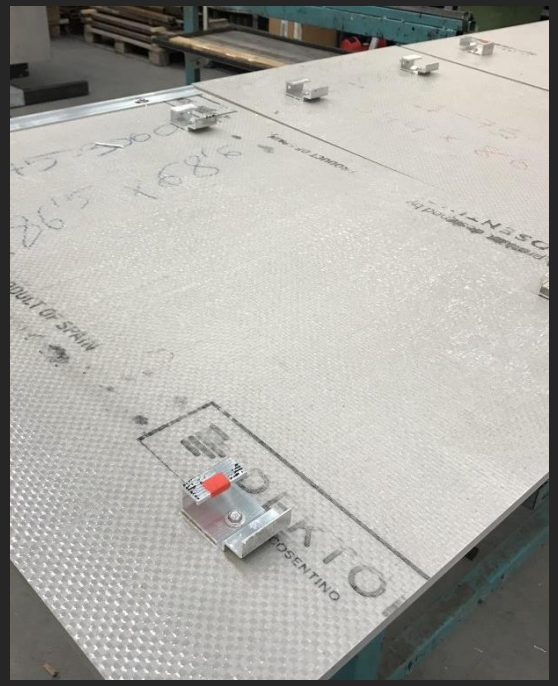
Kap West
Munich, Germany

- Architect: Wiel Arets Architects
- 135,000 Square Feet, 2 towers
- Dekton: 1.2cm Keon color

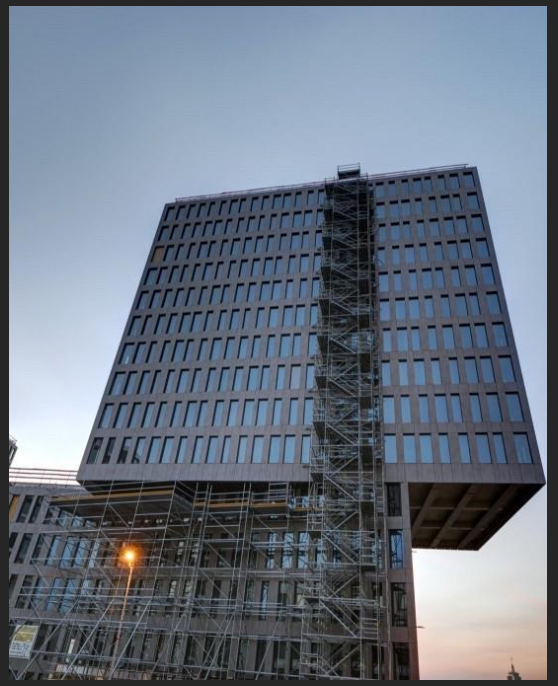
- Unitized construction using undercut anchor system installed in factory.
- Dekton was the ideal material to meet the design and physical requirements of Kap West’s flexible, energy-efficient concept.



Hidden Undercut Anchoring





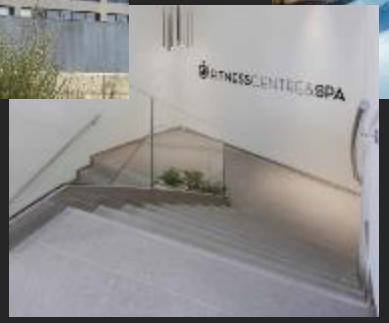


Case Study: Kap West– Munich, Germany

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 ft^2 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 ft^2 of Dekton** panels of all thicknesses and for different applications, such as facades, flooring, interior wall cladding, countertops, stairs, baseboards, swimming pools.



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