

AIA Continuing Education Program

SOLID SURFACES



Presented by:  Hanwha L&C | Surfaces

AIA CONTINUING EDUCATION PROGRAM

- Format: Presented f2f in real-time
- Course Credit:
 - 1 Health, Safety & Welfare (HSW) Learning Unit (LU)
- Completion Certificate:
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Hanex[®] Solid Surfaces
by Hanwha Surfaces

COURSE OVERVIEW

- Gain knowledge about solid surfacing:
 - Composition and Uses
 - Product Characteristics
 - Manufacturing and Fabrication
 - Application and Design Options



AIA BEST PRACTICES

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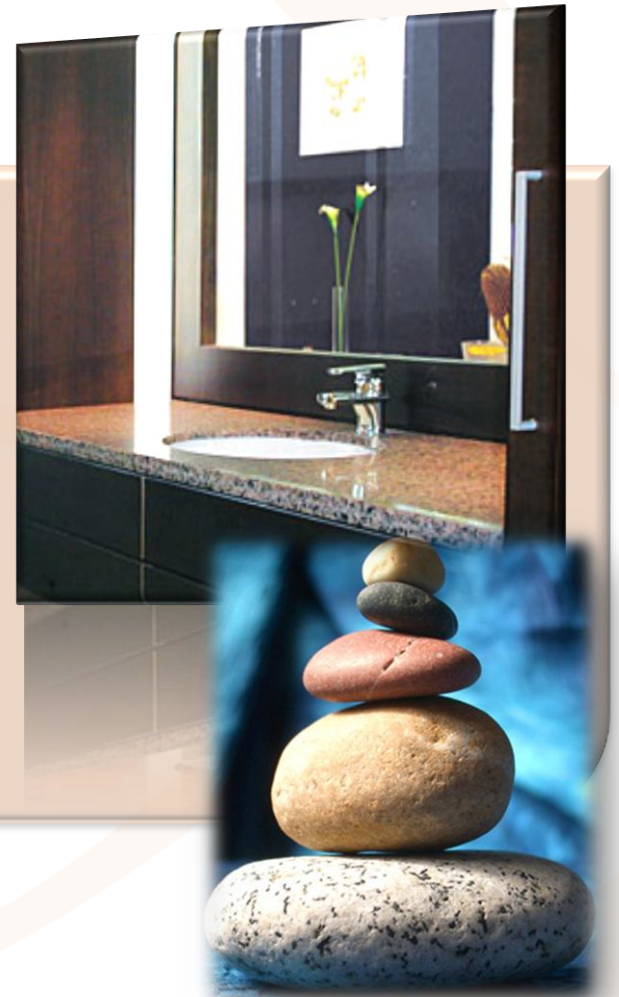
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HISTORY: SOLID SURFACES



HISTORY OF SOLID SURFACE

- Solid Surface was conceived in 1963 by a group of engineers and researchers.
- The creator of Solid Surface had the idea to create a material that would be totally solid all the way through, with a consistency of color, pattern and void of air bubbles.



HISTORY OF SOLID SURFACE

Makers were interested in developing a surface that was:

- non-porous as well as stain, chemical and fire resistant
- a usable working surface with standard woodworking tools
- hard enough to function as a work surface but at the same time easily repairable
- rich and pleasing 'look' to it

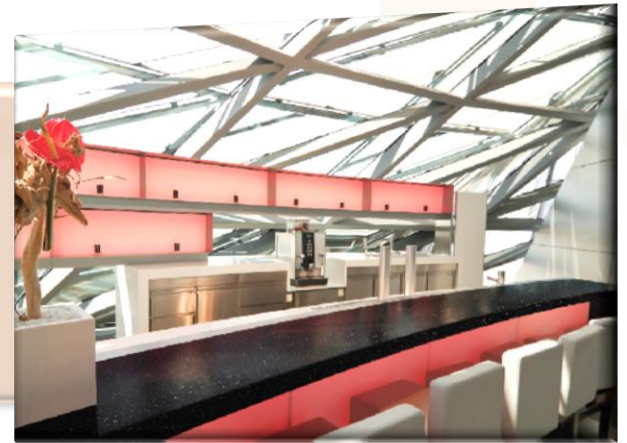


- Shower pans, shower and tub walls, floor tiles, tabletops, cutting boards, cabinet pulls and knobs, cutlery handles and many other products including artistic sculptures

VERSATILE PRODUCT



WHAT IS SOLID SURFACE?



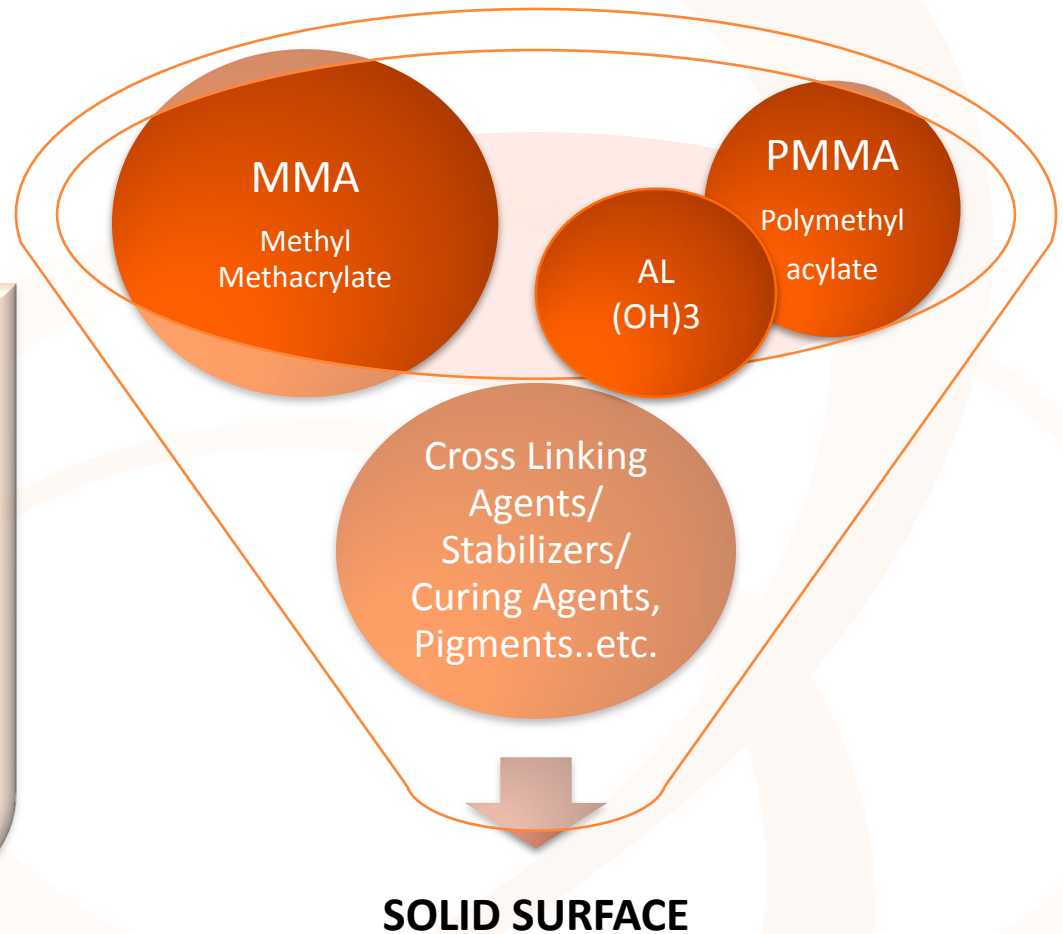
WHAT IS SOLID SURFACE?

- Solid Surface is a synthetic blend of natural minerals and high-performance acrylic, as a practical, innovative alternative to natural stone.



Composition

- The two main groups of resins used to make solid surface are acrylic and polyester
- A purely acrylic-based resin yields a sheet that is thermoformable — that is, it can be heated, bent into a shape and cooled without any loss of performance.



Composition

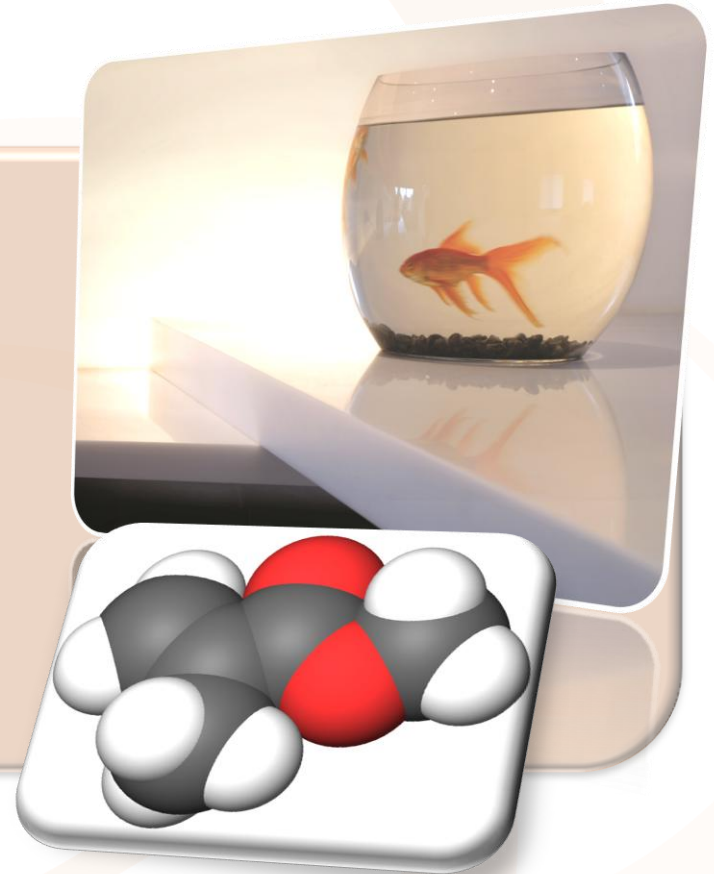
- Polyester resins (including those which are mixed with acrylic resins) are used in many high-strength demanding applications other than solid surfacing, including outdoor application such as boats and aircraft cowlings.



Composition

Acrylic Solid Surface is composed of:

- Methyl Methacrylate (MMA) and Poly Methyl Methacrylate (PMMA) resin filled with Alumina-Trihydrate (AL OH 3)





o Unlimited commercial applications

Composition

- ⦿ ATH gives solid surface its chemical and stain resistance, and one of the most important physical property; it is also a natural fire retardant.
- ⦿ ATH produces solid surface hard enough to give superb impact-resistance, but “soft” enough to be machinable like wood



Composition

- Every solid surface product contains additives and includes pigments for color
- UV absorbers, cross-linking agents, stabilizers are also included



- Standard Sizes and Thickness:

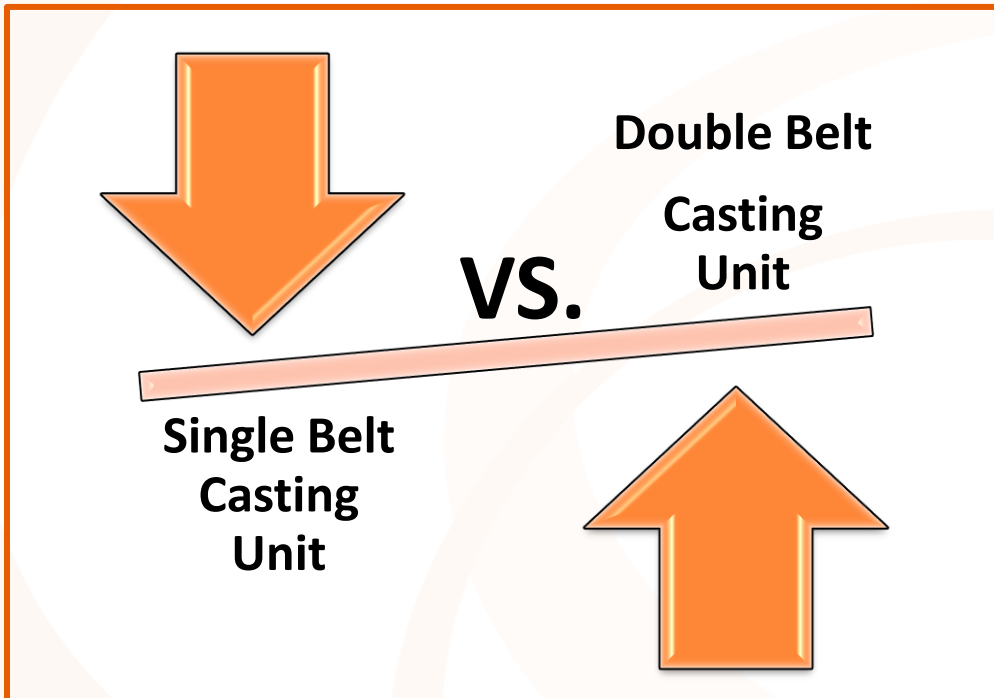
THICKNESS:	¼" and ½"
WIDTH:	30 inches
LENGTH:	¼": 98" ½": 144"





o Finish Options

DIFFERENT MANUFACTURING TECHNIQUES



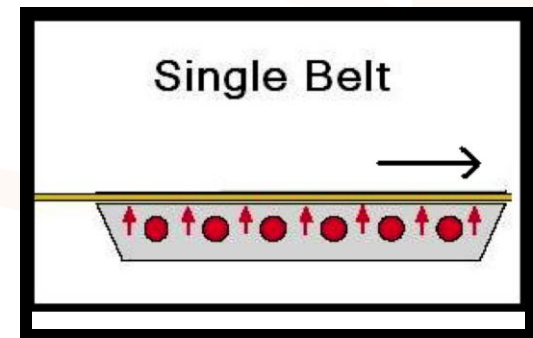
From all the Solid Surface competitors out there in today's market, only few use the **"Double Belt Casting System"** technology.

Most of manufacturers use the **"Single Belt Casting System"** process.

DIFFERENT MANUFACTURING TECHNIQUES

DISADVANTAGES of Single Belt Casting Unit vs Double Belt Casting Unit

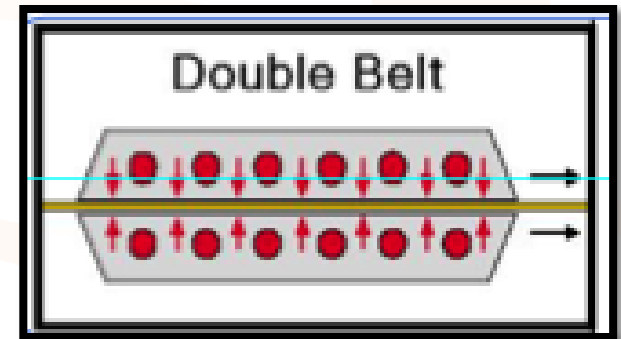
- Heat transfers from only the underside of the surface
- Exposed to warm air to the topside of the surface
- Hard to control heat of reaction
- No pressing effects
- Can cause uneven surface with blemishes of holes, lines, and partially depressed spots
- Can cause air bubbles on the surface
- Can cause bending/warping



DIFFERENT MANUFACTURING TECHNIQUES

ADVANTAGES of Double Belt Casting Unit vs. Single Belt Casting Unit.

- Heat treatment or cooling is applied to both sides of the product for maximum efficiency
- No contact between the product and ambient air
- Vapors and fumes are reduced and kept away from the operating area
- Product which can curl away from a single belt unit (resulting in irregular contact and loss of capacity can) now be handled
- There is an even and smooth surface with low grinding loss
- No air bubble on the surface
- There is a minimum heat loss and a uniform heat distribution



ACRYLIC Solid Surfaces

- No problems of chipping or cracking during fabrication
- Most fabricators prefer acrylic vs. polyester

POLYESTER Solid Surfaces

- More Brittle
- More prone to chipping or cracking during fabrication
- Creates more airborne during sanding and is easily scratched

ACRYLIC VS. POLYESTER: Seamless Finish

POLYESTER

Easier process than polyester for a seamless finish
Seaming results in less human error because the bond is chemical

ACRYLIC

Fractures easier on the seams
Seaming requires abrading the pieces because the bond is chemical

ACRYLIC VS. POLYESTER: Design Flexibility

- Acrylic has the advantage of being able to thermoform a lot better

ACRYLIC

POLYESTER

- Polyester can only be thermoformed or bent to a limited amount



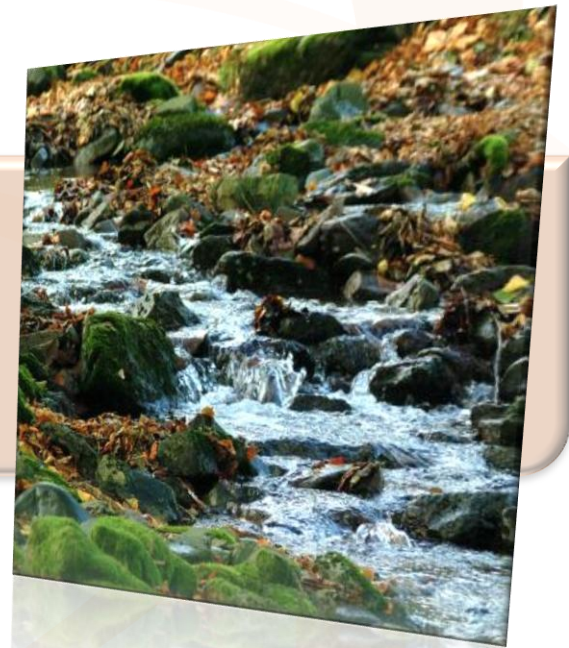
TYPES OF SOLID SURFACE

ACRYLIC: Key Benefit



POLYESTER: Key Benefit

KEY PRODUCT BENEFITS

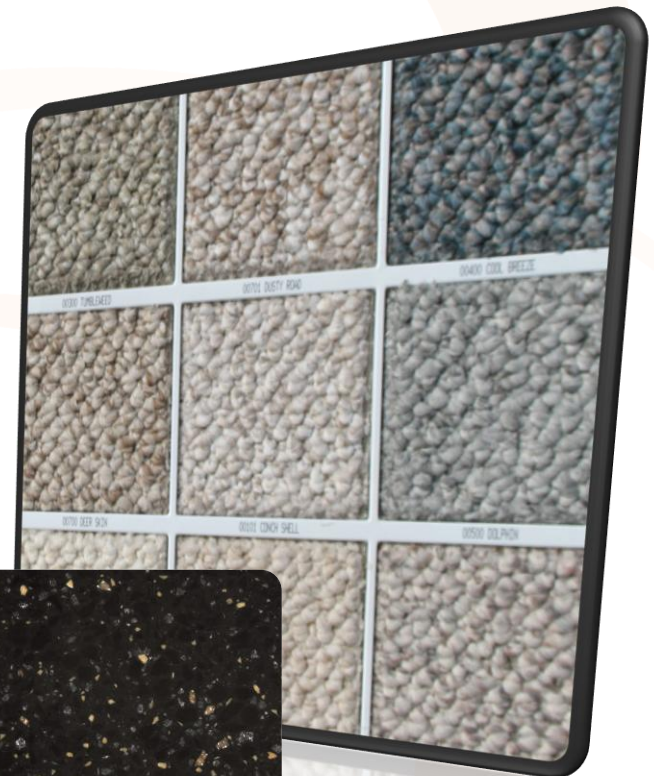




BEAUTY OF SOLID SURFACE: NATURAL

BEAUTY OF SOLID SURFACE: CLASSIC

- Classic neutral colors and patterns that accommodate any décor



BEAUTY OF SOLID SURFACE - TRADITIONAL

- Traditional colors and patterns that are calm, orderly and conventional



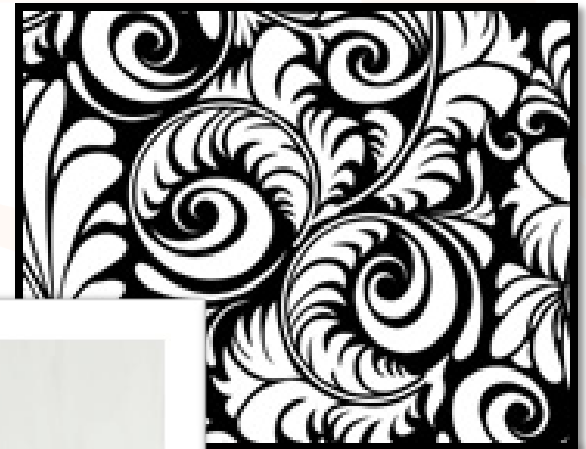
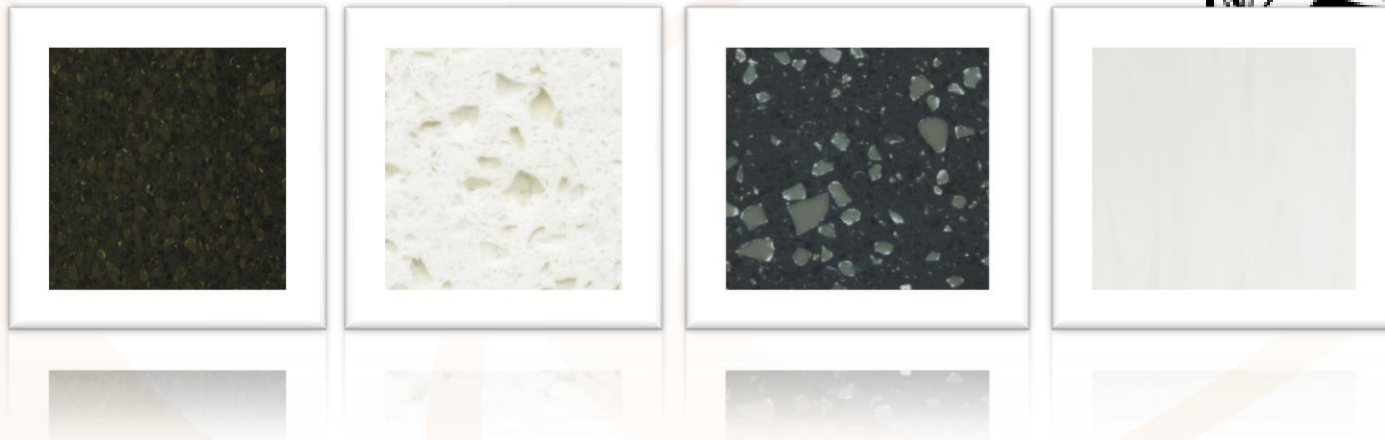
BEAUTY OF SOLID SURFACE: MODERN

- Vibrant colors and patterns that are clean and linear, elegant and uncluttered



BEAUTY OF SOLID SURFACES: CONTEMPORARY

- Neutrals, black, and white colors for those minimalists





BEAUTY OF SOLID SURFACE: MARBLE LOOK

BENEFIT: UNIFORMITY



- Solid Surface is homogenous, meaning it has uniform color and texture throughout the material

BENEFIT: DESIGN FLEXIBILITY

- The design flexibility and usability of solid surface, such as with integrated sinks and covered back splashes, makes it perfect combination of beauty, design and practicality.



BENEFIT: FUNCTIONALITY

- Solid Surface is proven to be resistant to:
 - ☑ **HEAT**
 - ☑ **CHEMICAL**
 - ☑ **STAIN**
 - ☑ **BACTERIA/GERMS/MOLD/MILDEW**



BENEFIT #5: EASE OF MAINTENANCE

- Non-porous and solid throughout the entire material
- Does not absorb food, odors or bacteria
- Requires no sealing unlike granite and marble

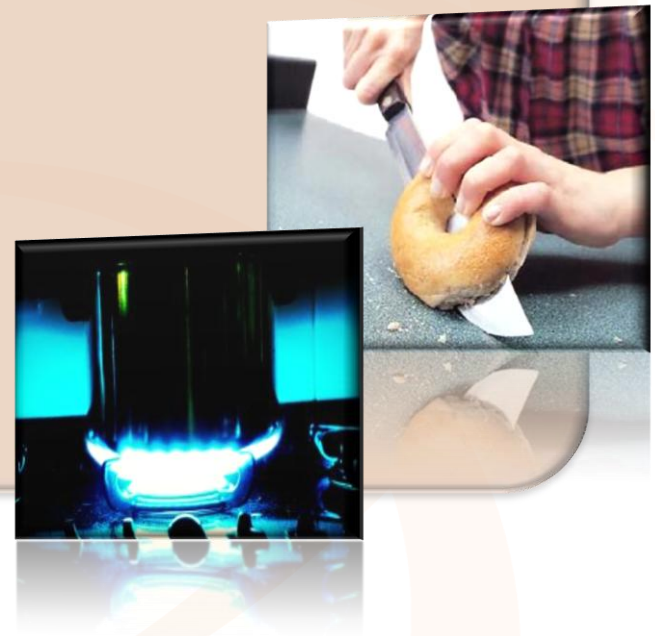
Daily Cleaning & Maintenance Tips:

- ☑ Just clean with damp cloth or sponge
- ☑ Remove stains with mild detergents



BENEFIT: REPARABILITY

- Solid Surface materials are engineered to withstand most hazards and minor knife cuts, chips, stains and scorches can be repaired.



BENEFIT: REPARABILITY

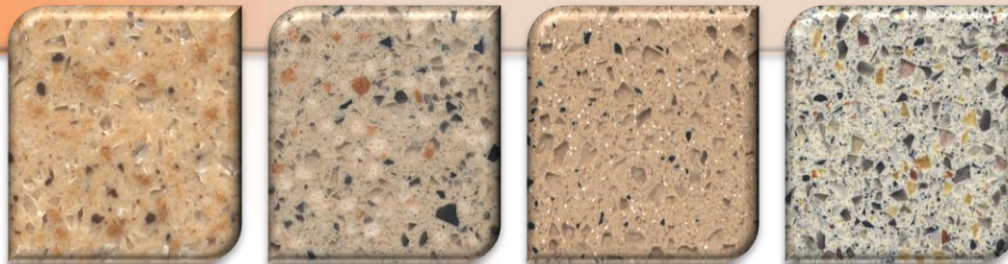
- Repairs made by sanding or buffing the damaged area with sand paper or with an abrasive cleanser



BENEFIT: ENVIRONMENTALLY FRIENDLY

○ Eco-Friendly

- Environmentally-conscious manufacturing process to produce the solid surface products
- Solid surface products manufactured with recycled materials (variety of post-consumer products)





SOLID SURFACE COMPARISON VS OTHER MATERIALS

	Quartz	Laminate	Solid Surface	Granite	Concrete
Beauty	very good	fair	very good	excellent	very good
Scratch Resistance	excellent	fair	very good	excellent	good
Stain Resistance	excellent	fair	excellent	very good	Fair
Heat Resistance	excellent	fair	good	excellent	Fair
Mildew Resistance	excellent	fair	excellent	very good	very good
Burn Resistance	excellent	fair	good	excellent	good
Easily Repairable	very good	good	excellent	good	fair
Seamless	very good	fair	excellent	very good	fair
Food Safe	excellent	good	excellent	fair	fair
Price	\$\$\$\$	\$\$	\$\$\$	\$\$\$\$\$	\$\$
Profession Installation Required	yes	no	yes	yes	no
Carefree	excellent	very good	excellent	good	fair
Repairable	fair	fair	excellent	fair	poor
Non-us	excellent	good	excellent	good	fair
Average Warranty	10 years	1 year	10 years	1 year	1 year

FABRICATION PROCESS



FABRICATION PROCESS

- When shipped to the factory, Solid Surface material has a sanded, matte surface
- Fabricator applies the final finish, that may range from matte to high-gloss



FABRICATION PROCESS

- Solid Surfaces can be stored:
 - Flat evenly supported racking systems or floors (use pallets)
 - “A” frames – the base of the sheets need to be fully supported



FABRICATION PROCESS

- Site Inspection:
 - Before any templating, fabrication or installation, it is important to have all information about the job site verified and/or prepared to make sure any unexpected problems do not occur.



FABRICATION PROCESS



- When cutting solid surface, make sure all pieces are supported.



- Sheets are installed on perimeter framing support and glued with small amounts of silicone sealant.



- The material must be reinforced with single-thickness wood or tubular steel cross-members every 18"



- All exposed edges are layered with strips of surface material, while rear edges are built up with wood strips

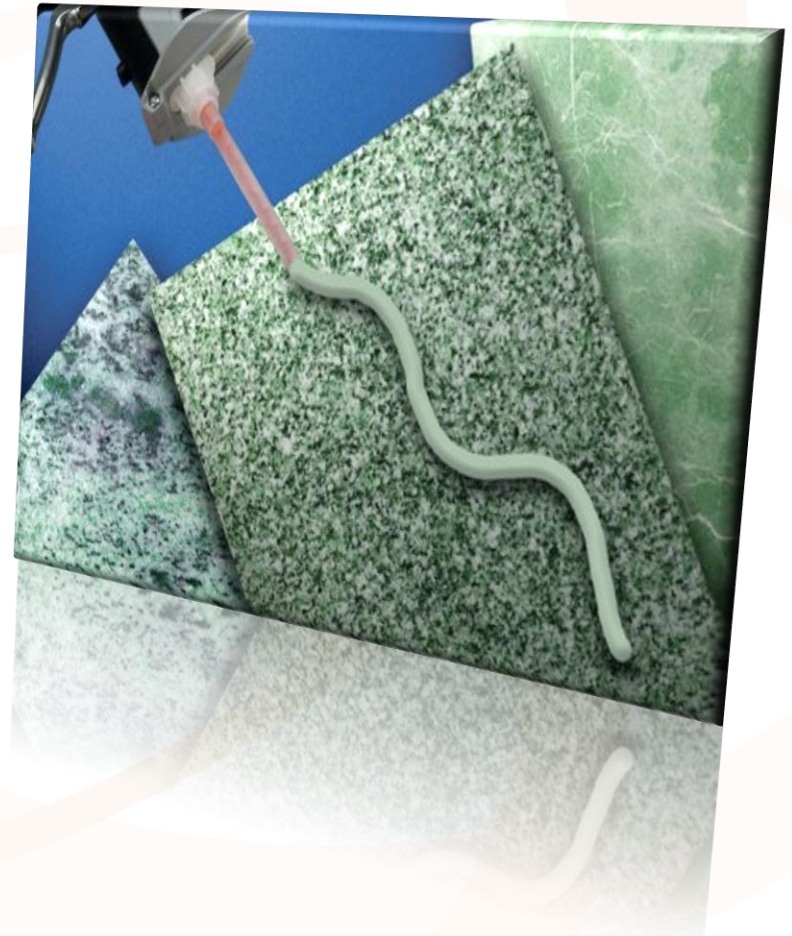
FABRICATION PROCESS

- Corner joints are normally squared rather than mitered to minimize wasted material and reduce the cost of labor.
- The seams should be placed at least 3" away from any corner or cutout.



FABRICATION PROCESS

- Recommended to use 100% silicone at all times
- Make sure adhesive is compatible with solid surface use
- Methyl Methacrylate Adhesive (MMA) – decorative adhesive: translucent, U.V. stable, non-yellowing and readily accepts pigments for color matching applications



Edge Profile Options



Ogee



Shark Nose



Double Ogee



Eased



Bullnose



Round Square



Triple Pencil



Bevel



Half-Bullnose

DESIGN APPLICATIONS

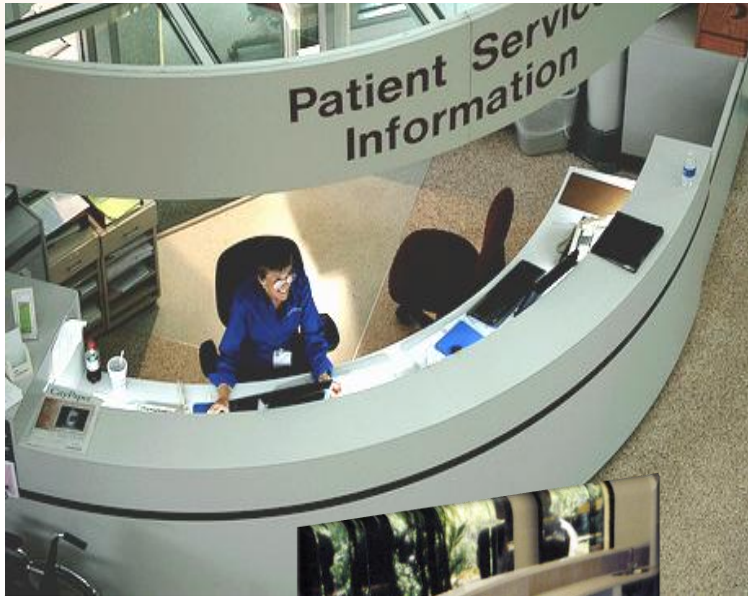


APPLICATIONS - COMMERCIAL

- Ideal for their commercial projects due to it's beauty, durability and design flexibility
- Can be easily used vertically or horizontally, indoors or outdoors – allowing architects to carry a design feature throughout a building/project



HEALTHCARE FACILITY

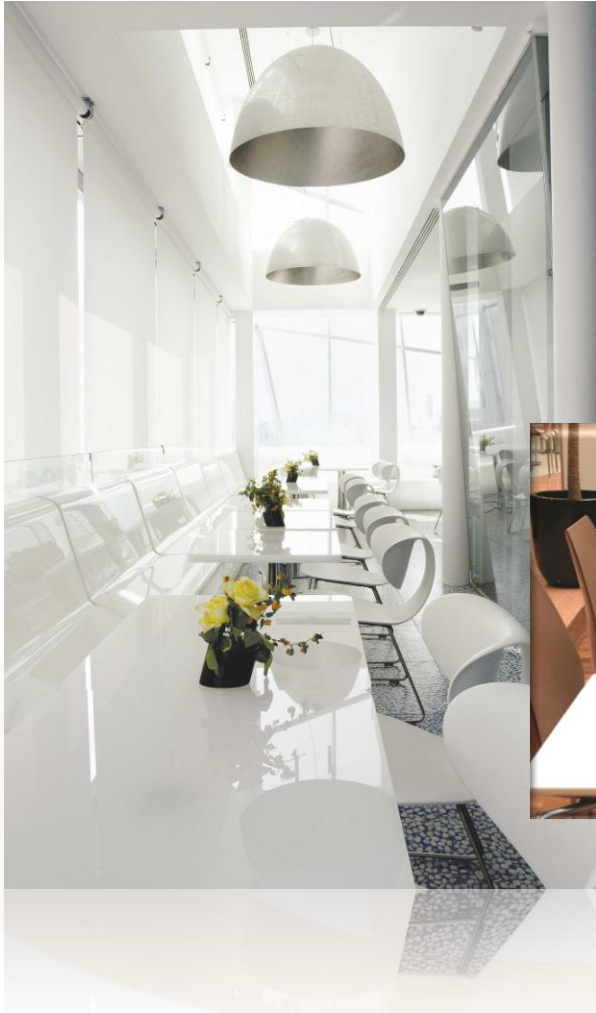


HOTEL RESTROOM



High traffic places, low
maintenance surface

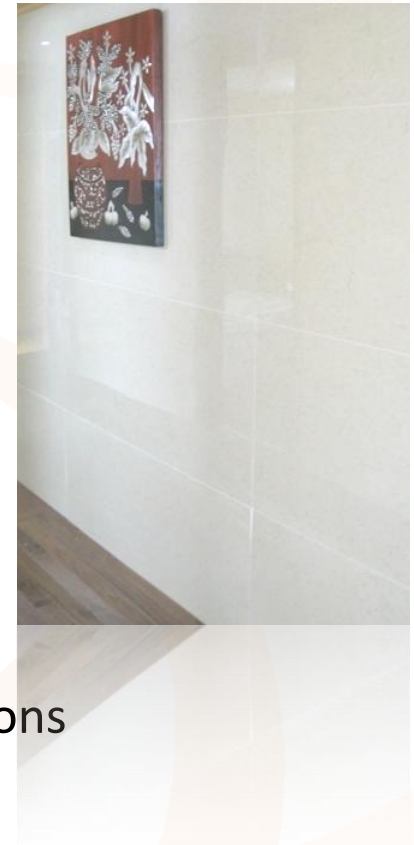
RESTAURANT



OFFICE & LOBBY



RETAIL STORES

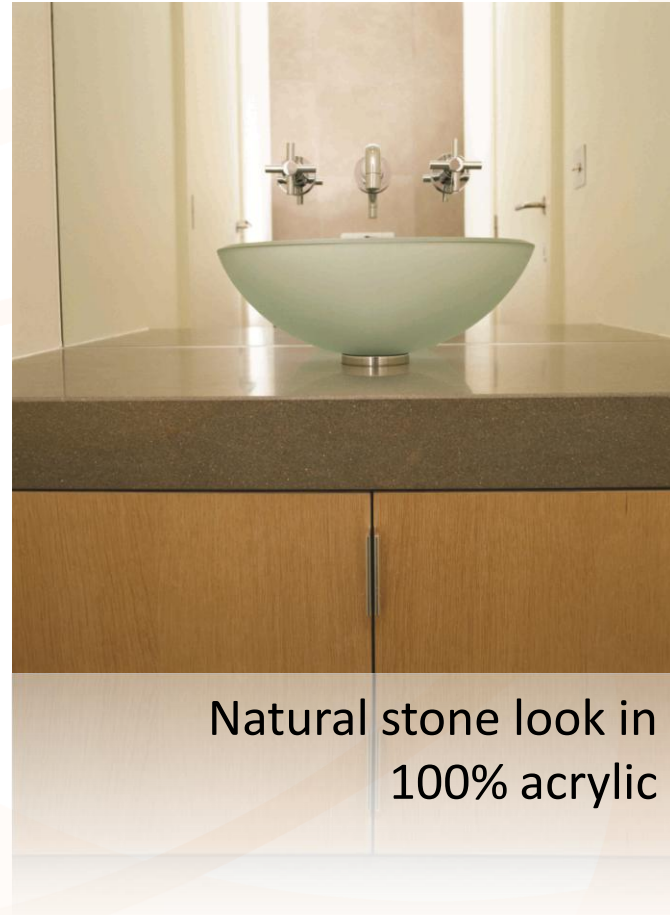


Retail wall applications

EDUCATION

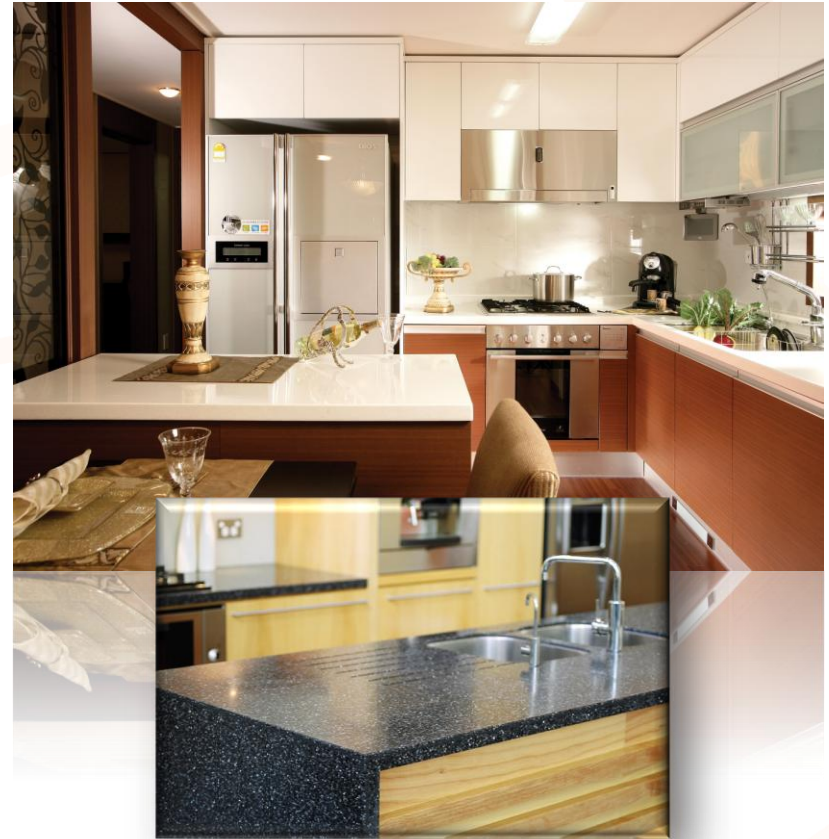


RESIDENTIAL - BATHROOM



Natural stone look in
100% acrylic

RESIDENTIAL - KITCHEN



RESIDENTIAL – ACCENT WALL



Quality Assurance

- **What to look for in Solid Surface manufacturers?**
 - Manufacturing Method
 - Composition Type
 - Quality and Overall Appearance
 - Nationwide Distribution System
 - Tests and Evaluation Reports
 - Certifications
 - Warranty & Coverage
 - Length of Business
 - Website, Literature and Customer Service

CONCLUSION

- Solid Surface is the perfect choice for both commercial and residential applications – a rare combination of design flexibility and avant-garde Acrylic composition that gives it a timeless beauty and unmatched quality.
- Discover the new surface of design for yourself.

The image features a white background with a solid orange border at the top and bottom. Several large, overlapping, light-colored (beige or light orange) abstract shapes, resembling thick brushstrokes or loops, are scattered across the white area. The word "QUIZ" is written in a bold, black, sans-serif font on the left side of the page.

QUIZ

This concludes The American Institute of Architects
Continuing Education Systems Program



Hanex[®] Solid Surfaces
by Hanwha Surfaces

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