

AIA & IDCEC Continuing Education Program

EXPLORE THE POSSIBILITIES OF SOLID SURFACES

PRESENTED BY:



AIA & IDCEC CONTINUING EDUCATION PROGRAM

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Learning Unit (LU)
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HANEX SOLID SURFACES | 2019

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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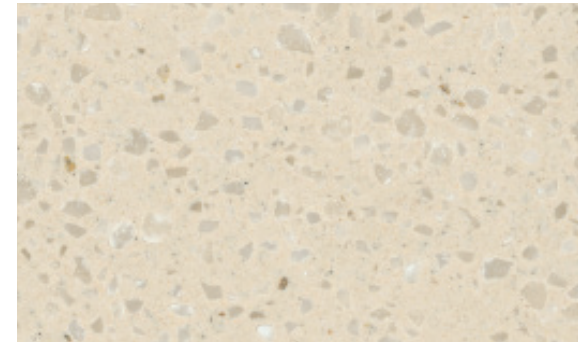
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HISTORY: SOLID SURFACES



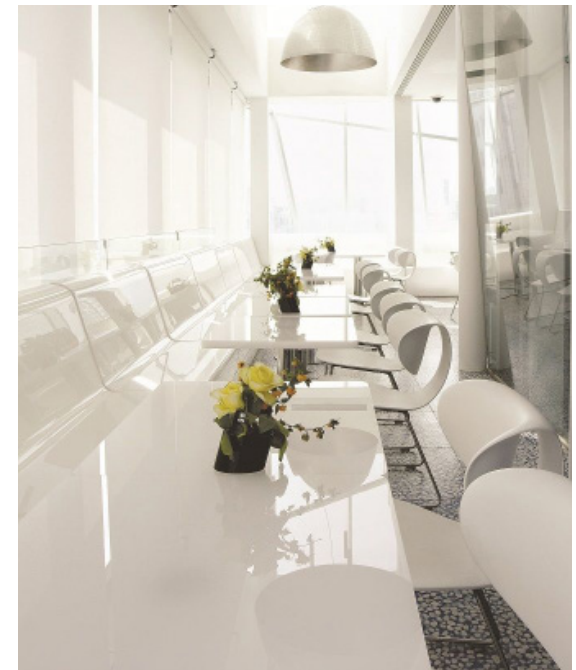
HISTORY OF SOLID SURFACES

- 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.



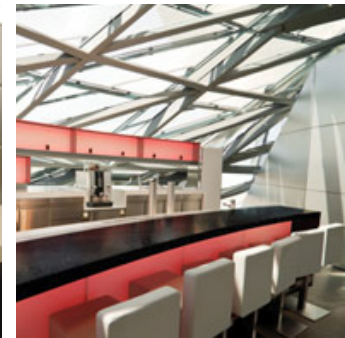
HISTORY OF SOLID SURFACES

- **Makers were interested in developing a surface that was:**
 - Nonporous 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 with a pleasing 'look' to it.



VERSATILE PRODUCT

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



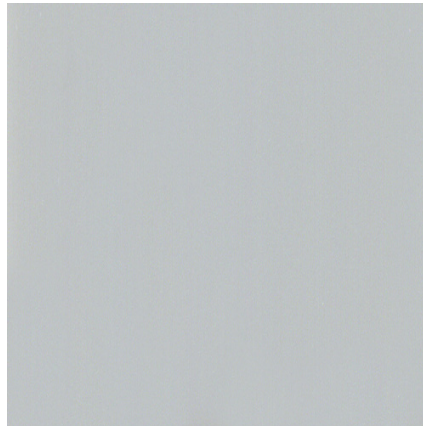
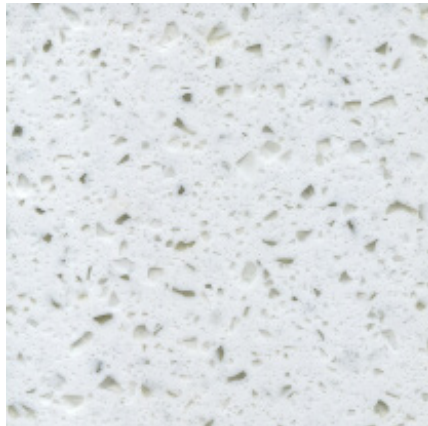
UNLIMITED COMMERCIAL APPLICATIONS



WHAT IS SOLID SURFACE?

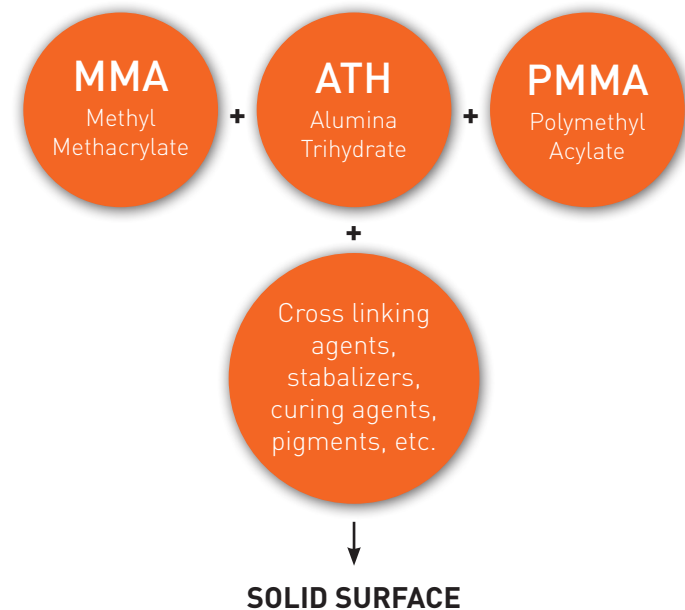
WHAT IS SOLID SURFACE?

- 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 thermo-formable — that is, it can be heated, bent into a shape and cooled without any loss of performance.



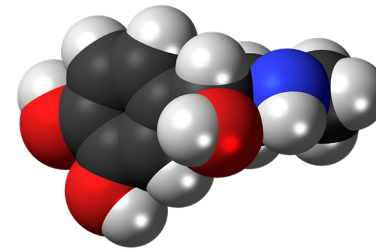
COMPOSITION

- 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 ($Al(OH)_3$).



COMPOSITION

- ATH gives solid surface its chemical and stain resistance, and one of the most important physical properties; 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, and stabilizers are also included.



STANDARD SIZES AND THICKNESS

Thicknesses 1/4" and 1/2"

Lengths 1/4" - 98"
 1/2" - 144"

Width 30"

*Some manufacturers now offer 60" wide sheets.



FINISH OPTIONS



MATTE



SATIN



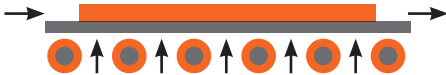
GLOSS



HIGH GLOSS

DIFFERENT MANUFACTURING TECHNIQUES

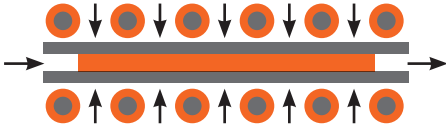
Single Belt Casting Unit



Most manufacturers use the “Single Belt Casting System.”

VS.

Double Belt Casting Unit



Of all the solid surface competitors out there in today’s market, only a few use the “Double Belt Casting System.”

DIFFERENT MANUFACTURING TECHNIQUES

Single Belt Casting Unit

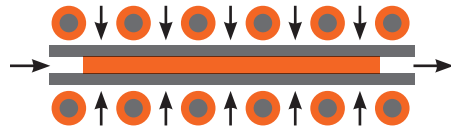


DISADVANTAGES OF SINGLE BELT CASTING UNIT VS DOUBLE BELT CASTING UNIT:

- Heat transfers from only the underside of the surface
- Exposes 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

Double Belt Casting Unit



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 bubbles on the surface
- There is minimum heat loss and uniform heat distribution

DIFFERENT MANUFACTURING MATERIALS

Acrylic Solid Surfaces

vs.

Polyester Solid Surfaces

- No problems with chipping or cracking during fabrication.
 - Most fabricators prefer acrylic vs. polyester.
- More brittle.
 - More prone to chipping or cracking during fabrication.
 - Creates more airborne particles during sanding and is easily scratched.

DIFFERENT MANUFACTURING MATERIALS - SEAMLESS FINISH

Acrylic Solid Surfaces

vs.

Polyester Solid Surfaces

- Easier process than polyester for a seamless finish. Seaming results in less human error because the bond is chemical.
- Fractures easier on the seams. Seaming requires abrading the pieces because the bond is mechanical.

DIFFERENT MANUFACTURING MATERIALS - DESIGN FLEXIBILITY

Acrylic Solid Surfaces

vs.

Polyester Solid Surfaces

- Acrylic can easily be thermoformed.

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

DIFFERENT MANUFACTURING MATERIALS - KEY ADVANTAGES

Acrylic Solid Surfaces

vs.

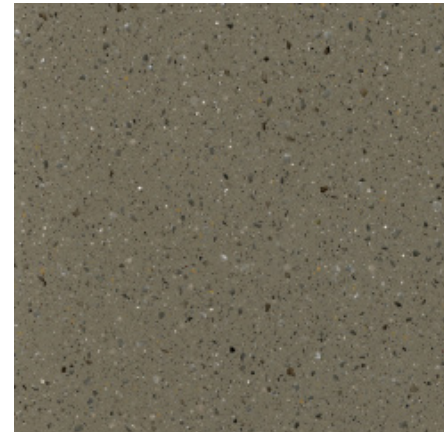
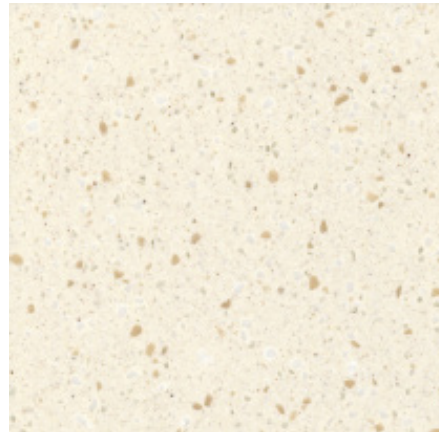
Polyester Solid Surfaces

- Used by 80% of the market.
- Unique colors can be created that are not possible with acrylic.

KEY PRODUCT BENEFITS



BEAUTY OF SOLID SURFACE - NATURAL



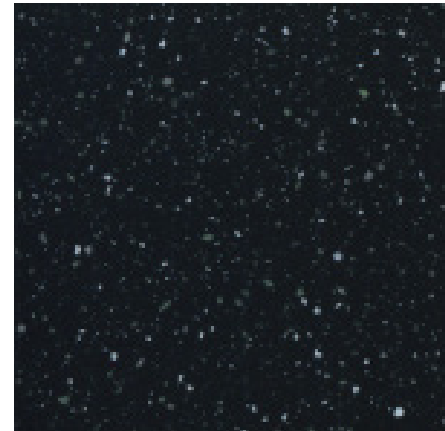
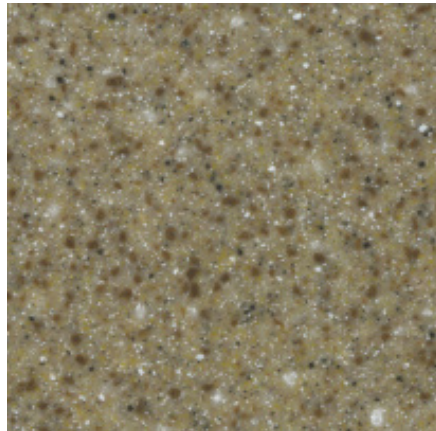
BEAUTY OF SOLID SURFACE - CLASSIC

- 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 SURFACE - 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, make the perfect combination of beauty, design and practicality.



BENEFIT: FUNCTIONALITY

- Solid surface is proven to be resistant to:
 - HEAT
 - CHEMICALS
 - STAINS
 - BACTERIA/GERMS/MOLD/MILDEW



BENEFIT: EASE OF MAINTENANCE

- Nonporous 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.



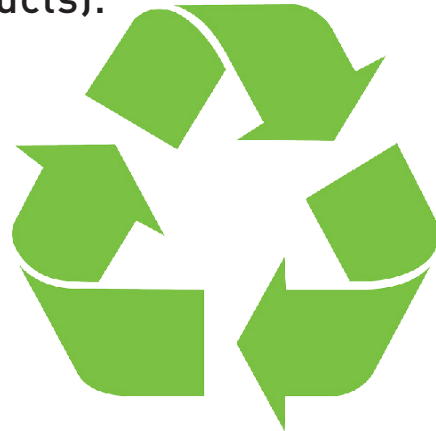
BENEFIT: REPAIRABILITY

- Solid surface materials are engineered to withstand most hazards and minor knife cuts.
- Chips, stains and scorchs can be repaired.
- Repairs made by sanding or buffing the damaged area with sand paper or with an abrasive cleanser.



BENEFIT: ECO-FRIENDLY

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





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SOLID SURFACE VS. OTHER MATERIALS

	QUARTZ	LAMINATE	SOLID SURFACE	GRANITE	CONCRETE
Carefree	excellent	very good	excellent	good	fair
Food Safe	excellent	good	excellent	fair	fair
Mildew Resistance	excellent	fair	excellent	very good	very good
Nonporous	excellent	good	excellent	good	fair
Repairable	fair	fair	excellent	fair	good
Seamless	very good	fair	excellent	very good	fair
Stain Resistance	excellent	fair	excellent	very good	fair
Beauty	very good	fair	very good	excellent	very good
Scratch Resistance	excellent	fair	very good	excellent	good
Burn Resistance	excellent	fair	good	excellent	good
Heat Resistance	excellent	fair	good	excellent	fair
Typical Warranty	10 years	1 year	10 years	1 year	1 year
Price	\$\$\$	\$	\$\$	\$\$\$	\$
Professional Installation	yes	no	yes	yes	no

FABRICATION PROCESS

A modern, minimalist bathroom with a white bathtub and a long vanity with multiple sinks and faucets. The room features large windows and a clean, industrial aesthetic.

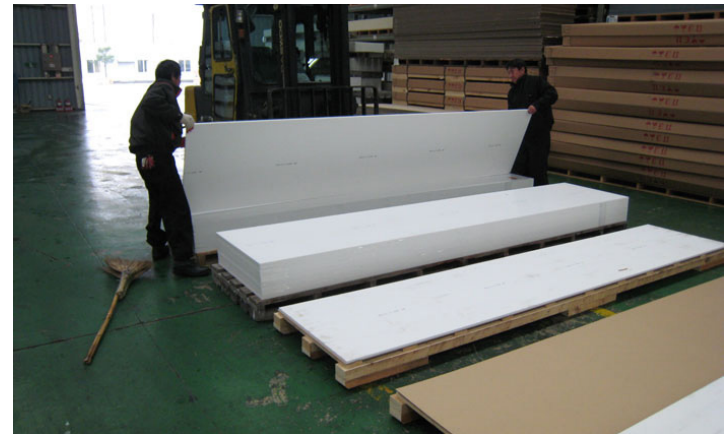
FABRICATION PROCESS

- When shipped to the fabricator, solid surface materials have 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.

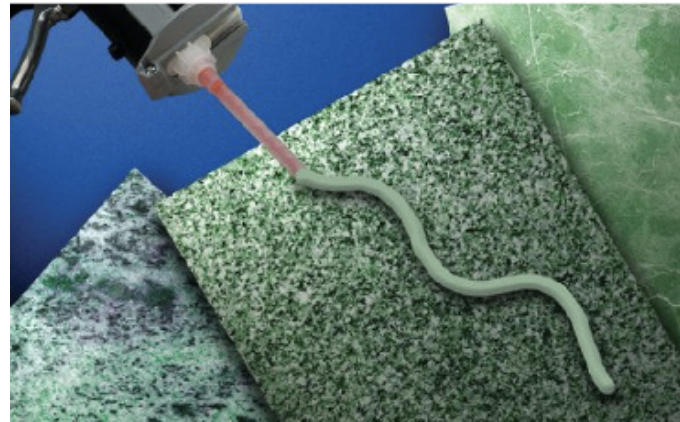
FABRICATION PROCESS

- 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 commercial projects due to 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.



COMMERCIAL: HEATHCARE FACILITY



COMMERCIAL: RESTROOMS



COMMERCIAL: RESTAURANTS



COMMERCIAL: OFFICE & LOBBY



COMMERCIAL: RETAIL STORES



COMMERCIAL: EDUCATION FACILITIES



RESIDENTIAL: BATHROOMS



RESIDENTIAL: KITCHENS



RESIDENTIAL: ACCENT WALL



MANUFACTURING:

- **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
 - Time 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 chemical composition resulting in timeless beauty and unmatched quality.
- Discover the new surface of design for yourself.

This concludes The American Institute of Architects Continuing Education Systems Program



For product information visit: www.hanexsolidsurfaces.com
For inquires: info@hanexsolidsurfaces.com or call: 800-426-9421