



# ENIGMA

Beauty Beyond Limits

**ARCHITECTS &  
DESIGNERS**

PRODUCT MANUAL





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Leading the industry in creativity, AHD SURFACES is proud to introduce ENIGMA SURFACES, an innovative new material comprised of Gibbsite and Silicon Oxide.

ENIGMA's impressive attributes represent a new generation of material combining world class aesthetics with superior performance.

**More Translucent | Brighter White | More Authentic**

Leading the industry in creativity, AHD SURFACES is proud to introduce ENIGMA, an innovative new material comprised of Gibbsite and Silicon Oxide. ENIGMA's impressive attributes represent a new generation of countertops combining world class aesthetics with the performance new engineering processes provide: **strength, durability and consistency.**

The extraordinary variety of life and resources on Earth is fascinating. Human beings have the unique talent and inventiveness to transform matter around us to create something totally new, something never seen before.

Enigma Surfaces is a remarkable new material that certainly will revolutionize the stone industry due to its impressive features and numerous attributes. Enigma Surfaces will leave a mark in history by being the first to launch a new generation of countertops, resistant to stains and with the minimum maintenance requirements.

Molecule to molecule, the properties of the original material have been changed structurally at the nanoscopic scale in our laboratory.

The most experienced researchers have fluctuated the performance of the stone's individual particles to achieve the creation of Enigma, an innovative and fresh agglomerate material able to meet sophisticated customer's needs, providing creative options to home design as well as to inspire professionals in the design field.





### ADVANTAGES

The tested high performance of Enigma Surfaces together with its competitive value makes it ideal for any application, whether for small or large projects, residential or commercial.

Available in an extensive series of colors and textures, hi-tech Enigma Surfaces is the perfect choice for a wide range of interior, whether commercial or residential applications. Its versatility allows professionals to customize any layout easily, not only for its high-end patterns and colors, but also for its performance and consistency: non-porous, aseptic, low-maintenance, impact resistant, stain resistant, scratch resistant, and translucent.

Enigma Surfaces is a solid asset to be used, horizontal or vertically, as kitchen countertops, integral backsplash, vanity countertops, bar tops, reception counters, furniture cladding, tables, flooring or any other interior design you could imagine.



### TRANSLUCENCY

Translucency is a unique characteristic inherent to natural stone and almost impossible to replicate in engineered stone. Enigma Surfaces' technology allows light to pass through it as in natural stone patterns, therefore the resulting design shows a hyper-realistic natural-look composition.

### MANUFACTURING

Enigma Surfaces' slab dimensions and characteristics meet the highest standard of quality to ensure any custom design will be carried out efficiently.

### DURABILITY

Enigma Surfaces is a robust agglomerate of materials, perfectly suited for any residential or commercial application, giving customers the utmost confidence in their investment.

### NATURE IN YOUR HOME

Enigma Surfaces features unbelievable veining and shades, blending effortlessly with beautiful backgrounds, adding realistic movement and texture to each pattern. Their natural look brightens any room and make you feel connected to the Earth.

### THE BEAUTY OF SINGULARITY

Enigma surfaces brings a comprehensive range of colors with beauty and distinctiveness, standing out with unique elegance and the perfect amount of personality. The only challenge will be choosing just one from our gorgeous color palette.

### APPLICATIONS

The tested high performance of Enigma Surfaces together with its competitive value makes it ideal for any application, whether for small or large projects, residential or commercial.

### LIQUID REPELLENT

Enigma Surfaces is protected by NEOS, Nano Enhancement of Surfaces, an extraordinary innovative high-performance stain and substance repellent technology. Available for all colors, polished and silk.

PRODUCT DESCRIPTION

Enigma Surfaces’ impressive attributes represent a new generation of countertops combining world class aesthetics with the performance new engineering processes provide: strength, durability and consistency. Creative colors and multidimensional patterns that will impress homeowners, fabricators, architects and designers.

Slab Dimensions

The slab dimensions of Enigma Surfaces’ engineered stone are 126" x 63" (3200mm x 1600mm) and 120" x 56.5" (3000mm x 1400mm)\*, while available thicknesses are 3/4" (2cm) and 1 - 1/4" (3cm), which enable optimized flexibility and maximum utilization of material, meeting the highest standard of quality to ensure any custom design will be carried out efficiently.

Precision and Efficiency

Whether for private environments, work areas or public spaces, Enigma Surfaces represents a solid asset that ensures value for money and return on investment for years to come.

Technical Specifications

TEST ITEMS	TEST METHOD	UNIT	RESULT
FIRE CLASSIFICATION	EN 13501-1:2018	class	Efl
WATER ABSORPTION	EN 14617-1:2013	%	0,18
APPARENT DENSITY	EN 14617-1:2013	kg/m3	2572
FLEXURAL STRENGTH	EN 14617-2:2008	MPa	48.3
ABRASION RESISTANCE	EN 14617-4:2012	mm	27.8
FREEZE AND THAW RESISTANCE	EN 14617-5:2012	MPa	53MPa
THERMAL SHOCK RESISTANCE	EN 14617-6:2012	%	0.01
IMPACT RESISTANCE	EN 14617-9:2005	J	13.77
CHEMICAL RESISTANCE	EN 14617-10:2012	class	C4
LINEAR THERMAL EXPANSION	EN 14617-11:2005	10 <sup>6</sup> /°C	14.9
DIMENSIONAL STABILITY	EN 14617-12:2012	class	A
SURFACE QUALITY	EN 14617-16:2005		No defects
SLIP RESISTANCE WET	EN 14231:2003	SRV	28
SLIP RESISTANCE DRY	EN 14231:2003	SRV	46
THERMAL CONDUCTIVITY	EN 12664:2001	W	0.780W
RELEASE OF DANGER SUBSTANCES	SGS	SVHC 198 substances	PASS

### RESTRICTIONS

Enigma Surfaces is intended for interior use exclusively. Avoiding exposure to the following situations is highly recommended:

1. **Excessive heat.** Enigma Surfaces is strong and heat resistant; however, one should avoid stressing the material with sudden thermal shock. Also, chronic or acute exposure to high heat can scorch the resin binders. Never set hot pans directly on the surface and always use hot pads or trivets to protect your counters.

2. **Chemicals.** Any product containing trichloroethane, methylene, chloride, abrasives, pH levels greater than 8 or less than 5, hydrofluoric acid, liquid bluing, gentian violet or aggressive cleaning compounds must be avoided.

3. **Acids.** Common acids such as hydrochloric, muriatic or sulfuric do not affect Enigma Surfaces. In concentrated solutions, and after being exposed 24hrs, some acids including nitric acid will discolor the material, although they will not compromise its strength. In case of accidental exposure to substances superior to pH13 or concentrated solutions, wash meticulously with clean water as soon as possible.

4. **Bases:** Sodium hydroxide and potassium hydroxide in concentrations of 10% or higher will mark the material; therefore, any accidental spill any accidental spill must be cleaned up immediately. Household cleaning products containing sodium and potassium hydroxide in typical concentrations do not damage Enigma Surfaces.

5. **Solvents.** Most solvents are not harmful. Household cleaners and industrial strength solutions of methyl ethyl ketone (MEK) have shown any effect on Enigma Surfaces. Solvents that can be safely used in pure concentration only in Enigma Surfaces include acetone, mineral spirit, methylene chloride, lacquer thinner, isopropyl alcohol, trichloroethane.

6. **Staining agents.** Enigma Surfaces material is impervious to common laboratory staining agents. It is not permanently stained by povidone-iodine (betadine), potassium permanganate or tincture of iodine. Residual stains of betadine or iodine on light-colored Enigma Surfaces cleans off with chlorine bleach. Darker colors show no stain from these agents. However, some colors can be stained by prolonged contact with solutions of gentian violet, blue ink and some lipsticks.



### PRODUCT PROCEDURE

**Manufacturing:** 97% of the water used during manufacturing is reclaimed using filtration and recycling systems. Regenerative thermal oxidizers remove particulate matter from the atmosphere, reducing air pollution and ensuring a safer work environment.

**Regional fabrication:** surfaces can be produced by fabricators located close to the building site.

**Product lifespan:** Enigma Surfaces is a very durable material. A 25-year warranty is available.

**Recommended cleaning and maintenance:** Enigma Surfaces requires minimal maintenance. Unlike natural stone, it does not need periodic resealing for stain resistance, and its good looks can be maintained without the use of harsh cleaning chemicals. This improves indoor air quality and eliminates the environmental impact of sealers and cleaning chemicals.

**Product reuse:** The high strength of Enigma Surfaces can make it possible to remove surfaces without excessive breakage. The durability of the material therefore permits it to be reused in another location.

**NAZCA**  
Collection



**Colibri** - EM5051  
■ Silk Finish



**Spyder** - EM5052  
■ Silk Finish

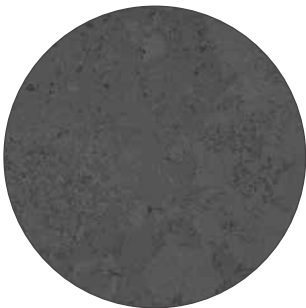
**MOAI**  
Collection



**Sculpture** - EM5053  
■ Silk Finish



**Nui** - EM4049  
■ Silk Finish



**Pukao** - EM5054  
■ Silk Finish



**Eastern** - EM5057  
■ Silk Finish



# PYRAMIDS

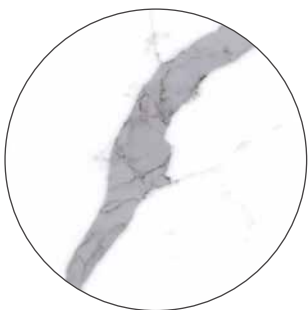
Collection



**Keops** - EM2024  
■ Silk Finish



**Ramses** - EM2021  
□ Polished Finish



**Pharaon** - EM2022  
■ Silk Finish



**Cleopatra** - EM2023  
□ Polished Finish



**Valley** - EM2025  
□ Polished Finish



**Dynasty** - EM4042  
■ Silk Finish



**Nefertiti** - EM4048  
□ Polished Finish



**Giza** - EM4043  
□ Polished Finish



**Sphinx** - EM4044  
□ Polished Finish



**Desert** - EM4046  
□ Polished Finish



**Ra** - EM4047  
□ Polished Finish



**Maze** - EM4142  
■ Silk Finish



**Mask** - EM4143  
■ Silk Finish

ENIGMA SURFACES: SLAB INFORMATION

Enigma Surfaces offers a wide range of colors, formats, thicknesses and finishes to make your project unique. These features allow for the maximization of any space.

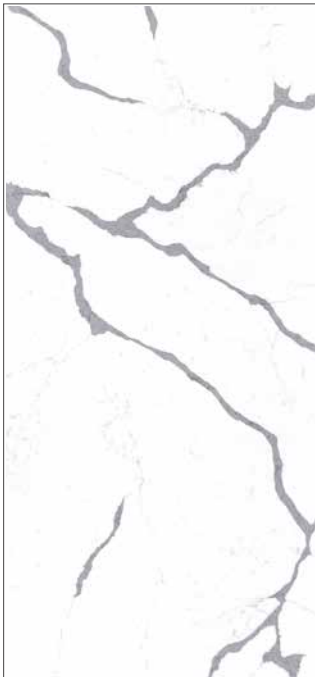
SIZES:

JUMBO SLABS  
1600mm | 63"



3200mm | 126"

ORIGINAL SLABS\*  
1400mm | 56,5"



3000mm | 120"

THICKNESS:

2cm | 3/4"



3cm | 1-1/4"



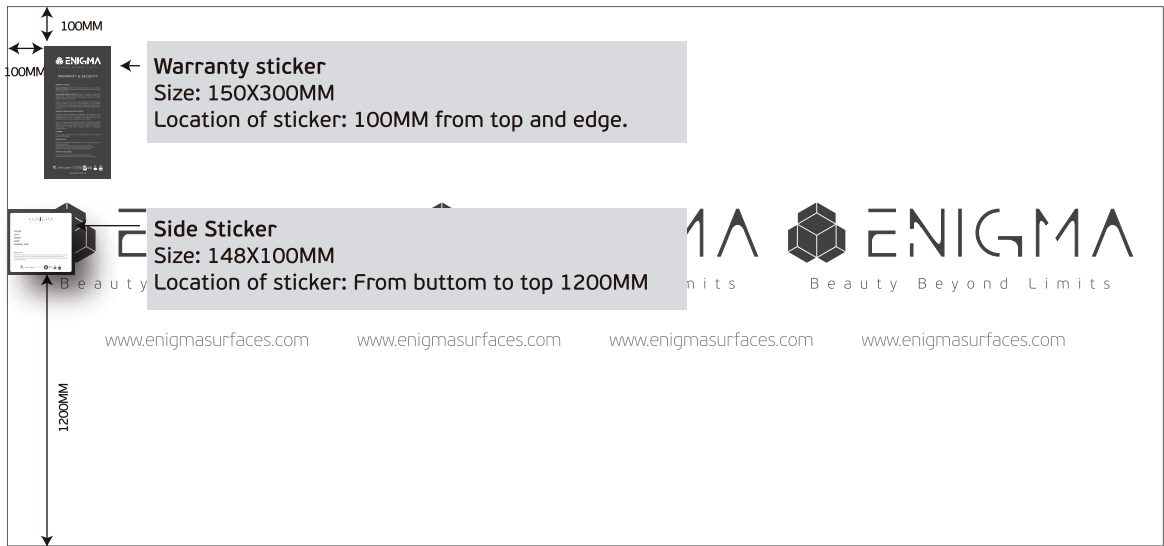
*\*This size is only available under special order*

# ENIGMA SURFACES: SLAB INFORMATION

## ENIGMA SURFACES SLAB LABELS

Standard Enigma Surfaces Label on Front of Slabs.

Each slab is delivered with three stickers: Warranty sticker, Slabs Edge Sticker, Tear off Paper



Tear off sticker and edge sticker information:

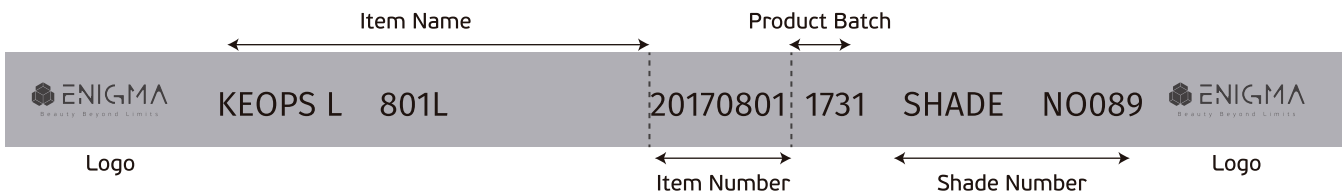
- 1. Item name
- 2. Item number
- 3. Production batch
- 4. Shade number

For example:

KEOPS L 801 1717 SHADE005  
are on both stickers and they must be the same.



## Standard Enigma Surfaces Label on the Back of Slabs



### PRE-FABRICATION:

Any failure by a fabricator to comply with the recommended methods of manipulating the product may result in refusal of an end user claim. In order to protect your own interests, Enigma Surfaces requires that you carefully read and follow these pre-fabrication, fabrication and installation instructions.

Please direct any questions about the recommendations in this manual to your local Enigma Surfaces official distributor.

Before manipulating any Enigma Surfaces material, you must perform a visual inspection for defects and ensure any necessary color matching. As you would before cutting any material, we recommend you complete the following steps to help guide your inspection:



- 1.- Inspect both the front and the back of slabs for any defects.
- 2.- Look for any hairline cracks in the slab.
- 3.- All slabs should be checked for accurate color matching before fabrication, whether the layout calls for them to be seamed or unseamed.
- 4.- When book matching Keops, Ramses, Pharaon and Cleopatra, make sure that the main veins match/line up 70% or more. Similarly, make sure that the third pair of veins match/line up 50% or more. When book matching veins, make sure veins have a similar direction and a similar shape.
- 5.- Check slabs for correct dimensions, warpage, irregular spots, or other defects that make the slab unacceptable for fabrication.
- 6.- Check for accurate color matching of all Enigma Surfaces colors, and the orientation/layout of pattern flow.

*Please note: Once the fabricator has deemed a slab to be acceptable for fabrication and the slab is cut or machined in anyway, the slab cannot be exchanged. The fabricator is responsible for determining if the slabs are fit for fabrication. If they are not, they should be exchanged with their supplier. Enigma Surfaces will not accept claims for any of the above once the slab is modified or fabricated in any way.*





### VEINING/COLOR-MATCH

Always inspect all material before fabrication. Pyramids Collection replicates natural marble and is a veined material that have a non-directional pattern. During the layout process it is very important to use extra care in layout relative to your seam locations. Enigma Surfaces vein distribution can be different throughout the slabs and at all edges, whether factory or fabricated. Our veined patterns will require a somewhat more careful/specialized layout to produce the optimal aesthetic look.

Color-matching slabs before fabricating is a very important step. It is typical and expected for engineered slabs to exhibit slight color variation between batches and/or production cycles, due to the complex blending of natural minerals and raw materials.

If your job requires more than one slab you will want to check the Enigma Surfaces labels to check batch number along with the shade number of each slab. After inspecting all slab numbers, it is important to remove the protective plastic film. Now you will want to visually inspect slabs for color variation, color match and any other defects before cutting the material.

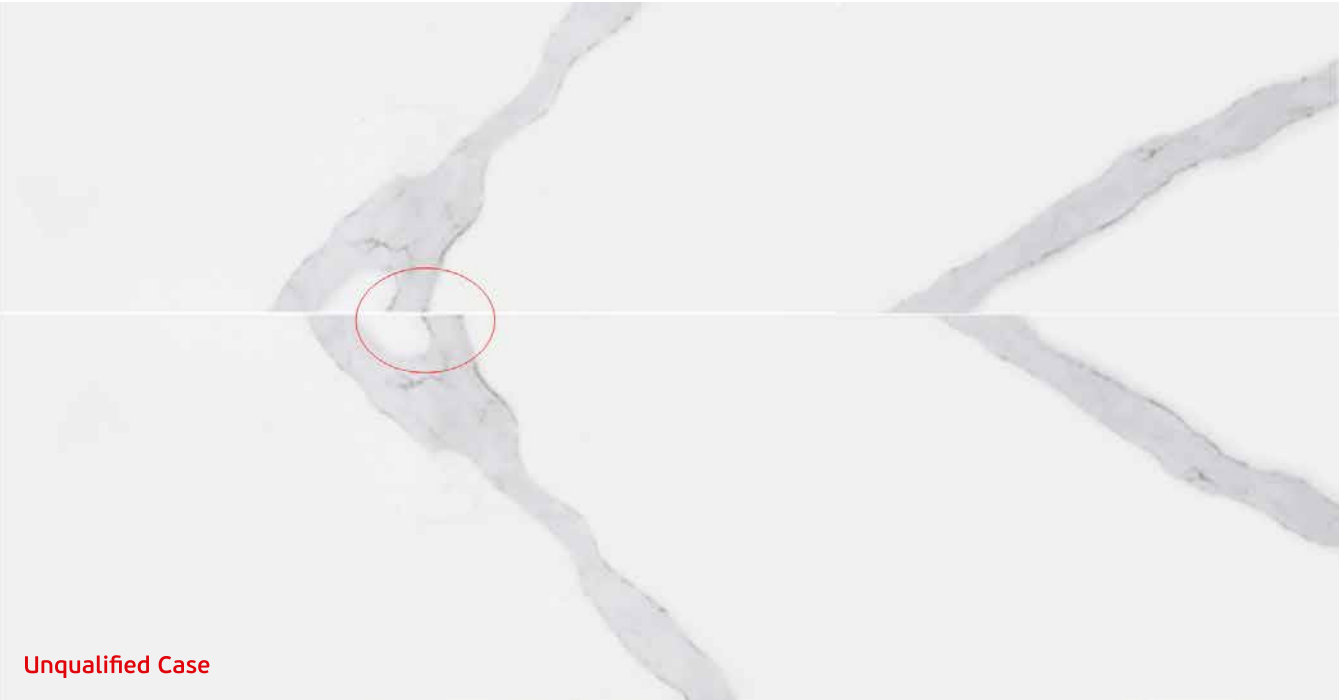
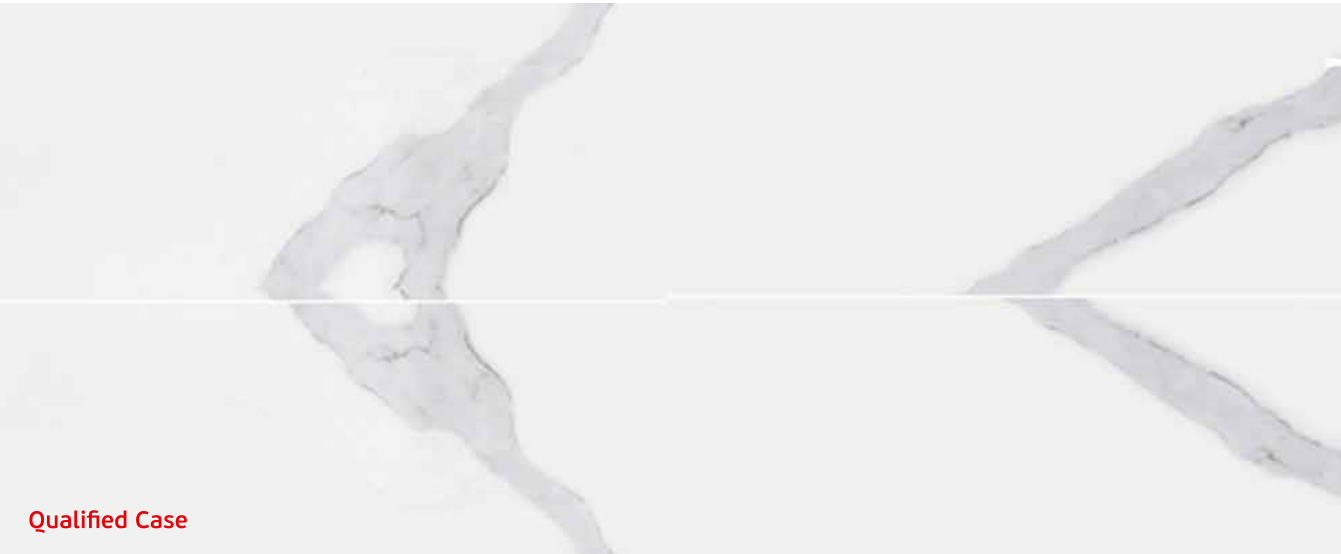
During layout don't forget to consider backsplashes. It is important that they color match and have vein patterns similar to those on the countertop.

Layout is one of the most important processes in fabricating Enigma Surfaces and vital to ensuring the best result. Pyramids Collection closely replicates the look of natural marble, it requires a little additional attention in this process to maximize the homeowner's lasting enjoyment.

KEOPS, RAMSES, PHARAON & CLEOPATRA MATCH STANDARD

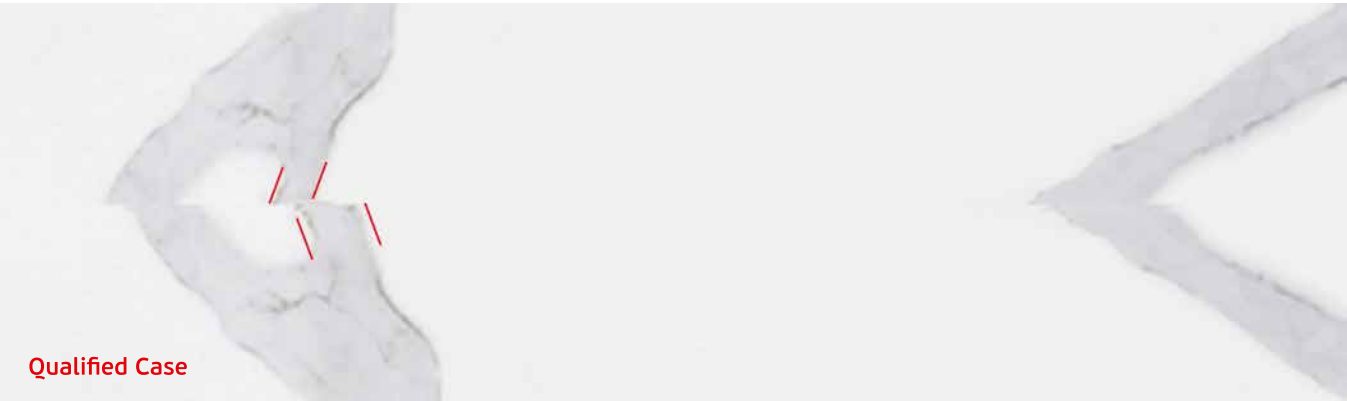
Examples of qualified book matches for Enigma Surfaces:

When book matching, make sure that the main veins match/line up 70% or more, and that the third pair of veins match/line up 50% or more. Keep in mind: the book match will not be 100% perfect as some variation in main vein pattern is normal.



ENIGMA SURFACES: PRE-FABRICATION

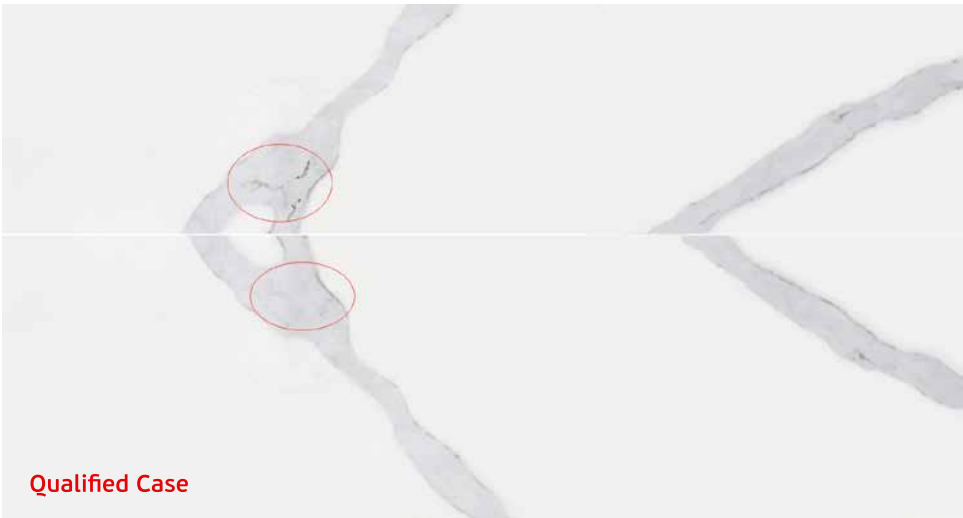
When book matched, 2 pairs of main veins connect area 70%, one pair main veins have different shape (mainly different width)



When book matched, the veins have both a similar direction and a similar shape.



When book matched, the two slabs have the same shade of veins. We allow some of the veins to have the black lines inside the veins.



### SUPPORT REQUIREMENTS

Structures with support on four (4) sides. Structures supported on four sides do not require any additional support for both 2cm and 3cm material if the countertop depth is less than 26" and the countertop length is less than 118".

However, if the above dimensions are exceeded, support will be required every 36".

Structures with support on three (3) sides (i.e. dishwashers, frameless cabinets, desks, and lazy Susan's). Structures supported on three sides require additional support for both 2cm and 3cm material as follows:

- 2cm & 3cm material with countertop depths greater than 26" need support every 24".
- 2cm material with countertop depth less than 26" need support every 24".
- 3cm material with countertop depth less than 26" need support every 36".

Some suggested support materials for cabinets that need additional support for Enigma Surfaces: plywood, wood, MDF board, structural steel.

All non-moisture resistant materials or products are not acceptable for use as support material (OSB, particle board, etc.)

All the above information should be taken into consideration by the fabricator during the templating and layout/measuring procedure. This will help avoid problems during the fabrication and installation process. Not following the procedures in this fabrication guide will void any warranty given by Enigma Surfaces.





OVERHANG / CANTILEVER

- Overhangs cannot exceed 1/3 of the countertop depth and must have a minimum length of 24".
- Material that is 2cm requires support every 24".
- Material that is 3cm requires support every 36".
- Overhang ratios require that two-thirds of the width/Length of the material to be used be supported; one-third of the width/length of the material to be used can be unsupported (an overhang).
- No cutouts or cored holes are permitted on any overhangs.
- Additional support (i.e. support bars or 3/ 4" plywood) may need to be added to meet additional span requirements.
- Overhangs that exceed cantilever rules will need to add columns, corbels or Legs to be properly supported as follows:

Overhang	No Support Needed	Corbels Required	Columns Required
2 cm material	≤ 8"	> 8"	> 18"
3 cm material	≤ 12"	>12"	> 24"

- Corbels should always be mounted to a stud for proper support of the material.

RECOMMENDED SUPPORT MATERIAL FOR CABINETS:

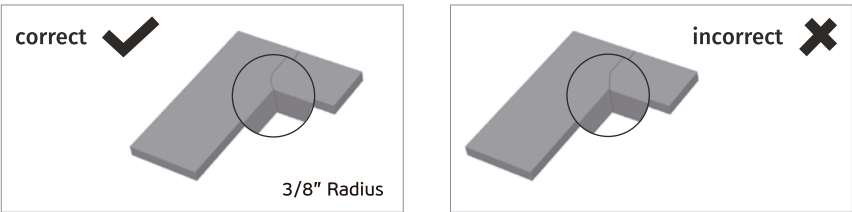
- Plywood, wood, medium density fiberboard and structural steel are the recommended support materials for cabinets that need additional support for Enigma Surfaces.
- Materials or products that are not moisture resistant, like oriented strand board and particle board, are not acceptable as support material.

The above information should be taken into consideration during the templating and layout/measuring process. This will help to prevent any problems during the fabrication and installation process. Not following the procedures in this fabrication guide voids any warranty provided by Enigma Surfaces.

SEAM LOCATION

During the layout process, determine all your seam locations. This is very important to ensure the optimum aesthetics of the material and the kitchen. Seams should never be placed in the following locations:

- Through the center of sink cutout.
- In places where there is direct sunlight.
- Above dishwashers located the under the counter.



### TEMPLATING

It is very important to capture all information necessary to accurately fabricate all portions of the job, including sink and appliance centerlines, faucet hole locations, finished edges, overhangs, etc. It is also highly recommended that all appliances, sinks, cooktops and other items that require a cutout of the countertop, be on site when fabricator is templating the job.

#### DIGITAL TEMPLATING

Today there are many digital templating methods from which to choose.

Digital templating is used to capture accurate countertop dimensions and configuration data. Digital templating has the advantage of being able to send the digital information directly to compatible fabrication equipment, such as computer numerical control (CNC) machines, bridge saws and waterjets. These digital systems use lasers, digital cameras and point-to-point digitizers.

Digital templating technology is a faster, more accurate and efficient way to measure jobs because information can be transferred digitally to your fabrication equipment.



#### MANUAL TEMPLATING

Handmade fabrication templates are created to accurately transfer the measurements and configurations from the job site to the fabrication shop. The most common items used are thin plywood, luan strips and cardboard. Job drawings contain the specific job information and are very important to support the actual template.

It is important to capture all necessary information to accurately fabricate all aspects of the job, including sink and appliance centerlines, faucet hole locations, finished edges and overhangs. It is recommended that all appliances, sinks, cooktops or any other item that requires a cutout on the countertop be on site when the job is templated.



## ENIGMA SURFACES: PRE-FABRICATION

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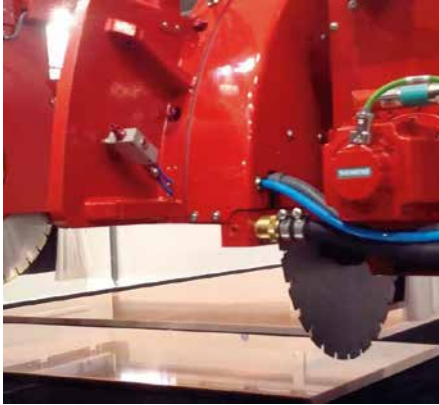
### INFORMATION TO GATHER FROM HOMEOWNER:

- Choice of 2cm or 3cm material
- Name of Enigma Surfaces selection
- Determine seam locations if needed
- Edge profile
- Backsplash
- Sink location
- Faucet location
- Appliance locations (i.e. cooktop/range, refrigerator, dishwasher)
- Location of additional items (i.e. soap dispenser, sprayer)
- Clarify inside corners (if using one piece of material for countertop, then use a 3/16-inch core bit for corners as internal corners must have a 3/16" radius at minimum; if using two pieces of material, use a square, two-piece seam)

### Very important regarding cabinets:

*Make sure that the cabinets are finished and installed properly. Fabricator must verify that all cabinets are level. The top of the cabinets must be true and flat with no more than a 1/16" slope over the span of 18". The cabinets must be adjoined to each other and secured to the immediate wall. All cutouts and seams must be properly supported; there should also be extra structural support around the dishwasher.*

### FABRICATION



#### CUTTING

Before cutting any slabs of Enigma Surfaces, calculate the square footage, length, and width of material needed to finish the project. This is very important when using Enigma Surfaces, because each batch and slab are unique and have specific shades that need to be matched for each job. If your measurements come up short, it may create color match concerns if more material must be ordered. Thoroughly inspect each slab for color, pattern and defects. Do not use material with visible manufacturing defects unless the layout/job allows you to work around them.

- 1.- When cutting Enigma Surfaces, no matter what equipment you are using, the workpiece and tooling should always be kept cool with enough water for your diamond tooling and waterjets. Always avoid excessive heat with all diamond cutting tools.
- 2.- The very first cut made on every Enigma Surfaces slab should be along the longest edge of the slab. Then you may proceed to cut along the shortest edge.
- 3.- When using a bridge saw, you should never plunge cut.
- 4.- It is important that you never cut square corners when fabrication Enigma Surfaces. This can create stress points in the countertop that is being fabricated, which can result in cracking.
- 5.- Always use diamond core bits for all corners or radius cutting.
- 6.- Corners that are fabricated on a single slab must have a minimum of a  $\frac{1}{4}$ '' radius.
- 7.- Cross cutting should never be used when fabricating Enigma Surfaces countertops. Always use a diamond core bit to create your radius. This should always be use on inside corners, so any internally angle corner must have a radius. Never crosscut.
- 8.- Keep in mind that engineered stone slabs have a percentage of resin, which can allow some warping or bowing to occur, depending on storage practices and/or weather conditions. If this occurs, you should use the double-pass cutting technique. First you make a cut half the length of your intended cut and stop. This will relieve the tension, and the slab will flatten out. Then proceed with a second cutting pass to finish the cut.

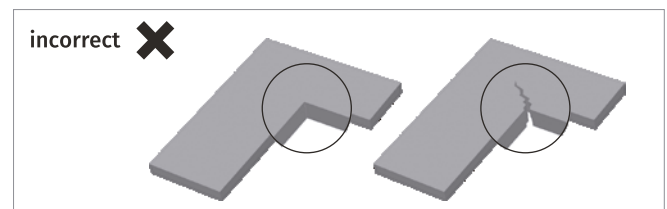
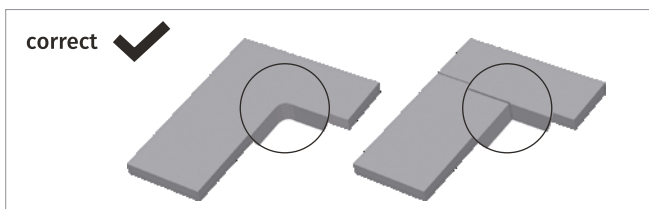


### CUTOUTS

Cutouts can be completed with several different types of equipment. A bridge saw can be used for straight cuts, but all radius work needs to be cored with diamond core bits and without any cross cutting. CNC machines are also very popular and should be used following the same guidelines give for bridge saw use. Waterjets can be another alternative, with the proper abrasives and water pressures.

Please keep these considerations in mind:

1. L- or U-shaped countertops with inside corners should always be fabricated from a single slab and must have a minimum of a 3/8" radius. Always keep in mind that the Larger the radius, the stronger the corner.
2. If the distance between the cutout and the seam is Less than 6", the seam needs to be supported. This can be achieved during the Layout process by making sure that all seams are at a cross member of the base cabinet; otherwise, additional cross members need to be added.
3. Internal cutouts on all corners should have a 1/4" radius at minimum.
4. Cutouts for all drop-in sinks, cooktops, outlets, slide-in stoves, etc. should include an extra 1/8" from the edge to allow for expansion.
5. Cutouts range from simple, core holes for faucets and soap dispensers to complex cutouts for specialized equipment. It is best to have all equipment on the job site during the installation process as this is the safest way to determine the shape and size of the core or cutout.
6. Always refer to the manufacturer's recommendations when available.
7. The customer should make the final decision regarding the location and the size of the cutout in their countertop and sign off on this.
8. Additional support should be added to both ends of the cutout if the base cabinet cross bars are not within 3" of cutout.
9. All hot cutouts (i.e. cooktops) require that 9-mil aluminum foil tape (heat tape) be used to prevent the transfer of heat to Enigma Surfaces. Always follow manufacturer's guidelines.



### LAMINATION

Laminate edge refers to the process of gluing pieces of stone together to create a variety of edge profiles, including mitered edges, stacked edges, and drop edges. The lamination process is also used to create more sophisticated edge profiles.

#### Stacked Edges:

An additional 1.5"-wide strip of material is cut during fabrication from the same slab. The piece is glued to the underside of the countertop along the front edge to create a thicker edge. Example: If you are using 2cm of material, it will create a 4cm or 1.5" edge. If a plywood substrate is required underneath your 2cm countertop for support, the laminated stacked edge also serves to hide the plywood from sight. This process can also be done with 3cm material.

#### Tips:

When laminating, it is important to make sure that the lamination piece is the full length of the top piece and that the corners are cut at 45 degrees. If for some reason the two laminated pieces must be joined, the joint must be cut at a 45-degree angle. The use of a mitered end cut reduces stress on the material that may cause stress fractures.

The lamination strip should be cut from the same slab as the countertop surface material to ensure a color match. When cutting the piece to be laminated, add the lamination piece size to your cutting measurements to ensure that a lamination strip of the correct length and color is available for the lamination process.

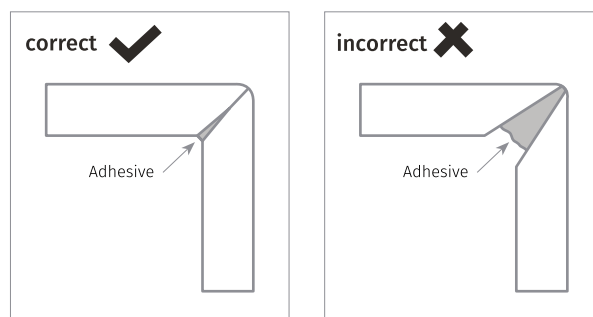
1. A 45-degree corner joint is recommended to minimize the stress on the corners.
2. Use full-length lamination pieces if possible.
3. For long countertop runs where a joint may be required, make sure that the joint in the laminated piece is at 45 degrees to minimize stress points.
4. Proper clamping is recommended every 3"-4" for a secure, tight bond.

#### Mitered Edge:

A mitered edge is made up with a perfect 90-degree angle, by joining two separate pieces of Enigma Surfaces, each cut at a 45-degree angle. Gluing them together will create a perfect 90-degree angle piece. Generally, it is done with 2cm material. Also, the longer the apron, the harder it is to hide your seams because it is more difficult to clamp. It is never recommended to have a mitered edge over 4 inches unless a special support is added.

#### Adhesives:

We recommend that a cartridge e-style acrylic or epoxy that is already color matched for Enigma Surfaces be used. Enigma Surfaces is translucent, so solid colors will not match the translucency of the stone. Acrylics and epoxies have a chemical attraction to the stone and will provide the tightest seams. This is very important for mitered edge details because, when properly done, the adhesive is not visible.





### POLISHING

One of the most important aspects is selecting the right polishing pads for Enigma Surfaces. There are a lot of different brands in the market, but it is important not to select polishing pads that have colored resin. These pads can be great for granite and are able to reach a quality polish but require an excessive amount of water and time; and can transfer the resin's color to the edges of the Enigma Surfaces. We recommend using white resin pads only in all applications, whether hand polishing, or using an automatic edge polisher or CNC machine.

#### **Rigid Backer Pads:**

Flexible backers work well for concave profile edges, such as ogee edges; there is no need to use a flexible backer on most other profiles. Keep in mind that all automatic edge machines use extremely rigid polishing tools and backer pads; these machines will produce a far better edge than what many fabricators can do by hand.

#### **Polishing Pads:**

Common problems include both using too much water and not enough water, and not using the proper polishing technique.

- When too much water is used while applying pressure to the center of the pad, the water gets trapped in between the pad and the stone, causing a hydroplaning effect. This causes the water to escape to the outer edges of the pad, making it difficult for the polishing pad to effectively polish the edge or edge's surface. This will result in a spotty polish.
- When too little water is used, the polishing pads tend to flex or cup outwards around the center of the pad (mainly with higher grits). This causes the outer edges of the polishing pad to touch the surface but will not allow the center of pad to polish. The tendency is to apply more pressure, which also leaves a spotty polish.
- When polishing the edge detail on Enigma Surfaces, be sure to use the entire polishing pad surface, which is stated in the tips below. When polishing any bullnose edge, it is important to use the center of the pad only as it will give the proper water distribution for the pad and the stone.
- Never use a final buffing pad for Enigma Surfaces. These come in black and buff and contain different chemicals and no diamonds and are meant to bring granite to a high polish. The final step for polishing Enigma Surfaces is to use a grit level of 3000.
- Dry polishing the edge profile may cause overheating of Enigma Surfaces. Excessive heat to the stone can alter the physical properties of the slab which can cause micro-fissures not visible to the naked eye. This can lead to chipping, discoloration and a poor, uneven polish. Never use dry polishing pads on Enigma Surfaces.
- Enigma Surfaces should never be polished on the top surface of the manufacturing finish.

**Polishing Tips:** When polishing any edge detail on Enigma Surfaces you should use the proper amount of water. Polishing pads with grit levels of 50-400 have a higher concentration of diamonds and require less water; a trickle from your center water feed will be enough. Higher 800-1,500 grit pads have less diamond content and require more water. Using the proper water flow allows the pads to work faster.

Polishing should be done in circular motion, utilizing the edges of the polishing pad as it rotates from the top half of the edge to the bottom half as it moves down the piece. While polishing, you will feel resistance with each grit level, which is the diamonds polishing. Allowing the diamonds to do the work requires less pressure from the polisher. When resistance is no longer felt, it is time to change the polishing pad to the next grit. Follow this procedure until you arrive at the final grit level.





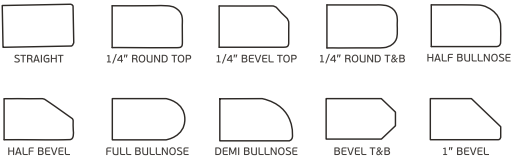
EDGE DETAIL

When pro filing edges on Enigma Surfaces, it is best to use a machine with diamond tooling to produce the desired shape. CNC machines, and other specific edge profiling machines, are recommended for producing consistent edge profiles. Some standard or basic edges can be achieved using only hand tools and diamond cup wheels. A combination of both machine and hand labor produces the best results when creating edge detail.

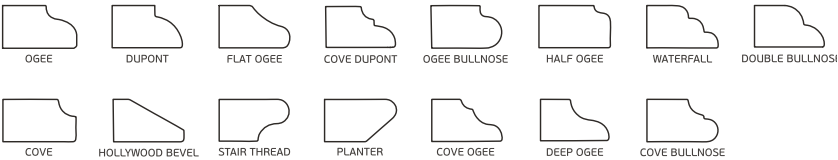
**Edges:** We recommend that all outer edges of the countertop be beveled, which will improve the material's resistance to chipping and remove sharp edges and there by prevent possible cuts. Keep in mind that the larger the bevel, the greater the resistance to impact. A hidden edge, which is typically against a wall, should have a minimum bevel of 1mm; an exposed edge should have a minimum bevel of 3mm. All cutouts, whet her expo sed or hidden, should follow the same rules regarding the size of the bevel.

Enigma Surfaces edge details include a wide variety of profile edge options. Many manufacturers produce profiling wheels for both CNC machines and handheld routing machines. All profiling wheels will work Enigma Surfaces, although some exotic edges require a thicker edge.

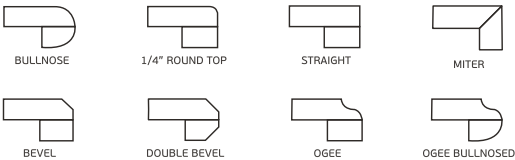
POPULAR EDGES



PREMIUM EDGES



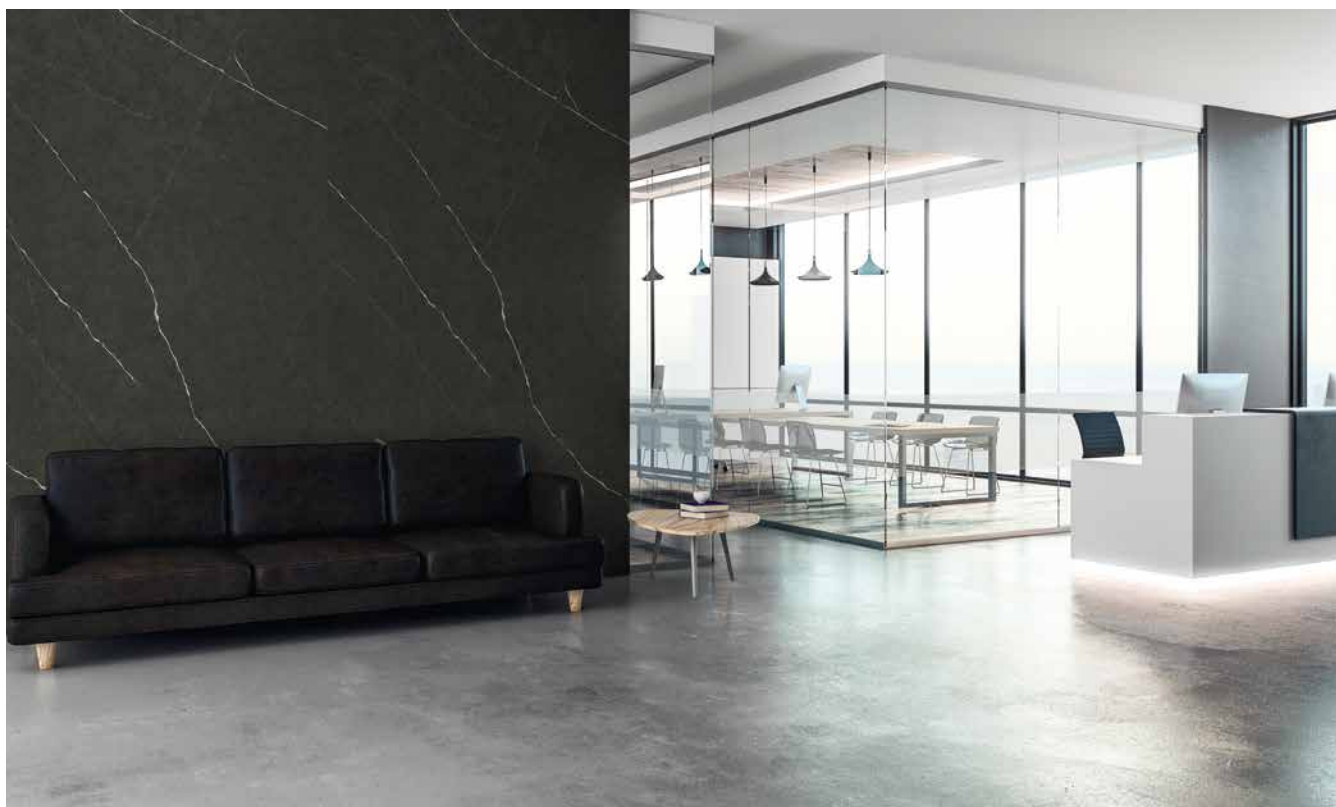
LAMINATED EDGES



### INSTALLATION

It is important that cabinets are leveled, and shimmed where necessary, to 1/16" tolerances prior to final countertop installation. Check all cabinets for level.

- 1.- After the support system is installed and leveled, installation of the Enigma Surfaces countertops can begin. Measure cabinets and verify that the pieces will fit before placing the material on the countertop.
- 2.- Bring the pieces in one at a time, and test fit them in their proper place on the cabinets. Adjust as necessary to ensure a good fit and proper alignment. Always make any necessary cuts outside, cutting wet to control dust.
- 3.- Space should always be allowed as Enigma Surfaces need room to expand. Each countertop requires at least 1/6" at each wall for expansion and contraction. Fill the gap between the wall and countertop with silicone.
- 4.- After all the pieces have been adjusted for fit, you will need to attach the tops to the cabinets and support strips using caulk that is 100% silicone. Apply silicone caulk approximately every 6"-12" around the perimeter of the cabinet and at the cross supports. Do not use epoxy adhesive, acrylic adhesive or the product Liquid Nails. The purpose of the silicone is to allow the top to expand/contract as needed.
- 5.- Use extra silicone on all corners and joints, and around all cut outs.





### SEAMS

Seam tolerance is generally the same for all hard -surface countertop material. The recommended seam width is 1/16"; recommended seam tolerance is +/- 1/32". Both pieces should be level across a seam, with a tolerance of +/- 1/32". One side of a seam can be slightly raised, or one side can be slightly lowered, but not both.

The two edges to be seamed must be cuts straight and true. If a waterjet is used for cutting, the edges should be ground flat to remove any grooves from the cutting process.

Test fit to make sure that the two pieces to be seamed together form a tight, level and uniform seam before applying adhesive. Shim and level pieces if required. Also, check to make sure the color and vein pattern matches across the seam.

Always clean the joined edges with denatured alcohol and wipe clean with a white cloth. Apply strips of tape to the top and under side of the two pieces to be joined/seamed. Put tape on each side of the two pieces, leaving about 1/4" between the pieces. This prevents adhesive from dripping into the cabinets and allows for easy clean-up on the top surface.

If possible, use a pneumatic seam setter with a vacuum and post /pins to level and to make seams as tight and inconspicuous as possible. Several manufacturers sell this equipment. Seams should never be more than 1/16" wide.

### ADHESIVE

Seams should be made using a premixed cartridge adhesive, which can be either acrylic or a two-part epoxy system. Several companies produce a color-matched adhesive Enigma Surfaces. We recommend using a cartridge with a static mixing tube as this provides a consistent seam each time.

Insert the adhesive cartridge in the seaming gun with a fresh, disposable mixing tip. Always purge the adhesive (generally the length of the tip you are using) with your cartridge adhesive system to ensure that the adhesive and hardener are properly mixed before seaming the material. After each use, remove and replace the tip, otherwise the remaining adhesive will cure in the tip.

Remove the used tip and replace the original cap for an airtight seal. The normal cure time for acrylics is about 15-20 minutes in 70°F. During winter's colder temperatures, work time is increased. The cure time for two-part epoxy system can be anywhere from 2 to 6 hours.

### SINKS

For all sink installations, whether they are top-mount or under-mount, we recommend that you follow the sink manufacturer's recommendations and guidelines.

1.- We recommend that all sink installations be fully structurally supported without reliance on the Enigma Surfaces as a form of support.

2.- Under no condition can mechanical fasteners (screws, nails, etc.) be affixed directly to Enigma Surfaces. These items will rust with moisture and the rust will bleed through the stone.

3.- For under-mount sink installations, follow the minimum edge profile recommendations around the cutout to prevent chipping. Fasteners or clips should be used along with silicone.

4.- All sinks must be sealed to the countertop using 100% silicone.

5.- Always follow the sink manufacturer's recommendations. Some sinks may require support systems like cradles, rail systems and sink sellers.



### BACKSPLASH

Considerations for installation of backsplash materials:

- 1.- A backsplash is typically 3" in height unless a full backsplash is desired. The backsplash should always be cut from the same lot or batch as the countertop material.
- 2.- Cut all backsplash material to the sizes required for the project. The top edge and any exposed ends should be polished. Generally, the backsplash has a flat top with a slightly beveled edge.
- 3.- Dry fit the backsplash to make sure that all joints and edges are tight. Apply a continuous 1/ 8" bead of silicone to the bottom of the backsplash that will be adhered to the countertop surface. Then place dabs of 100% silicone every 4"-6" on the back, unpolished side of the stone and adhere it to the wall.
- 4.- Do not hard-seam backsplash to countertop.
- 5.- Enigma can be installed as a backsplash behind a gas, induction or vitroceramic cooktops. Install cooktops following the manufacturer's instruction, paying special attention to insulation requirements and materials.

The cutout requires a minimum distance of 60mm to the backsplash and 80mm to the edge.

All cooktops requires a minimum distance of 120mm from the perimeter of the nearest burner, to any vertical application to avoid heat transfer.

For L or U-shaped countertops, cooktop requires no less than 25mm to the corner.



### CARE & MAINTENANCE:

Enigma Surfaces requires minimal maintenance to keep the surface looking its best. It is a non-porous material, therefore for routine cleaning, simply wipe down your Enigma Surfaces 'countertop with a damp cloth or paper towel and a pH neutral cleaner for natural stone or warm clear water.

To keep your worktop beautiful, spot free and shiny you can use a wide selection of available cleaners and their respective pH levels, since NEOS resists ranges between pH1 and pH13, making it the only protectant resistant to a broad list of chemicals and safe from acid corrosion. Whatever product you choose to clean your Enigma Surfaces 'worktop, please follow manufacturer's instruction and always remove the product before it gets dry.

Please read our Care and Maintenance Guide for proper cleaning and maintenance techniques.

### ACTIONS TO AVOID:

Do not expose, in use or otherwise, Enigma Surfaces to abrasive or strong alkaline or acid or free radicals or oxidizers or the like above pH13 cleaners. Various chemicals are corrosive and /or erosive in their ability to attack any structure including Enigma Surfaces. Be very aware of these potential damages to your surface.

Although ADH Surfaces formula has improved the material resistance, you must remember that the surface is not heat or fracture proof in any form. Be aware of the potentially damaging effects of these items to your Enigma Surfaces.

Do not expose Enigma Surfaces to products including, but not limited to, bleach, oven cleaner s, Comet®, Soft Scrub®, sose, products with pumice, batteries, paint removers, furniture strippers, tarnish or silver cleaners, or any other product above pH13 or the like. Do not use abrasive or harsh scrub pads. Do not apply any sealers, penetrants or topical treatments to Enigma Surfaces under any circumstances. Such products will wear off and cause the gloss to appear dull or inconsistent.

### ADDITIONAL CONSIDERATIONS

Enigma Surfaces is made with Gibbsite and Silicon Oxide. Variation in the natural stone color, pattern, size, shape and shade are inherent and unique characteristics to be expected with this product. This does not affect the material performance in any manner.

Color blotches are intended and designed into many designs to enhance the natural beauty. Samples are small select cuts from a slab; they do not exhibit all the characteristics of a design and therefore are not fully representative of what will be installed. Product will not be replaced due to these variations.

Enigma Surfaces is durable and more resistant to surface damage than other stone. However, all stone can be damaged by force and no material is chip proof. Objects hitting edges, particularly at sinks or dishwashers, may generate chips. Though a minor knife slip will dull the knife and not harm Enigma Surfaces, no stone surface is scratch proof. Surface markings are more visible on monotone designs than multi-colored surfaces.

Enigma Surfaces is not a seamless product; seams are visible. Where there are seams, the product pattern and shade can change.



CERTIFICATIONS:

Enigma Surfaces is internationally certified to ensure maximum safety and protection. Such certificates offer consumers the assurance that Enigma Surfaces is a safe, top-quality material. Our certificates offer a 100% guarantee.



NSF

With the NSF certificate, Enigma Surfaces is deemed to be a safe material for direct contact with all types of food. This certificate is endorsed by esteemed organizations such as the FDA (Federal Drug Administration) and WHO (World Health Organization).



GREENGUARD

This certificate prove that Enigma Surfaces does not generate any substance that is harmful to the environment. It also certifies the use of our surfaces in closed areas.



GREENGUARD GOLD

Enigma Surfaces has also been awarded the "Green guard Children & Schools Certificate" which confirms maximum safety in its applications for schools and universities.



## ENIGMA SURFACES: WARRANTY

Enigma Surfaces by AHD Surfaces offers an innovative new material comprised of Gibbsite and Silicon Oxide. This next generation material passes stringent quality standards and controls producing a beautiful and durable surface perfect for myriad uses.

### GUARANTEED COVERAGE

Enigma Surfaces provides a 25-year Limited Warranty y Lifetime Stain Warranty to the original owners/purchasers of Enigma Surfaces installed in indoor residential and commercial projects. We warrant that the material will be free of manufacturing defects for the term of this warranty. It is the obligation of the owner to inspect the finished installed material upon receipt. Should damage occur after installation it is the responsibility of the owner. Should Enigma Surfaces and/or its authorized agents verify that there is a manufacturing defect within the warranty period, Enigma Surfaces will, at its sole discretion, repair or replace the defective material. Replacement is limited to the replacement of the slab(s) necessary to substitute for the defective material.

Additionally, thanks to the cutting-edge technology of NEOS, Nano Enhancement of Surfaces, an innovative high-performance stain and substance repellent technology developed for Enigma Surfaces, we are the only brand to include a Lifetime Stain Warranty for indoor residential or commercial projects.

The Lifetime Stain Warranty of Enigma Surfaces guarantees that your countertop will resist staining and will be protected from a broad range of chemicals and acid corrosion (between pH1 and pH13).

In the event your countertop gets stained by short exposure to a substance of the established range, Enigma Surfaces undertakes to repair or change the countertop at its sole discretion\*.

#### General Terms

Enigma Surfaces warrants only product that has been transported, handled, fabricated and installed according to industry standards by a professional fabricator/ installer. Improper transportation, handling, fabrication, or installation will void the warranty.

This warranty applies only to products that have been permanently installed and that have not been moved or displaced since original installation. This warranty applies only to product fabricated and installed in the US or Canada.

In order to benefit from the warranty, you need to register your product purchase with the Enigma Surfaces website, [www.enigmasurfaces.com](http://www.enigmasurfaces.com). Failure to do so within 30 days from the date of purchase will void the warranty.

### EXCLUSIONS

- Product that has not been paid for in full is not subject to this warranty.
- This warranty does not cover any outdoor installations or applications.
- This warranty is non-transferrable.
- This warranty does not cover damage caused by improper shipping, handling, fabrication, or installation of the material. Any deviation from industry standard fabrication and installation guidelines will void this warranty.

- This warranty is non-transferrable.

- The professional fabricator/installer is responsible to inspect the Enigma Surfaces material before fabricating and/or installing the product. It is also the end user's responsibility to inspect the finished product before permanent installation.

- This warranty does not cover products installed with known or visible manufacturing defects at the time of installation, including but not limited to variance or flatness deviation beyond defined tolerances, and/or perceived visual imperfections.

- This warranty does not cover damage resulting from inappropriate substrate conditions (unstable substrate, improper support) at the location where the material is installed. Any damage caused by the substrate failing, shifting, moving, etc., will void the warranty.

- This warranty does not cover damage caused by insufficient or improperly designed support which causes such damage. Damage to cabinets or areas surrounding the install area caused by fabricator or installer is not covered by this warranty.

- This warranty does not cover fabrication or installation errors or oversights.

- This warranty does not cover damage resulting from displacing or moving the material from its original installation location.

- This warranty does not cover any costs, including but not limited to, tear-out, new fabrication, installation and related costs involved in a replacement.

- All fabrication and installation must be performed by fabricators/installers approved by our exclusive distributors for the warranty to be valid.

- This warranty does not cover appearance or performance of seams.

- Improper care and maintenance methods that in any way deviate from what is expressly written in the Enigma Surfaces Care and Maintenance Guide will void the warranty. This warranty does not cover any material that has been subject to abuse, misuse or excessive heat, as well as scratches, stains, cracks and chips resulting from such misuse or abuse. Further this warranty does not apply to damage caused by chemicals or prolonged exposure to UV rays, extreme heat or cold, or thermo shock caused by sudden severe temperature changes.

- When choosing a color, please refer to samples only as a general indication of a particular color's design pattern, aesthetics and hue. Samples are not guaranteed to be an exact replica of Enigma Surfaces slabs and may vary from the actual installed product. Be advised that some colors contain movement or veining and due to the randomness of this effect, samples of these colors may not show this overall aesthetic.



neos

Anti Stain  
LIFETIME



WARRANTY

AHD SURFACES





GENERAL LIMITATION

Enigma Surfaces’ obligation under this Residential 25-year Limited Lifetime Warranty or 25-Year Commercial Warranty and Lifetime Stain Warranty is limited solely to the repair or replacement of the failed product. Such repair or replacement, however, shall not include the performance of any other repairs or modifications that may be necessary to achieve the actual repair or replacement of the failed product (for example, any plumbing, electrical, tile or wall surfacing repairs or modifications). Such other repairs and modifications shall be the responsibility of the customer.

\*Regarding the Lifetime Stain Warranty, it becomes effective when all standard industry protocol for stain removal has been exhausted. Enigma Surfaces has the right to conduct any test to your surface to verify and assess the damage caused, and therefore the final compensation to the customer. In the event Enigma Surfaces decides to replace warranted material, that replacement is limited to the same color and pattern as originally installed, no exceptions.

In order to obtain service under this warranty, you must permit your Enigma Surfaces fabricator or Enigma Surfaces authorized agents to inspect your product at the residence. You must also reasonably cooperate with your fabricator and Enigma Surfaces agents in the efforts to service this warranty.

Except to the extent expressly stated herein or otherwise required by applicable law, Enigma Surfaces disclaims all warranties and representations, expressed or implied, statutory or otherwise, including without limitation, any implied or expressed warranties of non-infringement of third party rights, satisfactory quality, merchantability or fitness for a particular purpose.

Enigma Surfaces shall not be responsible or liable in either contract or tort, and whether or not Enigma Surfaces has been advised of the possibility of such loss or damage, for any loss or damage, including, without limitation direct, indirect, special, consequential or incidental, arising out of the inability to use or delays in installation of/or repairs to the products manufactured by Enigma Surfaces.

Enigma Surfaces will not be held liable for any injury or damage caused by engineering or architectural design, structural issues, accidents, job site conditions, vandalism, or acts of God. Please check your state’s laws to determine which local laws or additional rights apply to you, as this may vary from state to state.



# ENIGMA

Beauty Beyond Limits

