



LUCCIARE®

by polarstone

Fabrication & Installation Guide

Genesis Surfaces

Nature's Masterpiece
Crafted To Inspire

GENESIS

At Lucciare, our experience in engineered surfaces spans generations. But traditional methods could never fully capture the depth, color, and beauty of natural stone.

This challenge led to the creation of **Genesis**.



Lucciare Genesis surfaces redefine engineered stone. Using patented materials and advanced 3D printing technology, Genesis achieves unmatched realism—delivering the fine veining, depth, and texture of natural stone with stunning precision. Durable, consistent, and easy to fabricate, Genesis brings high design and high performance together in perfect balance.

The Science Behind the Beauty

How Genesis Surfaces Are Made

At the core of Lucciare Genesis is a revolutionary 3D printing process.

Unlike traditional engineered stone manufacturing, which relies on manual layering and limited pattern control, Genesis uses precision 3D printing to deposit inks and pigments layer by layer onto the surface.

This allows for:

Hyper-realistic veining that mimics natural stone down to fine detail.

Depth and movement across the slab, not just surface decoration.

Consistency across multiple slabs for seamless large-scale projects.

Patented materials combined with this advanced printing process create designs that were once impossible with conventional methods.



Why UV Resistance Matters

Ordinary printed engineered stone can discolor, yellow, or fade when exposed to strong light or outdoor conditions.

Genesis surfaces solve this by using two critical innovations:

Eco-Resin Foundation

Made with advanced eco-resins originally developed for outdoor surfaces, Genesis offers natural UV resistance and superior durability – even in high-exposure environments.

Aircraft-Grade Inks

The 3D printing inks used in Genesis are the same UV-stable inks trusted in the aerospace industry, ensuring patterns stay vivid and true over time.

Result:

Genesis surfaces maintain their stunning color, depth, and integrity – indoors or near windows year after year.



The Science Behind the Beauty

Why Full-Body Design Matters

Traditional printed engineered stone has patterns only on the surface, leaving edges and cuts exposed and unnatural after fabrication.

Genesis surfaces solve this with true through-body technology:

Through-Body Pattern

Veining, color, and movement extend through the entire slab, not just the surface.

Seamless Authenticity

Edges, corners, and profiles reveal the same natural beauty as the face, creating a cohesive, luxurious look.

Result:

Genesis offers unmatched design freedom, durability, and realism—elevating every detail of the final installation.



Why Translucency Matters

Reimagining Light in Stone

Traditional engineered stone is fully opaque, limiting visual depth. Genesis surfaces break this barrier with controlled translucency in select colors.

Engineered Light Transmission

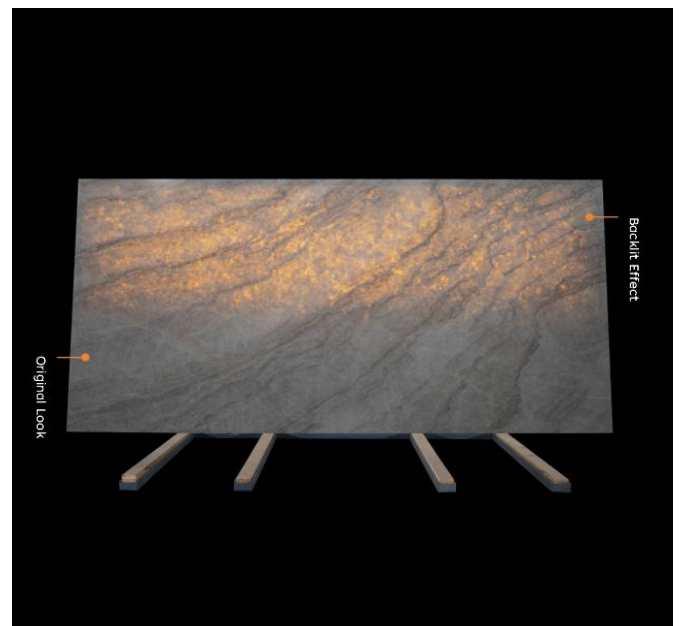
Through specially developed formulations, Genesis surfaces allow light to subtly pass through the material. This gentle transmission creates a soft, ambient glow that enhances depth, adds dimension, and brings the surface to life.

Natural Stone Realism

This subtle illumination replicates the beauty of translucent stones like quartzite and onyx, offering a more authentic and visually dynamic experience.

Result:

Genesis surfaces interact beautifully with lighting, opening new possibilities for feature walls, bars, and artistic installations.



Slab Information



Fullbody available in Strata series



Translucency available in select designs at
12mm and 20mm thicknesses



Original/Low Silica/Silica Free



Serica (Silk) Finish



Slab Label

Product Code&Name



9311R Pandora

A9311Z30YGC1203

Size:3230x1615x30



Batch: 100169

Slab Size



Batch No.



Fabrication Guide

Visual Inspection of Lucciare Surfaces

A careful visual inspection for defects and color consistency is essential when working with Lucciare Genesis Surface. This inspection must be completed **before any cutting, machining, or fabrication begins**. Standardizing this step helps avoid costly issues later in the fabrication or installation process.

Follow these steps for proper slab inspection:

- **Always remove the protective film** before inspecting. Defects and inconsistencies may be hidden underneath the film.
- **Inspect both the front and back** of the slab. While the polished side is the primary surface, the back may show cracks or flaws that could compromise material strength.
- **Look closely for any hairline cracks** throughout the slab. Hairline cracks, even if small, can grow during cutting or transportation and may lead to breakage.
- **Check color matching carefully** between slabs if the project requires multiple pieces. This is critical for both seamed and unseamed applications to maintain consistent appearance.
- **Verify slab dimensions** and inspect for **warping, irregular surface spots, or any visible defects** that may affect fabrication quality.
- **Review the pattern flow and orientation** for Lucciare Genesis Surface designs. Slabs should be arranged properly to ensure that veins or directional patterns align correctly across seams.

Important Notice:

Once a slab is cut, machined, or modified in any way, it **cannot be exchanged**.

It is the fabricator's responsibility to determine the suitability of all slabs **before** fabrication begins. If any defect, damage, or color mismatch is found, the fabricator must contact their supplier immediately for resolution.

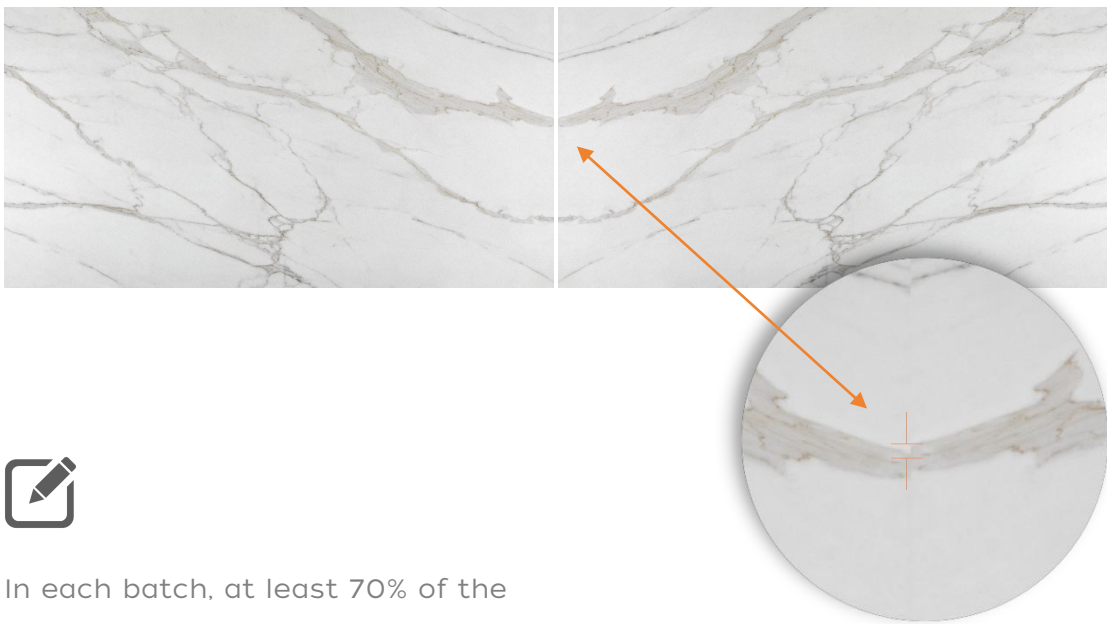
Lucciare will not accept claims for defects, color variation, or pattern misalignment **after** slabs have been altered.

Fabrication Guide

4 Edges Book Matching



$\leq 10\text{mm}$ Unconnected Tolerance



In each batch, at least 70% of the slabs will be bookmatched. For the remaining 30%, bookmatching is not guaranteed, and an unequal quantity of left (L) and right (R) slabs may occur.

Fabrication Guide

A-Frame Storage for Lucciare Surfaces

Store Lucciare slabs on wood or metal A-frames, ideally with forklift receivers for easy handling.

Double A-Frames

- **Large:** 8' L x 43" W x 60" H, 4,400 lbs capacity (2,200 lbs per side)
- **Small:** 6' L x 43" W x 48" H, 4,400 lbs capacity (2,200 lbs per side)

Key Points:

- Balance slabs evenly on both sides.
- Keep slabs flat with no gaps to avoid warping.
- Always strap slabs securely to the frame.



Single-Sided A-Frames

- Capacity: 2,200 lbs
- Ideal for box vans.



General Guidelines

- Place slabs face-to-face or back-to-back to protect finishes.
- Always strap slabs before moving.
- Use A-frames for **temporary storage** only, not long-term.

Fabrication Guide

Proper Materials Handling for Lucciare Surfaces

Never transport slabs horizontally. This stresses the material and may cause hairline cracks or breakage.

Use heavy-duty carts and dollies for moving slabs in the shop.

Use slab booms or slab-carry clamps when lifting with overhead cranes or forklifts.

Support all cutouts with 2" x 4" x 8' rails when transporting to the job site.

Use pneumatic vacuum suction cups (with white rubber) to move slabs and avoid stains on white or translucent surfaces.



Required Tools for Fabrication

Diamond Tools:

Polishing pads (wet only), cup wheels, core bits, contour blades, turbo blades, router bits, bridge saw blades.

Other Tools:

Silicon carbide wheels, back-up pads, pneumatic polishers (0-4000 rpm), variable-speed grinders (2,800-11,000 rpm), water supply units.



Fabrication Guide

Additional Recommended Fabrication Equipment

- Bridge saw (20+ HP)
- Automatic edge profiler
- CNC machine
- Waterjet
- Handheld edge profiling machine
- Fork truck
- Overhead crane
- Fabrication tables
- Air compressor
- Water supply system
- Stone carts/dollies
- A-frames and storage racks
- Slab clamps



Basic Safety Equipment

Always cut and polish Lucciare Genesis Surfaces wet, with proper shop ventilation.

Use **personal protective equipment (PPE)** to protect against airborne dust, noise, and physical injury.

- Safety first-aid kit
- Indoor/silica-rated dust masks
- Safety glasses
- Solvent-resistant gloves
- Ear plugs
- Waterproof, steel-toed boots
- Waterproof apron or rain suit
- Leather gloves (for moving slabs)
- Ground Fault Interrupter (GFI) for electric tools in wet areas



Fabrication Guide

Standard Safety Practices And Procedures for Fabricators

PPE (Personal Protective Equipment)	Environment & Procedures
✓ Wear protective clothing (long sleeves, pants)	✓ Follow all MSDS for chemicals/materials
✓ Steel-toed boots required for fabrication	✓ Slip prevention: Slope floors to drains, squeegee water frequently
✓ OSHA-approved eye protection (safety glasses/face shield)	✓ Use GFI outlets ; keep cords off wet floors (use ceiling drops)
✓ Hearing protection (≥ 85 dB over 8 hrs)	✓ Prefer pneumatic tools to reduce electrical hazards
✓ Gloves when handling sharp materials	✓ Clean trench drains regularly to avoid clogs
✓ Respirator for dust/silica (see QR code)	✓ Ventilate areas with fumes/dust

Additional Compliance

- Follow **manufacturer safety guidelines** for all tools/equipment.
- Review **state OSHA regulations** for full compliance.



Scan for OSHA silica exposure standards

Fabrication Guide

Digital Templating

Today's digital templating methods offer fast, accurate ways to capture countertop dimensions and configurations. Using lasers, digital cameras, or point-to-point digitizers, these systems can send data directly to CNC machines, bridge saws, and waterjets—streamlining the fabrication process with greater efficiency and precision.



Manual Templating

Manual templating involves creating templates with plywood, luan strips, or cardboard to transfer measurements from the job site to the fabrication shop. Accurate job drawings are crucial to ensure all important details—like sink and appliance centerlines, faucet holes, finished edges, and overhangs—are correctly captured. It's essential to have all items that require cutouts available on-site during the templating process.



Information to Gather from Homeowner

- Selected Lucciare Genesis slab
- Seam locations (if needed)
- Edge profile and backsplash details
- Sink and faucet locations
- Appliance locations (cooktop, fridge, dishwasher)
- Additional cutouts (soap dispenser, sprayer, etc.)
- Clarify inside corners—Lucciare Genesis requires a minimum 3/8" radius (achieved using a 3/4" bit)



Fabrication Guide

Support Guideline for 2cm Materials

Support Requirements

Support Type	Max Unsupported Span	Reinforcement Needed?	Notes
4-Sided Support	≤26" depth, ≤118" length	No	Ensure full perimeter support.
4-Sided Support	>26" depth or >118" length	Yes (every 36")	Add braces or substructure.
3-Sided Support	Any span	Yes (every 24")	Critical for unsupported edges (e.g., overhangs)

Reinforcement Methods

Application	Recommended Materials	Installation Notes
Horizontal Support	5/8" exterior-grade plywood Steel support bars	Must be continuous under seams
Vertical Support	Powder-coated steel legs Structural corbels	Must anchor to wall studs or floor

Important Note

Careful support planning is essential for installations using thinner 2cm slabs. Proper reinforcement not only protects the stone but also ensures long-term durability and a flawless appearance.

Fabrication Guide

Overhang / Cantilever Requirements

Overhang Specification

Requirement	2cm Material	3cm Material	Notes
Max Overhang (No Support)	≤8"	≤12"	Must maintain 2:1 support ratio
Corbels Required	>8" to ≤18"	>12" to ≤24"	Must mount to wall studs
Columns Required	>18"	>24"	For all extended overhangs

Critical Rules

- 2:1 Support Ratio: Minimum 24" supported base for every 12" overhang
- No Exceptions:
 - No cutouts in overhang areas
 - No moisture-sensitive materials (OSB/particle board)



Recommended Support Materials for Cabinets

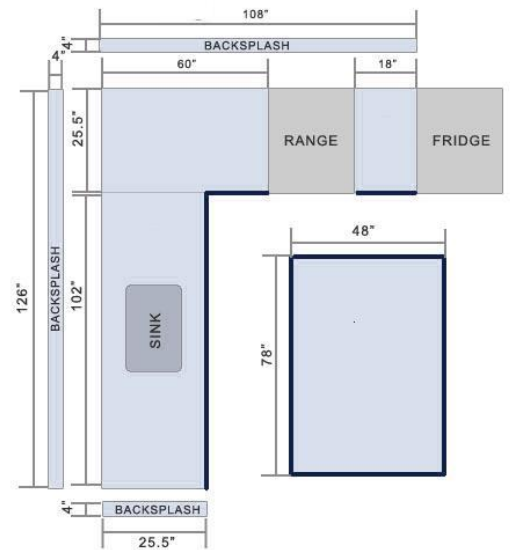
Approved Materials	Prohibited Materials	Installation Notes
Plywood (5/8"+)	OSB	Seal edges in wet areas
MDF (Moisture-resistant)	Particle board	Not for structural support
Structural Steel	Non-rated metals	Powder-coated preferred

Fabrication Guide

Layout

Before cutting Lucciare slabs, carefully calculate the square footage, length, and width of material required to complete the project. This step is especially critical when working with Lucciare TOPZERO, as each batch and slab are unique with specific shades that must be matched for each job. Inaccurate measurements can lead to color matching issues and may require ordering additional material.

Thoroughly inspect each slab for color consistency, pattern alignment, and any visible defects before fabrication. Do not use slabs with visible manufacturing defects unless the layout and project design allow you to work around them.

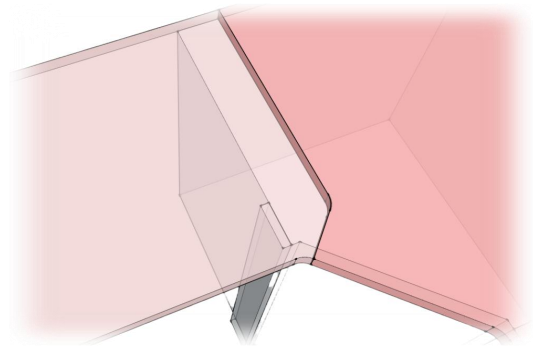


Determine Seam Locations

During the layout process, it is important to determine all seam locations to ensure the best aesthetics for both the material and the kitchen design. Seams should never be placed in the following areas:

- Through the center of a sink cutout
- In locations exposed to direct sunlight
- Directly above dishwashers

If a mitered edge is used on an L-shaped countertop, eliminating the minimum inside radius of $\frac{3}{8}$ ", a field deck seam (as shown below) is required.



Fabrication Guide

Proper Cutting

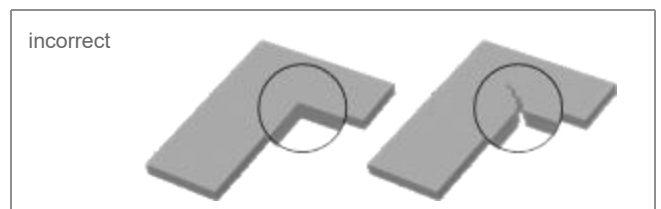
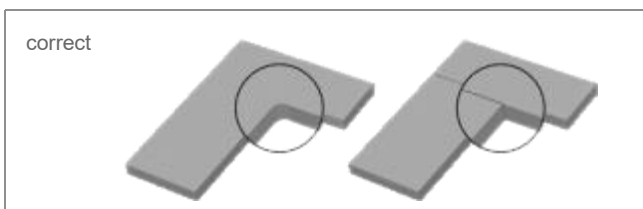
All equipment used to cut Lucciare Genesis Surfaces must be properly cooled with a sufficient amount of water during operation.

ALWAYS AVOID EXCESSIVE HEAT WITH ALL DIAMOND-CUTTING TOOLS.

When cutting Lucciare Genesis Surfaces:

- Always make the first cut along the largest section of the slab, then proceed to the shorter sections.
- When using a bridge saw, **never plunge cut**.
- **Never cut inside square corners**, as this can create stress points that may result in cracking. Always fabricate inside corners with a **minimum radius of 3/8"** to properly distribute stress.

Inside corners fabricated from a single slab must maintain at least a 3/8" radius to ensure durability and performance.



- Never use cross cutting when fabricating Lucciare Genesis countertops. Always use a diamond core bit to create your radius. This must be done on all inside corners – any internal angled corner must have a radius. **NEVER CROSS CUT!**
- Remember that Lucciare slabs contain resin, which can cause warping or bowing depending on weather conditions and storage. If bowing or warping exists, cutting the slab into component parts will release tension and allow the pieces to flatten.

Fabrication Guide

Cutouts

Use a bridge saw for straight cuts, but all inside corners must be cored with a **diamond core bit – no cross cutting**. CNC machines and waterjets can also be used with proper setup.

Inside Corners

L- or U-shaped countertops must be fabricated from a single slab with a **minimum 3/8" radius** at all inside corners. Larger radiuses add strength.

Seam and Support

If a cutout is within 6" of a seam, the seam must sit on a cabinet cross member or have additional support added.

Cutout Guidelines

All cutouts must have a **3/8" minimum radius** at internal corners. Allow an extra **1/8" gap** for expansion around sinks, cooktops, outlets, and other inserts.

Final Checks

Have appliances on site during install to confirm cutout sizes. Customers must approve and sign off on cutout locations.

Heat Protection

Use **9-mil aluminum foil tape** around cooktop cutouts to protect the surface, following the manufacturer's recommendations.



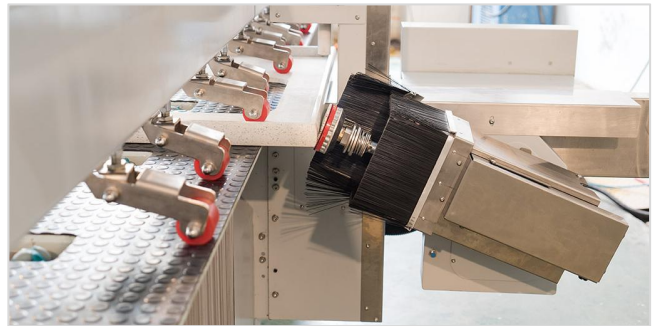
Fabrication Guide

Pencil Edge Guidelines (Without Lamination)

When fabricating Lucciare Genesis surfaces without lamination, maintaining precision is essential for achieving the best visual and structural results.

Polishing must be performed using a CNC machine.

It is very important that edge polishing is done with CNC equipment to ensure straight, clean, and consistent lines that match the quality of the surface.



Avoid hand polishing.

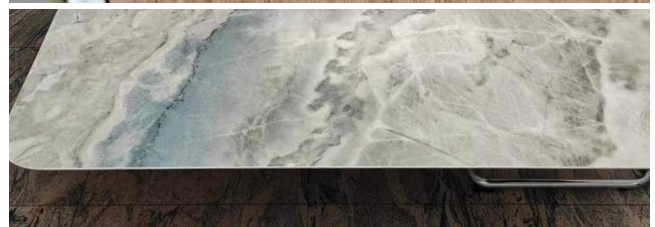
Hand polishing cannot achieve the same level of straightness and precision, often resulting in uneven edges that affect the overall appearance.



Recommended Edge Profile: Pencil Edge.

Pencil edge is the best choice for this material.

It helps maintain the best aesthetics and seamless integrity between the surface and the edge, ensuring a unified and refined final installation.



Fabrication Guide

Laminations

Mitered Edge (Recommended)

- Join two 45° cuts to create a 90° edge for a seamless, monolithic look.
- Ideal for visible edges where pattern continuity is critical.
- Limitation: Avoid heights >4" unless reinforced (risk of visible seams).
- Use CNC machines only for precise, clean, and consistent polishing.
- Avoid hand polishing, which can lead to uneven, imprecise edges and compromise appearance.

Precision is essential for maintaining both aesthetic quality and structural integrity.

Square Edge (Butt Joint)

- Not recommended for 2cm materials—creates a visible seam and disrupts pattern flow.

Examples of Mitered and Butt Joints



Square Mitered



Square Laminated

Cutting guideline

- Use full-length lamination strips cut from the same slab as the countertop to maintain color and pattern consistency.
- Always cut corners and joints at a 45-degree angle to minimize stress and help prevent fractures.
- When measuring for cuts, add the lamination thickness to ensure proper final dimensions.
- For long countertops requiring a seam in the lamination, make the seam at a 45-degree angle for greater strength and a cleaner appearance.

Clamping guideline

When clamping mitered edges, use Mitsubishi G-Tape (or similar) every 8-10 inches for standard 1½" edges. For taller edges (3"-8"), apply tape more frequently to support the apron. If using mechanical clamps, apply even pressure—uneven clamping can warp the finished surface.

Adhesives

Use color-matched acrylic or epoxy cartridge adhesives made for Lucciare Genesis. Standard solid-color adhesives will not properly match the material's translucency. Acrylics and epoxies ensure strong, seamless joints, ideal for mitered edges.

Fabrication Guide

Polishing/Edge Detail

To achieve a flawless, high-gloss finish on **Lucciare Genesis Surfaces**, follow these critical polishing and edge detailing guidelines. Proper technique ensures durability, clarity, and an impeccable final appearance.

■ Resin Pad Selection



- ✓ **Use White Resin Pads (3,000+ grit)**
 - Designed for engineered stone, preventing color transfer.
 - Delivers a **scratch-free, high-gloss** finish without excessive water use.



- ✗ **Avoid Colored Resin Pads**
 - Common in granite polishing but can stain or haze translucent surfaces.

Tip:
For consistent results, use **brand-specific** pads (e.g., **3M Trizact™** or **Alpha Tools**).

■ Machine Polishing vs. Hand Polishing Comparison

Feature	Machine Polishing	Hand Polishing
Best For	Straight, beveled, demi-bullnose edges	Ogee, cove, intricate profiles
Pressure Control	Uniform (no human error)	Variable (depends on skill)
Backer Pads	Rigid (better for standard edges)	Flexible (required for concave shapes)
Consistency	High (repeatable results)	Lower (requires experience)
Speed & Efficiency	Faster (automated process)	Slower (manual effort)

Fabrication Guide

■ Water Management Tips

Issue	Cause	Solution
Hydroplaning	Too much water ➔ pad floats	Reduce water, ensure proper drainage
Uneven Polish	Water trapped under pad	Wipe excess water, adjust flow rate
Overheating	Too little water ➔ pad flexes	Maintain steady water flow for cooling

■ Final Polishing Step

Final Grit = 3,000 (No exceptions)

Delivers a **smooth, reflective finish** without compromising integrity.

✗ Never Use "Buffing Pads"

These non-diamond pads (designed for granite) are **ineffective on engineered stone**.

■ Dry Polishing Is Forbidden

Why?

- Generates excessive heat, causing micro-fissures.
- Leads to chipping, discoloration, or hazing over time.

Always Use Wet Polishing

- Maintains cool temperatures and preserves material integrity.

■ Common Mistakes And Fixes

Issue	Cause	Solution
Hazy Finish	Wrong pad (colored/grit)	Switch to white 3K+ grit pad
Streaks/Spotting	Hydroplaning	Reduce water, check pad pressure
Edge Chipping	Dry polishing	Always use water

Fabrication Guide

Mitered Edge Polishing

When polishing mitered edges on Lucciare Genesis Surface, a delicate and precise approach is essential to avoid chipping, scratching, or overheating while achieving a flawless finish.

■ Process

Polishing the Top Edge of the Miter

- Begin with a **400-grit** polishing pad, applying only light pressure.
- Refine with a **600-grit** pad, maintaining consistent, gentle pressure.

Key Guidelines:

Use **significantly less pressure** than with porcelain or sintered stone.

Proper technique **reduces visible edge transitions** for a seamless appearance.

Never polish the factory-finished top surface—only the mitered edge.

■ Tips

Water Usage:

- **50-400 grit pads:** Use minimal water (just a trickle)
- **800-1500 grit pads:** Increase water flow for optimal results

Technique:

- Work in **consistent circular motions**, starting at the **top half** of the edge and moving downward
- Only advance to the next grit when you feel **reduced resistance**
- **Let the diamonds do the work**—avoid heavy pressure to prevent damage

Polisher RPM Guidelines

- **Speed:** 2,800-4,000 RPM max (over 4,000 RPM burns resin)
- **Pads:** Use only **white resin pads** (colored pads may stain)
- **If burning occurs:** Clean white pad marks with denatured alcohol

Installation Guide

Installation Guide

■ Pre-installation Checklist

Step	Requirement	Tolerance	Tools Needed
Cabinet Leveling	Entire run must be level	1/16"	Laser level, shims
Support System	Install plywood/steel supports	N/A	Drill, screws
Test Fit	Verify slab dimensions	Exact match	Tape measure

■ Installation Guidelines & Best Practices

Item	Specification	Why It Matters
Expansion Gap	1/8" at all walls	Prevents stress from movement
Adhesive	100% silicone only (beads every 8-12")	Allows natural flexing
Cutting	Wet-cut outdoors only	Controls dust/slurry



Installation Guide

Seams

■ Seam Standard

Parameter	Requirement	Visual Cue
Width	1/16" (1/32")	Credit card thickness
Alignment	One side slightly raised if needed	No "tenting"
Prep	Edges cut straight, cleaned with alcohol	Mirror-flat contact

■ Prohibited Adhesives

✗Epoxy ✗Acrylic ✗Liquid Nails

Key Tips:

- Corners/Joints: Double silicone application
- Cutouts: Reinforce with extra silicone
- Seams: Use pneumatic setter for perfection

■ Approved Adhesives

100% Silicone

- For: Standard installs, cutouts, expansion gaps
- Why: Flexible, warranty-compliant

2-Part Epoxy (Special Cases Only)

- For: Pre-approved structural seams
- Requires: Pro install, 6-hr cure

Installation Guide

Sinks

■ Installation Guideline

Key Consideration	Requirement	Reason
Structural Support	Sinks must be independently supported (never rely solely on the countertop).	Prevents stress fractures, damage, or failure of the countertop over time.
Fasteners	Never attach screws/nails directly to Lucciare surfaces.	Rust from fasteners can bleed through, permanently staining the surface.
Undermount Sink Edges	Follow minimum recommended edge profiles around cutouts.	Reduces risk of chipping or edge damage.
Adhesive & Sealing	Use 100% silicone generously; ensure full perimeter coverage for a watertight seal.	Prevents water infiltration and protects underlying structures.
Support Systems	Use clips, cradles, rail systems, or sink setters as needed for weight distribution.	Ensures even weight distribution and long-term stability.
Manufacturer Guidelines	Always follow the sink manufacturer's specific instructions.	Compliance ensures compatibility and safety.

■ Why These Steps Matter

- ✓ Safety: Prevents countertop failure or sink detachment.
- ✓ Durability: Avoids moisture damage, rust stains, and chipping.
- ✓ Aesthetics: Maintains the pristine appearance of Lucciare surfaces.
- ✓ Note: For top-mount sinks, ensure the rim is properly sealed with silicone to prevent water seepage.

Installation Guide

Installation of Backsplash Materials

■ General Backsplash Requirements

Specification	Details	Why It Matters
Height	Standard: 3 inches (or full-height if preferred).	Balances aesthetics and functionality.
Material	Must be cut from the same lot as the countertop.	Ensures color/pattern consistency.
Edge Preparation	Polish top edge and exposed ends with a slight bevel.	Prevents sharp edges; enhances finish.
Adhesive	Apply 1/8" bead of 100% silicone along bottom edge + dabs every 4-6" on the back.	Secures backsplash while allowing flexibility (no hard-seaming).
Alignment Check	Always dry-fit before adhesive application.	Avoids misalignment or gaps.

■ Special Notes for Cooktops

Scenario	Clearance Requirements	Additional Tips
Gas/Induction/Vitroc ceramic	- 60mm from cooktop cutout to backsplash. - 80mm to countertop edge. - 120mm between burner and vertical surface.	Follow cooktop manufacturer's insulation guidelines.
L/U-Shaped Countertops	Leave 25mm to any corner.	Prevents stress from expansion/contraction.
Slide-In Ranges	- 8 inches between gas flame and backsplash. - Use a backguard if oven vents at the rear.	Always use overhead exhaust to manage heat.

Care&Maintenance

Lucciare Genesis Surfaces are non-porous and require minimal maintenance. Daily cleaning with a damp cloth and warm water is usually sufficient.

■ Daily Cleaning

Do's	Don'ts	Why It Matters
Use pH-neutral cleaners (e.g., granite cleaners from stores like Lowe's/Home Depot).	Avoid bleach, acetone, or harsh chemicals.	Lucciare's Fritech technology resists pH 1-13, but neutral cleaners (pH ~7) preserve the surface long-term.
Wipe with damp cloth + warm water.	Don't use soap regularly (can leave residue).	Non-porous surface prevents stains, but films from soap dull the finish.

■ Deep Cleaning (Monthly or as Needed)

Step	Key Points
Cleaner	Use heavy-duty neutral pH cleanser (no wax strippers).
Tools	Soft pads/plastic brushes only—no abrasive scrubbers.
Rinse	Thoroughly remove all cleaner residue.

