Slim-Line Stone Laminates

Installation Tips & MSDS

About Slimline

Slimline Stone Laminates are some of the most exciting and innovative products to enter the world of surface coverage in decades. Breakthroughs in extraction technology have allowed us to precisely separate fractional layers of a variety of slates, quartzites, sandstones, and limestones in such a manner that virtually all previously prohibitive properties of this stone (weight, rigidity, handling, volume) have been eliminated, while properties never thought possible in stone (flexibility, extreme durability, laminate thickness) have been unleashed. Most importantly, the undeniable beauty and prestige associated with a natural stone surface are no longer in contradiction with the values of a market increasingly focused on sustainable extraction, delivery, and installation practices. Slimline Stone Laminates have officially brought natural stone into the 21st Century, allowing not only those within the stone industry to accomplish magnificent never-before-possible stone showcases with ease, but also those across every surface coverage industry to comfortably incorporate stone into their programs.

General Applications

- Slimline Stone Laminates can be used virtually anywhere: **Interior/exterior walls, ceilings, interior, showers, countertops, cabinets, indoor/outdoor furniture, exterior facades, ect.**
- Slimline can be directly applied to a variety of surfaces: **concrete, wood, ceramics, stone, dry wall, concrete, cement, MDF, gypsum, and most smooth surfaces in general**.
- The type of **adhesive** used will depend on the type of **surface** and the **climate** (**wet/dry, rain/shine, freeze/thaw**, etc). In general, adhesives utilized to install Slimline should be **Polyurethane (PU) based adhesives.**
- In the case of **heavy wear** surfaces expected to be subject to a variety of stains, **seal** the surface with **2K-PU Sealant** (available through most brands, at virtually all home improvement / hardware stores)
- For **lighter wear** areas with low chances of staining, surface can remained unsealed and cleaned with normal stone cleaning materials (available at virtually all home improvement stores) or sealed once/twice a year with basic stone sealers (available at virtually all home improvement / hardware stores)
- A hand roller is recommended to remove air between the S-tilestone and substrate. To properly roll out trapped air, start in the middle of a sheet while firmly rolling to the edge. Do not press too hard while rolling as this may cause back-filled areas to push adhesive out and leave an air void. By proper pre-back-filling and using good rolling techniques a solid, hard surface will be achieved.

Specific Applications:

Fiber Cement, Metals, Wood, Plasterboard

- When bonding (installing / laminating) on above mentioned surfaces, we recommend a 1K or 2K-PUR adhesive system. (available at virtually all home improvement / hardware stores)
- Simple DIY installations in dry areas can utilize basic silicone adhesive systems (liquid nails, etc)

Plaster, Concrete, Screed

- When binding (installing / laminating) on above mentioned surfaces, we recommend that Slimline sheets be installed utilizing cement based adhesives.
- Installation process should mirror that used for ceramic tiles, with adhesive volumes adjusted for low thickness/weight of slimline sheets.

Recommended Adhesives

•Heavy duty construction adhesive.	•Polyurethane wood glues and PU construction grade adhesives.
•SOLVENT FREE FRP adhesive.	•Wood, parquet, and outdoor carpet adhesives.
•Premixed grout and tile adhesive	•Thick latex or acrylic latex type tile adhesive. Use only where air drying can take place. Not recommended for exterior applications.
•Acrylic copolymer based tile adhesive.	•Epoxy or Silicone (with primer only)
•Construction grade multi-purpose adhesive or Polyester resin with filler.	•Double-sided foam adhesive (peel & stick).

Tiling, Grouting, & Jointing

- Slimline can be used to create a tiled effect by leaving a grout joint between cut pieces. Sheets may also be butt-jointed for the look of a smaller seam. Due to the thin nature of S-tilestone a 1/8” to ¼” grout joint will produce better results. Test show the use of water based epoxy and acrylic premixed grout work well to fill between the cut veneers. During the sponge-off process, the epoxy will seal the surface of the Slimine as well. These grouts are also available in several colors to match the existing décor. If desired a deeper grout joint can be achieved by removing material just under the grout joint area with a scrapper tool. Modified grout and caulking grout can also be used.

Sealing / Enhancing:

Low Wear Surfaces (interior / exterior)

- While sealing of low wear + dry surfaces is not imperative, a single annual treatment with a common Single Component sealer will make such applications virtually maintenance free, ensuring that the surface will not be penetrated by any oil/water/grease.
- For low wear surfaces with a higher likelihood of stains/wetness (furniture, kitches, bathrooms, etc), this single treatment of sealant is highly recommended
- Single annual treatment with basic stone enhancers will be more than sufficient in such installations

High Wear Surfaces (interior / exterior)

- For high wear surfaces, we recommend multiple treatments annually, utilizing thicket coats of Multi Component sealers/enhancers during each treatment. Frequency of treatments is dictated by directions provided by sealant manufacturers.

Cleaning / Maintenance:

- When handling Slimline during installation process, sheets should be faced down so as to prevent contact of the surface with adhesives/grouts/cements/etc.
- Oil/grease/ stains can be comfortably eliminated using intensive stone cleaners from a variety of brands (ensure that cleaner is safe for specific type of stone on slimline surface). It is best to use cleaners when slimline sheets have entirely dried
- Calcium deposits resulting from regular exposure to flowing water can be easily cleaned using chlorine tablets
- Both sealed and non sealed surfaces can collect dust (etc), and should be wiped down with slightly damp/moist cloth with some degree of regularity.
- AVOID ACIDIC STONE CLEANERS ON SEALED/ENHANCED SURFACES, AND AVOID USING ABRASIVES OF ANY KIND ON ANY SLIMLINE SURFACES

Storage

- Slimline should be stored in environments free of climactic influences (Dry and covered). Large temperature fluctuations can cause the sheers to deform (temporary curling), making handling during installation slightly more difficult. Avoid storage where temperatures change drastically (or at all), if possible.

Installation Tools:

- Slimline can be applied using any DIY installation tools (drilling, pressing, sawing, cutting, milling, etc). Installations involving large volumes of slimline should utilize diamond bladed tools.

SLIMLINE STONE LAMINATES

S. No.	MATERIAL	INGREDIENTS	Concentration
1.	Polyester Resin	Polyethylene Terephthalate	98-99.8%
		Titanium Dioxide	<0.0 9%
2.	Fiber Glass (Non-Respirable)		%weight 0.90%Min
	Size & Binder		<9.80% Min
3.	Pigments & Colors & Stone	Minimal	Very Small

METARIAL SEAFTY DATA SHEET

S. No.	MATERIAL COMPOSITION OF SLIMLINE STONE LAMINATES			QUANTITY Kg./Sq. Mtr.
1.	Processing Material			1.280 – 1.30
2.	Backing material			0.130-0.150
3.	Natural Stone			0.90-.100
	TOTAL WEIGHT PER SQ. MTR.			**1.480-1.580**
	THICKNESS OF LAYERS OF SLIMLINE STONE LAMINATES			
	PARTICULARS			**IN MM**
4.	Thickness of Natural Stone Layer			**0.40mm**
5.	Thickness of other Chemicals with backing			**0.80mm**
6.	Total thickness of slate SLIMLINE STONE LAMINATES sheet			**1.20mm-1.50mm**
	PHYSICAL PROPERTIESOF STONE VENEER	**TEST VALUE**		**PROTOCOL**
		Slate	**Quartzite**	
7.	Water absorption, % by wt. (Test carried out on thin slate specimen)	2.48	1.84	ASTM C-121 guidelines
8.	Water Absorption, % wt. (Test carried out on thin slate specimen pasted on marble piece)	0.16	0.11	ASTM C-97 guidelines
9.	**Abrasion Test**			IS: 9162-1979 guidelines
	---Average wear, mm ---Max. **wear** on individual specimen, mm	0.68 0.79	0.85 0.95	
10.	**Density (Mass per unit area, Kg / M^2**	1.44	1.66	IS: 12866-1989 guidelines

Hazardous Details

i. HAZARDOUS CONSTITUENTS OF SLIMLINE LAMINATES

COMPONENT	CAS NUMBER	PERCENT	PERMISSIBLE EXPOSURE LIMIT (TWA)	SHORT TERM EXPOSURE LIMIT (STEL)
Vinyl acetate homopolymer	9003-20-7	51±2%	NH/NA	NH/NA
Residual monomer	108-05-4	<0.3 % max	10 ppm	20ppm\

ii. IDENTIFICATION OF HAZARDS OF SLIMLINE STONE LAMINATES

Toxic Effects of exposure / contact:
SKIN CONTACT: May irritate skin on prolonged or repeated contact. EYE CONTACT: May cause slight irritation to eyes.
INHALATION: Not Possible being dry product. INGESTION: Not permissible
DELAYED EFFECTS: Not reported.

iii. FIRST AID MEASURES OF SLIMLINE STONE LAMINATES USE SKIN CONTACT:

Wash skin with water after handling sheets. EYE CONTACT: Material being dry does not affect eyes INHALATION: Inert smell.
NOTE TO PHYSICIAN: There is no specific antidote. Treatment should be given symptomatically on the clinical condition.

iv. FIRE AND EXPLOSION HAZARD OF SLIMLINE STONE LAMINATES

FIRE EXTINGUISHING MEDIA: Material will burn. Use water, foam dry chemical powder, CO2 to extinguish the fire.

Thermal decomposition product: May yield acrid smoke and irritating gases with oxides of carbon and Inorganic fragments. Toxic fumes & dark smoke yields when burnt.

SPECIAL FIRE FIGHTING PROCEDURE: Wear self-contained breathing apparatus or equivalent (MSHA/ NIOSH- approved)

UNUSUAL FIRE EXPLOSION HAZARDS: Sheet burns fast with flames. There is no explosion while burning

v. ACCIDENTAL RELEASE MEASURES OF SLIMLINE STONE LAMINATES

Personal Precautions: Use personal protective equipment & handling when material needs to be burnt.
ENVIRONMENT PRECAUTIONS: Review fire and safety precautions before proceeding with clean up. Use appropriate personal proactive equipment during clean up. Keep spectators away. Dike and contain spill with an insert (e.g. sand, earth, etc) absorbent collect the absorbed material in plastic beg for final disposal.
CLEANING METHODS: Wash floor with water, contaminated diking material may be incinerated or land filled according to current local or central regulation.

vi. EXPOSER CONTROL / PERSONAL PROTECTIVE EQUIPMENTS DURING SLIMLINE STONE LAMINATES HANDLING & USE

PERSONAL PROTECTIVE EQUIPMENT: Do not eat drink and smoke when working with SLIMLINE LAMINATES sheets. Wash hands before breaks and after work.
EYE PROTECT: Impervious (rubber, neoprene, pvc, etc.) hand gloves, aprons.
RESPIRATION PROTECTION: None required if good ventilation in the area is maintained. Otherwise suggest wearing MSHA/NIOH approved respirator where vapor concentrations is more.
OTHERS: Eye wash facility and emergence shower.

ENGINEERING CONTROLS: not specific

vii. PHYSICAL AND CHEMICAL PROPERTIES OF SLIMLINE STONE LAMINATES
Burning Temperature (°C): About 250-300°C FLAMMABILITY: Combustible.
EXPLOSIVE LIMITS (% by vol.) LEL: NA UEL: NA FLASH POINT: NA

viii. STABILITY AND REACTIVITY DATA OF SLIMLINE STONE LAMINATES CHEMICAL STABILITY: Stable under normal ambient conditions. INCOMPATIBILITY: Mineral acids and strong salt solution.
HAZARDOUS POLYMERISION: Will occur. CONDITION TO AVOID: Not specific.

ix. TOXICOLOGICAL INFORMATION ON SLIMLINE STONE LAMINATES
Material has polymer content the product is not a problem in normal handling and storage. However polymer when heated may be release acetaldehyde into workroom atmosphere when sheets are heat above 195 degree centigrade.

x. ECOLOGICAL INFORMATION ON SLIMLINE STONE LAMINATES
Not determined, however as a general practice, do not allow product to overheat, expose to naked flame or extreme cold close to subzero.

xi. DISPOSAL INFORMATION ON SLIMLINE STONE LAMINATES
The damaged / discarded material may be disposed of in accordance with current local or central regulation.

xii. TRANSPORTATION INFORMATION ON SLIMLINE STONE LAMINATES
DO INFORMATION: Not applicable TDG INFORMATION: Not determined
The material is not considered as dangerous for transportation

DISCLAIMER:
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