

# RAJASTHAN SLATE & STONE EXPORTS INC.

## TECHNICAL DATA SHEET

### APPLICATIONS

Flexible Slate veneer is a natural stone that can be glued to many different indoor and outdoor surfaces. Their light weight and flexibility is appropriate for many applications such as wall paneling. Cladding on the buildings vertical and horizontal surfaces not previously considered for stone due to weight and / or flaking issues.

<b>ThinSlate</b>	Interior, Exterior, Door & Cabinets, Furniture, Kitchens, Bathrooms, Flooring, Signage, Wall cladding, trim & Backsplashes etc.
<b>TranStone</b>	Interior, Door & Cabinets, Furniture, Kitchens & any decoration purpose where translucency is required
<b>FabStone</b>	Special applications like stationary, bags, edges of doors & furniture's etc. More suitable for indoor applications.

### TYPES OF WALLURE STONE VENEERS

	Thickness	Weight	Flexibility	Constituents
<b>ThinSlate</b>	1.2 – 1.5 mm	1.5 – 1.8 kgs/sqm	slightly flexible	Stone Layer + Polyester Resin + Fiberglass
<b>TranStone</b>	1.2 – 1.5 mm	1.5 – 1.8 kgs/sqm	slightly flexible	Stone Layer + UV Resin + Fiberglass
<b>FabStone</b>	0.5 – 0.7 mm	0.8 – 1.0 kgs/sqm	very flexible	Stone Layer + Water based Glue (Ethylene Vinyl acetate copolymer + Cotton Fabric

### STANDARD SIZES OF SLATE SURFACE

**ThinSlate, TranStone, FabStone:** 122 x 61 cm, 4 x 2 feet, 0.74 sqm

### COLOR VARIATIONS

Slate-Surface is a Natural Stone Veneer, color & texture variations are the property of the material. Texture variations with color difference are an inherent part of the natural beauty of quarried material. Stone Veneer cannot be guaranteed to match with each Lot, it is recommended that material should be accepted in lots of 20, 40, 50 sheets to match. Large orders will be executed in bundles of 25 with 2-3 matching lots in each bundle. Exceptions of large lots are also a possibility.

### USES FOR LAMINATION & DIRECT GLUING

Slate veneer is used for wall panel on MDF, HDF board's application, furniture, woodworking machines, round column cladding and numerous interior and exterior applications. TranStone, Fabstone is not recommended for flooring or countertop applications due to the thin soft nature of the Stone Veneer. ThinSlate Veneer can directly be glued to concrete floors and walls with the help of epoxy and other PU glues.

## **SUBSTRATES**

Stone Veneer can be applied to MDF, HDF boards, Styro Foam sheets, melamine, concrete, brick, concrete blocks & slabs, mortar plastered walls, drywall, plywood, acrylic and other plastic sheets.

## **LIGHT, HEAT & TEMPERATURE RESISTANCE**

Stone Veneer has natural stone surface layer surface which acts as a UV light or UV rays protector and will resist high sun conditions for years. When it is glued to a substrate, Slate Stone veneer will handle high thermal contraction and or expansions of most standard construction materials. Stone Veneer will handle both high temperatures and freezing without cracking.

TranStone Veneer may be used in illumination application such as lamp shades or back light applications as translucent material or the other translucency applications.

## **TOOLS FOR CUTTING**

Diamond blades used for marble & stone cutting can be used for cutting Stone Veneer. Metal cutting tools also can be used to cut the Stone Veneer. Any standard carbide or diamond saw blades would work just as well.

## **CURVATURE & BENDING**

Stone Veneer can be bent with same flexibility as any plastic sheet product. The backing used gives it enough strength and flexibility. Stone Veneer can be bent in concave & convex forms, or arched or radial forms depending on the nature of curve. Stone Veneer can be bent or flexed to a radius of 380mm along the 1200mm length. The 600mm width will also have a slight flex to it, but is not recommended for bending. Due to the nature of the different thickness of the individual items, the degree of radius varies per item. We recommend testing the flex of the considered item prior to final installation.

## **INSTALLATION**

Stone Veneer can be glued to surfaces using most standard laminate adhesives having a thick body or foaming quality. Prior to application of the glue clean, brush and de-grease the receiving surface or dust, oils or any other contaminants. In some installations, and depending upon the adhesive used, it may be necessary to prepare the back of the thin Stone veneer with solvent or recommended primer by the adhesive manufacture. We recommend making a test area with any adhesive prior to final application.

## **ADHESIVES**

Knowledge of the special adhesives, and the respective surface for which they are recommended, is critical in obtaining superior installation when using Stone veneer. We recommend testing the selected adhesive prior to proceeding with installation. Humidity and temperature of the environment is to be evaluated first. If the application is outdoors, consideration to thermal expansion should be taken into account. Stone is a veneer, it must expand and contract which is recommended by the adhesive manufacturer, the bond must be tested by the installer prior to final installation.

Recommended types of adhesives & fillers:

- Polyester-based gap filler putties
- Silicone (with primer only)
- Epoxies
- Polyurethane wood glues
- Thick latex-type adhesive, thin set etc. (uses only where air-drying can take place)

- Construction grade multi-purpose adhesives (eg. Liquid Nails or PL Premium Polyurethane or similar)

Note: The back of Stone Veneer may require a filler-type adhesive in some cases. Polyurethane wood glues work well for most applications to fill gaps. For wet environment such as shower and bathroom applications, the use of epoxy is best.

Note: Pressure sensitive adhesives are also recommended due to the even backing of the Stone Veneer. Now Pressure sensitive glues are applied on the back of Stone Veneer and is supplied with the paper cover to use it as peel and stick material ready to use.

## **TILING**

Stone Veneer can be used to create a tiled effect by leaving a grout joint between cut pieces of material. Test results have shown the use of water-based epoxy grouts work well to fill between the cut veneers. By removing the material just under the grout joint, a deeper grout can be achieved if desired. Epoxy grouts are available in many colors to match or co-ordinate with the different colors of Slate Stone. On final clean up of the epoxy with a sponge, the epoxy can also be used to seal and fill the Stone surface. It is recommended in this installation that the entire surface of the Slate Stone be sealed with epoxy as a final step to ensure complete satisfaction.

Rajasthan slate & stone experts

THE MANUFACTURER'S MATERIAL SAFETY DATA SHEET OF

# THINSLATE

Rajasthan Slates & stone exports inc.

# MATERIAL SAFETY DATA SHEET OF THINSLATE ALONG WITH MAJOR CONSTITUENTS

## MAJOR CONSTITUENTS OF THINSLATE VENEER

### 1.SLATE

#### Properties of Slate:

It is a metamorphosed rock of shale's showing luster. Compactness and tension. It can be scratched by a copper coin or a key. The streak is generally whitish grey. The main properties of a slate are as follows:

- Strength
  - (i) Transverse Strength- This property indicates the capacity of resistance to damage in handling to bear upon slates in their actual use. Rather than those of tension and compression. This is expressed as

$$R = 1.5 WL/bd^2$$

Where R = modulus of rupture in kg/cm<sup>2</sup>.  
 W = breaking load in kg.  
 L = length of span between supporting steel bearing in cm.  
 b = width of specimen in cm. and  
 d = thickness of specimen in cm.

**TABLE 2**  
**Physlco - Mechanical Properties of Different Varieties of Slate Quarried in India, Bhutan, the United Kingdom and the United States of America**

Properties	unit	<u>Indian</u>	<u>India</u>		<u>Bhutan</u>		<u>U.K.</u>	<u>U.S.A.</u>	
		Std.IS: 6250-1971	Dharm sala	Khund	Kurnool	Bonsegcoma	South Wales	Eastern New York	Pennsy Ivanta
Specific Gravity	-	-	2.706	2.782	2.784	2.765	2.766	2.783	2.764
Transverse Strength	kg/cm <sup>2</sup>	600	489.85	547	861.7	884.30	861.87	-	844.65
Shear Strength	kg/cm <sup>2</sup>	-	172.44	231.63	239.58	216.10	210.61	-	223.97
Water Absorption	%	0.2	0.10	0.09	0.08	0.10	0.07	0.098	-
Corrodibility	%	-	0.60	0.42	0.40	0.52	0.60	-	0.49

### **2. POLYESTER RESIN:**

#### **A) Physical & Chemical Properties**

Form / Appearance	Material is a Polyester Resin
Color	Based on specification
Odor	None
Flammability	Not Determined
Melting Point	482-572 °F (250-300 °C)

Odor Threshold	Not Determined
Solubility (H <sub>2</sub> O)	Insoluble
VOC (Weight %)	Not applicable

## B) Chemical Stability & Reactivity Information

### CHEMICAL STABILITY

Stable, however, may decompose if heated. Molten polymer or prolong air drying of polymer at temperatures above 195 °C will release small quantities of acetaldehyde		
<b>NIOSH – Pocket Guide – IDLHs (Immediately dangerous to Life or Health)</b>		
Acetaldehyde	75-07-0	2000 ppm IDLH
<b>U.S. – OSHA-Final PELs-Time Weighted Averages (TWAs)</b>		
Acetaldehyde	75-07-0	200 ppm TWA; 360 mg/m <sup>3</sup> TWA
<b>U.S. – OSHA-Vacated PELs-TWAs</b>		
Acetaldehyde	75-07-0	100 ppm TWA; 180 mg/m <sup>3</sup> TWA
<b>ACGIH-Threshold Limits Values – Cellings (TLV-C)</b>		
Acetaldehyde	75-07-0	25 PPM Ceiling

## C) Toxicological Information

Due to this material's high molecular weight, and results of toxicity studies of similar products, this material is considered to be of little to no toxicological concern.

## D) Ecological Information

### Ecotoxicity

This Product is not expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems. Based on similar substances, this material is expected to be essentially non-biodegradable

### Environmental effects

Based on the physical properties of this product, significant environment persistence and bioaccumulation would not be expected.

## E) Disposal Considerations

### Disposal Instructions

Any unused product, in discarded, is not considered a RCRA hazardous waste. Dispose of as a non hazardous waste in accordance with local, state and federal regulations.

The information offered here is for the product as shipped, Use of and / or alteration to the product, such as mixing with other materials, may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

## 3. FIBER GLASS:

### A) Composition of E-glass

SiO <sub>2</sub>		52 –62%
Alkaline oxides (Na <sub>2</sub> O <sub>2</sub> , K <sub>2</sub> O)	< 2%	
Alkaline terrous oxides (CaO, MgO....)	16 – 30%	
B <sub>2</sub> O <sub>3</sub>		0 –10%
Al <sub>2</sub> O <sub>3</sub>		11 – 16%
TiO <sub>2</sub>		0 – 3%
Fe <sub>2</sub> O <sub>3</sub>		0 – 1%
F <sub>2</sub>		0 – 2%

## B) PHYSICAL AND CHEMICAL PROPERTIES

⇒ PHYSICAL STATE: Solid

⇒ FORM Continuous or chopped strand mats glued or chopped strands or continuous woven fabric.

⇒ COLOUR: White or yellowish white.

ODOUR None, except for some products from which a slight odor is sometime released when a pallet or carton is opened. This odor never indicates that an eventual Toxic product has been released in a dangerous amount. PH not applicable.

⇒ SPECIFIC TEMPERATURE AT WHICH CHANGES IN PHYSICAL STATE OCCUR

- 1. Softening point: Littleton point (defined as the temperature for which the viscosity of the glass is 10 Poises) : approximately 850°C
- 2. Melting point: Not applicable. Glass dose not melt, but viscosity decreases by elevation of the temperature for E glass is in a range of temperature between 1150°C and 1250°C (Fibeizing temperature)

⇒ DECOMPOSITION TEMPERATURE: Sizes and mat binder start to decompose at 200°C

⇒ EXPLOSIVE PROPERTIES: None

⇒ DENSITY (Molten glass): 2.6 g/cu. Cm.

⇒ SOLUBILITY: Very low solubility in water. Sizes and binders can be partially (and even totally) dissolved in most organic solvents.

#### **THINSLATE MAJOR INGREDIENTS**

S. No.	MATERIAL	INGREDIENTS	Concentration
1.	Polyester Resin	Polyethylene Terephthalate	99-99.9%
		Titanium Dioxide	<1%
2.	Fiber Glass (Non-Respirable)		%weight 90%Min
	Size & Binder		<10% Min
3.	Pigments & Colors & Stone	Minimal	Very Small

S. No.	MATERIAL COMPOSITION OF THINSLATE VENEER	QUANTITY Kg./Sq. Mtr.		
1.	Processing Material	1.300		
2.	Backing material	0.150		
3.	Natural Stone	0.100		
	<b>TOTAL WEIGHT PER SQ. MTR.</b>	<b>1.500-1.750</b>		
	<b>THICKNESS OF LAYERS OF THINSLATE VENEER</b>			
	<b>PARTICULARS</b>	<b>IN MM</b>		
4.	Thickness of Natural Stone Layer	<b>0.40mm</b>		
5.	Thickness of other Chemicals with backing	<b>0.80mm</b>		
6.	Total thickness of slate NR GRADE STONE VENEER sheet	<b>1.20mm-1.50mm</b>		
	<b>PHYSICAL PROPERTIES OF THINSLATE VENEER</b>	<b>TEST VALUE</b>		
		<b>Slate</b>	<b>Mica</b>	
		<b>PROTOCOL</b>		
7.	Water absorption, % by wt. (Test carried out on thin slate specimen)	2.50	1.9	ASTM C-121 guidelines
8.	Water Absorption, % wt. (Test carried out on thin slate specimen pasted on marble piece)	0.17	0.12	ASTM C-97 guidelines
9.	Abrasion Test ---Average wear, mm	0.7	0.9	IS: 9162-1979 guidelines

	---Max. wear on individual specimen, mm	0.8	1.0	
10.	Density (Mass per unit area, Kg / M <sup>2</sup> )	1.45	1.66	IS: 12866-1989 guidelines

### SECTION I – HAZARDOUS CONSTITUENTS OF THINSLATE VENEER

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\

### SECTION II – IDENTIFICATION OF HAZARDS OF THINSLATE VENEER

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.

### SECTION III – FIRST AID MEASURES OF THINSLATE VENEER USE

**SKIN CONTACT:** Wash skin with water after handling sheets.

**EYE CONTACT:** Material being dry does not effect eyes

**INHALATION:** Inert smell.

**INGESTION:**

**NOTE TO PHYSICIAN:** There is no specific antidote. Treatment should be given symptomatically on the clinical condition.

### SECTION IV FIRE AND EXPLOSION HAZARD OF THINSLATE VENEER

**FIRE EXTINGUISHING MEDIA:** Material will burn. Use water, foam dry chemical powder, CO<sub>2</sub> 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

### SECTION V – ACCIDENTAL RELEASE MEASURES OF THINSLATE VENEER

**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.

### SECTION VI – HANDLING AND STORAGE OF THINSLATE VENEER

**HANDLING PROCEDURE:** Use appropriate personal protective Hand Gloves during handling. Protect against physical damage. Observe good hygiene practices.

**STORAGE REQUIREMENT:** Store at ambient temperature. Keep away from freezing. Keep sheets in stored at room temperature away from flames & fire.

#### **SECTION VII – EXPOSER CONTROL / PERSONAL PROTECTIVE EQUIPMENTS THINSLATE VENEER HANDLING & USE**

**PERSONAL PROTECTIVE EQUIPMENT:** Do not eat drink and smoke when working with NR GRADE STONE VENEER 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 to wear MSHA/NIOH approved respirator where vapour concentrations is more.

**OTHERS:** Eye wash facility and emergence shower.

**ENGINEERING CONTROLS:** not specific

#### **SECTION VIII – PHYSICAL AND CHEMICAL PROPERTIES OF THINSLATE VENEER**

**Burning Temperature (°C):** About 250-300° C

**FLAMMABILITY:** Combustible.

**EXPLOSIVE LIMITS (% by vol.) LEL:** NA **UEL:** NA **FLASH POINT:** NA

#### **SECTION IX – STABILITY AND REACTIVITY DATA OF THINSLATE VENEER**

**CHEMICAL STABILITY:** Stable under normal ambient conditions.

**INCOMPATIBILITY:** Mineral acids and strong salt solution.

**HAZARDOUS POLYMERISATION:** Will occur.

**CONDITION TO AVOID:** Not specific.

#### **SECTION X – TOXICOLOGICAL INFORMATION ON THINSLATE VENEER**

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.

#### **SECTION XI – ECOLOGICAL INFORMATION ON THINSLATE VENEER**

Not determined, however as a general practice, do not allow product to overheat flame exposor or extreme cold close to sub zero.

#### **SECTION XII – DISPOSAL INFORMATION ON THINSLATE VENEER**

The damaged / discarded material may be disposed of in accordance with current local or central regulation.

#### **SECTION XIII – TRANSPORTATION INFORMATION ON THINSLATE VENEER**

**DO INFORMATION:** Not applicable **TDG INFORMATION:** Not determined

The material is not considered as dangerous for transportation

#### **SECTION XIV – MISCELLANEOUS INFORMATION**

**DISCLAIMER:** The data presented here is based on information we believe to be reliable but unknown risk may be present. We disclaim liability for damage or injury which result for the use of the above data and nothing contained therein shall constitute guarantee or a warranty (including warranty of merchantability or fitness for a particular purpose) or representation (including freedom from patentability) by us with respect to the accuracy or completeness of the data the product described or their use for any specific purpose as known to us. The final determination of the suitability of information, the manner of use of information or product and potential infringement of patents is the sole responsibility of the user.

THE MANUFACTURER'S MATERIAL SAFETY DATA SHEET OF

**TRANSTONE**

Rajasthan slabs & stone exports inc.

# MATERIAL SAFETY DATA SHEET OF TRANSTONE ALONG WITH MAJOR CONSTITUENTS

## MAJOR CONSTITUENTS OF TRANSTONE VENEER

### 1.SLATE

#### **Properties of Slate:**

It is a metamorphosed rock of shale's showing luster. Compactness and tension. It can be scratched by a copper coin or a key. The streak is generally whitish grey. The main properties of a slate are as follows:

- Strength
  - (i) Transverse Strength- This property indicates the capacity of resistance to damage in handling to bear upon slates in their actual use. Rather than those of tension and compression. This is expressed as

$$R = 1.5 WL/bd^2$$

Where      R = modulus of rupture in kg/cm<sup>2</sup>.  
               W = breaking load in kg.  
               L = length of span between supporting steel bearing in cm.  
               b = width of specimen in cm. and  
               d = thickness of specimen in cm.

**TABLE 2**  
**Physico - Mechanical Properties of Different Varieties of Slate Quarried in India, Bhutan, the United Kingdom and the United States of America**

Properties	unit	<u>Indian</u>		<u>India</u>		<u>Bhutan</u>		<u>U.K.</u>		<u>U.S.A.</u>	
		Std.IS: 6250-1971	Dharm sala	Khund	Kurnool	Bonsegoma	South Wales	Eastern New York	Pennsy lvanta		
Specific Gravity	-		2.706	2.782	2.784	2.765	2.766	2.783	2.764		
Transverse Strength	kg/cm <sup>2</sup>	600	489.85	547	861.7	884.30	861.87	-	844.65		
Shear Strength	kg/cm <sup>2</sup>	-	172.44	231.63	239.58	216.10	210.61	-	223.97		
Water Absorption	%	0.2	0.10	0.09	0.08	0.10	0.07	0.098	-		
Corrodibility	%	-	0.60	0.42	0.40	0.52	0.60	-	0.49		

### **2. ULTRA VIOLET POLYESTER RESIN:**

It is an unsaturated polyester resin, containing styrene monomer and methyl methacrylate, and have high level of translucency.

#### **A) Physical & Chemical Properties**

**a. Liquid Resin Properties**

Appearance	: Clear Liquid
Acid Value [mg KOH/gm]	: 24±2
Viscosity at 25°C, cps [Brookfield RVT sp2/10 rpm]	: 250±50
Specific Gravity at 25°C	: 1.10±0.01
Monomer Content, %	: 38±2

**b. Curing Characteristics**

Get time at 30°C, min.	: 15±2
RPL 111	: 100 gms
Accelerator	: 2.0 ml
Catalyst	: 2.0 ml
Resin Temperature	: 30°C

**B) Toxicological Information**

Due to this material's high molecular weight, and results of toxicity studies of similar products, this material is considered to be of little to no toxicological concern.

**C) Ecological Information**

**Ecotoxicity**

This Product is not expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems. Based on similar substances, this material is expected to be essentially non-biodegradable

**Environmental effects**

Based on the physical properties of this product, significant environment persistence and bioaccumulation would not be expected.

**D) Disposal Considerations**

**Disposal Instructions**

Any unused product, in discarded, is not considered a RCRA hazardous waste. Dispose of as a non hazardous waste in accordance with local, state and federal regulations.

The information offered here is for the product as shipped, Use of and / or alteration to the product, such as mixing with other materials, may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

**NR GRADE STONE VENEER MAJOR INGREDIENTS**

S. No.	MATERIAL	INGREDIENTS	Concentration
1.	Polyester Resin	Polyethylene Terephthalate	99-99.9%
		Titanium Dioxide	<1%
2.	Fiber Glass (Non-Respirable)		%weight 90%Min
	Size & Binder		<10% Min
3.	Pigments & Colors & Stone	Minimal	Very Small

**3. FIBER GLASS:**

**A) Composition of E-glass**

SiO <sub>2</sub>	52 –62%
Alkaline oxides (Na <sub>2</sub> O <sub>2</sub> , K <sub>2</sub> O)	< 2%

Alkaline terrous oxides (CaO, MgO....)	16 – 30%
B2O3	0 –10%
Al2O3	11 – 16%
TiO2	0 – 3%
Fe2O3	0 – 1%
F2	0 – 2%

## B) PHYSICAL AND CHEMICAL PROPERTIES

⇒ PHYSICAL STATE: Solid

⇒ FORM Continuous or chopped strand mats glued or chopped strands or continuous woven fabric.

⇒ COLOUR: White or yellowish white.

ODOUR None, except for some products from which a slight odor is sometime released when a pallet or carton is opened. This odor never indicates that an eventual Toxic product has been released in a dangerous amount. PH not applicable.

⇒ SPECIFIC TEMPARATURE AT WHICH CHANGES IN PHYSICAL STATE OCCUR

- 1. Softening point: Littleton point (defined as the temperature for which the viscosity of the glass is 10 Poises) : approximately 850°C
- 2. Melting point: Not applicable. Glass dose not melt, but viscosity decreases by elevation of the temperature for E glass is in a range of temperature between 1150°C and 1250°C (Fibeizing temperature)

⇒ DECOMPOSITION TEMPERATURE: Sizes and mat binder start to decompose at 200°C

⇒ EXPLOSIVE PROPERTIES: None

⇒ DENSITY (Molten glass): 2.6 g/cu. Cm.

⇒ SOLUBILITY: Very low solubility in water. Sizes and binders can be partially (and even totally) dissolved in most organic solvents.

### TRANSTONE VENEER MAJOR INGREDIENTS

S. No.	MATERIAL	INGREDIENTS	Concentration
1.	Polyester Resin	Polyethylene Terephthalate	99-99.9%
		Titanium Dioxide	<1%
2.	Fiber Glass (Non-Respirable)		%weight 90%Min
	Size & Binder		<10% Min
3.	Pigments & Colors & Stone	Minimal	Very Small

S. No.	MATERIAL COMPOSITION OF TRANSTONE VENEER	QUANTITY Kg./Sq. Mtr.
1.	Processing Material	1.300
2.	Backing material	0.150
3.	Natural Stone	0.100

	<b>TOTAL WEIGHT PER SQ. MTR.</b>	<b>1.500-1.750</b>		
	<b>THICKNESS OF LAYERS OF TRANSTONE VENEER</b>			
	<b>PARTICULARS</b>	<b>IN MM</b>		
4.	Thickness of Natural Stone Layer	<b>0.40mm</b>		
5.	Thickness of other Chemicals with backing	<b>0.80mm</b>		
6.	Total thickness of slate TRANSTONE VENEER sheet	<b>1.20mm-1.50mm</b>		
	<b>PHYSICAL PROPERTIES OF TRANSTONE VENEER</b>	<b>TEST VALUE</b>		<b>PROTOCOL</b>
		<b>Slate</b>	<b>Mica</b>	
7.	Water absorption, % by wt. (Test carried out on thin slate specimen)	2.50	1.9	ASTM C-121 guidelines
8.	Water Absorption, % wt. (Test carried out on thin slate specimen pasted on marble piece)	0.17	0.12	ASTM C-97 guidelines
9.	Abrasion Test ---Average wear, mm ---Max. wear on individual specimen, mm	0.7 0.8	0.9 1.0	IS: 9162-1979 guidelines
10.	Density (Mass per unit area, Kg / M <sup>2</sup> )	1.45	1.66	IS: 12866-1989 guidelines

#### **SECTION I – HAZARDOUS CONSTITUENTS OF TRANSTONE VENEER**

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

#### **SECTION II – IDENTIFICATION OF HAZARDS OF TRANSTONE VENEER**

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.

#### **SECTION III – FIRST AID MEASURES OF TRANSTONE VENEER USE**

**SKIN CONTACT:** Wash skin with water after handling sheets.

**EYE CONTACT:** Material being dry does not effect eyes

**INHALATION:** Inert smell.

**INGESTION:**

**NOTE TO PHYSICIAN:** There is no specific antidote. Treatment should be given symptomatically on the clinical condition.

#### **SECTION IV FIRE AND EXPLOSION HAZARD OF TRANSTONE VENEER**

**FIRE EXTINGUISHING MEDIA:** Material will burn. Use water, foam dry chemical powder, CO<sub>2</sub> 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

#### **SECTION V – ACCIDENTAL RELEASE MEASURES OF UV TRANSTONE VENEER**

**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 bag 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.

#### **SECTION VI – HANDLING AND STORAGE OF TRANSTONE VENEER HANDLING**

**PROCEDURE:** Use appropriate personal protective Hand Gloves during handling. Protect against physical damage. Observe good hygiene practices.

**STORAGE REQUIRMENT:** Store at ambient temperature. Keep away from freezing. Keep sheets in stored at room temperature away from flames & fire.

#### **SECTION VII – EXPOSER CONTROL / PERSONAL PROTECTIVE EQUIPMENTS DURING TRANSTONE VENEER HANDLING & USE**

**PERSONAL PROTECTIVE EQUIPMENT:** Do not eat drink and smoke when working with TRANSTONE VENEER 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 to wear MSHA/NIOH approved respirator where vapour concentrations is more.

**OTHERS:** Eye wash facility and emergence shower.

**ENGINEERING CONTROLS:** not specific

#### **SECTION VIII – PHYSICAL AND CHEMICAL PROPERTIES OF TRANSTONE VENEER**

**Burning Temperature (°C):** About 250-300° C

**FLAMMABILITY:** Combustible.

**EXPLOSIVE LIMITS (% by vol.) LEL:** NA **UEL:** NA **FLASH POINT:** NA

#### **SECTION IX – STABILITY AND REACTIVITY DATA OF TRANSTONE VENEER CHEMICAL**

**STABILITY:** Stable under normal ambient conditions.

**INCOMPATIBILITY:** Mineral acids and strong salt solution.

**HAZARDOUS POLYMERISATION:** Will occur.

**CONDITION TO AVOID:** Not specific.

#### **SECTION X – TOXICOLOGICAL INFORMATION ON TRANSTONE VENEER**

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 centigarde.

#### **SECTION XI – ECOLOGICAL INFORMATION ON TRANSTONE VENEER**

Not determined, however as a general practice, do not allow product to overheat flame exposor or extreme cold close to sub zero.

**SECTION XII – DISPOSAL INFORMATION ON TRANSTONE VENEER**

The damaged / discarded material may be disposed of in accordance with current local or central regulation.

**SECTION XIII – TRANSPORTATION INFORMATION ON TRANSTONE VENEER**

**DO INFORMATION:** Not applicable **TDG INFORMATION:** Not determined The material is not considered as dangerous for transportation

**SECTION XIV – MISCELLANEOUS INFORMATION**

**DISCLAIMER:** The data presented here is based on information we believe to be reliable but unknown risk may be present. We disclaim liability for damage or injury which result for the use of the above data and nothing contained therein shall constitute guarantee or a warranty (including warranty of merchantability or fitness for a particular purpose) or representation (including freedom from patentability) by us with respect to the accuracy or completeness of the data the product described or their use for any specific purpose as known to us. The final determination of the suitability of information, the manner of use of information or product and potential infringement of patents is the sole responsibility of the user.

Rajasthan slate & stone exports inc.

THE MANUFACTURER'S MATERIAL SAFETY DATA SHEET OF

**FABSTONE**

Rajasthan slate & stone exports inc.

# MATERIAL SAFETY DATA SHEET OF FABSTONE(FABRIC BACKING) VENEER ALONG WITH MAJOR CONSTITUENTS

## MAJOR CONSTITUENTS OF FABSTONE VENEER

### 1.SLATE

#### **Properties of Slate:**

It is a metamorphosed rock of shale's showing luster. Compactness and tension. It can be scratched by a copper coin or a key. The streak is generally whitish grey. The main properties of a slate are as follows:

- Strength
  - (i) Transverse Strength- This property indicates the capacity of resistance to damage in handling to bear upon slates in their actual use. Rather than those of tension and compression. This is expressed as

$$R = 1.5 WL/bd^2$$

Where R = modulus of rupture in kg/cm<sup>2</sup>.  
 W = breaking load in kg.  
 L = length of span between supporting steel bearing in cm.  
 b = width of specimen in cm. and  
 d = thickness of specimen in cm.

**TABLE 2**  
**Physico - Mechanical Properties of Different Varieties of Slate Quarried in India, Bhutan, the United Kingdom and the United States of America**

Properties	unit	<u>Indian</u>	<u>India</u>		<u>Bhutan</u>	<u>U.K.</u>	<u>U.S.A.</u>		
		Std.IS: 6250-1971 sala	Dharm Khund	Kurnool	Bonsegcoma	South Wales	Eastern New York	Pennsy Ivanta	
Specific Gravity	-	2.706	2.782	2.784	2.765	2.766	2.783	2.764	
Transverse Strength	kg/cm <sup>2</sup>	600	489.85	547	861.7	884.30	861.87	-	844.65
Shear Strength	kg/cm <sup>2</sup>	-	172.44	231.63	239.58	216.10	210.61	-	223.97
Water Absorption	%	0.2	0.10	0.09	0.08	0.10	0.07	0.098	-
Corrodibility	%	-	0.60	0.42	0.40	0.52	0.60	-	0.49

### 2. COTTON FABRIC

#### **PROPERTIES OF COTTON FIBER (COTTON FABRIC IS MADE FROM COTTON FIBER)**

Property	Evaluation
Shape	Fairly uniform in width, 12–20 micrometers; length varies from 1 cm to 6 cm (½ to 2½ inches); typical length is 2.2 cm to 3.3 cm (7/8 to 1¼ inches).
Luster	high
Tenacity (strength)	
Dry	3.0–5.0 g/d
Wet	3.3–6.0 g/d

Resiliency	low
Density	1.54–1.56 g/cm <sup>3</sup>
Moisture absorption raw: conditioned saturation mercerized: conditioned saturation	8.5% 15–25% 8.5–10.3% 15–27%+
Dimensional stability	good
Resistance to acids alkali organic solvents sunlight microorganisms insects	damage, weaken fibers resistant; no harmful effects high resistance to most Prolonged exposure weakens fibers. Mildew and rot-producing bacteria damage fibers. Silverfish damage fibers.
Thermal reactions to heat to flame	Decomposes after prolonged exposure to temperatures of 150°C or over. Burns readily.

Cotton fibers viewed under a scanning electron microscope

The chemical composition of cotton is as follows:

- FABRIC 91.00%
- water 7.85%
- protoplasm, pectins 0.55%
- waxes, fatty substances 0.40%
- mineral salts 0.20%

### **3. PVA GLUE**

#### **Technical Specification**

It is PVA based revolutionary water resistant wood adhesive with excellent bonding strength made as per European EN 204/205 D3 standards.

S. No.	Test	Unit	Test Method	Results
1	COLOUR	-	VISUAL	MILKY WHITE
2	APPEARANCE	-	VISUAL	VISCOUS PASTE
3	BROOKFIELD VISCOSITY @ 30C (SPINDLE NO.6/20RPM)	cps	BROOKFIELD, RVDVI+	9000 ± 3000
4	SOLID CONTENT @ 105 C till constant Weight	%	Oven	52 ± 1
5	pH VALUE		BY DIGITAL PH METER	4 + 0.3

The above information is based on the present state of our knowledge and experience. The statements mentioned herein should be considered as information without obligation. For applications, users should make their own assessment of our product under their own conditions according to final requirements. If local regulations exist, they should be applied

S. No.	MATERIAL COMPOSITION OF STONE VENEER	QUANTITY Kg./Sq. Mtr.
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1.	Processing Material			0.550
2.	Backing material			0.150
3.	Natural Stone			0.100
	<b>TOTAL WEIGHT PER SQ. MTR.</b>			<b>0.800 - 1.000</b>
	<b>THICKNESS OF LAYERS OF STONE VENEER</b>			
	<b>PARTICULARS</b>			<b>IN MM</b>
4.	Thickness of Natural Stone Layer			<b>0.20mm</b>
5.	Thickness of other Chemicals with backing			<b>0.30mm</b>
6.	Total thickness of slate stone veneer sheet			<b>0.50mm-0.70mm</b>
	<b>PHYSICAL PROPERTIES OF STONE VENEER</b>	<b>TEST VALUE</b>		<b>PROTOCOL</b>
		<b>Slate</b>	<b>Mica</b>	
7.	Water absorption, % by wt. (Test carried out on thin slate specimen)	2.50	1.9	ASTM C-121 guidelines
8.	Water Absorption, % wt. (Test carried out on thin slate specimen pasted on marble piece)	0.17	0.12	ASTM C-97 guidelines
9.	Abrasion Test ---Average wear, mm ---Max. wear on individual specimen, mm	0.7 0.8	0.9 1.0	IS: 9162-1979 guidelines
10.	Density (Mass per unit area, Kg / M <sup>2</sup> )	1.45	1.66	IS: 12866-1989 guidelines

### **SECTION I – HAZARDOUS CONSTITUENTS OF FABSTONE VENEER**

Not a hazardous substance or preparation within the meaning of the current Hazardous Materials Regulations (GefStoffV).

### **SECTION II – IDENTIFICATION OF HAZARDS OF FABSTONE VENEER**

No Toxic Effects of exposure / contact:

**SKIN CONTACT:** Does not irritate skin on prolonged or repeated contact.

**EYE CONTACT:** Does not cause slight irritation to eyes.

**INHALATION:** Not Possible being dry product.

**INGESTION:** Not permissible

**DELAYED EFFECTS:** Not reported.

### **SECTION III – FIRST AID MEASURES OF FABSTONE VENEER USE**

**SKIN CONTACT:** Wash skin with water after handling sheets. **EYE CONTACT:** Material being dry does not effect eyes **INHALATION:** Inert smell.

**INGESTION:**

**NOTE TO PHYSICIAN:** There is no specific antidote. Treatment should be given symptomatically on the clinical condition.

### **SECTION IV FIRE AND EXPLOSION HAZARD OF FABSTONE VENEER**

**FIRE EXTINGUISHING MEDIA:** Material will burn through direct or indirect heat.

**Thermal decomposition product:** Does yield smoke and irritating gases with oxides of carbon and

inorganic fragments. Non Toxic fumes does not come but & dark smoke do when burnt.

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

**UNUSUAL FIRE EXPLOSION HAZARDS:** Sheet does not burns fast with flames. There is no explosion while burning

#### **SECTION V – ACCIDENTAL RELEASE MEASURES OF FABSTONE VENEER**

**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 dirking material may be incinerated or land filled according to current local or central regulation.

#### **SECTION VI – HANDLING AND STORAGE OF FABSTONE VENEER**

**HANDLING PROCEDURE:** Use appropriate personal protective Hand Gloves during handling. Protect against physical damage. Observe good hygiene practices.

**STORAGE REQUIRMENT:** Store at ambient temperature. Keep away from freezing. Keep sheets in stored at room temperature away from flames & fire.

#### **SECTION VII – EXPOSER CONTROL / PERSONAL PROTECTIVE EQUIPMENTS DURING FABRIC BACKING STONE VENEER HANDLING & USE**

**PERSONAL PROTECTIVE EQUIPMENT:** Do not eat drink and smoke when working with FABRIC BACKING STONE VENEER 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 to wear MSHA/NIOH approved respirator where vapour concentrations is more.

**OTHERS:** Eye wash facility and emergence shower.

**ENGINEERING CONTROLS:** not specific

#### **SECTION VIII – PHYSICAL AND CHEMICAL PROPERTIES OF FABSTONE VENEER**

**Burning Temperature (°C):** About 250-300° C

**FLAMMABILITY:** Non Combustible.

**EXPLOSIVE LIMITS (% by vol.) LEL:** NA **UEL:** NA **FLASH POINT:** NA

#### **SECTION IX – STABILITY AND REACTIVITY DATA OF FABSTONE VENEER**

**CHEMICAL STABILITY:** Stable under normal ambient conditions.

**INCOMPATIBILITY:** Mineral acids and strong salt solution.

**HAZARDOUS POLYMERISION:** Will not occur.

**CONDITION TO AVOID:** Not specific.

#### **SECTION X – TOXICOLOGICAL INFORMATION ON FABSTONE VENEER**

Material has polymer content the product is not a problem in normal handling and storage. However polymer when heated does not release acetaldehyde into workroom atmosphere when sheets are heated above 195 degree centigrade.

#### **SECTION XI – ECOLOGICAL INFORMATION ON FABSTONE VENEER**

Not determined, however as a general practice, do not allow product to overheat flame exposure or extreme cold close to sub zero.

**SECTION XII – DISPOSAL INFORMATION ON FABSTONE VENEER**

The damaged / discarded material may be disposed of in accordance with current local or central regulation.

**SECTION XIII – TRANSPORTATION INFORMATION ON FABSTONE VENEER**

**DO INFORMATION:** Not applicable **TDG INFORMATION:** Not determined  
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