



## MATERIAL SAFETY DATA SHEET

**Adal Stone**<sup>®</sup> can be applied over nearly any solid substrate including concrete, ceramic, wood, metal, plywood, fibreglass, backer board, tile, dry wall, painted surfaces, MDF, HDF, door skins and cabinetry. **Adal Stone**<sup>®</sup> has been tested and developed as a beautifying stone covering veneer for use in many different environments, indoors or outdoors. **Adal Stone**<sup>®</sup> has proven to be a superb material when a real stone finish and texture is desired, but heavy solid stone may not be practical. **Adal Stone**<sup>®</sup> is not recommended for commercial flooring.

**Adal Stone**<sup>®</sup> Colours: Autumn White, Autumn Rustic, Indian Autumn, Forest, Terra Red, Tan, Multi Pink, Multi Colour, Mongolian, Black Slate, Blank Line, Black Star, Auburn, Copper, Burning Forest, Golden, Silver Shine Gold, Silver Shine, Silver Grey, Sea Green, Monsoon Black, Pearl White, Rainforest Brown.

Above mentioned **Adal Stone**<sup>®</sup> is available in 1220 x 610 mm which is our standard size. We can provide 2440 x 1220 mm upon request.

### Composition



**Adal Stone**<sup>®</sup> is natural stone surface chemically extracted and enhanced by strong core fibreglass backed by polyester resin substrate.

**Adal Stone**<sup>®</sup> is available in 3 main types: **Slim Cover** (1.5-2 mm thick), **Flexi Face** (~0.5mm) and **Light Wall** (1.5-2mm thick, translucent which allows lights to go through).

Further information please visit our product website on these 3 types comparison:  
<https://adalhome.com.au/compare-products/>

## **Installation**

Installation of **Adal Stone**<sup>®</sup> is quick, simple and easy. Simply apply the proper adhesive to the back of the **Adal Stone**<sup>®</sup> sheet with the recommended 4-6mm V-notched trowel and mount the sheet into place. Starting in the center of the sheet, using a roller or hand pressure, work any trapped air out towards the edge of the sheet. After adhesive has cured, you may finish the edges with any grout or trim pieces to match or accent the given decor.

Download our quick Installation Manual for reference:  
<https://adalhome.com.au/category/documents-en/>

## **Flexibility**

**Adal Stone**<sup>®</sup> can be used in many of the same applications as other thin laminate products are used. The **Slim Cover** series will bend to a minimum 20cm radius depending on the stone colour or type. With the assistance of heat, smaller radius can be achieved. Testing should always be done prior to any installation. **Adal Stone**<sup>®</sup> can be bent inward or outward to meet a given look or architecture. Fiberglass strand is used in the makeup of **Adal Stone**<sup>®</sup>, which gives it superior strength and flexibility.

Alternatively, the **Flexi Face** series, which is paperthin series approx 0.5mm thick providing unlimited flexibility, can be bent to any radius and folded to create square edges which is highly suitable to cabinet/furniture industry.

## **Sealers & Impregnators**

All **Adal Stone**<sup>®</sup> need sealers and impregnators for stain and scratch protection. The sealers and impregnators available in the market are polyurethane matt and glossy, waterbased sealers and impregnators, solvent based sealers and impregnators. All these sealers are similar to the ones used in stone industry.

It is best to pre-seal **Adal Stone**<sup>®</sup> sheets prior to installation. This protects and seals the face from adhesives and grout during installation and handling. **Adal Stone**<sup>®</sup> can be sealed with the same sealers used for slate, stone tiles, and wood. Sealers can be found at almost any home store. There are many sealers on the market with various recommended applications. Please test any sealer for the desired luster and penetration prior to installation.

Some recommended brands that can be easily sourced from Bunnings in Australia: Betta Tilecare (natural look or gloss finish), Dunlop Natural Look Sealer, Dunlop solvent based sealer (gloss), Lithofin sealers.

We strongly recommend to seal the Stone with Lithofin sealers.

## **Preparation**

Before application it may be necessary to clean, brush, or degrease any surface of dust or oils. In some installations, depending on the adhesive used, it may be necessary to prep the back of the **Adal Stone**<sup>®</sup> by sanding or scuffing. Some adhesives may require the use of solvents or recommended primer by the adhesive manufacturer.

## **Layout & Patterns**

Preparation of the area to be covered and the layout of the **Adal Stone**<sup>®</sup> sheets is the same as for natural stone or tile. Time spent preparing the work area will pay off immensely. A preliminary dry fit of **Adal Stone**<sup>®</sup> allows for arrangements and orientation of individual sheets, patterns, textures, and colours before final placement. It is recommended that each sheet be dry fit exactly where it will be placed on horizontal or vertical surfaces. Numbering the sheets to track relocation before cutting and trimming is recommended and will save time.

## **✂ Cutting**

The Flexi Face series is very easy to cut with any normal scissors for domestic applications.

The Slim Cover series can be cut using DIY tools such as power circular saw with diamond cutting blade.

Where large volume of sheets is to be cut there wet diamond marble cutting blades can be used with electric hand tools or machines. This material can also be cut with tungsten carbide wood cutting blades also. Wood panel saw blades of Diamond & tungsten carbide mixture are the most suitable cutting tools for dry cutting. Any kind of thick sharp blade can also be used for small cutting operations

## **Adhesives**

It is important to know your adhesives; by understanding the specifics of the adhesive, a great deal of time and cost can be saved. All adhesives should be tested prior to any installation including consideration of moisture and temperature in the planned environment. If the application is outdoors, consideration to thermal expansion needs to be taken into account. Since **Adal Stone**<sup>®</sup> is a veneer it must expand and contract with the substrate or delamination may occur. Where adhesive primers are recommended the bond should be tested by the installer before final installation.

The back of **Adal Stone**<sup>®</sup> veneers may require a filler type adhesive for some applications. For wet environments, epoxies, polyester resin and water proof adhesives are the best candidate. Contact adhesives are not recommended due to the uneven backing of **Adal Stone**<sup>®</sup>. Do not use non-catalyzing (water vapor type) cure adhesives where the substrate is a moisture barrier. Adhesive may not adhere properly if applied between non-porous materials.

### **Recommended Adhesives**

- Premixed grout and tile adhesive.
- Acrylic copolymer based tile adhesive.
- Polyurethane wood glues and PU construction grade adhesives.
- Wood, parquet, and outdoor carpet adhesives.
- Highly modified thin-set. Use only after testing. Not recommended where high adhesion is required.
- Epoxy.
- **Construction grade multi-purpose adhesive, Liquid Nails® type.**
- Polyester resin with filler.
- Double-sided foam adhesive (peel & stick).
- Adhesive tile mat systems (peel & stick).

Other recommended websites for glues:

- <https://aus.sika.com/en/construction/sealants-adhesives/wood-work-adhesives/sikabond-142-instantnails.html>
- <https://www.selley.com.au/products/adhesives/multipurpose-bonding/selleys-liquid-nails-original/>

Above mentioned companies are multinational and the local dealer can be contacted.

Stone veneer on MDF/HDF must be heat pressed for 2-5 minutes under 10 Tons pressure and 120 degree centigrade heat to activate the glue and achieve good industrial results. Glues recommended are PU hot melt glue, and white water based Polymer Emulsion called Ethylene Vinyl acetate copolymer Glue. The glue can be found in the local market.

**Adal Stone® on concrete or mortar cement plastered wall or Gypsumboard Exterior or interior:** EXPOXY based grouts available in the market with flexibility component are recommended. Contact local dealer /engineer of the area or local supplier of similar products.

### **The self adhesive Adal Stone® PEEL & STICK**

It is pre-coated with pressure sensitive glues and can be made available on request.

## **Tools to work with**

**Adal Stone**<sup>®</sup> can be worked with any commercially available tools (DIY tools). Sawing, drilling, milling, cutting, bending, pressing. For industrial processing we recommend using diamond blade tools due to strong wear on wood blades.

## **Hand Rollers**

A hand roller is recommended to remove air between the **Adal Stone**<sup>®</sup> sheet 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. Proper back-filling and good rolling techniques will result in a solid, hard surface.

## **Tiling, Grouting & Joining**

**Adal Stone**<sup>®</sup> can be used to create a tiled effect by leaving a grout joint between cut pieces. To the thin nature of **Adal Stone**<sup>®</sup> a 3-6 mm grout joint will produce better results. Tests show the use of water based epoxy and acrylic premixed grout work well to fill between the sheets. These grouts are available in several colours to match the existing decor. If desired, a deeper grout joint can be achieved by removing material just under the grout joint area with a grinding or scraping tool. Modified grout and caulking grout can also be used.

Alternatively, sheets can be butt-jointed for the look of a smaller seam.

## **Pressing**

**Adal Stone**<sup>®</sup> has a natural, split rough surface with a tolerance up to 2 mm. Thickness equalizing additions protect the surface from being damaged. Proven are 7mm thick rubber plates with a shore grade of 50 and a temperature resistance of at least +80°. It's important that the rubber mate has an insulating effect, so that the press time can be therefore extended. Pending to the adhesive type and press temperature of +80°, press time approximately 6 minutes. Depending on the press configuration, the pressure has to be carefully set.

## **Substrate**

**Adal Stone**<sup>®</sup> can be applied to MDF, HDF boards, Styro Foam sheets, melamine, brick, concrete blocks & slabs, mortar plastered walls, drywall, plywood, acrylic or other plastic sheets. In some indoor and most outdoor applications expansion and contraction must be equal to prevent delamination. A flexible adhesive may be considered in this case. Concrete and masonry substrates must be at least 28 days old. Hydrostatic pressure conditions and vapor transmission cannot exceed 3 lbs. per 1,000 sq. ft. (1,36 kg per 92,9 m<sup>2</sup>) per 24 hours using a calcium chloride test (reference ASTM F1869), and retained moisture should be less than 2.5%.

## **Variations**

Since **Adal Stone**<sup>®</sup> is a natural product *DESIGNED BY NATURE*, colour and texture variances are not defects within the material, but are inherent to it and part of the natural beauty of quarried materials *which* cannot be guaranteed to match dye-lot to dye-lot, so it is recommended that orders take into account future maintenance or re-fit possibilities.

## **UV & Temperature**

The stone surface of **Adal Stone**<sup>®</sup>, like most natural stone elements, acts as a UV inhibitor and will resist high sun conditions for years. When adhered to a substrate, **Adal Stone**<sup>®</sup> will handle thermal contraction and or expansion of most standard construction materials.

**Adal Stone**<sup>®</sup> will handle both, high temperatures and freezing, without cracking.

## **Storage**

The storage of unsealed **Adal Stone**<sup>®</sup> material must be dry, preferably frost-free and sun Protected. Protect against climatic influences.

## **Precautions**

Precautions must be taken when working with **Adal Stone**<sup>®</sup> due to the fiberglass composition of the backing materials. ALWAYS use the proper gloves, goggles, and dust mask when working with **Adal Stone**<sup>®</sup>. Industry standards recommend a NIOSH/MSHA approved respirator for this type of material. When using a saw ALWAYS be sure to take proper precautions to cover skin and eyes from fiberglass dust. When cutting **Adal Stone**<sup>®</sup> with saws, grinders, or sanders ALWAYS properly filter and exhaust equipment.



## **Safety**

**AVOID BREATHING SILICA DUST.** This product when cut, drilled, or abraded produces dust containing Free Silica which may cause cancer or delayed lung injury (Silicosis) if inhaled. Work outdoors, in a well ventilated area, or use mechanical ventilation. Please wear safety glasses and a dust mask. If working in dusty areas or where airborne dust exceeds PEL wear NIOSH/MSHA approved respirators. This product contains one or more chemicals known to the State of California to cause cancer.

## Adal Stone<sup>®</sup> technical analysis

**Test method:** US code of federal regulations Part. 1500.44, Titel 16

Flammability test on rigid and pliable solids:  
PASS Sample burning rate:  
inch/sec  
Polyester Resin based Metalized panel: 0.004

\*A sample is considered to have passed the test if the burning rate is not more a 0.10 inch per Second.

**Test method:** As specified in AOAC 16th Ed. Section 973.32 &

973.82 Polyester resin-based- metallized panel / bowl

Lead and Cadmium content in earthenware quantilation by AAS: PASS

| SGS Laboratory No.                            | Extract, Volume (l) | Lead, ppm (mg/L) | Cadmium, ppm (mg/L) |
|---|---------------------|------------------|---------------------|
| 14324   | 2.0                 | <1.0             | <0.25               |
| 14324   | 2.0                 | <1.0             | <0.25               |
| 14324   | 2.0                 | <1.0             | <0.25               |
| 14324   | 2.0                 | <1.0             | <0.25               |
| 14324   | 2.0                 | <1.0             | <0.25               |
| 14324   | 2.0                 | <1.0             | <0.25               |
| <b>Limit for FDA (any one of six) 1.0 ppm</b> |                     |                  | <b>0.25</b>         |

**Notes:**

1. < = less then
  2. mg / L = milligrams per litter
  3. ppm = parts per million
- AAS = ATOMIC ABSORPTION SPECTROPHOMETER**

**Conclusion:** The client submitted samples described above comply with the leachable lead and cadmium requirements of the American Food and Drug Administration (FDA).

**Test Method:** Nitric Acid digestion and analyzed by Atomic Absorption Spectrophotometer.

**Test Sample:** 04249 Stone/Slate on Resin 12 x 12 tile size 6x12

To determine the soluble Heavy Metal contents in accordance with the European Standard EN 71 part 3.1994 + A1:2000 – Migration of certain elements.

| <b>Migration of Certain Elements</b> | <b>04249</b> | <b>Limit</b> |
|--------------------------------------|--------------|--------------|
| Soluble Lead (Pb), mg/kg             | 12.7         | 90 mg/kg     |
| Soluble Antimony (Sb), mg/kg         | <5.60        | mg/kg        |
| Soluble Arsenic (As), mg/kg          | 0.2          | 25 mg/kg     |
| Soluble Barium (Ba), mg/kg           | <0.5         | 1000 mg/kg   |
| Soluble Cadmium (Cd), mg/kg          | <0.5         | 75 mg/kg     |
| Soluble Chromium (Cr), mg/kg         | 7.5          | 60 mg/kg     |
| Soluble Mercury (Hg), mg/kg          | <0.5         | 60 mg/kg     |
| Soluble Selenium (Se), mg/kg         | <0.5         | 500 mg/kg    |

**Methodology:**

with reference to EN 71 Part 3.1994 +A1:2000 by inductively coupled argon plasma (ICP-OES)

**Analysis:** 04249  
Lead (Pb), ppm ND (None detected) detection limit for Pb is 5.0 ppm

### **Adal Stone<sup>®</sup> details**

| <b>S.No.</b> | <b>MATERIAL<br/>compound/ ingredients</b> | <b>Quantity<br/>Kg./Sqm.</b> |
|--------------|---|------------------------------|
| 1            | Processing                                | 1.300 -1.500                 |
| 2            | Material Backing                          | 0.150 – 0.200                |
| 3            | Material Natural<br>Stone                 | 0.100 – 0.200<br>1.550-1.900 |
|              | Total Weight per sqm.                     |                              |

| <b>THICKNESS OF MATERIAL<br/>PARTICULARS</b> |                                      | <b>in MM</b> |
|--|--------------------------------------|--------------|
| 4  | Thickness of natural stone layer     | 0.50-0.60    |
| 5  | Thickness of other chemicals backing | 1.00-1.40    |
| 6  | Total thickness                      | 1.50-2.00    |

|    | Test conducted at testing laboratory which is ISO 9001:2000 approved internationally   | TEST VALUE   |              | PROTOCOLL                 |
|----|--|--------------|--------------|---------------------------|
|    |  | SLATE        | QUARZITE     |                           |
| 7  | Waterabsorption in % by wt   | 2.50         | 1.90         | ASTM C-121 guidelines     |
| 8  | Waterabsorption in %<br>Test carried out on thin slate specimen pasted on marble piece | 0.17         | 0.12         | ASTM C-97 guidelines      |
| 9  | Abrasion Test<br>Average wear, mm Max wear on individual specimen, mm                  | 0.70<br>0.80 | 0.90<br>1.00 | IS: 9162-1979 guidelines  |
| 10 | DENSITY (mass per unit area Kg /m2)  | 1.45         | 1.66         | IS: 12866-1989 guidelines |

### The Limited Warranty

**Adal Stone®** products are warranted to be free from defects in materials and workmanship. Any such defects must be reported within ten (10) days of date of delivery. During this warranty period we will repair, or at our option, replace free of charge, such merchandise as shall prove to be defective. THIS WARRANTY DOES NOT APPLY TO DAMAGE RESULTING FROM ACCIDENT, ALTERATION, MISUSE, TAMPERING, NEGLIGENCE, OR ABUSE. INCIDENTAL AND CONSEQUENTIAL DAMAGES ARE SPECIFICALLY DISCLAIMED. ALL OTHER WARRANTIES (INCLUDING ANY WARRANTY OF MERCHANTABILITY OF FITNESS FOR ANY PARTICULAR PURPOSE) ARE HEREBY EXCLUDED. THE FOREGOING SHALL CONSTITUTE THE SOLE REMEDY OF THE CUSTOMER.

Concrete and masonry substrates must be at least 28 days old. Hydrostatic pressure conditions and vapor transmission cannot exceed 3 lbs. per 1,000 sq. ft. (1,36 kg per 92,9 m2) per 24 hours using a calcium chloride test (reference ASTM). NOTICE: Before using, user shall determine the suitability of the product for its intended use and user alone assumes all risks and liability whatsoever in connection therewith. ANY CLAIM SHALL BE DEEMED WAIVED UNLESS MADE IN WRITING TO US WITHIN FIFTEEN (15) DAYS FROM DATE IT WAS, OR SHOULD HAVE BEEN DISCOVERED.