

Surface Shop TERRAFORM™

Installation Tips & Guides



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Surface Shop is a manufacturer and supplier of premium natural stone products for residential and commercial world markets. Established in 2006, The Surface Shop has forged its name by maintaining the highest standards in the industry for quality control, product design, and customer service. We're as passionate about your project as you are.

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Before We Begin – This is for General Guidance Only

Please note these tips are guides only and should be used in addition to your relevant Local Building Standards for trade practices. Note that installation may vary from site to site with varying conditions experienced on that site. The contractor, specifier, and customer should decide if these suggestions are suitable for their application or require further adjustment. A site sample of the proposed method of installation should be completed to ensure that this method is appropriate for the site conditions. These tips are given in good faith and to the best of our knowledge and experience at the time of printing. In no way do these tips replace the services of professional contractors and/or consultants.

Introduction to TERRAFORM™

TERRAFORM™ irregular thin stone veneers by The Surface Shop Inc., of the United States. For more information not contained in this document, contact your local Surface Shop distributor for assistance. TERRAFORM™ products are designed to offer a large scale irregular but contemporary looking natural stone veneer option, open to being set in a variety of styles by a stone mason. TERRAFORM™ adhere to the following physical properties

STONE CLASSIFICATION: Limestone, Marble, and Granite

COLOR: Aeon, Origin, Kalahari, Costa, Orion, Delos, Roland and Niko.

SIZE: TERRAFORM™ sizing is variable. Depending on the mineral type and origin, It is not uncommon for TERRAFORM pieces to meet or exceed 16"x16" nominal dimensions on the larger end, but can be as small as 4"x4" depending on the stone.

WEIGHT: approx 14.5 lbs per sq ft.

PACKAGING: Material is Crated, and quantities will vary. Contact a Surface Shop Pro for details.

Estimating Stone Required

Determine the amount of the TERRAFORM™ to be ordered by measuring the area to be covered. Measure the length times the height to determine the square footage required. Subtract the square footage for window and door openings. Always allow a minimum of 10% for error and wastage when ordering and, if a dry-fit application is desired, a minimum of 25% overage will be needed. Consult your mason to confirm your quantities before ordering.

Professional Installation Recommended

TERRAFORM™ Stone Veneers required advanced masonry skill and should only be installed by a professional mason.

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Storage

Ideally store crates indoors away from direct sunlight and rain and on a level surface. Do not stack crates on top of one another.

Tools and Material Needed

[1] For chipping and tooling TERRAFORM™ a masonry hammer and chisel will be necessary [2] For clean straight cuts, a quality masonry **wet saw with a masonry diamond blade** or [3] An angle grinder may be used for around small protrusions in the wall such as pipes, steelwork etc. [4] Steel trowel, [5] ½" (half-inch) notched trowel, [6] large sponge, and [7] recommended masonry adhesive, meeting or exceeding ANSI 118.4 & 118.11 standards.

Optional materials that **may be required**, depending on the substrate and application include:

Metal Lath
Thick Bed Mortar
Waterproofing Membrane
Grout and Grout Spacers
Natural Stone Sealer

Cutting

Ideally it is recommended that cutting be done using a bench saw with a wet diamond blade. The stone should be washed immediately after it is cut to avoid cutting paste drying and staining the surface of the product.

Crystalline silica (or silica dust) is a common mineral found in soil, sand and stone. It is also used in the construction of materials such as bricks, tiles, concrete and artificial stone. Silica exposure can cause a range of health issues, so protective equipment should be worn whilst using power tools to cut, grind and drill such products. Appropriate safety guidelines relating to silica exposure should be adhered to on the work-site.

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Preparing Your Substrate for Installation

The background structure must be structurally sound and suitable for the stone installation. This may require an engineer's structural certification. Please consult your local building authority with any specific questions relating to the local building codes.

TERRAFORM™ weigh approximately 14.5 lbs per sq ft; therefore it is critical that they are fixed to an appropriate substrate to ensure a successful installation. TERRAFORM™ may be applied over any masonry surface, concrete block, brick, cement, etc. Painted

surfaces must be sandblasted, or otherwise stripped of paint. If a new wall needs to be built of a thinner and lighter substrate, cement board is the correct material to use. **TERRAFORM™ SHOULD NOT be installed over drywall or sheet rock.**

All walls should be checked for plumb and corrected as necessary to within 1/8" tolerance over 10' and no more than 1/16" tolerance in any 2'. If the wall is not true, a mortar should be applied as per the manufacturer's recommendations to float the wall to conform to proper tolerances.

New concrete must be allowed to cure for 6 weeks, should have a wood float finish and be free of any laitance.

Old concrete should be cleaned of all laitance and have a keyable surface.

For tilt-up concrete panels, it is vital that all residues from release agents etc. are removed from the panel prior to the application of any tile adhesive. Mechanical fixings such as a shelf, pin or tie back system may be necessary.

Fortified Wall Mortar

All mortar should be liquid modified and bonded as per the manufacturer's instructions. The mortar should be true to a tolerance of 1/16" every 12 feet. It is essential to have a keyable finish. The mortar should be finished no thicker than .8" thick; no single coat should be less than .3" Thick and no more than .6" Thick. Mortar should be allowed to fully cure before application of stone.

Selection of Adhesive for Bedding Stone Elements

We recommend using synthetic tile adhesives to bed stone elements. Research and development of adhesives are continually improving. There are many reputable companies with a wide range of products available.

Installing Over Open Stud Walls

TERRAFORM™ can be installed over open stud walls using either cement board or a combination of wood sheathing, metal lath, and scratch coat. First ensure the wood or steel frame is structurally capable of supporting the weight of the TERRAFORM™. An engineer may need to be consulted.

If using cement board, it must be a minimum of 1/2" thick to support the weight of the TERRAFORM™ and must be securely fixed to the framework of either wood or steel. We suggest that the board be glued and screwed to the frame. First, cover the entire frame, where contact with the cement board is made, with a good quality mastic type adhesive and then fix the cement board to the frame, screwing at 24 inch centers using screws that are a minimum of 2 inches long. To ensure safety, strength and permanent fixing, this work should only be done by a qualified and licensed builder. If project is either exterior or will be exposed to moisture, a waterproofing / anti fracture membrane, to comply with ANSI 118.10 will be required between the cement board and the setting material.

If using wood sheathing, it must be exterior grade and covered with an exterior sheathing product such as 15 lb builders felt or 4 mil polyethylene. A 3.4# galvanized diamond wire metal lath is then to be affixed to the substrate per manufacturer's recommendations and then covered with a thick bed mortar mix. If project is either exterior or will be exposed to moisture, a waterproofing / anti fracture membrane, to comply with ANSI 118.10 will be required between the scratch coat and the setting material.

Please refer to Appendix A for detailed substrate drawings over open stud walls.

Installing Over Block, Brick, CMU, or Poured Concrete

First ensure that the surface is clean and free of any foreign agents, including paint that may interfere with the bond between stone and substrate. This may require light sandblasting or waterblasting.

**** Special note for pre-fabricated concrete tilt up construction – all release agents must be removed from concrete surfaces prior to TERRAFORM™ Large Format Tile installation.**

Next, in all installations over brick, or over other concrete substrates with uneven surfaces, a thick bed mortar mix is troweled onto the substrate to even out any inconsistencies in the substrate and provide a mortar base with which to adhere the setting material to. If the project is either exterior or will be exposed to moisture, a waterproofing / anti fracture membrane, to comply with ANSI 118.10 will be required between the mortar bed and the setting material.

Please refer to Appendix A for detailed substrate drawings over concrete substrates.

Installing Over Steel

First ensure that the surface is clean and free of any surface contamination, such as rust, dirt, paint, and manufacturing oils. **Refer to the steel manufacturer's guidelines for adequately removing all manufacturing oils as to not interfere with the bond between TERRAFORM™ and substrate.** If possible, tack weld a wire lath onto the steel in accordance with ANSI A108.0 – 3.3 standards. Once the lath is in place, a thick bed mortar mix is troweled onto the steel to fully cover the lath and form a suitable bonding substrate with which to adhere the setting material to. If the project is either exterior or will be exposed to moisture, a waterproofing / anti fracture membrane, to comply with ANSI 118.10 will be required between the mortar bed and the setting material.

Alternatively, TERRAFORM™ Large Format Tiles can be adhered directly to a contaminant-free steel substrate using an epoxy based tile adhesive meeting or exceeding ANSI 118.3 standards. This method should only be used when tack welding wire lath and creating a mortar bed on the steel substrate is not feasible. A waterproofing / anti fracture membrane is not required in this method.

Please refer to Appendix A for detailed substrate drawings over steel.

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Laying of TERRAFORM™ Stone Elements – General tips

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General tips in working with adhesives are as follows:

1. Ensure the back of the stone is clean and free of dust and other contaminants.
2. Spread the adhesive using a ½" notched trowel, making sure there is at least a 1/16" final bed thickness and full coverage of the stone surface.
3. Each stone should be fully back buttered before attempting adherence.
4. The adhesive should not be allowed to skin prior to bedding of the stone. Work within controlled areas, to ensure the stone is applied promptly to the adhesive bed (refer to manufacturer's specifications).
5. To ensure that full coverage is being maintained, a sample stone piece should be removed, the adhesive coverage noted, and the stone re-laid accordingly.
6. Sponge off any residual tile adhesive immediately.
7. Once stone pieces are laid, they must not be disturbed for at least 24 hours.
8. Care should be taken to ensure that vertical progression is appropriate (i.e. Don't install too high too quickly).
9. Depending on the style of stone to be installed there are numerous techniques, which can be used to achieve a certain look. Where a grout joint or coursing is desired, use tapered wedges or pre-soaked timber spacers. Ensure these are removed once the tile adhesive has set but is not yet fully cured.
10. Please pay special attention to corner details, ensuring that the stone is never seen 'floating' on a wall. Corner pieces are made for most stone styles.

How to Address Corners

All TERRAFORM™ Veneers come with L-Shaped corners, which offer the easiest installation benefit and the best looking final finish. Contact a Surface Shop Pro for more detail on your specific TERRAFORM™ Corner

Special Note on Moisture Rich Environments and Freeze Thaw Climates

Drainage design and waterproofing should be considered prior to installation as part of a broader 'moisture management plan'. To assist in dealing with efflorescence and other moisture related issues, we recommend coating the substrate with a waterproofing, anti-fracture membrane prior to tile installation. Please see our resource library for recommendations.

Natural stone is an excellent choice of building material for any environment and climate, be it interior or exterior, adjacent or completely submerged in water, desert hot or polar cold. Certain products should be used and procedures followed in some of these environments, as noted below:

Moisture Rich Environments – It is critical that a waterproofing membrane meeting or exceeding ANSI 118.10 standards be applied between the substrate and tile adhesive to form a waterproof barrier. This will ensure moisture will not reach the substrate material and potentially degrade its ability to support the tile installation.

Pool Applications – It is especially important to **thoroughly seal** your pool application; note that you may be required to **re-seal** your pool application more

frequently than other areas of your project. **We recommend re-sealing your pool application every 18-24 months**, or sooner if you notice your sealer has worn off or any adverse affect to your stone.

Freeze / Thaw Climates – TERRAFORM™ will not be affected at all by the normal freezing and thawing of the climate which they are exposed to, however, the same cannot be said about the substrate to which they are applied. It is critical that a waterproof / anti-fracture membrane meeting or exceeding ANSI 118.10 standards be applied between the substrate and tile adhesive to form a water and fracture proof barrier, capable of resisting substrate movement during freeze thaw cycles.

It is also strongly recommended that the top course be sealed (silicon/polyurethane) or capped to prevent moisture entering between the stone and the substrate.

Weather Consideration

Avoid laying stone in extreme weather conditions, or if rain is expected. Laying stone on very hot days (above 90-100F degrees) or on cold days (below 38F degrees) can cause delamination issues between stone and adhesive bedding layer.

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Special Note on Control Joints on Exterior Façade Installations

Natural Stone is a stable building material and will not move on its own. All buildings however will move over time, settling in response to applied loads, foundation settlement, traffic vibrations, and changes in temperature and humidity.

In determining if and where movement joints may be needed as part of a stone veneer installation, consideration should be given to where differential movement is expected, for example at the intersection of different materials or at transition points between two different type of wall assemblies. Movement joints should be included as part of the building envelope by the structural engineer, and their location and should be clearly indicated on the building elevations.

Generally, Control joints should be used in the following areas:

1. Over movement joints in the background and over weakened plane joints.
 2. At a junction between different background materials.
 3. At fixtures interrupting the stone surface, e.g. columns and beams.
 4. At internal vertical corners.
 5. At all horizontal joints and vertical joints (Approximately 3m to 4.5m apart).
- Foundations/Substrates

Stone veneer installations should not be installed directly over top of existing movement joints. The installation should stop at the movement joint, and restart on the other side of the joint with a backer rod and **color-matched sealant** used to fill the movement joint gap.

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Post Installation Guidelines

Cleaning

Work carefully and meticulously, to avoid adhesive dropping onto the tiles during installation. Should some thinset find its way onto the face of a tiles, allow it to dry until it is crumbly, then pick it off carefully, and use a soft bristle brush to lightly clean the spot where the adhesive may have left a slight mark.

Excess dirt and film may be removed using clean water and a soft bristle brush. It is important not to allow excessive adhesive to dry on face of the tiles. Carefully remove it with a damp rag prior to it hardening.

WARNING: Acidic cleaning agents must not be used under any circumstances as this will cause unnecessary damage to natural stone and void any warranty.

Sealing

Natural Stone products must be sealed with a good quality penetrating sealer for all exterior applications. Surface Shop also recommends sealing interior applications of Grey Basalt and Ebony Basalt TERRAFORM™ to assist in keeping these polished finishes clean and smudge free. Always test the sealer on an off-cut or in an inconspicuous place on the finished stone wall before applying to the entire stone surface.

Follow the manufacturer's instructions regarding the application of the sealer. Sealed stone may be easier to keep clean than unsealed stone and certain sealers also repel stains. However, sealers must be periodically reapplied, especially on exterior applications, and could alter the natural coloring of the stone.

If you've installed TERRAFORM™ in a pool, it will be important to re-seal your application periodically. We recommend every 18-24 months, or whenever you notice that your sealer has worn off. This maintenance will ensure the stone stays stable and in good condition.

Please view our resource library for recommendations on sealers.

Please note – Surface Shop provides recommendations for sealing products as a service to consumers only. Surface Shop does not warranty and will not be responsible for any claims regarding sealers.

Ongoing Maintenance

Though natural stone will last many lifetimes, routine maintenance may be required from time to time. Depending on the application – as with any wall finish - various types of scaling or build-up may occur. Should you experience a need to clean your TERRAFORM™ please adhere to the following recommendations:

1. Regular dusting for interior applications and hose washing for exterior applications is recommended.
2. In the event that cleaning agents are needed, please select a natural detergent that is non-corrosive and non-acidic to remove build-up in problem areas. Test your detergent in an inconspicuous place to verify compatibility and results.
3. In some cases, a low grade pressure wash may be used. However, the stone should never be exposed to a direct angle of attack from the nozzle. Note that up-close attack from a pressure washer may corrode the stone, so please stand a minimum of 5 feet away when pressure washing.

WARNING

Please DO NOT:

1. Acid wash the stone.
2. High-Pressure Wash the stone (directly or indirectly).
3. Use any sharp object, such as a steel scraper, knife, or screwdriver, to remove stubborn deposits from the face of the stone. This can result in damage to the natural texture of the product.

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Disclaimer

This Installation Guide is intended for general informational purposes only and should not be considered as professional technical or legal advice. It is designed as a reference only and shall not be construed as a substitute to seeking professional advice relevant to your particular circumstances to evaluate its accuracy, completeness and relevance for your specified application, or employing professional and licensed contractors to install Surface Shop Products. Therefore The Surface Shop does not take any responsibility for any error or misinformation that may be contained within this guide.

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Warranty

The Surface Shop, INC, Surface Shop Companies & Distributors, Rassan Trading Inc. — Limited Warranty

Subject to these terms and conditions, The Surface Shop, Inc. and all its subsidiaries and affiliates ("Surface Shop & Companies") warrants its products for a period of 12 months from the date of original purchase from Surface Shop & Companies against manufacturing defects when used on a structure which conforms to all building codes and regulations and when installed in accordance with Surface Shop & Companies' instruction, specifications and guidelines. In the event of a defect, Surface Shop & Companies will credit the cost of the products purchased or, at Surface Shop & Companies' option, repair or provide new products to replace any products determined to be defective. This warranty is limited to the original purchaser and may not be transferred to any subsequent owner. This limited warranty does not cover damage from: a) settlement of the building or improvement or other structural movements; b) contact with chemicals or paint; c) deterioration or discoloration due to airborne contaminants; or d) staining or oxidation. This limited warranty covers only manufacturing defects in Surface Shop & Companies products. Surface Shop & Companies are not responsible for labor costs in removal and replacement of defective products.

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