

ROCK PANELS

Stone Installation



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For Detailed Product Information, please visit the following web-based resources:

[Technical Library](#)

[Product Page](#)

Introduction to Norstone's Natural Stone Veneer System

Product Series

Standard Series Rock Panels, XL Series Rock Panels, AKSENT™ 3D Panels as produced by Pty Ltd., of Sydney Australia. For information not contained in this document, contact your local distributor for assistance. Natural Stone Veneer System products are aimed at providing the look and feel of stacked natural stone at the low cost installation and speed of tile.

Classification

Standard Series Rock Panels & XL Series Rock Panels: Quartzite-based sedimentary stone

AKSENT™ 3D Panels: Basalt and Marble Natural Stone

Color

Standard Series Rock Panels: Ochre Blend, Charcoal, White, Ivory,

XL Series Rock Panels: Ochre Blend, Charcoal, White, Ivory, Aztec

AKSENT™ 3D Panels: White Marble, Beige Marble, Grey Basalt, Ebony Basalt

Size

Standard Series Rock Panels: Field Units at 6" Tall by 24" Long, or 1 Square Foot in face coverage. Thickness varies between approx ¾" to 1 ¾". Outside Corner Units and Natural Ends also available.

XL Series Rock Panels: Field Units at 6" Tall by 24" Long with stepped or interlocking ends, or .94 Square Foot in face coverage. Thickness varies between approx ¾" to 1 ¾". Outside Corner Units and Natural Ends also available.

AKSENT™ 3D Panels: Field Units at 6" Tall by 24" Long with stepped or interlocking ends, or .94 Square Foot in face coverage. Thickness varies between approx ¾" to 1 ¾". Outside Corner Units and Natural Ends also available.

Weight

Standard Series Rock Panels: approx 12lbs per panel, or square foot.

XL Series Rock Panels: approx 12lbs per panel

AKSENT™ 3D Panels: approx 8.5 lbs per panel

Packaging

Standard Series Rock Panels: 4 panels per box = 4 square feet per box; 48 boxes per crate = 192 square feet per crate

XL Series Rock Panels: 4 panels per box = 3.76 square feet per box; 48 boxes per crate = 180.48 square feet per crate

AKSENT™ 3D Panels: 6 panels per box = 5.64 square feet per box; 48 boxes per crate = 270.72 square feet per crate

Estimating Stone Required

Determine the amount of Stone Veneer 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. Measure the vertical linear feet of the external corners to determine the amount of corner units required, if necessary. Always allow a minimum of 10% for error and wastage when ordering.

Professional Installation Recommended

Stone Veneer Systems can be installed by most home handyman with a limited knowledge of building and construction; however we strongly recommend they be installed by professional licensed tradesmen.

Tools and Material needed

[1] For cutting and modifying Stone Veneer, a quality brick or tile **water saw with a continuous rim diamond blade** is required and should **tilt** if miter cuts are necessary; these are usually available for hire on a daily basis from large equipment hire firms in your area. If pre-fabricated corner units are to be used, or if the mitering of corners is not required, a tilting wet saw is not necessary. **[2]** An angle grinder may be used for around small protrusions in the wall such as pipes, steelwork etc. **[3]** Steel trowel, **[4]** ½" (half-inch) notched trowel, **[5]** scraper, **[6]** stiff wire brush, **[7]** masonry brush, **[8]** large sponge, **[9]** selected Rock Panels and **[10]** recommended tile thinset 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
Natural Stone Sealer

Preparing your substrate for Installation

It is mandatory that local building codes be followed in the installation of Stone Veneer Systems. Please consult your building authority with any specific questions relating to the local building codes.

Stone Veneer can weight up to approximately 12 lbs per sq ft; therefore it is critical that they are fixed to an appropriate substrate to ensure a successful installation. Stone Veneer 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, then there is only one product suitable - fibrous cement board. **Stone Veneer SHOULD NOT be installed over drywall or sheetrock.**

Installing over open stud walls

Stone Veneer can be installed over open stud walls using either fibrous cement board or a combination of plyboard, lath, and scratch coat. First ensure the wood or steel frame is structurally capable of supporting the weight of the rock panels.

If using fibrous cement board, it must be a minimum of 5/8" thick to support the weight of the rock panels 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 fibrous cement board is made, with a good quality mastic type adhesive and then fix the fibrous 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 fibrous cement board and the setting material.

If using plyboard, 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 Stone Veneer 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.

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 Stone Veneer 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, Stone Veneer 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.

Installing Stone Veneer

Make certain the back of each panel is free of dirt, sand, or loose particles. When necessary, wash them completely. If the back of the panel is dry, dampen it first with a wet sponge, but do not saturate. This prevents the rock panel from pulling the moisture from the adhesive, allowing it to cure naturally and with a stronger bond.

Select a tile adhesive that meets or exceeds ANSI 118.4 and 118.11 standard, and mix per the manufacturer's instructions. When laying Stone Veneer it is necessary to start the bottom row on a level line in order to maintain consistent levels in each row **as you work up the wall.** Always start installing Stone Veneer at the bottom row, and **start each row at an outside corner** if one exists. It is also important that they rest on a secure base such as a concrete floor or footing to help carry the weight until the thinset has fully set. The panels should be laid in a **randomized, staggered fashion**, in an effort to minimize any vertical seams lining up from one course to the next. The panels should **not** be "stacked" one on top of the other **in a single line up the wall**, nor laid in a running or brick bond pattern as this increases the likelihood of patterned or vertical seams being visible from the wall.

When fixing the panels use a generous amount of recommended tile adhesive and apply it to the back of each panel and to the wall. **It is important to screed** the tile adhesive on to the wall as would normally be the application method used for laying tiles. By applying the adhesive to the back of each panel and to the wall, this ensures

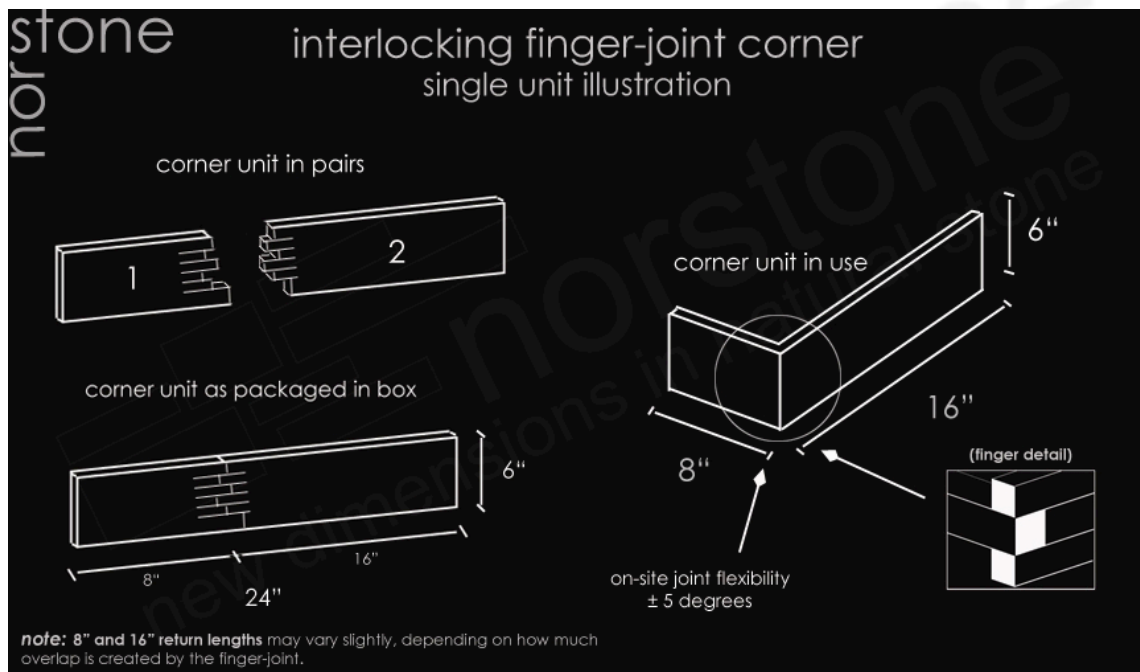
the maximum possible adhesion to your wall surface, as all the gaps, voids and cracks are filled.

Press each panel into the adhesive, rotating slightly, forcing some of the adhesive to squeeze out freely. Any adhesive forced out beyond the finished joint or on the panel surface itself must be removed before the adhesive is allowed to set. **Tight joints will provide a neat appearance.** Be sure not to allow any adhesive to harden on the face of the panels as this will help in the cleanup process.

How to address corners

Outside 90 degree corners can be handled either by **[1]** using pre-fabricated finger jointed corner units or **[2]** miter-cutting individual flat panels. Corner units provide for a smooth, finished look, and are easier to install, but are appropriate for 90 degree corners only. Mitering provides for a nice clean edge at the corner, however do require a higher level of skill to fabricate on site. Miter-cuts should be used in all off-angle (45°, 60°, etc) corner applications.

Corner Units are installed by forming the corner on site, cutting the returns down to size as necessary, and adhering the stone to the substrate in the same manner as a flat panel. Corner units stand 6 inches tall, and are comprised of two sides: one approximately **8 inches**, and the other approximately **16 inches**. Special care should be made to **alternate the returns** as the installation progresses up the corner so as to prevent any patterns forming in the wall which may lead to the appearance of vertical seams.



To use a miter cut for an outside corner, select one rock panel and mark the point where the joint should be, which is determined by the position of the adjoining panels. Once you have marked where to make your cut, make a straight cut to separate the panel into two pieces; once the panel has been cut into two separate pieces, cut each on a 45

degree miter to form a right angle. **NOT** making a straight cut (or separating the panel) prior to the mitered cut could render the thicker pieces on the opposing panel vulnerable to direct attack from the saw blade, so it is important to designate and separate the panel prior to mitering it.

Once cut, check the panel to make sure it forms a perfect 90° corner. The color, the width and thickness of the stone pieces should match to form a continuous look that seems to "flow" around the corner. **Never use 2 different panels to form a corner.** Every panel is unique so the results would be very disappointing, because nothing matches.

Special Note on moisture rich environments and freeze thaw climates

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 Management: Products should not be used in installations where they would be exposed to standing water, run-off water or too much humidity. Proper moisture management should be employed to ensure a successful, long-term installation. This includes but is not limited to: Proper Flashing around doors, windows, and exposed eaves; pool or aquatic installations that do not contain running water or may become still; proper water channeling from adjacent roofing or fireplaces; excessive moisture from steam rich environments; etc. Consult a building professional to ensure you are employing proper moisture management techniques before proceeding with your installation.

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 Stone Veneer System.

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.

Naturally Occurring Mineral & Iron Content – **Stone Veneer Systems are a product of nature and may contain deposits of minerals and iron that may react to moisture.** Stone bleed or rusting is a common example of this. A sealer is required but will not prevent the chemical reaction from happening. Please contact your sealer manufacturer for information about products that can protect the stone from moisture exposure. no responsibility for oxidation. If your project is experiencing oxidation, can outline a cleaning and maintenance process that may assist in removing the oxidation from the installation.

Freeze / Thaw Climates – Stone Veneer Systems exceed industry standards for freeze/thaw resistances and therefore will not be affected by the normal freezing and thawing of the climate in which they are installed; 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.

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.

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.

Post Installation Guidelines

Cleaning

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

Excess dirt and film may be removed using clean water and a stiff brush. It is important not to allow excessive adhesive to dry on face of the panels. 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. 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.

SPECIAL NOTE: All Aksent 3D Panel applications, both interior and exterior, should always be sealed. The marble and basalt natural stones used in these products is more susceptible to staining and should always be sealed post installation with a quality penetrating sealer.

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 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.

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 panels 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.

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 Stone Veneer Systems. Therefore does not take any responsibility for any error or misinformation that may be contained within this guide.

Appendix A – Substrate Detail

Appendix A details proper installation procedures over various substrates in both interior and exterior applications. Please direct all questions to your local Norstone office at 866-717-4548.

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- Open Stud – Lathe & Mortar - Exterior 15
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