

Norstone Masterguide



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The Norstone rock panel range provides the look and feel of stacked natural stone combined with a fast, fully warranted installation process.

Norstone rock panels strictly adhere to the following physical properties:

Classification: Quartzite-based sedimentary stone
Colour: Ochre Blend, Charcoal, White, Ivory, Sahara, Aztec, Sliver Grey
Size: 152mm tall by 610mm long. Thickness varies between 15-35mm.
Weight: approx. 5.5kg per panel.
Packaging: 4 panels per box; 48 boxes per crate = 17.8 m² per crate.

Professional installation recommended

We would strongly recommend that a skilled tiler installs Norstone products.

Installing Norstone rock panels

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 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 local building regulations and mix per the manufacturer's instructions. We strongly recommend Laticrete MVI and we will only warranty installations using this product.

When laying rock panels 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 Norstone rock panels at the bottom row, and beginning at an outside corner if one exists. The rock panels should be laid in a random, staggered fashion in an effort to minimise 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.

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 adhesive has fully set.

When fixing the stone panels it is essential that the substrate and all parts of the back of the tile are covered to a compressed total bedding thickness of 10mm. It is important to screed the tile adhesive on to the wall as would normally be the application method used for laying tiles. Applying the adhesive to both the back of each panel and the wall ensures the maximum possible adhesion to your wall surface, ensuring the gaps, voids and cracks are filled.

Press each rock 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 hinder the cleanup process.

Tools and materials needed

- [1] For cutting and modifying Norstone rock panels, a wetsaw with a continuous rim diamond blade is required and should tilt if mitre cuts are necessary; these are usually available for hire on a daily basis from large equipment hire firms in your area.
See our unique interlocking fingerjoint corner units which will save labour time and produce a perfect finish for angles of 65-115 degrees.
- [2] An angle grinder may be used to notch the back of the rock panels to fit around small protrusions in the wall such as pipes, steelwork etc.
- [3] Notched steel trowel
- [4] scraper
- [5] stiff wire brush
- [6] masonry brush
- [7] large sponge
- [8] selected Norstone rock panels

Preparing your substrate for installation

Norstone rock panels weigh up to approximately 65kg m² therefore it is critical that they are fixed to an appropriate substrate to ensure a successful installation. Norstone rock panels may be applied over any masonry surface, standard 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 Hardie Backerboard (6 or 12mm) for internal walls, or Knauf Aqua Exterior Boarding for external walls must be used.

Warranties are available if used in conjunction with Laticrete MVIS. It is mandatory that local building codes be followed in the installation of Norstone rock panels. Any installation above 3LM, we would strongly advise for health and safety rules that mechanical fixing should be installed.

Norstone rock panels and other products can weigh up to 65kg per m².

Please consult your building authority with any specific questions relating to the local building codes.

Installing over open stud walls

Norstone rock panels can be installed over open stud walls using Hardie Backerboard (see above).

Installation details can be found in our technical library.

Installing over standard concrete block, brick or 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. If the substrate is uneven or not plumb, please contact Norstone for specific advice.

**Special note for pre-fabricated concrete tilt up construction – all release agents must be removed from concrete surfaces prior to Norstone rock panel installation.

Radius wall installation

Concave - simply cut the standard rock panel into 3 equal pieces.

Convex - do the same but mitre (45 degrees) the back of all six the vertical ends of the pieces of the panel which will allow the panel to move into the adjoining panel.

This will work seamlessly on a radius up to 180 degrees (i.e. a semi-circle) over 4 linear metres.

Installing Norstone Planc™ tiles

Norstone Planc™ Series is designed to be installed as a highly calibrated natural stone tile without grout joints. The basis for a successful installation is primarily the flatness of the substrate and the installer's ability to start with a level course and maintain level courses throughout the installation.

A standard tile wet saw is the ideal tool for cutting Planc Series veneer. If mitre cuts are desired for inside and outside corner work, a wet saw with a tilting blade or mitre cut attachment will also be needed. Here is a quick summary of the key components of a Planc Series installation:

1) Substrate.

As with any vertical tile installation, an appropriate cementitious substrate is required. Cement board is most common for interior projects, however block work and unpainted brick are also suitable for both interior and exterior applications. Plasterboard is not a suitable substrate for installing tile or stone on vertical surfaces as it is not designed to support the added weight and the outer paper layer of the plasterboard can fail over time causing an installation to destabilize or potentially fall off the wall.

In addition to the right type of substrate, the wall should be in good condition and plumb. If your wall / substrate is uneven or in unsatisfactory condition a masonry skim coat, sometimes called a brown coat, can be used to bring it within tolerance. Please consult with Norstone as to the available methods.

2) Waterproofing.

If the product is suitable for an exterior or wet installation, the appropriate waterproofing and where applicable freeze/thaw anti-fracture membranes should be put in place between the substrate and the tile setting bed. Many Norstone Planc colours* are suitable for use in exterior, wet, submerged, and freeze/thaw conditions provided the right setting material and installation system is used. Contact us for any questions specific to your project.

3) Stone Setting/Patterning.

Norstone Planc Series should be set with Laticrete MVIS Hi Bond adhesive. Mix the thinset per the manufacturer's recommendation and ensure that both the substrate and the back of the Norstone is fully covered with Adhesive with a final compressed adhesive of no greater than 10mm. For further information, visit our Technical Library under Laticrete warranties for installation instruction or call Norstone UK Ltd for further information. During installation and curing, temperatures should be at least 5 degrees and rising throughout curing time. Curing Times will lengthen depending on temperatures.

Butt horizontal and vertical seams up tightly to achieve a groutless look. Special care should be taken to set the first course and achieve a level line by either selectively trimming or shimming the tiles and then maintaining level as subsequent courses are set.

4) Corners.

Internal and external corners are easily fabricated onsite from standard tiles. Individual Plancs can be set along a corner in an alternating overlap pattern where the short edge (thickness) of the tile is exposed on each course, alternating on which side of the corner from one course to the other. A mitre cut can also be used for internal and external corners as well as any non-90 degree corners.

5) Sealing.

Pre-sealing prior to setting should be considered depending on the stone selected and the environment it is to be installed in. When pre-sealing, ensure that the product used is appropriate to work in conjunction with the selected tile adhesive.

We would recommend that the Lavastone Platinum and Graphite, should be sealed prior to installation. This will reduce any chance of finger staining during installation.

Otherwise, most Planc Series colours should be sealed with Lavastone Sealant, a penetrating water based sealant. Different sealers can produce different effects on the stone, so be sure to test the sealant on a sample or offcut of tile before applying to the entire project.

The benefit of Norstone Planc Series is the high degree of calibration we are able to achieve with this product through our expertise in raw stone sourcing and decades of stone fabrication experience at our manufacturing centre simplifying installations for both commercial and residential applications alike.

Installing Norstone Lynia™ tiles

When installing Lynia Tiles the following installation is recommended.

Apply Norstone Lavastone sealant using a lint free cloth to the Lavastone Tile before installing. Once dried it is ready for installing. Screed the substrate with a 6mm notched trowel, This thickness of trowel will avoid the adhesive slipping through the gaps and preventing effective grouting.

Using a grout float, pat down to ensure full contact. Once dried, apply the grouting as you would any normal natural stone products.

Special note on moisture rich environments and freeze thaw climates

Moisture Rich Environments

It is essential that Laticrete MVIS Air & Water Barrier is applied between the substrate and the Laticrete MVIS Hi Bond adhesive. This will ensure moisture will not reach the substrate material and potentially degrade its ability to support the Norstone panels.

When installing Norstone with Laticrete Air and Water Barrier, ensure that the adhesive is fully cured before applying Norseal H20 Penetrating Sealant.

Freeze / Thaw Climates

Norstone rock panels will not be affected at all by the normal freezing and thawing of the climate they are exposed to. However, the same cannot be said about the substrate to which they are applied.

Norstone Ochre Blend rock panels are 100% natural sedimentary slate and may be subject to some spalling. It is a natural product and this characteristic is one of nature. To minimize this, we recommend an application of Norseal H20 Penetrating Sealant.

Norstone Charcoal rock panels are 100% natural slate and are hard wearing. Some iron oxide may exist naturally within the stone and may leave oxide marks on the stone when exposed to moisture. To minimize this, we recommend an application of Norseal H20 Penetrating Sealant.

Post installation guidelines

Cleaning

Excess dirt and film may be removed using clean water and a stiff brush; it is important not to allow adhesive to dry on face of the stone panels. Remove it prior to it hardening.

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 may be sealed with Norseal H20 only after thoroughly curing.

Follow the instructions on the application of sealer. Sealed stone is easier to keep clean than unsealed stone and also helps repel stains. However, sealers must be periodically reapplied, especially on exterior applications. Norseal H2O has been specially designed to maintain the integrity and natural colour of the stone.

In common with all tiling projects, we strongly recommend that all tests are carried out on a small sample prior to installation.

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 Norstone rock panels please adhere to the following recommendations:

- Regular dusting for interior applications and hose washing for exterior applications is recommended.
- 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.
- 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 1.5 metres away when pressure washing.

WARNING - PLEASE DO NOT:

- Acid wash the stone.
- High-pressure wash the stone (directly or indirectly).
- 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

LATICRETE WARRANTIES

Laticrete will warranty their adhesives when installing Norstone, providing the following steps are undertaken:

1. Internal Installations

Norstone products can be installed onto concrete, suitable high density concrete blockwork, brick or Hardie Backerboard. The background must be free from any dust, debris, paint or any other substance that will inhibit the bond of the adhesive. It must be stable and be able to support the load of the selected Norstone product.

If the substrate is not even, a render coat must be applied to create a smooth, flat surface prior to fixing Norstone. Apply Laticrete 3701 Fortified Mortar in accordance with the instructions in our technical library.

If applying multiple coats, each coat must be fully cured before the next one is applied. Once the mortar has dried, Norstone panels can be installed in accordance the technical guide. Apply the Laticrete MVIS Hi-Bond Masonry Veneer Mortar Adhesive (known as Laticrete MVIS Adhesive) to the substrate and all parts of the back of the Norstone panel, ensure all the Norstone panel back is 100% covered with adhesive. The maximum total thickness of the adhesive bed is 10mm.

Norstone products can be applied directly onto the Hardie Backerboard using Laticrete MVIS Adhesive. As above, apply the adhesive to the substrate and the back of the Norstone panel to achieve 100% coverage. The boards must be installed in accordance with the manufacturer's guidelines. This installation will be eligible for a 10 year Laticrete System Warranty.

The adhesive should be applied onto the substrate and the back of the Norstone panel within 15 minutes of mixing.

2. External Installations

When fixing Norstone with Laticrete MVIS Veneer Mortar, ensure that the substrate temperature is +4 degrees C and rising during the installation and immediately afterwards.

The installation may require protection using frost blankets or hessian sheets to sustain the required temperature throughout the curing process of the adhesive until it has fully cured. Norstone products can be installed onto concrete, brick, suitable high density concrete blockwork or HardieWall.

The background must be free from any dust, debris, paint or any other substance that will inhibit the bond of the adhesive. It must be stable and able to support the load of the selected Norstone product.

If the substrate is not even, it is recommended to apply a render coat to create a smooth, flat surface prior to fixing Norstone, using Laticrete 3701 Fortified Mortar* in accordance with the instructions in our technical library.

*NB - The Laticrete 3701 Fortified Mortar cannot be applied to HardieWall.

After applying the Laticrete 3701 Fortified Mortar, it must be allowed to fully cure before applying two coats of Laticrete MVIS Air and Water Barrier by brush or hairy roller. Ensure the first coat is allowed to dry before applying the second; allow to dry.

When installing Norstone with Laticrete MVIS Air and Water Barrier and Laticrete MVIS Veneer Mortar, ensure that the adhesive is fully cured before applying Norseal H20 Penetrating Sealant.

The affixing of Norstone must be completed within 30 days of application of the MVIS Air and Water Barrier as it is ultra light light-sensitive and will degrade.

Using both Laticrete MVIS and Laticrete Air and Water Barrier when affixing Norstone onto concrete, high density blockwork or brick substrates will enable eligibility for the 25 Year Laticrete System Warranty.

The Laticrete MVIS Adhesive adhesive should be applied to the substrate and the back of the panels to ensure 100% coverage.

Norstone products can also be fixed to HardieWall™ using Laticrete MVIS adhesive. As above, apply the adhesive to the substrate and the back of the Norstone panel to achieve 100% coverage.

The boards must be installed in accordance with the manufacturer's guidelines. The adhesive should be applied onto the substrate and the back of the Norstone panel within approx. 15 minutes of mixing.

We would always recommend Norseal penetrating sealer be applied to Norstone products after installation, the sealer does not generally alter the appearance of natural stone - however, we would advise applying a test coat on an off-cut prior to full application onto a completed project. Note: The Laticrete products detailed above must be mixed and applied as per the latest technical data sheets.

Technical Information regarding Laticrete, Norstone and Hardie boards can be found at <https://www.norstone.co.uk/technical-library.html>

Installation of Knauf Aqua Exterior Boarding or Internal Knauf Boarding

When installing the Knauf Aqua Exterior or interior Boarding, the Installation methods must be strictly adhered to for the Knauf Guarantee and Laticrete 15 year Warranty to apply when affixing Norstone.

Drawings/plans of intended installation methods must be sent to Mr Richard Lord, Technical Development Manager of Knauf for his approval. His email address is rlord@knauf.co.uk Any technical questions regarding the installation of Knauf Aqua exterior Panel or interior Boarding, must be sent stating the installation required to allow Norstone to be affixed to Knauf.

Written approval or amendments must be incorporated within the design in order for the system warranty to exist.

For the Knauf Guarantee and the 15 year Laticrete warranty to be in place, The Knauf Aqua Exterior Boarding and internal Boarding, must be purchased through Norstone UK Ltd.

The information provided in this document is to be used as a guide only and does not constitute a Laticrete Warranty. A project specific Laticrete Warranty is available upon request. All information supplied is subject to the company's terms and conditions of sale, copies of which are available.

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Guidelines & Recommendations when fixing with MVIS Veneer adhesive in adverse site conditions

The optimum conditions for installation of direct adhered cladding are temperatures between 16°C and 27°C, with 50% relative humidity and minimal wind. Due to the UK climate, these conditions are not typical, so provisions must be made for variations in climatic and environmental conditions.

The need for protection applies to the substrate, the installation of adhesives and grouts and post-installation (rain and temperature protection) until suitable cure has been achieved, as well as the storage and handling of the cladding material. The standard rule of thumb applies: For every 10°C above 21°C cementitious materials cure twice as fast. For every 10°C below 21°C, cementitious materials take twice as long to cure.

Due to the normal rate of Ordinary Portland cement hydration and how its' strength development is affected by low temperatures, it is very important to protect installations for longer than normal periods until full cure. Always allow for extended cure time for installation in cooler temperatures. It is important to note that large format tile and stone will also require extra curing time in cooler temperatures beyond what is stipulated. Suitable protection should be included in the scope of work. Each component must reach a proper cure prior to installing the subsequent installation product.

Helpful Hints:

- Ensure that the surface temperature is within the suggested temperature range for the LATICRETE product
- Consult the individual LATICRETE product data sheet and How-to-Install guide for more information.
- Tent / shade that will be subjected to the elements (wind/raid) or freezing temperatures during installation and cure periods.

Wet Conditions – Certain materials used in direct adhered exterior wall assemblies are moisture sensitive. For example, the strength of cementitious adhesives can be reduced from premature exposure to water/moisture or exposure to excessively wet or damp substrates. Some materials, such as waterproofing membranes, may not cure properly or can delaminate from a continually wet or damp substrate.

A damp substrate may also contribute to the formation of efflorescence (see TDS 159 "Efflorescence – Causes and Prevention" for more information). This is of particular concern not only from normal rain exposure during construction, but, also in areas of a facade which may be exposed to rising dampness at ground level, and in areas where leaks from poor design or construction cause continual dampness in the substrate.

Protection and corrective action primarily requires temporary enclosures or tarpaulins prior to, during and immediately after installation to shield from rain. If prolonged exposure occurs, surfaces that appear dry may be saturated internally and require testing to determine suitability of certain overlay substrates, membranes or adhesives.