artisan EXTERIOR

INSTALLATION GUIDE

LIMESTONE

LIMESTONE INSTALLATION GUIDE

Please note, all information given in this document should be considered as a guide only and should be checked against the relevant Australian Standards for trade practices at the time of installation.

All information is provided in good faith and should be used in conjunction with site specific considerations. Tips and Guides included do not replace the services of professional contractors/consultants, or the relevant manufacturer's technical data sheet or recommended method of application.

Artisan Exterior reserves the right to change, delete or otherwise modify any information in this document without prior notice.

CONTACT:

Artisan Exterior
1300 301 898
artisanexterior.com.au

PRODUCT CONSIDERATIONS:

The Artisan Exterior Limestone range is a versatile calcite based, sedimentary stone found on ocean floors, along coastlines and in mountain ranges. These Pavers and Tiles are the result of thousands of years of formation in all types of weather conditions, as such, variation from batch to batch is expected, in fact it's a big part of what we love about natural stone and what makes it so uniquely beautiful.

A reasonable degree of dimension and thickness tolerance should be expected, along with natural variation in colour and shade. Samples should only be taken as indicative of colour and shade. Artisan Exterior recommends inspecting all product upon delivery to ensure the colour and characteristics of the stone meet client expectation. Always mix pavers and tiles evenly from all crates during installation.

Minor marking and chipping is not structural and not considered as defective. All tumbed and antique edge products naturally have chipped edges and corners because of how they are manufactured. Being natural stone, all pieces are not expected to be perfect. Installers are to put these imperfect pieces aside during installation and use them later for cutting and wastage. If excessive chipping or thickness variation is noted in the delivered product, notify Artisan Exterior PRIOR to installation. Installation of the product constitutes acceptance of the product. Always include adequate amount of extras while ordering. Natural stone products can take days to dry out depending on density of the product and the weather conditions following installation. Please consider and allow adequate drying time before analysing final desired outcome.

PRODUCT DESIGN:

Prior to beginning installation, please check that the correct, specified layout for the product is being followed to achieve the intended finish.

Contact Artisan Exterior if additional information is required.

STORAGE:

Upon delivery, we recommend storing uninstalled product in a dry, protected environment, away from exposure to weather and direct sunlight, single stacked on a firm level surface.

SUBSTRATES & FOUNDATIONS:

Successful installation begins with a high-quality substrate. A site investigation should be undertaken by a qualified structural engineer, in most cases there will be three key considerations: soil investigation, traffic estimation and a site survey, to examine the topography of the site and the drainage requirements.

A typical guide for slab thicknesses at 25mpa is as follows:

Pedestrian traffic only: Minimum 75mm thickness reinforced* concrete
Vehicle Traffic below 3t gross mass: Minimum 100mm thickness reinforced* concrete

**Reinforcement grades will vary dependant on use.*

Ensure that the substrate's required drying time, as given in the relevant part of AS 3958, is allowed to elapse prior to fixing. The substrate must be fit for purpose prior to installation and should be clean, firm and free of dust, dirt, oil, grease, curing compounds, release agents and other barrier materials.

CONTROL & MOVEMENT JOINTS:

Control and movement joints allow the absorption of variance in the flooring caused by temperature swings and movement in the sub-grade, substrate, adhesive/mortar or the stone itself.

Check all control and movement joints to ensure no adhesive/mortar has dried in the joint connecting the two pavers or tiles together, this would render the joint ineffective for expansion and contraction. An angle grinder may be required to clean out any joints that are occupied with adhesive/mortar. When grinding out a joint the waterproofing membrane should not be penetrated, this would compromise waterproofing integrity.

When laying the stone, all control joints and movement joints must be transferred through to a flexible joint in the surface of the finished flooring. Where a tile or a paver covers a control joint, a cut and flexible joint must be made in the finished surface directly above the control joint to create a movement joint. Movement joints and control joints should be carried out in accordance with AS3958.

DRAINAGE:

Drainage is an important consideration for preventing softening of subgrades, deterioration of surfacing layers and efflorescence and will ensure the longevity of the installation. Minimum surface crossfall, to adequate drainage points, should be carried out in accordance with Australian Standards.

Please contact Artisan Exterior to discuss suitable drainage systems for your project.

SCREED & BONDING SLURRY:

Where a screed bed will be installed, allow the concreted base to cure for the time period defined in the manufacturer's specifications. An approved cement-based slurry coat should be used to bond the screed to the concrete base. Screed mixes and application methods should comply with the relevant Australian Standards and manufacturers recommendations.

WATERPROOFING MEMBRANE:

A compliant under tile waterproofing membrane should be used as required. This can be applied to either the concrete base or the screed bed (check manufacturer's instructions).

Whether installing the waterproof membrane directly onto the concrete or onto a screed bed, installation of the waterproofing membrane should be carried out in strict accordance with the manufacturer's instructions.

Artisan Exterior recommends Ardex and Mapei Waterproofing Systems.

Ardex: www.ardexaustralia.com

Mapei: www.mapei.com

PRE-SEALING & PRE-GROUT SEALING:

Dependent on the stone selected and the environment it is being installed in, pre-sealing or pre-grout sealing can assist installation and product stability. This process can be performed prior to adhesion or grouting as applicable.

Artisan Exterior recommends Aquamix products for pre-sealing, pre-grout sealing and post installation sealing of natural stone, however it is important to confirm that any pre-sealer or pre-grout sealer chosen is compatible with the intended stone, adhesive or grout. Application should be carried out in strict accordance with the manufacturer's guidelines.

Artisan Exterior recommends Aquamix Cleaning and Sealing Solutions:

Aquamix: www.aquamix.com.au

WEATHER CONSIDERATION:

Consider expected weather conditions prior to installation. Conditions below 10 degrees and above 30 degrees Celsius can inhibit adhesion or bonding, rain can cause excess moisture which in turn can weaken the bond strength of adhesive and grout.

Temperature ranges are indicative only, for further information, consult the relevant data sheet of the intended product(s) being used on-site.

CUTTING:

It is recommended to use a specialist, high-quality, product specific blade for cutting. Ensure the blade is compatible and approved for use in conjunction with the machinery you intend to use it with. Artisan Exterior recommends the use of a bench saw where possible.

Please note: Crystalline silica (silica) is found in sand, stone, concrete and mortar. It is also used to make a variety of products including composite stone, bricks, tiles and some plastics. When cutting, crushing, drilling, polishing, sawing or grinding products that contain silica, dust particles are generated that are small enough to lodge deep in the lungs and cause illness or disease including silicosis. Correct PPE should always be worn and work health safety measures adhered to.

For more information visit safeworkaustralia.gov.au

ADHESION:

The choice of adhesive for installation depends on the type of stone, its intended use, the area, the substrate, the sealant (if applicable) and the environment it is being installed in. Installers are required to use the appropriate adhesives, taking all these factors into consideration. Please contact Artisan Exterior to discuss the best suited product to your needs.

MIXING:

Adhesive (no additive)

Pour the required amount of clean, cool water into a clean mixing container. Gradually add the proportionate amount of powder while slowly mixing. Mix thoroughly with a low-speed mixer until a there is a smooth, creamy, homogeneous consistency. Allow to stand for 3-5 minutes and re-stir the mixture.

A 20Kg bag of adhesive will require 4-6L of water dependant on adhesive type.

Adhesive (with additive)

A two-part adhesive will require mixing with either an additive or an additive combined with water. Always follow the manufacturer's instructions carefully and follow the ratios for powder, additive and water usage accurately.

Pour the required amount of additive into a clean mixing container, if mixing with water, add the required amount of additive to clean, cool water and mix until blended. Gradually add the proportionate amount of powder to the additive or diluted additive solution while slowly mixing. Mix thoroughly with a low-speed mixer until a there is a smooth, creamy, homogeneous consistency.

The consistency of the adhesive can be slightly adjusted to suit site conditions and size, weight and type of the stone, along with the location of fixing.

FIXING

1. Ensure the substrate is clean, firm and free of dust, dirt, oil, grease, curing compounds, release agents and other barrier materials and that the stone is free from dust or contaminants.
2. Whether installing onto a waterproofing membrane, concrete base or onto a screed bed, the immediate surface that the tile adhesive will be adhered to must be allowed to cure according to manufacturer's specifications.
3. The adhesive should be worked/keyed into the substrate using a 10-12mm notch trowel. Back butter the underside of the stone to be installed, taking care to cover the back surface entirely.
4. The stone should be pressed firmly onto the freshly notched adhesive bed to ensure good contact with the adhesive, a rubber mallet may be required to move the stone into its final position.
5. Work in controlled spaces with consideration for adhesive open time (pot life).
6. Use a spirit level to maintain desired levels and falls.
7. Lift a tile from time to time to check that there are no voids beneath the pieces. Do not spot fix.
8. Apply joint spacers or wedges to achieve consistent grout joint spacing*.
9. Any surplus adhesive must be removed from the surface of the paver and joints, before the adhesive sets.

**Remove spacers and wedges once adhesive has set but not fully cured*

For additional information on aesthetic considerations for the installation of Limestone pavers & tiles, contact Artisan Exterior.

Artisan Exterior recommends Ardex and Mapei Adhesive Systems for Limestone Installation.

Ardex: www.ardexaustralia.com

Mapei: www.mapei.com

GROUTING:

MIXING:

Grout (no additive)

Pour the required amount of clean, cool water into a clean mixing container. Gradually add the proportionate amount of powder while slowly mixing. Mix thoroughly with a low-speed mixer until a there is a smooth, creamy, homogeneous consistency and uniform shading of the coloured grout. Allow to stand for 3-5 minutes and re-stir the mixture.

Grout (with additive)

A two-part grout will require mixing with either an additive or an additive combined with water. Always follow the manufacturer's instructions carefully and follow the ratios for powder, additive and water usage accurately.

Pour the required amount of additive into a clean mixing container, if mixing with water, add the required amount of additive to clean, cool water and mix until blended. Gradually add the proportionate amount of powder to the additive or diluted additive solution while slowly mixing.

Mix thoroughly with a low-speed mixer until there is a smooth, creamy, homogeneous consistency and uniform shading of the coloured grout. Allow to stand for 3-5 minutes and re-stir the mixture.

APPLICATION:

1. Check all joints are thoroughly cleaned prior to starting.
2. Moisten the surface with a damp sponge, do not flood the stone or allow water to stand in the un-grouted joint.
3. Work grout into the joint with a rubber grout float. Make sure all joints are well-compacted and free of voids or gaps.
4. Remove excess grout from the surface by moving the float diagonally over the paver and joints.
5. Allow grout to firm (typically 10-15 minutes, based on weather consideration).
6. Fill two buckets of water for cleaning. Use one bucket for cleaning the majority of the grout residue from the sponge, use the other for moistening the sponge.
7. Dip sponge and wring out excess water. Wipe diagonally across the paver and joint in a single stroke, reverse the sponge and repeat the process in an adjacent area. After using both sides, rinse the sponge in the bucket allocated to cleaning the majority of the grout residue, then dip into the second bucket, wring out the excess and repeat the process.
8. Avoid using excessive water and replace water regularly.
9. Ensure **all** grout residue is cleaned from the surface of the stone within the time limit specified in the manufacturers data sheet.

Artisan Exterior recommends Ardex and Mapei Grout Systems for Limestone Installation.

Ardex: www.ardexaustralia.com

Mapei: www.mapei.com

POOL COPINGS:

The following considerations should be made when installing Limestone Natural Stone Pavers as a pool coping.

PROFILE CHOICES:

Artisan Exterior **does not** recommend using laminated epoxy rebated copings on fibreglass pools due to the technique used to produce the product and movement considerations relevant to a fibreglass shell, however one/full piece rebates of 30mm thickness or above are suitable for this application.

All profiles including rebated copings can be used when applied to a concrete pool shell. Please refer to the relevant product specification sheet for profile options.

BOND BEAM PREPARATION:

Fibreglass Pool Shell

The top of the fibreglass pool shell should be sanded using wet and dry sandpaper to scuff the surface coating and wiped free of all dust or residue, this creates a better bond with the sealant (Ardex CA20P or equivalent).

Concrete Pool Shell

A screed may be required over the concrete bond beam in order to level the horizontal surface. Where the screed process has been carried out, the concrete and screed must be allowed to cure for the time period according to manufacturer's specifications, prior to beginning installation.

MOVEMENT JOINTS:

Movement joints (min 3mm) should be carried out at a maximum of 2.4Lm in addition to every corner (internal and external) and the entire rear perimeter of the coping.

INTERNAL MOVEMENT JOINT & UNDERSIDE PERIMETER SEAL:

A movement joint (min 3mm) should be applied between the internal underside of the coping and the internal surface finish. An appropriate silicone/sealant should be used to fill the movement joint. This in turn seals the internal underside of the coping and serves as a barrier to prevent pool water from traveling underneath the coping.

ADHESION & INSTALLATION OF POOL COPINGS:

FIBREGLASS POOL SHELL (excluding laminated epoxy rebated coping):

1. A cement-based modified adhesive conforming to C2 TE S2 should be worked/keyed into the horizontal surface of the concrete bond beam or screed using a 10-12mm notch trowel.
2. Back butter the section of coping being fixed to the concrete surround, the section of coping that will be positioned directly over the fibreglass beam should be adhered using a sealant (Ardex CA20P or equivalent). Do not spot fix.
3. When installing one/full piece rebated copings, the back of the face edge should be adhered to the shell using a sealant (Ardex CA20P/Mapei or equivalent). Do not spot fix.
4. The stone should be pressed firmly onto the freshly notched adhesive bed to ensure good contact with the adhesive, a rubber mallet may be required to move the stone into its final position.
5. Work in controlled spaces with consideration for adhesive open time (pot life).
6. The coping should be installed level, straight and true, with a slight fall away from the pool, allowing any water to drain away from the pool not into the pool.
7. Lift a paver from time to time to check that there are no voids beneath the tile. Do not spot fix.
8. Apply joint spacers or wedges to achieve consistent grout joint spacing*.
9. Any surplus adhesive must be removed from the surface of the tile and joints, before the adhesive sets.
10. Grout as per grouting instructions included on Page 5.

**Remove spacers and wedges once grout has set but not fully cured*

CONCRETE POOL SHELL:

1. A cement-based modified adhesive conforming to C2 TE S2 should be worked/keyed into the substrate using an 10-12mm notch trowel. Back butter the stone, taking care to cover the back surface entirely.
2. The stone should be pressed firmly onto the freshly notched adhesive bed to ensure good contact with the adhesive, a rubber mallet may be required to move the stone into its final position.
3. When installing rebated copings, the back of the face edge should be adhered to the shell using a sealant (Ardex CA20P or equivalent). Do not spot fix.
4. Work in controlled spaces with consideration for adhesive open time (pot life).
5. The coping should be installed level, straight and true, with a slight fall away from the pool, allowing any water to drain away from the pool not into the pool.
6. Lift a paver from time to time to check that there are no voids beneath the tile. Do not spot fix.
7. Apply joint spacers or wedges to achieve consistent grout joint spacing*.
8. Any surplus adhesive must be removed from the surface of the tile and joints, before the adhesive sets.
9. Grout as per grouting instructions included on Page 5.

**Remove spacers and wedges once grout has set but not fully cured*

STEPS (Rebated Copings):

If installing rebated copings as step treads, follow the adhesion and installation method for Concrete Pool Shell outlined in the Pool Copings section of this document.

CLEANING:

A final clean of your product should be undertaken once all grout and silicone joints have fully cured (see relevant manufacturer guidelines).

It is important to consider all surfaces/materials (framework, trims, fences etc) that may come into contact with the cleaning product and remove or protect them as required.

1. Remove excess dirt from the surface of the stone.
2. Apply the appropriate cleaner* as outlined in the manufacturer guidelines.
3. Agitate the surface with a scrubbing brush and allow to sit as directed.
4. Remove the cleaner and rinse as outlined in manufacturer guidelines.

**Generally speaking, a final clean will require the removal of minor grout residue and surface staining. Each product has different requirements and will dictate which cleaning product is most appropriate. Please contact Artisan Exterior to determine the cleaner best suited to your project.*

Please note: Acid should never be used without consultation of Artisan Exterior. Acid can damage product surfaces, installation products and sealers and should therefore only be used when applicable.

Artisan Exterior recommends Aquamix Cleaning and Sealing Solutions.

Aquamix: www.aquamix.com.au

POST INSTALLATION SEALING:

Artisan Exterior recommends post installation sealing for all Natural Stone products and considers it an essential step to ensuring the longevity and beauty of the product. Manufacturer instructions should always be followed carefully to achieve the best results for appearance and protection of the stone. For more information on the most appropriate sealing options please contact Artisan Exterior.

MAINTENANCE:

All products will require some form of maintenance over time, this will vary from surface to surface and will be heavily dependent on use, location and product type. The product type and maintenance requirement may require cleaning only or a combination of both cleaning and sealing.

Please contact Artisan Exterior to discuss the best suited product to your needs.

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