ECO OUTDOOR INSTALLATION TIPS

FLOORING
PORPHYRY

ECO OUTDOOR®

FLOORING • WALLING • FURNITURE

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INSTALLATION TIPS

Please note these tips are guides only and should be used in addition to the relevant Australian Standards for trade practices. Note that installation may vary from site to site with varying conditions experienced on that site (i.e. Soil conditions, pool surrounds, driveways, wet areas etc.). The contractor and specifier 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.

Material Considerations

Natural stone wears the markings of thousands of years of formation, through extreme weather and climate conditions with sands, oxides and minerals from the earth and the sea. Materials vary in appearance from original sample and from piece to piece upon installation. As with any natural material, no two pieces of natural stone will be exactly alike. Colour, as well as percentage, size and shape of markings, will vary. Variation is not a material flaw. It's not that we accept imperfections, the imperfection is the point.

Our goal is to minimize surprises and help set realistic expectations with specifiers, contractors and end users. Prior to ordering, ensure that consideration has been made to understand what variation you might expect when this material is delivered and installed.

We suggest blending stone elements from all pallets delivered whilst laying.

Some typical installation methods are:

Foundations/Substrates

For an area to be successfully tiled, the substrate or foundation preparation is very important and is the first element to influence the end quality of the flooring. This is because the sub base or 'laying support' carries out a number of functions in protecting the surface layer of the Stone. For these stones we recommend the following:

Pedestrian traffic only: reinforced concrete 75mm thick

Vehicle Traffic: Reinforced (F72 mesh) concrete base 100mm thick min. 25MPA

** Engineer's advice should be sought in the design of all concrete. Contractors should also consider drainage and/or waterproofing issues to minimise the risk of rising humidity, which can bring salts contained in the soil or in the bedding layers to the surface.

Slope

When dealing with outdoor stone flooring, special attention must be paid during planning in order to respond adequately to rainwater run-off. This is done by dividing the floor field into different drainage surfaces if necessary and giving them effective slope and perfect levelness. This will avoid trapping water and moisture on the floor surface since they cause undesirable and unsightly effects due to rings, saltpetre efflorescence and dirt build up. The following slopes are recommended:
Small flooring surfaces: gradient > 1%
Large flooring surfaces: gradient > 2%

Control Joints
Control joints are recommended for the substrate (concrete sub base). The joints in the concrete base should be continued through the mortar bed and grout joint. Control joints help absorb variations in the flooring caused by temperature swings and other movement in the sub grade, concrete base, mortar or actual tile itself. In addition to structural concrete joints, tiled surfaces should also include appropriate control joints every 20m^2 that penetrate through tile and the bedding mix, but not through the concrete substrate. Generally, the overall floor field is divided into compartments where technical expansion joints are set out in a crosswise and/or longitudinal direction (minimum 5mm joints every five meters).

Use of control joints will greatly reduce the chance of unsightly surface cracks appearing.

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.

Membranes, Cracking & Moisture Management
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 (ideally the bedding screed) with a waterproofing compound/membrane prior to tile installation. Examples are Mapelastic Smart (Mapei helpline 1800 652 666) or Hydro Ban (Laticrete helpline 1800 331 012).

Weather Consideration
Avoid laying stone in extreme weather conditions, or if rain is expected.

Laying stone on very hot days (above 30C degrees) can cause delamination issues between stone and mortar bedding layer.

Selection of Bedding Technique
Porphyry stone elements are typically supplied with a variable thickness greater than standard stone tiles and therefore often need to be installed using a wet mortar bed.

Classic Wet Mortar Bedding Technique
It is recommended that the concrete slab to which the mortar is going to be applied, be free and clear of all dust and debris. It is vital to ensure that the surface is clean, to enable a good bond to take place between the mortar and the concrete base.

Mortar Compound
Recommended mix is:
3 parts blended coarse wash sand (as per Aust. Standards)
1 part Grey Portland cement (type GP cement)
1 part clean water
Note: additional water can be added to achieve the desired consistency
Bonding agent: This will help with the workability, adhesion and strength.

This can be mixed with a paddle mixer or in a barrel cement mixer. It should be mixed until free of all lumps and all material is completely blended together.

Bonding Slurry Compound
Cement and water mixed into a workable paste or;
Cement and bonding agent (SBR based) mixed into a workable paste

Laying Method

General tips in working with Wet mortar are as follows:

1. Clean and dampen the concrete on which the stones are to be laid.
2. Apply the bonding slurry compound slurry to the concrete where the mortar is to be placed in an even coat (1-2mm thick)
3. Place the mortar mix on the concrete and the paste on which the stone is to be laid. The mortar bed should be 25mm thick with no voids and evenly spread.
4. Remove all loose material from the back of the stone before laying.
5. Apply the bonding slurry compound to the back of the stone in an even coating (1-2mm thick).
6. Place the stone into position gently tapping down with a rubber mallet (white rubber mallet is recommended to avoid marking the product). It is important to ensure that there are no air voids under the product as this may cause the adhesion of the stone to fail or the product may not be fully supported.
7. Tap the stone down to the desired level.
8. Consistent open joints should be allowed for at 7-10mm spacing.
9. Trowel fill any voids around the product and remove any excess mortar and discard it.
10. Remove all excess material from the surface of the stone using a clean sponge with clean water. It is important to work as cleanly as possible to avoid marking the product.
11. Do not spread too much mortar as it may begin to dry before you have laid the stone. Work in small controlled areas.

For all laying techniques, we recommend that after an area is laid it should not be loaded for a period of time to enable the bedding layer to strengthen. Pedestrian traffic: 2 days Vehicle Traffic: 2-3 weeks.

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.

Grouting Compound

It is recommended to use a high-grade pre-bagged grouting compound that is suitable for the application. Other methods using sand and cement are also commonly used with porphyry, but always complete a test area first ensuring there are no contaminates in the wash sand used.

Grouting Methods

1. Dampen grout joints and stone with a sponge
2. Place grout into joints, ensuring no voids, to the full depth of the paving stones
3. Remove any excess grout with a trowel
4. Sponge clean the paving surface with water, ensuring all excess grout has been removed.

Cleaning

Stone should be cleaned when grouting material has set. Cleaning will enable any grouting residue to be removed.

1. Sweep excess dirt from surface.
2. Use a pH neutral cleaner and apply to surface in liberal quantities and in manageable sections.
3. Gently agitate the surface with a stiff broom and/or nylon pad (such as Doodlebug by 3M).
4. Remove residue from surface with a wet-vac or squeegee.

It is important that no acidic cleaners are used.

Using a cleaning and sealing professional may be appropriate to achieve best results.

Sealing
Sealing is an essential step in protecting the beauty and ensuring the longevity of any Eco Outdoor stone.

We always recommend using a cleaning and sealing professional after the stone has been installed. Please call a showroom for a list of recommended professionals.

Research and development of sealing products are continually improving. There are many reputable companies with a wide range of products available. Examples are Dry Treat (www.drytreat.com.au) and Aquamix (www.aquamix.com.au).

We recommend using high quality penetrating sealers such as Stain Proof (Dry Treat), Ultra Solve (Aquamix) or Sealers Choice Gold (Aquamix).

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

Anti-Slip Treatment
You should consider anti slip treatments depending on where your tiles are being installed and other site considerations. Please refer to our technical details for indicative testing data. There are many reputable companies working in this area such as Cyndan (www.cyndan.com.au) and Dry Treat (www.drytreat.com.au).

Acceptable Characteristics
Stone tiles are made from naturally occurring materials and a variation in colour and/or surface finish may occur. It is the responsibility of the user to inspect tiles prior to laying. Minor marks and small chipping are not structural and therefore not considered defects. Any tile with excessive chipping or variation in thickness and dimension prior to laying, may be subject to a warranty claim.