ECO OUTDOOR INSTALLATION TIPS

FLOORING
PEBBLES

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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 pebbles from all bags 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 subbase 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 subbase). 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 pebble bags 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 membranes should be considered prior to installation. This is to assist in dealing with efflorescence and other moisture related issues as well as helping to reduce minor cracking by neutralising movement in the substrate.
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 adhesive bedding layer.

Selection of Bedding Technique
Pebble 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 for laying in-situ
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.

Laying
General tips in working with adhesives are as follows:

1. Level mortar compound on prepared sub-base
2. Set pebbles in as tight as possible
3. Tap down pebbles with a wooden float to desired level (mortar compound should come through between pebbles).
4. Add more mortar compound between pebbles as required
5. Sponge off excess mix to desired level
6. Let mortar compound mix set
7. Clean off any compound residue

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.

Using pebbles as loose mulch
As mulch, pebbles are best laid over a sheet of permeable horticultural textile to prevent weeds from seeding through. Cut small crossed slits in the textile, plant through these, then cover the whole surface with a layer of pebbles 10-30mm.

Pebble Spread Rates (approx):

Size (mm) Depth	Mm of bed depth	Loose bags/m2	Insitu bags/m2
10-20	30	3	2
20-30	45	3.5	2.25
30-50	75	4.5	2.75
50-75	112.5	5.5	4
75-100	150	7.5	4.75
100-150	225	8	5.5
Gloss Black 20-60	60	4	2.5