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# ECO OUTDOOR INSTALLATION TIPS

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## FLOORING COTTO

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**ECO OUTDOOR<sup>®</sup>**  
FLOORING • WALLING • FURNITURE

LOS ANGELES • SAN FRANCISCO  
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## INSTALLATIONS TIPS

*Please note these tips are guides only and should be used in addition to the relevant American 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

Eco Outdoors' range of handmade cotto tiles are made in a very traditional way, only using natural raw materials that are mixed and pressed by hand and then fired in a kiln. This artisan approach to producing cotto means that tiles will vary in appearance from original sample and from piece to piece upon installation. As with any handmade natural material, no two-cotto tiles will be exactly alike. Color, 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 tiles 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 4" thick

Vehicle Traffic: Reinforced (6" x 6" #10 welded wire mesh) concrete base 5" thick min. 3500PSI

\*\* Engineer's advice should be sought in the design of all concrete. Contractors should also consider drainage and/or waterproofing issues to minimize 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 200sqf 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 3/16" joints every 16 feet).

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 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 Aquadefense (Mapei helpline 1800 652 666), Hydro Ban (Laticrete helpline 1800 331) or Red Gard (Custom helpline 800-272-8786).

### Pre-Sealing Prior to Laying

Pre-sealing prior to laying 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.

### Pools and Wet Areas

In certain environments it may be appropriate to dip seal (on all six sides of the stone tile) with a consolidator sealer such as Dry Treat 40SK (Dry Treat 1 866 667 5119). This would be highly recommended for pool coping and for other wet areas such as kitchens and bathrooms.

### Weather Consideration

Avoid laying cotto in extreme weather conditions, or if rain is expected.

Laying cotto on very hot days (above 85F) can cause delamination issues between cotto tiles and adhesive bedding layer.

### Selection of adhesive for bedding tiles

We recommend using synthetic tile adhesives, to bed cotto tiles. Research and development of adhesives are continually improving. There are many reputable companies with a wide range of products available. It is essential to follow manufactures instructions.

In certain environments, fast setting tile adhesives (such as Granirapid by Mapei) should be used.

### Laying

General tips in working with adhesives are as follows:

1. Prepare a sub floor (screed) that is perfectly flat to make it easy to keep the cotto elements level with each other, since only a thin (3/16" - 3/8") layer of adhesive is used (therefore offering very little laying tolerances).
2. Clean the laying surface (remove debris, dust oil etc), once the screed is completely dry.
3. Prepare a uniform layer of adhesive using a notch trowel 8-10mm thick, and back butter the base of the tile as well.
4. Lay cotto elements so the timing corresponds to the drying time required for the adhesive used, without letting the glue create a film due to prolonged exposure to air. The cotto pieces are then compacted evenly on the adhesive with a rubber mallet to ensure consistent contact with the glue. Consistent open joints should be allowed for at 1/8" - 1/4" spacing

For site specific requirements we suggest you contact Mapei p: 1800 992 6273 or Laticrete p: 1800 243 4788.

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 cotto 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.

### 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

Cotto 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 material.

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](http://www.drytreat.com)) and Aquamix ([www.aquamix.com](http://www.aquamix.com)).

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

Color and texture can be enhanced when laid by coating with a mix of linseed oil and wax.

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. Dry Treat (<http://www.drytreat.com/>).

### Acceptable Characteristics

Cotto tiles are made from naturally occurring materials and a variation in color 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.