

Suggested laying methods for STONE pavers

These suggestions are a guide only and should be used in addition to the relevant Australian Standards for trade practices. It is to be noted that installation may vary from site to site with varying conditions experienced on that site, (i.e. Pool surround, Vehicle access, Plastic Paving Supports etc). The contractor should decide if these suggestions are suitable for their application or require further adjustment.

The suggestions that are given are done so in good faith and to the best of our knowledge and experiences at the time of printing.

These suggestions in no way replace the services of professional contractors and/or consultants.

Delivery

STONE pavers are delivered to site using an all-terrain forklift or crane truck to the nearest kerbside unless other arrangements have been made prior to delivery. At the time of delivery the driver will assess the risk or danger to people, property and/or equipment. Whilst all attempts will be made to place pallets where requested the driver has the discretion to place them in another location that will ensure a safe delivery process.

If a driver is instructed to enter the site by the customer, STONE will not be responsible for any damage to property that may occur.

Handling & Storing

The product quantities, sizes and colour should be checked upon delivery and any discrepancies or defects reported within 2 working days of delivery date and prior to installation. Claims for faulty or defective goods will not be accepted once the product has been installed.

If the order exceeds one pallet it is important to source from all pallets whilst laying as this will enable a natural blending to occur. A full size STONE paver or equivalent product weighs 20kg or more. Please ensure that the correct OH&S practices are used to handle a product of this weight.

STONE pavers come with a protective layer between each paver. These sheets should be used when restacking the paving stones on the job site to avoid damaging the surface of the product.

IMPORTANT:

The pavers should NEVER be stacked in a criss-cross formation at any time during installation. Stacking the pavers in this way causes a differential in drying rates and can cause surface variations that are permanent.

It is recommended that the product be laid within a few weeks of delivery. The product should not be stored for extended periods of time as this may result in shadowing and surface variations on the pavers due to weathering or differential drying rates that are permanent.

Any marks that occur because of restacking or extended storage are not the responsibility of the manufacturer.

Acceptable Deviation

STONE pavers 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 products prior to installing. Minor marks and small chipping are not structural and therefore are not considered defects. Any paver with excessive chipping or variation in thickness and dimension may be subject to a warranty claim as long as the product has not been laid.

Colour

STONE pavers are manufactured using natural materials and therefore variations in colour are an inherent characteristic of the product. We suggest sourcing tiles from all pallets delivered whilst laying. This will enhance the natural look of the product and the overall effect of the area that has been laid.

Foundation

It is recommended that STONE pavers be installed with a foundation of concrete or compacted crush rock. The concrete slab will be to engineers or contractors specifications in accordance with the relevant Australian standards. This may vary depending on the end use of the product (i.e. Pedestrian traffic, Vehicle traffic ect...).

Pedestrian traffic only

Compacted crushed rock 75mm thick or Reinforced concrete 75mm thick*

Vehicle traffic

Reinforced concrete 100mm thick*

*Engineers advice should be sought in the design of all concrete bases. Expansion / control joints are suggested on concrete foundations. See 'Control Joints' subheading for more information.

Slope

When dealing with outdoor 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, which can cause undesirable and unsightly effects like rings, saltpeter efflorescence and dirt build up.

The following slopes are recommended:

Small flooring surfaces: gradient > 1%

Large flooring surfaces: gradient > 2%

Cutting

STONE pavers can be cut using a grinder with a masonry or diamond blade. Ideally it is recommended that cutting be done using a bench stone saw with a wet diamond blade. The product should be washed immediately after it is cut to avoid the cutting paste drying and staining the surface of the product. All safety equipment must be worn while cutting.

These include:

- Eye protection (safety goggles)
- Respiratory protecting (dust mask)
- Ear protection (ear muffs)

Mortar Bed Compound

The recommended mortar bed compound to lay STONE pavers is that of a mix consisting of:

1. 4 parts blended washed sand & brick sand 50/50 (as per Australian Standards)
2. 1 Part Grey Cement (not high early strength)
3. 1 part clean water: Note additional water can be added to achieve the desired consistency
4. 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

The recommended bonding slurry compound is that of a mix consisting of:

1. Cement and water mixed into a workable paste or;
2. Cement and Bonding Agent mixed into a workable paste

Control / Expansion Joints

All control / expansion joints should be free and clear of grout and mortar. If there are control joints in the sub strata (concrete base) these should be followed through to the top surface of the pavers. The placement of the joints shall be in accordance with the engineers/contractors specifications with reference to the relevant Australian standards.

The control joints may be filled with flexible mastic to keep the joint clean of dirt and debris. Please consult the relevant manufacturer for further information.

Laying Methods – Rigid

It is always recommended to use a qualified experienced trades person for this installation method. Product should not be laid in very hot conditions (above 32C) or in very wet (rainy) conditions, as this can affect the strength of the mortar bed and the adhesion of the products.

1. The concrete where the pavers are to be laid is to be cleaned and dampened.
2. The slurry mix is to be applied 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 for the paver to be laid on. The mortar bed should be 20mm thick with no voids and evenly spread.
4. Remove all loose material from the back of the paver before laying.
5. The back of the paving stone should have the slurry mix applied to it in an even coating 1-2mm thick.
6. Place the paving stone into position gently tapping down with a rubber mallet. *(It is recommended to use a white rubber mallet 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 pavers to fail or the product may not be fully supported.
7. Tap the paving stone down to the desired level. Allow a minimum of 6mm between each product for a grout joint.
8. Trowel fill any voids around the product and remove any excess mortar and discard it.
9. Remove all excess material from the surface of the paving stone using a clean sponge with clean water. It is important to work as cleanly as possible to avoid marking the product.
10. Do not spread too much mortar as it may begin to dry before you have laid the paving stone. Work in smaller controlled areas.

Note: *STONE pavers (500mm and above) are NOT to be laid on a sand bed only.*

Laying Method – Flexible

STONE pavers can be laid using a flexible laying process however ideally the rigid method will provide a better long lasting result. When using the flexible method good drainage allowing water and moisture to drain away from the pavers quickly is critical. If moisture cannot escape and gets trapped in the joints or in the bed this can result in picture framing on the product which can be very difficult to remove.

Note: *This method of installation is only applicable for products smaller than 0.2m² in plan area. It is not appropriate for products larger than 0.2m² in plan area. It is always recommended to use a qualified experienced trades person for this installation method.*

1. The Base course shall be leveled within a tolerance of no more than 5mm from the base of the level in any direction. It shall be of an even thickness and adequate drainage precautions taken. It should be correctly compacted to suit the intended application. There should be no ponding on the surface of the base course as this may cause problems with the integrity of the paving application.
2. The Bedding sand must be of appropriate grading for the bedding application. The level of sand compaction must be taken into account when setting the levels for the bedding sand.
3. It must be spread evenly and appropriate precautions must be taken to ensure adequate drainage. It should not be assumed that the pavers will "bridge" a poorly prepared base or bedding sand.

4. The pavers can be placed on the bedding sand and the grid lines adjusted using a screwdriver where necessary.
5. An edge beam may be necessary to put in place if the paving area doesn't provide them i.e. a wall or kerb etc. The edge beams are generally made using a concrete mix to the relative Australian standards.
6. The thicknesses of the bedding sand should not exceed 35mm when compacted.
7. Compacting of the paver can be done using an appropriate compacting plate. It is recommended to cover the plate with a soft layer of material to avoid chipping the surface of the pavers (ie Carpet). Compacting of the pavers should be kept back 1m from the laying edge unless it has the appropriate edge beam or structural edge i.e. wall or kerb etc.
8. The joints in the pavers should be a minimum of 6mm and can be filled after compaction with appropriate jointing sand. It can be swept into the joints. It is not recommended to use a rigid style of grout for this method of laying.
9. The area can be re-compacted after the joints have been swept with sand and more sand applied where necessary.
10. The sand should be dry and the joints should be filled as soon as possible after the initial compacting has taken place.
11. Regular checks should be done to ensure that the paving is performing as desired and any maintenance should be carried out to ensure the structural integrity of the paving.

Laying Methods - Tiles

Please note that the above laying suggestions do not apply when installing STONE pavers 28mm tile. This product should be treated as a tile and laid accordingly using an appropriate tile adhesive product designed for external use.

Please note: Our Tile products should be laid using tile laying methods NOT paving laying methods.

Laying Method – Paving Pedestal Support Systems

STONE pavers can be laid using Pedestal Support Systems. This method of laying is commonly used on balconies, decks and roof top gardens. To determine the correct number of supports and the correct sizes and thicknesses that can be used in this application contact STONE for assistance.

Maximum Span 38mm Thick units – 500mm

Maximum Span 48mm Thick units – 600mm

Grouting Compound

It is recommended to use a high-grade pre-bagged grouting compound that is suitable for the application. It should cater for Grout joints of between 7-10mm and be suitable for external use. Follow the manufacturers directions for guidelines in mixing and applying the grout. Ensure you keep the pavers clean throughout the grouting process and don't allow the grout to dry completely on the pavers before removing.

Sealing

All STONE products can be sealed. It is recommended to use a penetrating sealer. This will help protect the pavers from oil-based stains and generally make them easier to clean. STONE recommends using a professional sealing applicator. For further information about the appropriate sealers and trades that can apply them contact STONE for assistance.

Cleaning

After Laying & Grouting

The following method should NOT be used for HONED finished products.

STONE pavers should be cleaned when the grouting material has cured. This clean will enable any grouting and mortar residue to be removed.

1. Wet the area you wish to clean down.
2. Apply acid water mix (20 parts water to 1 part Hydrochloric acid)
3. Gently agitate surface with a stiff broom
4. Wash surface thoroughly

Note: *It is recommended to work small areas at a time (3-4 square meters) and thoroughly wash as you go. It is important to have a well wet down surface before you apply the cleaning mix. Never apply acid mix to dry pavers. Care needs to be taken not to over etch (burn) the product by using a mix that is too strong or washing an area too much.*

It is also recommended that all appropriate safety protection be worn while handling the acid including gloves and eye protection. Remember to always add acid to water not the other way round.

Maintenance

STONE pavers will generally require minimal maintenance. Normally sweeping and cleaning with a high-pressure water wash on a regular basis is all that is required. Maintenance can be assisted by having the paving sealed with the appropriate sealer (see SEALER section). If there are marks on the pavers that cannot be cleaned by sweeping or water washing then chemical cleaning may be required.

For organic stains using a household bleach product on the stain may assist in removing it from the paver. Alternatively, the product could be re-washed again using an acid wash process (See process in this section under After Laying & Grouting). Professional cleaning companies that specialize in cleaning pavers can also assist in removing marks that don't come off with simple cleaning processes. STONE can provide contact information regarding professional cleaning services.

STONE wants to ensure a successful installation of the products they supply. If there are any concerns or queries before or during this process please contact STONE on 1300 303 975 or via email at enquiries@stoneoutdoors.com.au.