



# **NATURAL STONE PAVING**

## **INSTALLATION, CARE & MAINTENANCE GUIDELINES**

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### **General Advice Warning**

*The information contained in this guide is general in nature and does not take into account your personal situation, specific products, site conditions or external contractor arrangements. You should consider whether the information is appropriate to your needs, and where appropriate, seek further clarification on your personal situation. All information within this document is based on Yarrabee's experience in combination with industry and Australian regulations. Although every effort has been made to verify the accuracy of the information contained here within, Yarrabee & Castlemaine Stone, its officers, employees and agents disclaim all liability (except for any liability which by law cannot be excluded), for any error, inaccuracy in, or omission from the information contained within this document or any loss or damage suffered by any person directly or indirectly through relying on this information. Yarrabee reserves the right to change, delete or otherwise modify any information in this document without prior notice.*

### **Product Considerations**

Every effort is made to ensure your stone is perfect in every way. A reasonable tolerance of tile thickness and colour variation is very normal and considered standard. Minor chipping and marking are part of the natural appearance of the stone and not considered defective product.

All products are sold un-blended. We recommend blending of tiles from multiple crates / pallets during laying to ensure a consistent feel through the project.

All natural stone products are designed to be laid as a single side product only. The stone will have a different finish on the surface as it will to it's underside. To avoid laying the stone upside down, ensure the correct finish is facing upwards and installed this way. If unsure which is the correct surface side, please ask before laying.

**IMPORTANT:** No claims against the product will be accepted once the laid / installed. If you have any questions regarding the products please contact Yarrabee prior to installation. Installation of the product constitutes its acceptance.

### **Storage**

We are proud of our in-house delivery that endeavors to deliver the product in your desired location as appropriate as possible. Upon delivery we recommend keeping the stone in a dry environment away from the elements as much as possible.

### **Supporting Base**

The supporting base should be fit for purpose and be suitable to handle the traffic it is intended for. We recommend all paving be installed on a reinforced concrete base. A typical reinforced concrete slab with a minimum strength of 25mpa is suitable for:

- Pedestrian traffic: minimum thickness of 75mm
- Vehicle traffic\*: minimum thickness of 100mm

*\*Standard vehicle traffic of < 3 tonne gross mass*

The concrete base must be left to cure prior to any laying taking place. Please consultant engineers' advice when designing the support base / concrete slab for any site-specific conditions not taken into consideration within this guide.

## Expansion Joints

Expansion joints are essential in absorbing movement due to moisture and heat and avoiding damage to the structure. It is important to ensure no adhesive or mortar has dried in the joint making it ineffective. The joint should be cleaned out to allow it to function as desired and to be caulked as required.

When laying the stone, ensure all expansion joints in the supporting base are aligned with the joint in the stone to make sure the continuity of the joint is maintained and not restricted by paving over the top of it. The location of the expansion joints should be based on site conditions.

## Adhesive

Natural stone that is uniform in thickness either gang sawn or calibrated, can be laid into a suitable tile adhesive. This is subject to the accuracy of the base levels. If the base levels are not consistent, adhesives don't easily allow for a buildup where it is required.

## Mortar Mix

We recommend natural stone is laid into a wet mortar mix of white washed sand (triple washed) and cement at a ratio of 3:1. A plasticiser is generally required to make the mix workable. The underside of the tile should be brushed with a bonding agent such as a cement slurry or a suitable adhesive. This mortar bed is used to take up thickness variations of the stone and to allow for build up where required to accommodate drainage requirements.

We strongly recommend against the use of brick sand. The use of brick sand can create the potential for tiles to lift or become "drummy" due to its water retention. This can result in slow drying out of stone to achieve the stone's natural dry colour.

It should be noted that the entire under surface of the stone needs to be well bedded into the mix. Placing the stone on "dollops" or lines of mortar is insufficient. Full contact and support to the entire stone is an absolute pre-requisite of a sound job.

## Drainage & Falls

In most outdoor applications some adjustments to the base levels are required to achieve adequate falls for drainage or to fill dips in the base. This helps to encourage fluid run-off and avoid long term pooling which is undesirable. Yarrabee recommend a gradient of at least 1 in 100 for smooth surface stone and at least 1 in 50 for heavily textured surfaces.

## Pre-Sealing & Dip Sealing

Pre-sealing is not required for general paving applications in standard environments.

Some products may require dip sealing prior to laying if they are to be installed in an environment that is exposed to salt chlorinated water. Dip sealing is required to protect against salt attack and long term corrosion and general wellbeing of the stone. We recommend 40SK made by Dry Treat or suitable equivalent.

Please check with Yarrabee in regards to your particular product.

## Cutting

Cutting of tiles is often required to meet the layout demands of the project and is a necessary part of the laying process. When cutting tiles ensure you are wearing appropriate PPE to protect against potential inhaling dust and particles of stone that may cause or contribute to illness or disease.

We recommend utilising Yarrabee's in-house cutting service to maximise paving time and reduce cutting required on site. Contact [sales@yarrabee.com.au](mailto:sales@yarrabee.com.au) for more information on cutting services.

## Grouting

Grout should be mixed as per manufacturer's instructions ensuring it is not too wet as this can reduce its strength and result in cracking. Ensure the grout reaches the full depth of the joint at all times. Failure to do so may allow moisture into the substrate and cause subsequent issues. We recommend flood grouting to eliminate the potential for a framing effect on the stone which is often undesirable. Surplus grout should be removed before curing to leave the surface as clean as possible and eliminate the need for aggressive chemical cleaning.

## Cleaning

Final grout cleaning should be undertaken once grout has cured. After sweeping the area, apply the use of a low PH dedicated grout cleaning agent with a firm broom. Remove all excess with a pressure cleaner. We do not recommend the use of acid on any Yarrabee natural stone.

General cleaning is often done very successfully with a pressure cleaner.

## Sealing

Once the paving is fully cleaned and dry, it is recommended that it is sealed with a commercially proven stone sealing product. We recommend a penetrating sealer to ensure the natural appearance and slip resistance of the stone is retained.

There are 2 common types of penetrating sealer available:

- Natural finish – retain the natural colours of the stone when dry.
- Enhanced finish – which will retain the colours of the stone when wet.

Natural finish sealing will require replenishment approximately every 3 years while enhanced finish sealing will require re-coating approximately every 1.5 years. Both products are available from Yarrabee.

Six monthly cleaning with a pressure cleaner perhaps incorporating a chemical cleaner for particularly soiled areas should be adequate in most situations to retain a clean appearance between the re-seals.

It is recommended that a specialist cleaning and sealing contractor is used to carry out the cleaning, sealing and resealing process to ensure correct and compatible sealers are used and that the stone is not inadvertently damaged by aggressive acid washing.

Please note that sealing is recommended in the interests of maintaining the clean appearance of the stone and retaining the natural colours which will otherwise be hidden over the years by a build up of dirt and grime.

**Yarrabee & Castlemaine Stone stock a variety of products suitable for all aspects involved with laying and cleaning your natural stone. Please call or email at any time to discuss your specific situation and how the information in this document may apply.**