



# Banas Installation Guide

## Planning

Forward planning will undoubtedly save you time later on in the project. Having chosen your Banas Stones product we suggest you take a piece of paper and mark the outline of the area to be paved. Try to design your project to incorporate sizes of paving that will eliminate the need for too much cutting. This plan will be a useful guide both ordering and laying. When constructing, remember that when building a patio or path close to a house it is important that the finished paving level is at least two brick courses (150mm) below the damp course. Always provide a 'fall' to drain water away from buildings (a gradient of 1:40 is usually sufficient).

Some of the tools you will need in undertaking a project :- Rake, shovel, tape measure, bricklayers trowel, tamper, spirit level, wheelbarrow, string lines, soft brush, timber straight edge, mixing board, mallet or hammer and a bucket.

## Site Preparation

Preparing the ground for paving depends upon site conditions and the intended use of the paved area. If your ground is firm, you probably need only remove the turf and topsoil to a depth to accommodate the 30-40mm sand bed plus the slab and mortar thicknesses. If the subsoil is wet or spongy you need to dig out much deeper to put in a stabilizing layer (approx. 100mm) of well compacted hardcore (often called MOT, scalping, crushed hardcore) before laying the sand bed, again allowing for 30-40mm of sand plus the slab and mortar thicknesses. In reality, few areas are already level enough for immediate paving, so some areas need to be excavated whilst others need to be made up with compacted hardcore. The use of hardcore helps ensure adequate site drainage, which is a prerequisite for paved areas.

## Foundations

Examples below are a guide line only and depending on ground conditions, intended usage and the type of paving to be laid may be subject to alterations:

1. Most garden situations - light pedestrian use, solid established ground: Bed of mortar on 30 or 40mm compacted sharp sand
2. Heavy domestic use - to take heavy mowers, support planters, maybe on less stable or wet ground: Bed of mortar on 30 or 40mm compacted sharp sand on 100mm compacted hardcore.
3. Banas Natural Stone - Use 25mm wet mortar bed on 30 to 40mm compacted sharp sand may be required according to ground conditions
4. Car driveways - Block Paving is recommended rather than paving stone. However if Paving Stone is to be used then this should only be undertaken using a 100mm wet concrete bed on a suitably compacted hardcore base.

## Natural Stone

### Laying Paving Flagstones

Remember to select paving from different packs as you go along. This enables color blending and will help to alleviate any shade variations that may occur between packs, giving your design a "Natural" look.

Banas Stones strongly recommends sealing the underside of natural stone paving prior to laying with a PVA sealant. This will deter the possibility of surface staining on the flagstone face which can be caused by the drawing up of salts from the cement through more porous stone such as Banas Fossil.

Depending on your ground type (see Site Preparation and Foundation section above) use a mixing board to make up a slightly wet mortar bedding mix of 1 part cement to 3 parts of building sand. Bonding agent can be added to this mix to place where freezing can occur, if desired. Peg out several string lines so as to establish the desired level of the patio incorporating a slight fall for water run off for drainage. Start flagstone laying from a corner or straight edge.

The full mortar bed method enables any variation in thickness of individual slab to be taken up.





A full mortar bed to cover the base of the flagstone is placed over the sub base, the flagstone calibrated side down level to follow the string line with a rubber mallet. Double check alignment with a spirit level and once happy, move onto laying the next flagstone, repeating the process.

Continuous checking of levels and falls should be on-going during the laying process and should be taken across the top surface profile of a number of slabs.

Before proceeding too far, it is important to equalize slab spacing, gently shuffle the slab with a twist of the trowel until the joints look even.



### **Cutting**

Because Banas Stones products come in a variety of shapes and sizes cutting can be minimized. If your project involves a lot of cutting we advise the hire of a powered cutting tool incorporating a diamond tipped blade (advise the hire shop of what you are intending to cut, and ensure that a suitable diamond tipped blade is selected). Its use will ensure accurate clean cuts are achieved but please use with care and also make sure that your hire shop issues you with full instructions and relevant safety equipment including goggles.

### **Pointing**

You can use small pieces of wood as 10-15mm thick spacers to help get each slab equally distant from the others but remove them straight after laying. Do not walk on the paving for at least 24 hours. The joints should then be pointed as soon as possible but not if rain or snow are forecast. As with all natural stone products from Banas Stones, we recommend that paving is laid allowing for a minimum 10-15mm joint. We recommend joints are pointed using a wet (but not sloppy) cement mortar mix to produce a more permanent waterproof finish. Do not leave unjointed for more than a few days. You must not attempt to brush the mix across the surfaces of the slabs as any cement left on the slab will result in unsightly staining and will often mean a complete renewal of products. Care should be taken not to use too wet a mix and any mortar spillage should be immediately removed with a clean damp cloth or sponge. All joints should be jointed using a special jointing tool (available from builder's merchants) or with a suitably rounded piece of wood, to a depth some 5mm below the adjoining paving surfaces.

### **Sizes & Joint Widths**

All dimensions quoted are nominal and are for guidance only. Actual sizes will vary Banas Stones highly recommends dry laying natural stone paving prior to commencing full installation of the project to satisfy that planned paved areas and features such as circles meet with the installers satisfaction. The nominal paving sizes and quoted usually allow a nominal 8-14 mm joint width. When laying random paving and circles with their fettled edges joint widths may, depending on the paving type and laying pattern chosen, vary between 8mm to 25mm.