

Preparation

Planning Suggestions

- Draw the area to be paved using graph paper.
- A scale of 1:50 will allow direct use of the drawings on pages 128-137.
- Use dimensions that minimise cuts to paving.
- Paving surface must be at least 150mm below the damp course in any adjacent wall.
- Provide a gradient of 1:40 or steeper, towards adequate drainage.

Paving Installation

- This is heavy work, requiring specific skills, tools and experience.
- Before starting, refer to suitable professional advice, publications or websites.
- The following advice assumes you have acquired a basic knowledge of what is required, including health and safety precautions.

Foundations

- These depend on ground conditions and expected use.
- For light pedestrian use on solid, even ground, 40mm compacted sharp sand may be adequate.
- For less stable or wet ground, provide 100mm well compacted hardcore beneath the sand.
- For domestic driveways, increase the hardcore depth to 150mm. For Paviors then follow the Pavior Laying Guide; for Flagstones the section headed Driveways.

Groundworks

- Mark out the area and dig out to the required total depth.
- Tap in wooden pegs to show the levels for the finished surface, including the required gradients.
- Infill the appropriate foundations and remove the pegs before laying the paving.
- For Rio Paving and all Paviors, follow Pavior Laying Guide.
- For all other paving (including Rio if preferred), follow Paving Flag Laying Guide.

Paving Flag Laying Guide

Getting Ready

- Avoid rubbing and damage to Flags by carefully stacking them on timber battens with spacers between them.
- Select paving from different packs throughout the job, to blend colour shades.

Laying

- Make up a slightly wet mortar mix of 1 part cement to 5 parts building sand.
- A PVA, SBR or equivalent bonding agent can be added to the mortar to assist bonding, particularly with natural stones. Alternatively coat the back of each flag with neat wet cement and bonding additive just before laying.
- Prepare a full bed of mortar ahead of each Flag, approximately 25mm thick, but allowing for the variation in thickness between Flags.
- Tap the Flag down to the required level, keeping a piece of softwood between hammer and slab.
- If the Flag will not level with several gentle taps, lift it, adjust the level of the mortar bed and relay the Flag.
- Draw mortar up to the sides of each Flag before laying adjacent to it. This minimises pointing later on.
- Keep checking levels and gradient across a number of slabs. Stringlines can be helpful to define levels and lines within the laying pattern.

- Maintain the correct joint width by gently shuffling with a trowel. Small pieces of timber are useful as temporary spacers.
- If you need to cut Flags, a power tool with a suitable diamond tipped cutting disc will cut accurately through our products.

After Laying

- Do not walk on the paving for at least 24 hours.
- During wet or frosty weather, cover the paving for protection until mortar has cured.
- Then point as soon as possible.

Pointing

- Use a damp mortar mix of 1 part cement to 4 parts building sand.
- Press firmly onto the joints to produce a dense, impervious surface that will drain water across the paving.
- If mortar gets onto the faces of the Flags, clean off immediately using a damp sponge frequently rinsed in clean water.
- Jointing sands and other pervious materials are not recommended except where paving is laid with minimal joints. Stonemarket will not accept responsibility for contaminations/staining incurred from use of manufactured jointing compounds.
- Where minimal joints are recommended, these should be 2-3mm and filled with a kiln dried jointing sand. But jointing is not recommended for any of our products.

Driveways

Our Pavior ranges are specifically designed for high performance in areas used by domestic vehicles. However, many of our customers prefer the look of Flagstones and Millstone Flag, Trustone (Fieldland, Glenmoor and Fellstyle) and Vintage Stone Manor have been used successfully. Extra care with the foundations is essential. Lay the Flags directly onto a 100mm thick wet concrete bed (1:5 cement: sharp sand) on top of 150mm well compacted hardcore. Damage can be caused by heavy and four wheel drive vehicles, or by using power steering whilst stationary.

Specific Advice

(i) CONCEPT PAVING

Lay Concept paving onto a full mortar bed. Drystone, Pebble and Ammonite slabs have a specially shaped edge that closely interlocks with minimal joints. These joints should be filled by brushing in our Pavior Jointing Sand. Except where they abut the other textures, Concept Riven slabs should have 10mm joints pointed with mortar in the normal way.

(ii) TRUSTONE, VINTAGE STONE, MARKETSTONE

Always lay larger face upwards. Coating the back of each Flag with neat wet cement and PVA additive just before laying, will assist bonding.



(iii) TRAVERTINE, TRUSLATE GREEN, ARCTIC GRANITE (except MIDNIGHT)

These products sometimes absorb colour from Ordinary Portland Cement. We strongly recommend substituting White Cement in the mortar and adding a PVA, SBR or other bonding agent. Lay Arctic Granite with the textured slip resistant face upwards.

(iv) REVOLVE FEATURE

This should be dry laid before final positioning on mortar bed, starting from the centre outward.

Indoor Use

All of our products can be used indoors as well as outdoors. For indoor use, a coating is preferred to reduce dusting and make cleaning easier.

Use Around Swimming Pools

Advice from Stonemarket should be sought about suitability for use of products around swimming pools.

Coatings/Sealants

Make sure paving is completely dry and free of efflorescence before applying any coating. Responsibility for the performance of any coating rests with the user and the manufacturer of the coating. Always read the instructions carefully and first test a small area for colour and slip resistance, wet and dry. For further advice refer to our sales office.

Pavior Laying Guide

For PermeaPave see page 137.

Edge Restraint

- Paviors must be surrounded by a firm edge restraint to stop the blocks and sand layer from creeping.
- Kerbs are usually best, but walls, decorative edgings or the paviors themselves can also be used as restraints.
- Lay the restraint on a concrete bed, haunching kerbs or edgings in concrete and allow to cure and strengthen before any vibration.

Screeding

- Screed out a layer of coarse concreting sand to a depth of 65mm on the excavated area and within the edging.
- Compact the sand with a plate vibrator.
- Add more sand and screed off to give a firmly compacted thickness of 50mm. (One tonne of sand covers about 8m².)

Laying

- Start from a corner or long edge and proceed along one laying face. Place individual blocks vertically onto the sand bed according to the pattern.
- It is important to mix blocks from several packs to achieve a good blend of shades.
- Use stringlines and adjust the width of joints to within 2.5mm to ensure the lines in the pattern remain straight.

Cutting

- To fill gaps along edges, cut the blocks using a hammer and bolster chisel.
- For a lot of cutting, use a mechanical block splitter or power cutter with an appropriate blade.
- Avoid cutting and laying blocks less than a quarter of their original size.

Vibrating

- Using a stiff broom, brush bedding course sand over the paviors to partially fill the joints and ensure stability during initial vibration.
- After ensuring the surface is clean, vibrate the paving to settle the sand in the joints.
- Top up the joints with our Pavior Jointing Sand. Sweep the surface and then pass the vibrator over the whole area several times to level the paviors.
- Brush more Pavior Jointing Sand over the area to ensure all joints are topped up and make one more pass with the vibrator. The paving is then ready for immediate use.
- RENAISSANCE, and PENNON
We recommend using a rubber mat when vibrating to protect undulating surfaces.

Specific Advice

(A) RIO PAVING

- Not suitable for vehicles. Do not use a vibrator on top of the paving. Level off with a paver's maul.

(B) RENAISSANCE PAVIORS

- Wider top joints need special consideration for permanent filling. Refer to our website or sales office.

(C) ELEMENTAL PAVIORS

- May benefit from the use of spacers during installation. Refer to our sales office.

Wall Building Guide

Key points before you start

- Get professional advice if you are in any doubt, particularly with walls over 1.5m high and complex or stress carrying structures.
- Plan the wall and draw a design; this helps with calculating quantities and makes building quicker.
- Get the right tools; spade, concrete mixer, trowel, spirit level, club hammer, 60-120mm bolster chisel, stringline and pointing tool.

A firm foundation is essential

- Walls need a concrete foundation three times wider than the thickness of the wall. Its depth should be at least 100mm with the base 300mm below ground level.
- For walls over 1m high the foundation base depth should be one third of the height of the wall above ground.

Construction

- Single skin walls 100mm thick should not be higher than 1m and need 215mm square piers every 2m.
- Walls over one metre high should be double skin construction, with the two skins tied together and should have support pillars at least every 3m.
- All walls need provision for expansion and contraction about every 6m.
- Protect the top of the wall with copings and pier caps or suitably sized paving slabs.

Bricklaying, Mortar & Joints

- Use normal bricklaying techniques including damp proof courses where appropriate.
- Mortar should be 1 part masonry cement to 4 parts soft bricklayers sand.
- Mix bricks/blocks from different packs to ensure a blend of shades. If using just one pack, select from the top down.
- With raised planters and retaining walls, leave some vertical joints un-mortared for drainage.
- Raised pools require a waterproof liner and a design that will support the weight of water.

Rio Walling (pages 12, 13)

- Whilst Rio Walling can be built using normal mortar we recommend the use of Marshalls M-Fix walling adhesive.

Millstone Walling (pages 23, 25)

- Blocks are faced on one side and both ends.
- Use almost equal quantities of all six block sizes to create an authentic antique look. One block of each size will build 0.19 sq. m. of single skin wall.
- N.B. Block lengths are in the ratio of 1: 1¼: 1½. A 215mm block used to tie the skins together provides a half module and the appearance of a fourth length.
- Lay in random courses using blocks of different lengths but the same height in each course.
- Use 10mm mortar joints and bond the blocks by staggering vertical joints.
- Alternate course heights of 65mm and 140mm, though not strictly.
- To avoid a top heavy look, place extra 140mm courses near the base and extra 65mm courses near the top.
- For added interest, Cottage Garden Bricks may be substituted for 215 x 65mm blocks.

Yorkstone Walling (pages 34, 37)

- Walls up to 12 courses high that are not subject to load can be built semi-dry by using dabs of mortar within the indentations on top of each block.
- Walls over 12 courses high should have full mortar joints and normal construction techniques.

Cotstone Walling (page 43)

- Carefully mix the various profiles.
- Rake out mortar joints to same depth as the moulded joints to achieve the appearance of continuous random natural stone.

Carluke Walling (page 42)

- Each block is faced on a minimum of one length and one end.
- After the wall is built and the mortar has set firm, clean the blocks with a hose to reveal the full colour.

Vintage Stone Walling (page 66, 87, 93)

- Before commencing to build, blocks should be sorted to enable blocks of similar height to be laid in the same course.
- As Vintage Stone is a natural stone product, block height can vary. The ends of the blocks are dressed at an angle.

Health & Safety

Mixing Mortar

Dry or damp cement and wet concrete or mortar can cause irritation and burns to the eyes and skin. Suitable eye protection and PVC gloves should be worn. If contact with the eyes or skin occurs, irrigate or wash off with plenty of water. If irritation or burning persists, seek immediate medical attention.

Cutting

Using high speed cutters on concrete and stone products produces dust. If inhaled in excessive amounts over a long period this may cause long-term health problems. Suitable safety goggles and a dust mask should be worn.

Manual Handling

Most of our products are abrasive and heavy, some are very heavy. Appropriate handling precautions include wearing protective gloves and footwear and obtaining assistance when moving items weighing over 20kg.

Safety Data Sheets

Available by calling 024 7651 8700.
www.stonemarket.co.uk/healthandsafety

Maintenance

- Keep pavior and minimal joints well filled with Pavior Jointing Sand.
- Pressure washers and chemical cleaners are not recommended, particularly for reconstituted stone, natural limestone and Arctic Granite Midnight.
- To clean, wet thoroughly with lukewarm soapy water and use a stiff hard broom.
- Never use common salt to de-ice reconstituted stone or limestone. Alternative products are available, specially formulated for this purpose.

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General Information

Dimensions

All dimensions given are nominal and subject to manufacturing tolerances. The quoted sizes and coverage of our paving ranges, except where using minimal joints, are for the overall areas including appropriate joints, making it easier for you to plan a project and order the right quantities. For precise dimensions, measure several product samples at a stockist.

Colours

Variations in colour shade occur in all Stonemarket products. While the colours shown in this brochure are as accurate as reprographic processes allow, it is essential that you see actual materials at your local stockist before choosing. This is particularly important with natural stone products where considerable variation occurs. Our reconstituted stone products contain natural aggregates so we cannot guarantee that products made at different times will have identical shades. When using several packs, mix products from each pack to achieve a blended overall appearance.

Weathering

Weathering and site conditions can occasionally cause variations in shade to appear. All concrete products in their early life can exhibit efflorescence which may appear as a white deposit and/or apparent colour fading and/or drip staining. Differential weathering can also cause patchy dark discolourations on the surface of individual units. Both conditions will generally diminish over time and will not affect long term performance. Natural stone may develop shaded marking, deposits or patches as mineral content oxidises.

All products can develop algae and organic growths under certain environmental conditions and may require cleaning. Stonemarket cannot accept responsibility for any of the above conditions

Terms and Conditions

We are continually making innovations and improving products so we reserve the right to vary designs and specifications without notice. In the unlikely event of products reaching you in less than satisfactory condition, please notify the retailer immediately. Please note that if you lay a product with a defect apparent prior to laying, then we may not accept responsibility for costs incurred. While every effort has been made to give sound advice, Stonemarket cannot accept responsibility for any loss, damage or injury sustained in following it. We cannot accept any liability if products are used for purposes other than those for which they were intended, or if damage is due to not following our advice. All instruction given is for guidance purposes; building regulations should be followed at all times

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