



Planning, Installation & Maintenance Guide

For Stonecast, Natural Stone
& Porcelain

Welcome

If you're considering purchasing, or have purchased, one of our fantastic paving ranges, whether it be from our Stonecast, Natural Stone, or Porcelain selections, then this guide will help you understand, plan for and carry out the installation. This is our guidance whether you're an experienced installer using one of our products for the first time or whether you're a homeowner considering a DIY project.

Paving installation is heavy and skilled work so without careful consideration of the requirements, it is often best carried out by experienced hard landscaper/s. To further aid the installation, be aware that we have helpful project pack laying patterns for whichever range you're purchasing; you can find this on the product page on our website, under Laying Guides.

Later in the guide, we also include some helpful tips on caring for your paving for the long term.

We recommend reading this guide in full; there are some nuances to different paving types on recommendations for installation and after-care. The advice herein is the basic requirements to assure the best performance and longevity from your exciting new purchase. If you're a homeowner and you're employing a professional, some of their preferred specific methods or techniques may differ slightly from those suggested in this guide; this does not mean they're wrong, but there are certain fundamentals that should not be missed, and if we have specific product range advice in place, we'd recommend that it is followed.

We'd recommend downloading the Product Specification for your product from our website too for further design guidance and after-care tips specific to your exact product. These can be found on each product page. If you need any further assistance, please don't hesitate to get in touch on 01978 710685 or ask@westminsterstone.com.

Terms & Definitions

Depending on what type of paving you're purchasing from us, throughout our literature, an individual paving unit may be identified as a FLAGSTONE, TILE, COBBLES, SETTS, BLOCK PAVING and other names from other sources. For ease of understanding in this guide, we will call it a PAVER when discussing an individual paving unit for a general instruction.

Planning

Consider your specific needs and site conditions and choose the paving type, colour and surface finish that best meets your requirements. Discuss this at length if you're employing a designer and/or installer. We also have Product Specifications, with individual design guidance, available on our website to further aid your decision, our friendly team are also on hand for tips and advice.

Consider the type of use your paved area will be exposed to and/or your ground conditions before starting the project, e.g., a driveway will need a different construction to a patio; a clay substrate may also require special consideration.

Consider drainage and water management, in conjunction with factors such as; Sustainable Drainage Systems (SuDS) regulations or your natural ground conditions and site gradients.

Regarding natural ground conditions and gradients, often installing a patio with a gradient towards natural drainage, such as a lawn, is sufficient, but if a garden is already boggy, this will only make things worse. Another example for special consideration is that the garden's natural gradient may fall towards the house; you will have to put in a drainage system to stop the water, now falling on your new hard-standing area, running toward the house. Consider, if trees are to be removed or have recently been removed in the garden, how this may affect the overall drainage of the site and the ground conditions.

These issues may not be evident immediately. Consider and always keep in mind where your services are located, underground and overhead.

Consider and design the dimensions of your area, use dimensions that minimise cuts to save on wastage and time. Calculate the paving quantity you need in M². Add approximately 10% extra for cuts, wastage, accidental handling or transportation damage or product selection. Peg out the footprint; it's a great way of appreciating if the size is sufficient.

Consider site access and delivery. Will you need a specific type of vehicle to off-load?

Consider where you can store your delivery, alongside all the other materials you'll need, equipment, skip, etc.

Consider if you need to apply a priming slurry to the backs of the paving flags or tiles; this is particularly important when the back of the flagstone or tile doesn't have much or any texture such as slate or a porcelain tile. You can purchase our recommended product direct from us, Ultrascap Pro-Prime we can also help with the quantity required.

Consider how you're going to fill the joints. We have two jointing solutions that you can purchase directly from us. Ultrascap Prem joint and Ultrascap Flowpoint

Product Delivered – Getting Ready to Go!

- Ensure everyone involved in the project clearly understands the expectations of the products ordered, particularly if the homeowners are going away. Do not lay products despite not meeting expectations; report the issues immediately to us or wherever you ever purchased them. Once the product is laid that is knowingly unsatisfactory, we will not accept responsibility for the costs.

- Inspect the consignment for damage and that you've received what was ordered. Please report any damages or shortages within 72 hours; Westminster Stone cannot take any liability for damages after this time.
- Check that your batch codes match on multiple pack consignments, particularly with porcelain. Just a tip, keep a note or a photograph of the batch codes for future reference. If you ever wish to extend or need a few more, we might be able to help with a batch match.
- On all product types, store the packs to enable you to always mix from packs as you install. Even when batch-matched, mixing from packs is crucial to ensure a natural colour blend.
- Keep stored paving dry before and during installation.
- Due to the nature of our products, some scuffing can occur during transit. This will weather away naturally or with a light washing. Our natural stone ranges are washed after processing, but some residual process dust may remain when packaged. Porcelain is supplied in cardboard boxes; occasionally, this can get damp during the supply chain and will rub off if stuck to the surface. On our Stonecast products, we protect the face by casting spacers into the back of the flag, sometimes, there can be transit marks on the face of the slab as a result, but again these will weather away in a matter of weeks.

Foundation, Groundworks & Gradients

All paving will perform best with an appropriate foundation, construction and fall to allow water to run off. If you're in doubt about your specific site conditions or construction design, then consult a local expert for advice. The guidelines below are generally adequate for many domestic settings. You will need to excavate enough depth to allow for a sub-base, (e.g. hardcore), plus a laying course, (e.g. mortar bed), plus the paver depth, (e.g. flagstone).

- We'd recommend that our paving ranges are laid with a 1:60 gradient to appropriate drainage in most circumstances. There may be certain circumstances that the designer may prefer a 1:80; this is the absolute minimum we would suggest is considered.
- Ensure the gradient is also reflected in the sub-base too. For example, a patio that is 3M from house to lawn laid with a 1:60 fall (17mm per metre), and 100mm sub-base + 30mm mortar bed + 40mm paver will require a 170mm excavation depth at the house, but at the lawn edge the finished paving surface will be 51mm lower, but the construction layers below will need to be the same.
- Always ensure your finished paving surface is a minimum of 150mm below the Damp Proof Course (DPC) of your house, equivalent to two standard house bricks.
- Best practice is to line the ground with a ground stabilising non-woven membrane before the sub-base is placed. It also stops migration into the natural substrate.
- For most domestic patios, a sub-base of fully compacted MOT Type 1 is often appropriate. We'd recommend that 100mm is the minimum, and it would be unusual to need more than 150mm. Place and compact in layers of approximately 75mm.

- For a domestic driveway, we'd generally advise that the sub-base should be a minimum of 150mm; often 200mm is required or a reinforced concrete base. See our further advice on page 5.
- Saturated or frozen ground should be allowed to dry out. Clay substrates may need special considerations; speak to a local expert.

Paving Flag & Porcelain Tile Laying Guide

Laying

- Do not lay in temperatures of 5°C and falling.
- Prepare a slightly wet mortar mix of 1 part cement to five parts sharp sand. This should be wet enough to be rolled in a ball without falling apart, but not so wet that water can be squeezed out of it. If too wet, it won't support the weight of the paver. If too dry, it won't bond to the back of the paver or won't tap down to the desired level.

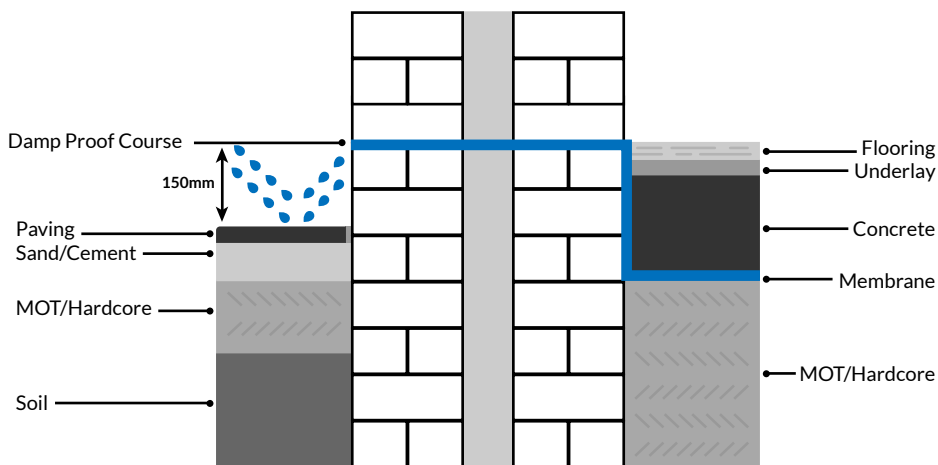


Diagram: Damp Proof Course spacing

- Consider using a plasticiser in the mix too; this helps workability whilst reducing water demand.
- Always prepare a full mortar bed. Extra care for full contact is especially important for all porcelain and natural stone ranges. Generally, 30-50mm depth is appropriate.
- Never spot, dot and dab or ring bed!
- Certain natural stones, such as slate and limestones, will benefit from having our recommended priming slurry applied to the backs of the pavers immediately before placement on the mortar bed to aid bonding. You can purchase our recommended product, Ultrascap Pro-Prime, direct from us.



- It is essential that porcelain paving has slurry primer applied immediately before placement on the mortar bed to aid bonding. Purchase our recommended product, Ultrascap Pro-Prime, direct from us.
- If laying riven slabs, it's good practice to try and lay the slab orientated to encourage water to run off with the gradient, when possible.
- Place the paver on the bed and tap down using a rubber mallet/pavers maul to the desired level.

- Keep checking levels and gradients every few pavers. Using string lines can be helpful in maintaining the desired levels; and the lines within a laying pattern.

Porcelain paving can also be laid on a concrete screed and then bonded using a good quality external tile adhesive (Ultrascap Slip-bond). Speak to a local expert regarding exact construction specifications.

Joint Widths

- Most Stonecast ranges are designed to be laid with a 15-22mm joint width. Stonecast Terracotta is designed to be laid with a 10-15mm joint.
- Most Natural Stone ranges are designed to be laid with an 10mm average joint width. Those Natural Stone ranges with square cut edges can be laid with 5-8mm joints to attain a more contemporary style.
- Porcelain ranges are generally designed to be laid with joints between 3-5mm.

After Laying

- Do not walk on the paving for a minimum of 24 hours.
- Point up or joint as soon as possible.
- During winter conditions, protect unfinished workings from frost and ice.
- If you need to walk on the paving after 24hrs before it is pointed, be sure to step in the middle of each paver.

Pointing/Joining

- We supply two great convenient jointing solutions, Ultrascape Premjoint and Ultrascape Flowpoint. Premjoint is easy to use for DIY'er and professionals alike. We'd recommend that Flowpoint should only be considered by the professional and requires a minimum of two people. For more information on our ready-made jointing solutions, don't hesitate to get in touch with us.
- We would recommend watching Ultrascape's demonstration videos (which can be found on Youtube) before trying for the first time, as well as thoroughly reading the instructions on the packaging.



- Point up using a traditional mortar joint. Mix one part of cement with four parts of building sand with as little water as possible to bind the mortar; consider using a plasticiser for added durability. Feed the mix into the empty joints, usually with a small pointing trowel from a larger trowel. Compact the joint either with the small pointing trowel or a pointing iron. Clean the edges of the pavers with a sponge as you go to stop the mortar staining.

Domestic Driveways

- Not all of our product ranges are specifically designed for driveway use; we don't recommend any natural stone products under 30mm thickness to be laid for use on a driveway.
- Our porcelain ranges can be used on domestic driveways for vehicles up to 3.5 tonnes. Please note this type of use requires a reinforced concrete base. Use an appropriate good quality external tile adhesive (Ultrascape Slip-Bond) and jointed with an appropriate good quality exterior tile grout (Ultrascape Prem-Flex)
- A number of our natural stone and Stonecast Cobbles & Setts are appropriate for driveway use. We'd recommend using our priming slurry to assist with bonding to the bed. Use a one-part cement to four parts of sharp sand mortar mix when laying these, and increase the bed depth to a minimum 50mm.
- Our Ultrascape Flowpoint is ideal for use on driveways and with cobbles and setts.
- Our Natural Stone Block Paving ranges generally can be used on a driveway. They can be installed either on a mortar bed as above, or they can be laid on a 'flexible' bed of compacted sharp sand or grano dust, approximately 35mm depth, and jointed 'flexibly'; it must be supported by an appropriate sub-base as already discussed.
- Any paving product may exhibit tyre marks, notably lighter colours, especially under braking or heavy power steering.
- **Please Note:** Responsibility lies with the user to ensure that the overall construction is appropriate for their needs.

Internal Flooring

We have wide ranges for internal flooring from our Stonecast, Natural Stone and Porcelain options. We'd recommend using a sealant for all Stonecast and Natural Stone products. We have a wide range of LTP cleaners and sealers to help you.

Stonecast and Natural Flagstones should be laid on mortar or a thick bed with flexible tile adhesive. Porcelain ranges can be laid using tile adhesive.

Underfloor heating is appropriate with all internal flooring options but recommended that the heating be turned up gradually over a couple of weeks or so. Furthermore, when using our products in conjunction with Underfloor heating, we always advise the use of a decoupling membrane and when jointing using a flexible wide joint tile grout such as Ultra Tile ProGrout Smooth.

Cutting

- For Stonecast and natural stone pavers, cut using a power-assisted disc cutter fitted with a diamond-tipped blade, preferably with a water feed to suppress cutting dust and to cool the blade.
- Regarding porcelain cutting, this is generally more challenging. Again, it can be done with a water-fed disc cutter or angle grinder, in conjunction with a specialist continuous rim porcelain blade, recommended to achieve the best result possible. Many users use bench cutters on large porcelain projects to attain consistent edge finishes. Whatever method, try and minimise vibration during the cut; clamping to a pallet is one straightforward way of doing this. For long cuts, it's good practice to cut both ends, of approximately 50-75mm, before cutting through the entire length.

- For more intricate porcelain cuts, you should consider using a 115mm/4" angle grinder. We supply CLFM blades which will work well for this and minimise chipping. Please get in touch with us.



- Always wear appropriate eye and ear protection.
- Always wear suitable respiratory protection to avoid inhalation of dust particles.

Other Health & Safety

Carry out risk assessments before embarking on any paving installation project. Wear appropriate eye, ear and breathing equipment. Wear suitable gloves, clothing and safety boots. Most of our products are abrasive and heavy. Some individual pavers may require a two-person lift or appropriate lifting aids, such as vacuum lifting equipment.

Cleaning & Maintenance

- Keep pointing and joints maintained throughout the life of the area. (LTP Grout brush recommended)
- We'd recommend against using pressure washers unless used at a minimum distance of 600mm with a wide fan setting.

- We'd recommend not using any acid-based cleaners on our paving without specialist advice. Please get in touch with us on our range of recommended LTP cleaners and sealers and which one is suitable specific to your needs.
- In most cases, LTP Grimex. and yard broom is sufficient to clean most soiling agents incurred in a domestic setting.
- We'd recommend against the use of de-icing salt. Source a chemical granule alternative that does not damage cement-based products and materials; these are widely available.
- We have a wide range of LTP cleaning and sealing products to help keep your patio or floor in tip-top condition.



- We supply a range of LTP tools to assist with cleaning, which includes a broom pole with various removable and transferable heads which work in a multi-directional motion specifically designed for patio and flooring upkeep.

General Information

Dimensions

All our stated product dimensions are nominal and subject to industry standard tolerances.

Colours

Variations in colours occur in all Westminster Stone products, from paver to paver, often by design or natural variation and from batch to batch, due to the nature of the constituents used in the product manufacture. This is most prominent in some natural stone ranges where considerable variation can occur.

When using more than one pack for your project, mix products as you go from multiple packs to create a natural blend.

Dusting

Some dusting can occur in our Stonecast ranges, usually only in the early week's post installation. If the transfer is causing an inconvenience, an appropriate dustproofing may need to be considered.

Our natural stone ranges are washed after processing, but some residual process dust can remain when unpackaging.

Efflorescence

All our Stonecast products can occasionally exhibit efflorescence in their early life. Efflorescence is a temporary condition that can occur in any cement-based product. It can show as a white residue or simply as a colour lightening; therefore, it is generally more prominent on darker colour shades.

It will diminish naturally with weathering over time (often the first cycle of the seasons) and as such, is not a product fault.

Natural Stone, particularly sandstone, can exhibit a similar phenomenon, either by calcium carbonates migrating through the stone from the mortar bed or natural salts and minerals showing from within the stone.

In the early months post-installation, sealing products should be done with care in case of this condition. Please speak to us for advice on recommended products.

Other Weathering

All paving products will weather, age and change colour over time. Stonecast products can display patchy dark discolorations post installation because of differential weathering. This generally begins to diminish after the first cycle of the seasons.

Natural Stone products can exhibit shade variations as mineral content oxidises post installation.

Porcelain products can exhibit water staining, notably darker shades and when the paver holds water. Porcelain often takes less effort to clean soiling off but due to its density may exhibit some everyday soiling more clearly than on other paving types.

All paving products may require cleaning, particularly in external environments. Organic staining and growth, e.g., algae, lichen, will exhibit given the right environmental conditions on all paving types. Fallen leaves can release tannins that may stain hard landscaped areas, sweep up as regularly as is practicable to minimise risk.

Westminster Stone cannot accept responsibility for any of the above conditions described in the General Information.

Terms & Conditions

The generic advice in this document is for guidance purposes only and only intended to assist you in your purchase and use of the product. Other supplementary external research is recommended, particularly in respect of local environmental and building regulations. Westminster Stone will not accept any responsibility or liability, whatsoever arising, from information provided in the document. Westminster Stone Ltd sole liability shall be outlined in the Terms & Conditions of purchase. We cannot accept any liability if products are used for purposes other than what they were intended for.



Westminster Stone
Shaws Estate
Sodylt
Ellesmere
Shropshire
SY12 9EL

01978 710685
ask@westminsterstone.com
westminsterstone.com

Further advice is available on our website at westminsterstone.com.

Should you require any further information or assistance, please, do not hesitate to contact us on 01978 710685 or ask@westminsterstone.com.