Reclaimed York Stone

1. Description of works

This is a non-site-specific technical detail only. SOP to be read in conjunction with relevant specification and site-specific RAMS for additional health and safety information prior to commencement. SOP to be read in conjunction with Preparation of unbound sub-bases for paved surfaces (REF: SOP 01 & 02).

2. Sequence of Events

2.1 Site Arrival & Induction

Appropriate site induction is to be carried out before commencing work for any staff members or contractors who have not previously visited the site.

- Toolbox talks are to be carried out before commencing work to familiarise staff and contractors with the expected schedule and work procedures.
- Staff and contractors are to be made aware of all welfare facilities.
- Staff and contractors are to be made aware of who the designated first aider is on site and of the location of the first aid kit.
- Staff and contractors are to be made aware of other people using the site and work to be carried out is to be communicated to others using the site as necessary.
- Associated RAMS to be read and signed by operatives prior to commencement of works.

2.2 Plan the laying

- Review the relevant plan, drawing, or specification for the paved area if present. A setting out plan is desirable.
- Double check profiles or stakes used for setting out to ensure correct levels and alignment.
- Determine the simplest way to lay the paving e.g. working backwards out of the site from the hardest part to reach to the easiest. Use this information to help with the set-up of the site.

2.3 Set up materials storage area.

- Ensure materials are stored with sufficient space to select and handle suitable slabs.
- Ensure materials are stored as close as possible to the point of use.
- Ensure the surrounding areas are protected from spills.
- Ensure the materials area is always kept tidy.

2.4 Set up cutting station

- Ensure the surrounding areas are protected from dust and water.
- Use old pallets as a raised surface to cut the slabs on.
- Make a suitable surface available to store small tools used during cutting.
- Determine a suitable location to store or dispose of offcuts.
- Ensure the materials area is always kept tidy.

2.5 Set up mixing area

- Ensure the surrounding areas are protected from spills.
- Ensure the mixer is set up close materials storage wherever possible to avoid double handling.
- Always ensure multiple bags of cement are open ahead of use to avoid delay during laying. Bags should be laid on a road pin and cut in half with each half representing 2 cement parts in a 6:1 sharp sand: cement gauge.
- Ensure the area around the mixer is always kept clear and tidy.

2.6 Set up laying areas

- Ensure the surrounding areas are protected from spills.
- Ensure the area is clear and tidy of any obstacles.
- Set up string lines to existing profiles or stakes and double check levels and alignment using the same process used during setting out. Make any necessary adjustments.
- Set up additional string lines to lay the paving to. These should be on the same fall and parallel to existing string lines, creating a set of tramlines no more than 1800mm apart (the maximum distance of a spirit level). This ensures paving can be laid square and to the correct fall. (SEE FIG. 1).

2.7 Laying paving

2.7.1) Plan your laying pattern (SEE FIG. 2):

- Larger slabs in high visibility areas, entry points or focal zones, load bearing or high traffic zones, as 'key stones' to anchor the pattern.
- Avoid smaller cuts around edges, high traffic areas, corners and transitions (i.e. against channel drains).
- Ensure a random, mixed size laying bond, with a minimum of 300mm between the edge of a slab and a joint line.
- Avoid long joint lines that present as excessive.
- If unsure, dry lay a slab combination before laying.
- Care should be taken when arranging slabs, stones or tiles and each piece should be checked for existing cracks or damage which could cause it to break when moving.
- Joints should be offset by minimum 300mm. Avoid cross joints.

2.7.2) Mix bedding material:

- Unless otherwise specified, use the standard bedding mix of 6 parts sharp sand to 1 part cement
- For the purposes of bedding material beneath slabs, this can be gauged more loosely using a loaded shovel as 1 part. A bag of cement split in half constitutes 2 parts.
- With the mixer turning, pour water into the mixer, initially to the joint line within the drum.
- Add 6 loaded shovels of sharp sand followed by a quarter of a bag of cement (half of the split bag opened).
- Ensure the material is mixing correctly and not sticking to the sides of the drum. As the mixer builds residual material from previous mixes, you may need to add a small amount more water at this stage.
- Add 6 more loaded shovels of sharp sand followed by the remaining cement from the split half bag.
- Add more water as necessary and ensure the gauge is fully mixed. The aim is for a wet consistency that is not so wet it doesn't hold its shape on the ground, and not so dry that it is crumbly and doesn't stick together.
- Empty the gauge into a barrow and move to the point of laying.

2.7.3) Preparing the bedding layer (SEE FIG. 3):

- Pour the bedding mixture close to the position of the first slab so the final bed can be prepared using a shovel and a bucket trowel.
- Ensure string lines are used for alignment and level to prepare the bed to the required depth.
- The finish level of the bed should be 5-8mm higher than the underside of the slab (at the thickest part). This allows for consolidation.
- Ensure a full bed without voids or low spots.
- The slabs will vary in thickness. The depth of your bed should ideally be between 30-60mm, though it may occasionally be outside of this range. This is also due to variation in the sub-base level.

2.7.4) Cutting slabs to size

- Lift the slab onto the cutting station. Use Grabbos where possible if handling individually. If two people are required for lifting, use either Grabbos or Probst VPH 150 Vacuum Lifter. The Probst Lifter requires the slab to be damp to ensure suction.
- Mark the slab with a pencil and dry score the line with the disc cutter to ensure the line isn't lost to water. Ensure the blade width is on the outside of the required slab piece.
- Complete the cut with the disc cutter and fettle the edges of the cut length using a walling masons hammer or brick hammer to give a natural appearance.
- Store the offcut away or dispose if not reuseable.

2.7.5) Laying a slab

- Always ensure the cut edge is hidden.
- Allow for a 15-20mm joint in the paving.
- Inspect slabs to ensure they are not liable to cracking with time. Look for existing hair line cracks and discard where present.
- Lift using lifting equipment and place on the bed evenly. Adjust the bed as necessary.
- Knock the slab into the correct position using a large rubber maul. Use white rubber to avoid dark marks.
- Double check alignment using the string lines.
- Check the longitudinal level by the string line and double check between slabs using a spirit level to ensure a consistent fall. (SEE FIG. 1).
- Check the transverse fall (this may be level if only falling one way) by using a spirit level across the slabs and between slab and the next string line (tramline). (SEE FIG. 1).
- The surface of the slab will be riven. Be aware that this doesn't cause you to creep out of level over the course of a few slabs. This can be prevented by making minor corrections and adjustments between slabs to maintain the overall levels required.

2.7.6) Preparing the pointing mix

- Unless otherwise specified, the slabs to be pointed using 2.5 parts sand to 1 part NHL 3.5 Lime. The sand should be either 2 parts sharp sand and 0.5 parts building sand or 2 parts sharp sand and 0.5 parts play pit sand depending on desired appearance. Building sand provides a warmer colouration, play pit sand a whiter colouration.
- Mix the sand components.
- To an empty and clean mixer, add half of the required sand amount and switch on.
- Next, add all the NHL lime and allow it to turn over a few times.
- Add the remaining sand.
- Turn over for 5 minutes until fully mixed.
- Slowly add water until the required consistency is almost reached and then switch off the mixer. The consistency should be drier than the bedding mixture; crumbly but with enough moisture that it can hold in a sausage shape.
- Leave the mix to stand for 20 Minutes. This is important. During this time the mortar will 'set up' and become 'fattier' due to the plastercising effect of the lime.
- Turn over briefly before using, adding more water if absolutely necessary to adjust the consistency.

2.7.7) Pointing

- Fill a small trug with the pointing mixture.
- Pour some of the mixture alongside the joint and move into the joint with a pointing trowel.
- Thoroughly compact the material into the joint using a piece of 38 x 19mm batten cut to a length of 125mm with a 45-degree angle cut on one end.
- When the joint is full, compacted and flush with the surface, use the angle of the batten to score the joint and finish by brushing with a soft brush to give a natural texture.
- When pointing is complete, damp hessian should be laid across the paved area during dry/warm periods. Dry hessian should be laid across the area during cold or wet periods.

2.8 Cleaning up

- Any waste from laying, including off-cuts, excess bedding material, and general rubbish is to be disposed of appropriately.
- The mixer should be cleaned thoroughly to ensure no material remains stuck to the drum.
- Surfaces should be swept and/or cleaned with water where appropriate.
- All remaining materials should be stored neatly and covered where appropriate.
- All tools should be cleaned thoroughly and stored dry.

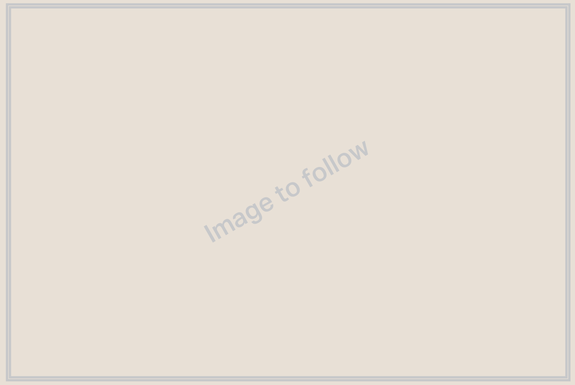

Fig. 1: Typical image reference for correct setting out

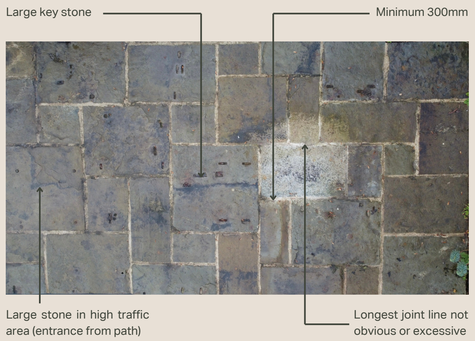

Fig. 2: Typical laying pattern

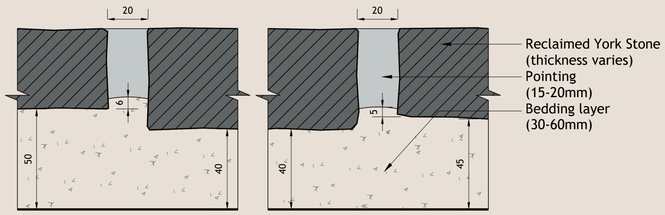

Fig. 3: Typical section through the bedding layer

Useful Information

- Endfall (Longitudinal Fall): The fall or gradient along the length of a pavement or surface
- Crossfall (Transverse Fall): The fall or gradient across the breadth of a pavement or surface
- Gradient = level difference (fall) / distance (run) expressed as percentage or ratio
- Using a 1:60 ratio fall as an example, this means 16.7mm of fall per metre (1000mm / 60 = 16.7mm)
- For ordering purposes, allow 10% overage for sub-base material

Suppliers

Stone

Steptoe's Yard: www.steptoesyard.co.uk (affordable, delivered on pallet network)
Authentic Reclamation: www.authentic-reclamation.co.uk (local)

Lime

Chalk Down Lime, The Lime Yard, Robertsbridge, TN32 5RP, Tel: 01580 830092
Aggregates (Bulk Bags and Cement)

Parker Building Supplies, St. Leonards on sea (on account), Highfield Dr, St. Leonards-on-sea TN38 9TG, 01424 856800

Misc. disposable materials

Parker Building Supplies, St. Leonards on sea (on account), Highfield Dr, St. Leonards-on-sea TN38 9TG, 01424 856800

Aggregates Loose

Parker Building Supplies, St. Leonards on sea (on account. Reseller of quarried products), Highfield Dr, St. Leonards-on-sea TN38 9TG, 01424 856800

Robins Herstmonceux, 2 Chilsham Ln, Herstmonceux, Hailsham BN27 4Q, Tel: 01323 833181

Gardenscape Direct, The Wharf, Rye Road, Newenden TN18 5QG, 0800 654663
Tool and Plant Hire

Top Plant,The Stage, Stable Works, Climpsetts Farm, Robertsbridge TN32 5SP, Tel: 07527 164641

Jewsons Tool Hire, 591 Sedlescombe Road North, Hastings, St. Leonards on sea, TN37 7PY, 01424 754256

Tools List

Note: Appropriate PPE to be available for all tasks as per site specific RAMS.
It is assumed that all personnel will carry suitable pencils/markers.

Batteries	Brick trowel	Buckets	Bucket trowel	Cement Mixer
Cleaning sponge	Disc cutter, blade and sockets	Extension lead	Grinder with masonry blade	Rubber mallet
Petrol/two stroke oil	Manual plate compactor	Pallets	Pencils	Pointing trowel
Shovels	Soft brush	Spirit levels	String lines	Tape measures
Tarpaulin	Timber 19x38mm (125mm lengths)	Transformer	Trugs	Whacker plate
Wheelbarrows	Wood screws			

THE GARDEN LANDSCAPERS

Standard Operating Procedures

Hard Landscaping
Paved Surfaces

Reclaimed York Stone (03)