Q25 Slab/ brick/ sett/ cobble pavings

The following clauses:
125a, 751c, 752a & 755a
comprise a full specification for the construction of a rigid pavement using “full depth” or “shallow” setts natural stone or pre-cast concrete setts, using enhanced adhesion between bedding mortar and setts, suitable for heavily trafficked areas, where the roadbase layer is concrete.
“shallow“ setts describes those setts which have a depth not less than half of their width.

The following variables, highlighted in red within the text, may be altered according to specific project and construction site requirements:-

Clause 751c:
Thickness: Target depth to be 30 mm.
Note: 30 mm is a useful target depth, for it allows for errors in setting out of as much as ±10mm in addition to the typical dimensional tolerances for cleft natural stone setts without compromising the thickness of the bedding mortar course. Bedding mortar may be laid at a greater nominal depth, if desired, typically when creating falls at the surface over a level roadbase.
When laying the bedding mortar course directly over an unbound sub-base it is normal to increase the nominal bedding mortar depth to 50 mm.
A bedding depth greater than 70 mm is normally addressed by first laying a screed bed of **tuffbed** which is densifed using a vibratory plate compactor, this may be overlaid the following working day.
Clause 755a:
bedding mortar has gained not less than 20 N/mm²
Note: 30 N/mm² is relevant to heavily trafficked areas. A lower value may be used for other situations, typically 15 N/mm² for areas subjected only to non-HGV traffic and 10 N/mm² for purely pedestrian areas.
and jointing mortar has gained not less than 25 N/mm²
Note: 25 N/mm² is relevant to heavily trafficked areas. For areas subjected only to non-HGV traffic a lower figure, typically 15 N/mm² may be sufficient, for purely pedestrian areas it is normal to specify only a period of quarantine time following jointing, as stated in clause 755a, and a minimum strength requirement for jointing mortar may be omitted.

125a ADVERSE WEATHER:

- Temperature: Do not lay or joint paving if the temperature is below 3°C on a falling thermometer or below 2°C on a rising thermometer.
- Frozen roadbase: Do not lay upon a roadbase surface which has not been protected from temperatures below 2°C for at least 24 hours prior to use.
- Frozen materials: Do not use. All materials must have been protected from temperatures below 2°C for at least 24 hours prior to use.
- Frozen water: Do not use. All water used for mixing mortars must be at a temperature not less than 2°C.
- Do not apply jointing mortars when ambient temperature exceeds 30°C and is rising.
- Protect fresh mortar joints and/or bedding mortar from frost and rapid drying out until mortar has cured.

751c MORTAR BEDDING OF SETTS (BS 7533-7):

- Material:
  "**tuffbed**" water permeable bedding mortar.
  "**tuffbond**" priming mortar.
- Thickness: Target depth to be 40 mm.
- Thickness: Maximum range 20 mm minimum to 70 mm maximum.
- Follow manufacturer's instructions for mixing and application.
  SteinTec, 1 Northwick Road, Canvey Island, Essex, SS8 0PU.
  Tel: 0203-598-9800 Email: info@steintec.co.uk
- Consistency of **tuffbed** bedding mortar:
  - Add sufficient water to achieve a 150 mm slump
- Consistency of **tuffbond** priming mortar:
  - Mix to a free flowing liquid slurry
- Laying:
  - All work must be carried out on the side of the unlaid face, at no time shall operatives stand, work or rest materials on freshly laid paving.
  - The surface of the roadbase or supporting structure must be thoroughly cleaned.

- The surface of the concrete roadbase or supporting structure is to be coated with "**tuffbond**" priming mortar to a minimum thickness of 1.5 mm immediately prior bedding mortar being laid. Priming mortar may be applied by brushing on.
- Bedding mortar must not be laid in advance of more than 4 rows or setts.
- Bedding mortar must be laid to a surcharge height of not less than 10 mm.
- The underside of setts is to be coated with "**tuffbond**" priming mortar to a minimum thickness of 1.5 mm immediately prior to sett being placed on bedding mortar. Priming mortar may be applied by brushing on or by dipping the sett into a shallow receptacle containing priming mortar.
- Priming mortar shall not be applied more than one minute prior to sett being laid upon bedding mortar.
- Setts to be hammered firmly to line and level immediately, thereafter not to be disturbed.

- Cleaning of setts during laying:
- All mortar contamination must be removed from the surface of setts immediately using clean water and a sponge.
- Cleaning of setts following laying:
- Areas of freshly laid setts to be thoroughly rinsed with clean water at the end of a working shift.

752a MORTAR JOINTING OF SETTS (BS 7533-7):

- Material:
"**tufftop**" jointing mortar.
- Follow manufacturer's instructions for mixing and application.
SteinTec, 1 Northwick Road, Canvey Island, Essex, SS8 0PU.
Tel: 0203-598-9800 Email: info@steintec.co.uk
- Preparation:

- Joints must be clean and clear of all foreign matter
- The area to be jointed must be thoroughly soaked with clean water and maintained in a wet condition until jointing mortar is applied.

- Consistency of mortar:

- Mix to a free flowing liquid slurry grout.

- Jointing:

- Freshly mixed mortar is spread over the surface and forced into joints using a suitable rubber/neoprene squeegee.
- Mortar is allowed to settle in joints and fresh mortar is drawn across the surface repeatedly until joints are full and settlement has ceased.
- Water may be applied to the surface at any time in the form of a fine spray, to prevent drying of the mortar on the surface.

- Cleaning of setts following jointing:

- Excess mortar is removed using a suitable rubber/neoprene squeegee.
- Water is applied to the surface in the form of a fine spray, taking care not to disturb the mortar in the joints, until the surface is wet.
- Water and excess water is removed using a suitable rubber/neoprene squeegee.
- Process repeated: Water is applied to the surface in the form of a fine spray, taking care not to disturb the mortar in the joints, until the surface is wet.
- Process repeated: Water and excess water is removed using a suitable rubber/neoprene squeegee.
- The surface is maintained in a damp condition by periodic application of water in the form of a fine spray.
- The surface may be rinsed clear with clean water after sufficient time has elapsed for joint mortar to have become sufficiently stable to resist action of cleaning.

755a PROTECTION AND QUARANTINE FOR FRESHLY JOINTED SETTS:

- Freshly jointed areas must be protected from vehicular traffic until bedding mortar has gained not less than 20 N/mm² compressive strength and jointing mortar has gained not less than 25 N/mm². Mortar cubes for testing shall be cured on site in unprotected conditions.
- Materials storage: Do not overload pavings with stacks of materials until the quarantine period for vehicular trafficking has passed.
- Pedestrian trafficking may be permitted on the next day following jointing.
- Materials storage: Do not overload pavings with stacks of materials until the quarantine period for vehicular trafficking has passed.
- Cleanliness: Keep paving clean and free from mortar droppings, oil and other materials likely to cause staining.