

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 ± 10 mm 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 densified 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 laying
tuffbau limited, 730 London Road, West Thurrock, Essex, RM20 3NL.
Tel: 00-44-1708-860-049 Fax: 00-44-1708-860-893 Email: info@tuffbau.com
- 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 unlaied 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.
tuffbau limited, 730 London Road, West Thurrock, Essex, RM20 3NL.
 Tel: 00-44-1708-860-049 Fax: 00-44-1708-860-893 Email: info@tuffbau.com
- 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.