

KERBSTONE INSTALLATION GUIDELINES

Installation of concrete kerbs, edging and channel units has five main stages:

1. Preparation of support layers
2. Construction of unit foundation
3. Laying to line and level
4. Bedding of units
5. Haunching of units

The unit foundation itself must be supported, either on an extension to the underlying pavement sub-layers or, for thin pavements (e.g. edgings on pedestrian footways), directly on an adequate subgrade. The depth of the unit and that of the pavement construction will determine on which pavement layer the kerb foundation will sit.

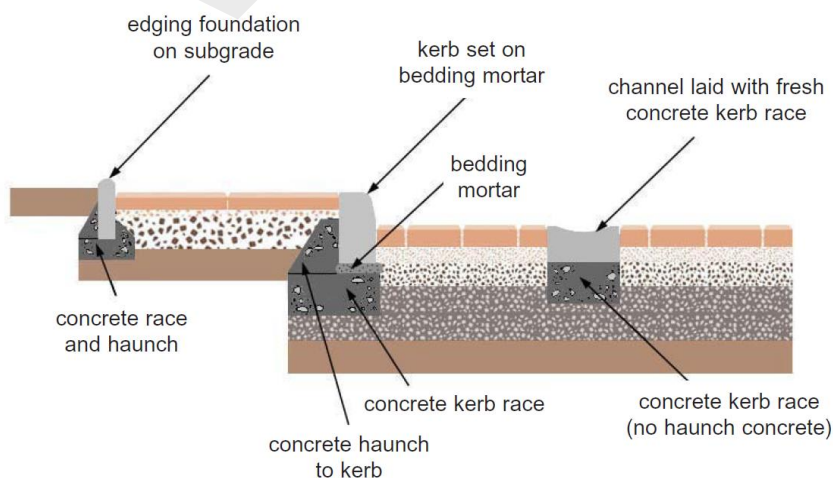
A **good concrete foundation** (kerb race) to support the unit is essential and must be sufficient for the intended pedestrian or vehicular trafficking. It must be able to spread and transmit the applied vehicular wheel loads to the underlying support layer without overstressing the layer. The foundation must also be capable of resisting any shear forces induced by overrun.

Kerbs and edgings in particular are also intended to be a visual marker, either to highlight the edge of a pavement or to warn of a change in level. They must therefore be laid to the **correct line and level** as any discrepancy will stand out and detract from the appearance of the finished pavement. Channels, when used to convey water, must be accurately laid to the correct line and level. Any variation from line and level may interrupt the smooth water flow leading to localized ponding and possible deposition of water-borne silt.

Kerbs, edgings and channels **require bedding to provide even support** and prevent vehicular overrun from damaging the unit by inducing bending stresses. The units may be bedded directly on a freshly mixed concrete kerb race, on mortar on a hardened kerb race or bonded directly to the pavement surface with a modified strengthened mortar or suitable resin compound.

Units should be haunched with backing concrete to support them and prevent horizontal displacement, unless the adjacent paving can provide adequate support e.g. flush laid channel units in block paving.

The main elements of a typical kerb installation are shown below.



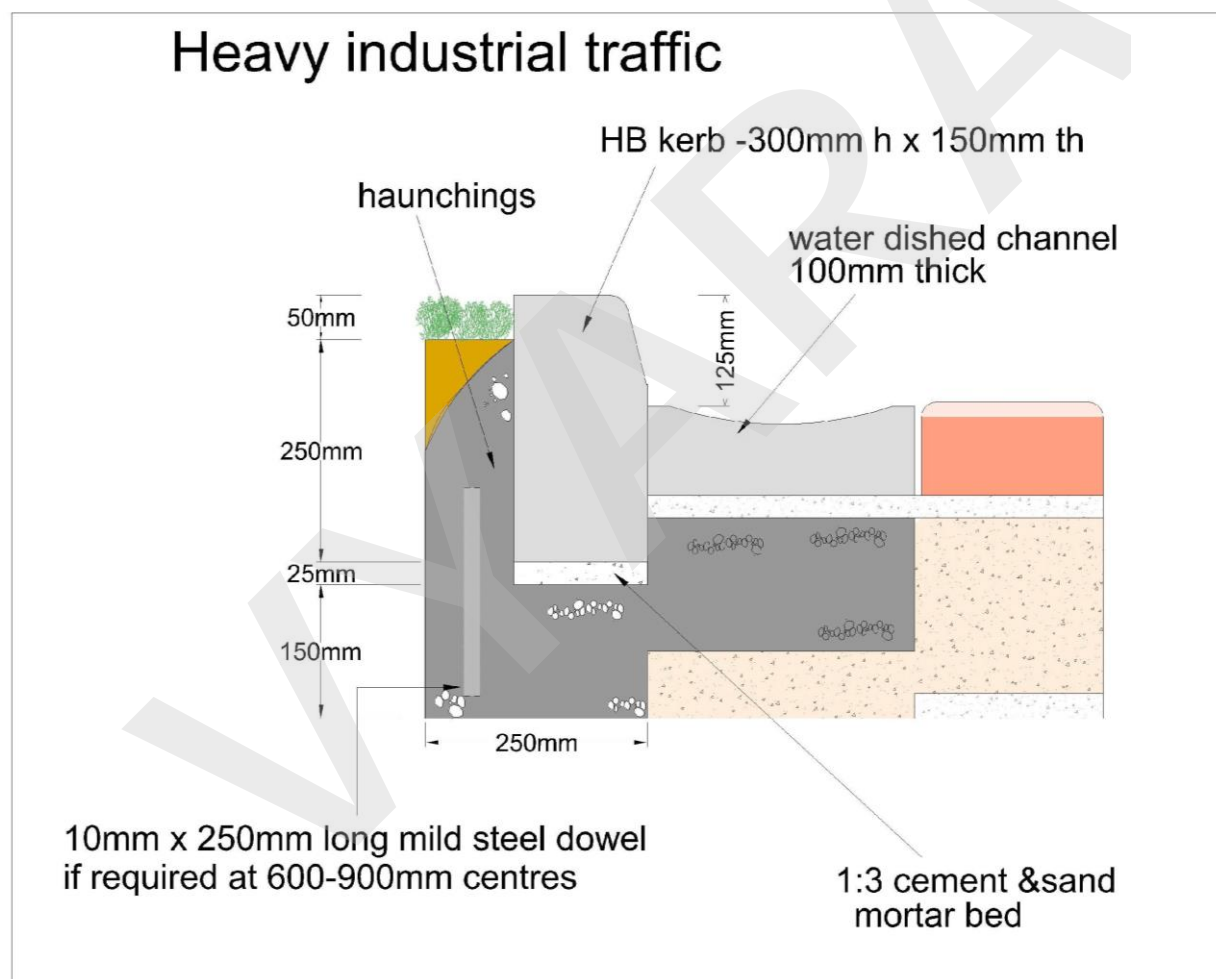
Laying

Products should be laid using one of the following alternative methods:

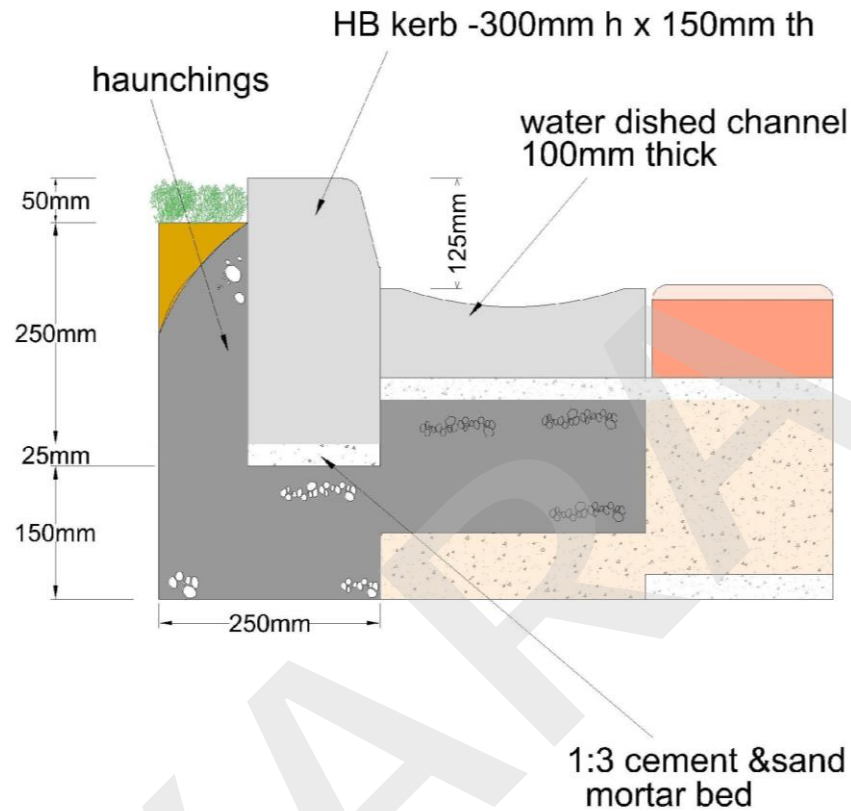
1. Units set on a race of freshly mixed concrete
2. Units bedded on a mortar bed on top of a hardened concrete race or onto a mortar bedding on a carriageway
3. Units bonded to the pavement surface.

Units should be haunched with M20 grade concrete or a race of fresh concrete extended to the required height.

Examples of typical kerb/edging installations for different applications follow.



Estate roadways/car parking areas



Laying on a fresh concrete race

A race of fresh M 20 grade concrete is placed along the intended line of where the units are to be placed. The concrete should extend to a width to fully support the units and backing concrete. After placing the units, the race should have the **following minimum thicknesses**:

Edging units - 75 mm

Small kerb units - 100 mm

Kerbs and channels etc. - 150 mm

The units are laid on the fresh concrete and adjusted to line and level.

The units are then haunched with M 20 grade concrete. The concrete should be well compacted to fully support the units.

In areas subject to heavy loading the race and haunch should either be monolithic or have dowel bars fixed into the base and extended into the haunching concrete. This will help prevent horizontal displacement.

Laying on a hardened race (edge beam or existing carriageway base)

A race of fresh M 20 grade concrete is placed along the intended line of where the units are to be placed. This is then allowed to fully harden. It should have a minimum thickness of 150 mm. The units should be bedded on freshly mixed mortar, 1:3 cement: sand (proportions by volume), with a 12-40 mm compacted thickness.

The units are then haunched with M 20 Grade concrete. The concrete

should be well compacted to fully support the units. In areas subject heavy loading the race and haunch should either be monolithic or dowel bars fixed into the base and extended into the haunching concrete. This will help prevent horizontal displacement.

Laying on a pavement surface

The units may be laid directly onto a suitable pavement surface which should extend to a width to fully support the units and any required haunching. The units are bonded to the surface using a suitable synthetic resin compound or with a modified strengthened mortar (used strictly in accordance with the manufacturers' instructions).

Jointing

Concrete kerbs are generally laid with unfilled, close joints with a minimum joint width of 2 mm: they must not be butt-jointed. Mortar joints are not necessary but can be used for aesthetic reasons. The mortar should be freshly mixed, consisting of 1:4 cement: sand (by volume). Where mortar joints are used, they should be completely filled and fully compacted. Joint widths should be 5-7 mm. Where units are laid over or adjacent to a jointed concrete pavement, suitable joints should extend through the line of the units at the joint and continue through the kerb race and haunching concrete. When mortar joints are used, movement joints should be provided. These movement joints should be formed of 10 mm thick, easily-compressible material, extend through the kerb race and haunching concrete, and should be at 15 m centres. Mortar should be used as soon as possible and any material that has begun to set or has been mixed for more than two hours discarded.

Setting-out and Alignment

Units are set-out to line and level using a string line between pegs or steel pins. The line and level of the laid units should then be checked and any necessary adjustments made. Allowances should be made on curves, as the string line will be made up of a series of straight lines. Final alignments are checked to ensure that the units follow a smooth curve both horizontally and vertically.

When using kerbs to EN 1340: 2003, radius kerbs should be used for radii of 15m or less.

Units should be laid to within 10 mm of their design alignment and the difference between adjacent units should not exceed 3 mm. Kerbs should normally be laid so that the water check is 25 mm above the surface of the road. At vehicle crossing points kerbs should be 25 mm above final road surface unless otherwise stated.

At pedestrian crossing points dropped kerbs should be laid 6 mm above the final road surface on the lower side of the road and level with the surface on the higher side to aid drainage. For ease of wheelchair use, the upstand should be between 0 and 6 mm. Joints on the dropper units may need adjustment to achieve this. This application may require a drainage outlet for removal of surface water at this point.

Cutting units

The long kerbs should not be cut to less than 300 mm in length, with smaller units not being cut to less than 1/3 of their original length (and a minimum of 50 mm).

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