GUIDANCE ON THE INSTALLATION OF EDENKERBS AND ANCILLARIES

Health and Safety Information

In accordance with the Health and Safety at Work etc Act 1974, the Manual Handling Operation Regulations 1992 (as amended 2004) and the Construction (Design and Management) Regulations 2015, risk assessments should be carried out to protect workers from risks associated with musculoskeletal disorders and work related upper limb disorders.

This may require the use of lifting aids to assist installation.

All relevant health and safety information, including Material Safety Data Sheets can be obtained from Marshalls Technical Advisory Services.

Protection

All necessary Personal Protective Equipment (PPE) should be worn on site, as the site rules dictate, and in addition to this, goggles, masks and gloves should also be worn especially when the units are being cut. A minimum requirement for personal protection equipment on site should include a hardhat, protective gloves, protective shoes and high visibility clothing.

Foundation

Materials

The units may be bedded directly onto a freshly mixed concrete kerb race, or bedded onto mortar on a hardened kerb race or bonded directly to the pavement surface with a suitable modified strengthened mortar or a suitable resin compound, in accordance with the mortar/resin manufacturer's installation recommendations.

Preparation

The concrete foundation shall conform to BS 8500-2: 2023 and BS EN 206: 2013+A2:2021 designated concrete to strength classes detailed in table below extracted from BS7533-101:2021

Concrete for kerb bases

Traffic category	Edge beam	Kerb race
3 and below	ST4 or C16/20	ST1 or C6/8
4–6	ST4 or C16/20	ST4 or C16/20
7–9	ST4 or C16/20 with reinforcement	Not applicable

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A concrete kerb race foundation should be a minimum thickness of 150mm, or it should be the thickness of subbase beneath the adjacent carriageway if that is larger, and extend to a width suitable to accept the width of the units being installed plus the width of the haunching behind the unit. The concrete race should be fully compacted. Mesh reinforcement can be used within the race if required.

When laying units onto an adjacent road-base, base course or sub-base it may be necessary to step the base to cater for certain carriageway thickness. The concrete race for the kerb unit should therefore be bedded on a suitable base material. At the position for the inlets of the Edenkerb, if the Diffuser Slab unit is being installed, it will be necessary for the foundation to be extended to accommodate the installation of the diffuser slab. The foundation for the Diffuser Slab should be installed to the extent of the footprint of the Diffuser Slab, to enable it to provide full support to the entirety of the unit.

Laying

When laying units on a fully compacted hardened kerb race, lay the unit to line and level onto a 12mm to 40mm thick layer of fresh bedding mortar a Type 35 or Type 25 mortar to Table 9 of BS7533-101:2021 or a 1:4 cement: sand, (proportions by volume) containing sand complying with BS EN 12620 : 2002 + A1 : 2008. Mortar selection should be based on trafficking applications detailed in the table below:-

Table 32 — *Kerb bedding mortar*

Traffic category	Kerb bedding
3 and below	Site-batched mortar as described in 5.4.2
3 to 5	Type 25 mortar conforming to Table 9
All traffic categories	Type 35 mortar conforming to Table 9

If the mortar has been mixed for more than two hours or begun to set, it should be discarded and replaced with fresh mortar.

Alternatively units can be laid onto a well-compacted fresh race of concrete with a maximum slump of 35mm.

For units laid flush with the pavement running surface (eg channel units) and for applications receiving regular and/or heavy vehicular overruns (eg centre stones, approaches to traffic calming ramps etc), the units should be cut down to lengths of no longer than 300mm. No cut unit should be less than 300mm for any part of the installation. When cutting to adjacent complimentary fitting units, only standard kerb units should be cut to fit.

Units should be bedded onto the bedding layer using a paviours maul to line and level. String lines should be used to ensure the accuracy of the units being installed to line and level.

On curves with a radius of 12m and less the appropriate radius kerb should be used.

Backing
The units should be backed with concrete conforming to BS 8500 (all parts) and BS EN 206-1 : 2000, designated concrete GEN0 and consistence class S1.

The backing should be of sufficient size, no less than 150mm and strength to prevent any movement of the unit when subjected to any envisaged loading.

The backing mix, the unit and the base must be bonded and should not act independently of each other.

In areas where units are likely to be subjected to high loading, dowel bars should be fixed into the race foundation with the kerb-backing cast around the bars.

Jointing
Units should be close jointed, leaving dry gaps of 2mm minimum.

Alternatively wide joints can be used, the joint being between 5mm and 7mm. Wide joints should be fully filled with 1:4 cement: sand mortar (proportions by volume) containing sand complying with BS EN 12620 : 2002 + A1 : 2008. Units should not be pointed after laying.

For wide joint construction, movement joints should be provided at 15m centres for units laid with wide joints. The movement joint should be formed using a 10mm thick easily compressible material and sealed with a two-part polysulphide sealant. The joint should extend through the concrete race and haunching.

Units should never be butt jointed.

Where units are laid over a jointed concrete pavement, suitable joints should extend through the line of units at a joint and continue through the haunching concrete.

Installation of the Diffuser Slab

The Diffuser Slab is positioned at the rear of the inlet of the Edenkerb and should be bedded on 40mm of a Type 40 bedding mortar, as defined within Table 9 of BS7533-101:2021. The upper face of the Diffuser Slab should be positioned at a level so as to sit flush with the bottom of the inlet or up to 5mm below. Under no circumstances should the Diffuser Slab be installed in such a way that it stands proud of the bottom of the inlet preventing or impeding the ingress of water into the rainwater garden. A 6-10mm mortar joint should be incorporated between the side of the Diffuser Slab and the rear of the kerb line.

Inclement Weather
Laying operations should be discontinued if weather conditions are such that the performance of the units' in-situ may be jeopardised.

Laying operations should not be undertaken when the temperature is below 3°C on a falling thermometer and below 1°C on a rising thermometer.

All unfinished areas should be covered in the advent of inclement weather, and stockpiles of materials covered.

Further Information

For technical advice on commercial installations, or when confronted by unusual problems or circumstances, please contact Marshalls Technical Advisory Services on 0370 411 2233, or by email on advisory.services@marshalls.co.uk

References

BS 7533-6 : 1999	Code of practice for laying of natural stone, precaste concrete and clay kerb units
BS 8500: 2023	Concrete – Specification for constituent materials and concrete
BS EN 206: 2013+A2:2021	Concrete – Specification, performance, production and conformity
BS EN 1340 : 2003	Concrete kerb units - Requirements and test methods
BS EN 12620 : 2002 + A1 : 2008	Aggregates for concrete

Interpave – The Precast Concrete Paving and Kerb Association www.paving.org.uk

NOTE: In all instances, reference should be made to current British Standards and Codes of practice as appropriate to the work to be performed. These guidelines are for the use of products supplied by Marshalls, and should be used in conjunction with the aforementioned design guidance.

The advice given above assumes the use of Marshalls' products. If you use any other manufacturer's products, Marshalls can accept no responsibility whatsoever for the performance of those products or generally for the advice it has given. As Marshalls are not involved in the overall design, management and supervision or the selection of materials or contractors, we cannot be liable for the performance of our products on site and in use. This does not detract from the customers rights under common law for claims made against the quality of our products should the situation arise.

Reference should be made to Marshalls Technical Advisory Services to ensure that the most current edition of these guidelines is obtained.