



kerb appeal

THE CASE FOR PRECAST CONCRETE
KERBS AND RELATED PRODUCTS



Interpave

THE PRECAST CONCRETE PAVING
AND KERB ASSOCIATION



www.paving.org.uk

Precast concrete kerb appeal

Precast concrete kerbs are the unsung heroes of our roads and streets, ensuring the safety of road users and pedestrians, and contributing to the paved environment over many years. It is worth reminding ourselves of their characteristics and capabilities, and how precast concrete can be specified with confidence as a tried and tested solution – unlike some other unestablished kerb materials.



A BRIEF HISTORY – AND LONG FUTURE

Kerbs, channels and edgings have been used to restrain the edges of roads and footways since Roman times, and precast concrete kerbs used as a lower cost alternative to stone for some 75 years. This long historical tradition continues to develop today and a well-established industry is in place. As a result, a particularly extensive choice of precast concrete kerbs and associated products is readily available from numerous substantial manufacturers and well stocked around the country. Precast concrete kerbs, manufactured in compliance with British Standards offer the user assured and predictable performance throughout its intended lifespan.

Precast concrete kerbs are best known for an extensive range of well-used ‘BS’ profiles given in the latest British Standards. The full, extensive range of components and accessories is available in precast concrete covering all the highway features needed today. These are easily sourced and present no

problems of compatibility between different manufacturers.

New versions of the kerb solution continue to be developed to meet specific demands. For example, high containment kerbs offer a simple, cost-effective system for passive traffic control, contributing towards better road safety and protecting pedestrians. Other precast concrete kerb products have been developed to facilitate access by wheelchair users, people with prams, the ambulant disabled and others onto buses. Here, special kerbs overcome the problems associated with height variance between footway and the various entrance levels of public transport vehicles, while also minimising the gap by facilitating easier, accurate vehicle positioning. The extensive, established precast concrete kerb industry has the resources to continue meeting new demands. Unlike other materials, developments in precast concrete kerbs are simplified by manufacturing techniques that enable bespoke products to be produced without expensive tooling.



ENDLESS CHOICE WITH A PREDICTABLE SURFACE

Precast concrete kerbs are produced in a wide range of sizes and radii with coloured, textured and profiled surfaces. They are manufactured using three main processes: semi-dry, hydraulically pressed and wet cast. The majority of precast concrete kerbs are produced by hydraulic pressing, with some very specialist kerb components wet cast. Secondary processes can provide different surface finishes, some of which provide a close match to traditional stone. These are particularly useful for the cost-effective edging to roads and footways in historic towns and conservation areas.

Precast concrete kerbs offer a complete range of components, whereas other materials with limited accessories may result in the need to mix different materials.



Essential for all roads



SHAPING THE STREET SCENE

Kerbs, channels and edgings provide restraint for all types of external surfaces, including concrete block and flag paving. They mark the changes between road and footway, providing a visual warning to pedestrians and drivers. Channels are used to intercept and transport surface water and dished channels are very effective where the gradients are relatively shallow or where a level change is not appropriate – for example within the shared surfaces of Home Zones. Precast concrete kerbs, channels and edgings can be used where a pavement edge restraint or drainage channel is required, including: pedestrian areas, domestic drives, public, private and commercial footways, school playgrounds, pedestrian precincts and industrial pavements.

In addition to Home Zones, major changes in the design of our urban streets are imminent, which may require new kerbing products – a challenge which the precast concrete industry is ready for. The new 'Manual for Streets'



offers guidance on design and layout that may be different from current practice. In the urban street environment, consistency of texture and slip/skid resistance characteristics is essential – with serious implications for pedestrian safety and accessibility. Availability of the complete range of British Standard accessories in a single material is essential for successful urban street design and the precast concrete kerb industry continues to develop an extensive portfolio of products.

PROTECTING THE HIGHWAY

Precast concrete kerbs are specifically used on highways and other heavily trafficked areas to provide additional strength to the edge of the carriageway. They prevent vegetation encroaching onto the road, act as a demarcation line between road and footway, deter traffic from mounting the footway, provide a barrier to divert water run-off into the gullies and prevent the surfacing materials on the road from spreading under load. Special precast concrete kerb designs with integral drainage are also available. In most highway situations mechanised handling methods are required, irrespective of the kerb material or weight.

Where channel units are used in conjunction with the kerbs it is advisable that these have the same characteristics as the kerb. High containment kerbs are also growing in popularity to prevent traffic overrun and improve safety, and products such as these are only available in concrete.



Modern sustainable solutions



MODERN METHODS OF CONSTRUCTION

Another major innovation has been transforming the precast concrete paving industry recently, in line with the Modern Methods of Construction (MMC) ethos. Precast concrete products, including kerbs, are manufactured off-site under factory conditions. Precast concrete kerbs are mechanically handled and laid on site to optimise efficiency and ensure consistent quality. This MMC approach contrasts with some other kerb products that require substantially more on-site concrete for support and installation than their precast concrete equivalents. In some cases, alternative kerb products act as permanent formwork and require substantial quantities of concrete filling and haunching.

An extensive array of equipment is readily available to handle precast concrete kerbs to cater for all situations.

These range from mechanical equipment allowing two operatives to handle kerbs for the tightest of sites, to vehicle mounted or self-powered vacuum lifters for rapid installation of longer runs. It has been suggested that some non-concrete kerbs weighing 20kg or less can be manually handled. This is not the case, as the Manual Handling Operations Regulations require assessment of the repetitive nature of the operation and posture during work – not just kerb weight.



SUSTAINABILITY AND THE PAVED ENVIRONMENT

It is tempting to make assumptions about sustainability issues based on preconceptions: some may instinctively feel that concrete is not one of the more environmentally friendly materials. But it is in fact sustainable in terms of energy and water consumed during production and manufacturers are making a concerted, co-ordinated effort to further reduce environmental impact. The concrete industry has already improved its environmental performance on average across a range of indicators - including carbon dioxide, sulphur dioxide, waste to landfill and extracted minerals – by 17% between 1994 and 2001. This includes the growing use of recycled concrete in cement and concrete manufacture, with the use of primary aggregates for construction decreasing by 28% from 1989 to 2002 and use of recycled/secondary aggregates for construction increasing by 94% over the same period.

In particular, precast concrete paving products including kerbs have excellent sustainability credentials, with a particularly long service life and complete recycling capabilities – they can be taken up for re-use intact or as crushed material.





Performance and testing

Highway authorities and other specifiers cannot afford to take risks and should demand consistent, predictable, trouble-free performance of kerbs over the longer term. To give this confidence, kerbs must comply with all aspects of test procedures stipulated in current Standards designed to replicate performance in use over time. The European Standard BS EN 1340, *Concrete Kerb Units – Requirements and Test Methods* provides this reassurance for precast concrete kerbs.

BS EN 1340 introduced a different approach to the previous British Standard to provide specifiers with full confidence in the use of precast concrete kerb units. It stipulates that the manufactured concrete must conform to a wider range of performance characteristics, determined on actual manufactured precast concrete kerb

units. Listed below are the criteria that precast concrete kerbs conform to which should apply equally to all kerbs, irrespective of the materials of their construction.

Strength – the ability of the kerb unit to withstand load. It is determined under laboratory conditions using a bending test.

Weathering Resistance – the ability of the kerb unit to withstand weathering where specific conditions exist such as frequent contact of the surfaces with de-icing salt under frost conditions.

Abrasion Resistance – the ability of the kerb unit to withstand erosion caused by trafficking in service.

Slip/Skid Resistance – the ability of the kerb or channel unit to minimise slipping for pedestrians and skidding for vehicles.



www.paving.org.uk

The Old Rectory, Main Street, Glenfield, Leicester LE3 8DG United Kingdom
e: info@paving.org.uk t: 0116 232 5170 f: 0116 232 5197

INTERPAVE IS A PRODUCT ASSOCIATION OF THE BRITISH PRECAST CONCRETE FEDERATION LTD



t: 0116 232 5170 f: 0116 232 5197
e: info@britishprecast.org
www.britishprecast.org



t: 0116 232 5191
f: 0116 232 5197
e: info@interlay.org.uk
www.interlay.org.uk