KASSEL® – SPECIALIST BUS BOARDING KERB FOR SAFE AND EASY PASSENGER ACCESS

The Brett Kassel Kerb system has been specifically designed to allow bus drivers to confidently position their vehicle close to the kerb for fast, safe and easy passenger access, without tyre damage.

Used in over 1,200 cities and towns across the UK and the Continent, Kassel Kerb is, today, Europe's number one bus docking system.

The need for bus stop safety and efficiency

Public transport occupies an important place in the strategies of local authorities since it satisfies a need for lower carbon travel, can be instrumental in relieving congestion within major urban areas and can offer low cost mobility to the individual and social sustainability to the wider community.

Since the start of the new millennium there has been a steady increase in bus travel from 3,966 million passenger journeys in 2000/1 to 4,783 million in 2008/9 (Source: Public Transport Statistics Bulletin GB: 2009), a rise of over 20% for the period.

Bus and tram stops have a far-reaching influence on the perceived suitability and up-take of public transport. One important attribute is accessibility. Unhampered access to public transport makes its use more attractive, more comfortable and safer. This is true not only for the mobility-impaired, but also those whose mobility is restricted, such as the elderly, parents with prams and small children, all of whom will benefit from stops equipped with the Kassel Kerb.

How does Kassel work?

Kassel kerbs work by enabling buses to obtain a typical gap between kerb and bus platform of 50 mm or less. Research by Nick Tyler, Professor of Civil Engineering at University College London, has shown that this is the critical feature for any kerb used for bus access.

The unique profile of the Kassel kerb enables bus drivers to obtain a gap of 50 mm or less without accelerating vehicle tyre wear. This means that public transport can be used comfortably by all sections of society; and does not exclude the elderly, infirm or parents with young children.

The concave curve of the kerb's traffic-facing profile helps to guide the bus driver allowing him/her to easily and accurately position the vehicle within 50mm of the bus stop, whilst minimising wear and tear to vehicle tyres tyres. Positioned in this way, the bus doors will be at kerb level and the minimal gap allows all passengers to enter the bus safely, quickly and comfortably.

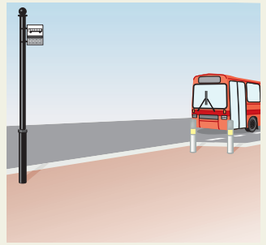
Taking the strain

Achieving such accurate postioning is essential but it is also vital to consider the loads imposed and how they are handled. Kassel are one piece kerbs avoiding the risk of splitting the lateral and vertical loadings. This means that Kassel's design serves to push the kerb towards the pavement every time a bus pulls in, ensuring long term durability in service.

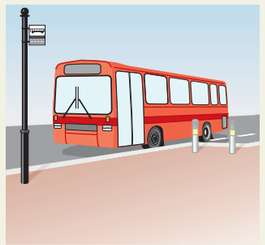
By contrast, built up designs designs have an internal weakness, as the loadings are split and serve to push the components apart leading to a product failure over time.

Getting the best results with Kassel

The Kassel kerb system is easier and safer to use for both passengers and drivers alike, but can only acchieve optimal efficiency if the vehicle is positioned correctly when it comes to rest.

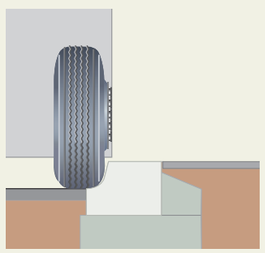


1. The bus driver first starts to position the bus 50m out from the bus stop.



2. The driver steers the bus onto the kerb at a gentle angle so that the tyre of the bus 'kisses the kerb'.

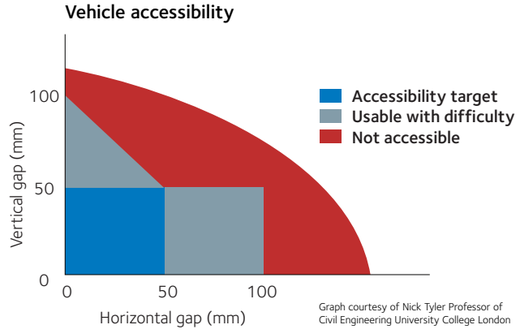
The kerb then guides the bus into the optimal position for passenger boarding and alighting.



3. Kassel Kerb's profile and smooth concrete finish steers the bus along the face of the bus stop into the optimal stopping position without damaging the tyres.

The optimal stopping position reduces the gap to less than 50mm providing easy and safe access for all passengers.

Vehicle accessibility



Graph courtesy of Nick Tyler Professor of Civil Engineering University College London

Bus stop design

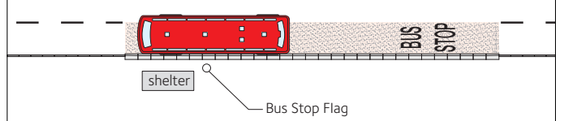
Kassel Kerb offers a unique performance at bus stops, stations and depots. However, to obtain maximum benefit, it is important to consider the broader design. Aspects for consideration include:

- Location
- Length
- Shelters, information stands and street furniture
- Boarding points, pavement traffic, queueing areas
- Paving
- Road markings
- Alignment
- Period of use - lighting
- Layout (i.e. in-line, lay-by or bus boarder stops)

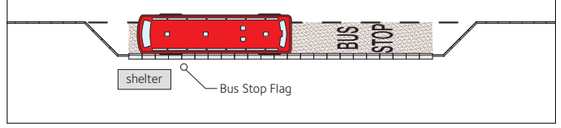
It is also vital to consider the actions of other vehicles around the location of bus stops in order to ensure that buses are able to pull in parallel to the kerb rather than at an angle which makes it difficult for drivers to align the bus and subsequently for passengers to access the bus.

The use of yellow lines before and after the bus stop should therefore be considered at the design stage along with the layout of the bus stop itself.

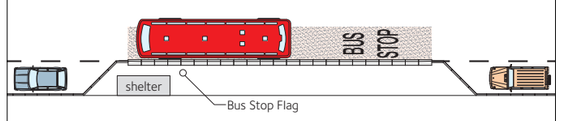
In-line design



Lay by design



Bus boarder design



Kassel in service

The use of Kassel bus boarding Kerbs creates a seamless, gap free join between buses and the stops – the option of 160 mm or 180 mm units allowing for hydraulic platform or fixed platform buses.

This improves passenger safety, especially for the disabled and visually impaired, but also reduces expensive wear and tear on vehicle tyres, substantially cutting overheads for the bus and coach operators.

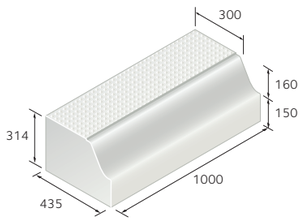
According to Ian Evans at Tameside MBC "Brett Kassel Kerbs have been used throughout to help raise the stops to enable easier access on and off the buses. The kerbs are substantial and the perfect height. They are a great product".

Kassel design service: call 0845 60 80 579

The three bus stop layouts shown are common in our transport systems. Brett offer a full Kassel design service to assist in maximising user safety, practical layout and aesthetic issues. We are able to offer design advice or full installation design, calculate quantities and provide detailed installation diagrams. We also design and produce bespoke units for specific projects.

Effective design also enables the minimisation of on-site cutting, which improves site safety as well as reducing construction waste.

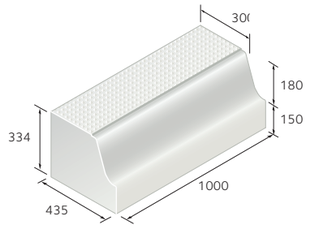
The Kassel Kerb system



Standard Kerb

160mm unit		Wt (kg)
Concrete:	KK601000	274
Granite:	KK601000G	325

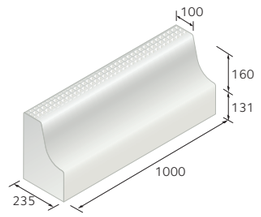
Ideal for hydraulic buses



Standard Kerb

180mm unit		Wt (kg)
Concrete:	KK801000	292
Granite:	KK801000G	346

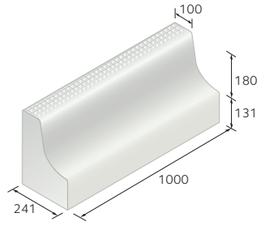
Ideal for non-hydraulic buses



Slimline standard kerb units

160mm unit		Wt (kg)
Concrete:	KKSL601000	103
Granite:	KKSL601000G	122

Ideal for retro-fit installation for hydraulic buses



Slimline standard kerb units

180mm unit		Wt (kg)
Concrete:	KKSL801000	128
Granite:	KKSL801000G	152

Ideal for retro-fit installation for non-hydraulic buses

PRODUCT RANGE

The Kassel Kerb system is available in standard and Slimline profiles both in 160mm and 180mm heights and comprising of a range of components, including quadrants, radius and transition kerbs which allow the seamless integration into existing kerb systems. This allows for a wide range of design possibilities that can address specific site constraints and safety considerations.

The Slimline profile is ideally suited for retro-fit applications where designers do not wish to disturb the existing kerb line and require minimal excavation prior to installation.

The unique Slimline profile and its transition units match those of the standard Kassel profile, enabling the system to be simply integrated into existing kerb configurations, so minimising time, cost of installation and disruption to local traffic.

COMPOSITION, MANUFACTURE AND FINISHES

Kassel Kerb units are wet cast from high strength concrete, manufactured with premium quality granite aggregates.

Kassel Kerb concrete units are available in three finishes:

- Standard Finish for a smooth, matt surface
- Exposed Aggregate Finish with a subtle, slightly aged finish for conservation and heritage installations
- Granite units for use in aesthetically sensitive locations, but with the same design properties as the concrete units.

FEATURES AND BENEFITS

- Easy, safe and quick access for all passengers
- Provides enhanced safety for disabled, elderly or visually impaired passengers and those with pushchairs, without delays
- Tactile diamond-shaped top surface for increased passenger slip resistance
- Clearly demarcates area of bus stop
- Available in two heights to provide a vertical/horizontal gap of less than 50mm for improved passenger access and safety
- Guides vehicle into optimum stopping position parallel with the kerb
- Unique, smooth concave kerb profile reduces tyre wear
- Ideal for shared bus and low-floor tram stops
- Available in a wide range of colours and textures from either cast concrete or cut granite to suit your design requirements
- A range of quadrant and radial units are available to create comprehensive bus stop or station solutions
- Single piece product design provides greater longevity than 'built-up' systems
- Compatible with Brett's tactile, flag and concrete block paving ranges

ACCREDITED CPD SERVICE

Brett offer a range of RIBA accredited CPD presentations, including 'Designing for Specialist Bus Boarding Kerbs'.
Contact Brett Commercial Support for more information.

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BRETT BRIEFING

KASSEL KERBS

Specialist bus boarding kerb systems