

BISON

Heavy duty steel kerb for edging hard landscapes

A steel kerb edge restraint used to delineate hard surfaces by creating curves and strong angles. Available in various heights in a galvanised steel finish.



SCAN HERE

- More robust than concrete and won't crack
- Much quicker than concrete to install
- Durable and corrosion resistant
- Requires less labour to install



G	G
Galvanised	Ground



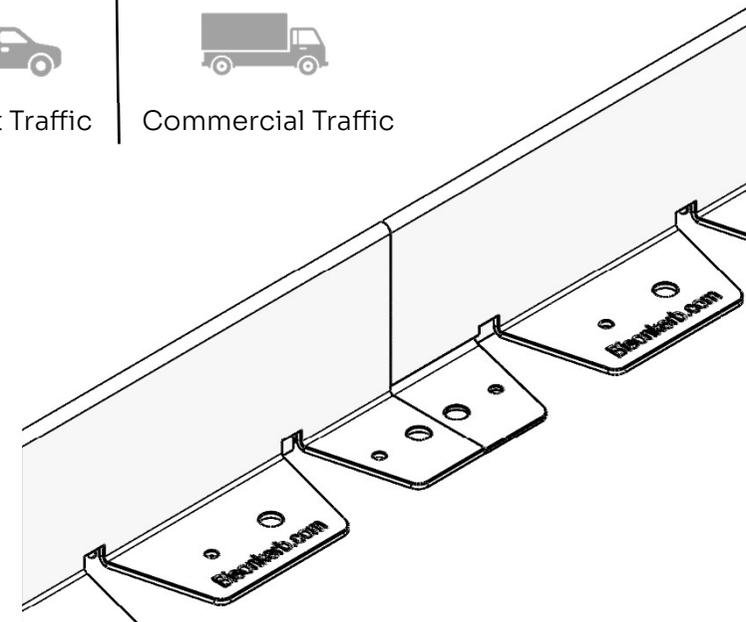
Pedestrian Use



Light Traffic

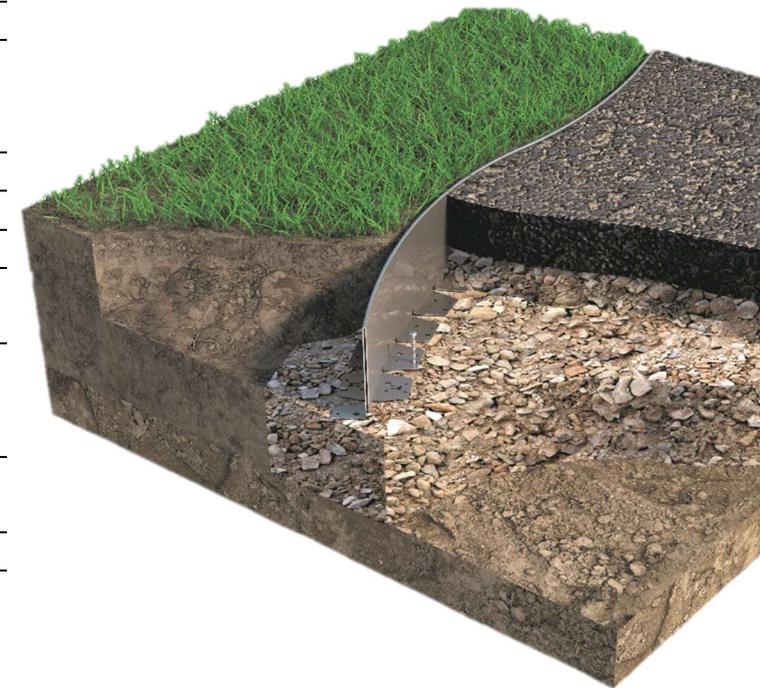


Commercial Traffic



Specification

Product Type	Heavy-duty steel kerb edge restraint
Manufactured to Product Type	Designed and Manufactured in the UK BS EN 9001
Edging Finish	Galvanised
Edging Heights	75mm, 100mm, 150mm, 200mm
Edging Thickness (top bead)	7mm edging thickness from top fold
Edging Length	2400mm
Edging Foot Width	50mm
Spiral Spike Length	250mm
Chamfer	Rolled/rounded top edge for smooth, safe finish
Fixings	250mm spiral fixing stakes (10 per 2.4 m length)
Tightest radius by hand	2000-3000 (100mm and 150mm high only)
Tightest radius in factory	500mm (all heights)
Applications	Edging or demarcating asphalt, rubber coating, tarmacadam, and hard landscapes; suitable for parks, playgrounds, pavements, and building perimeters
Durability	High corrosion resistance; robust and impact resistant
Fire Resistance	Class 1A
Recycled Content	100% recyclable steel
Environmental Impact	Made from sustainable galvanised steel; recyclable indefinitely; low whole-life cost
Installation	Mounted on compacted MOT Type 1 substrate using 250 mm spiral fixing stakes; dry-mix (5:1 sharp sand/cement) bedding layer recommended; connect with strip connectors
Stability	Strong folded-edge design; excellent resistance to corrosion and weathering
Packaging	Securely packed onto pallets
Carbon Footprint	Lowered through recyclable materials and long design life





Bison

Heavy-duty steel kerb for edging hard landscapes. Bison is the superior alternative to concrete kerbs.



Benefits:

- More robust than concrete and won't crack
- Much quicker than concrete to install
- Lightweight – approximately three times lighter than concrete!
- Requires less labour to install giving higher quality edging at no extra cost
- Easy to fit – even if working alone
- Rounded top edge detail for smooth finish with no sharp edges
- Durable and corrosion resistant

Suitable for:

- Bison kerb is suitable for replacing concrete in civil construction developments including service roads*, pavements and other building developments.

Stock

Finish	Edging Height	Weight (kg)	Edging thickness (top fold)	Edging Length	Edging Foot Width	Product Properties	Recyclable	Item Code
Galvanised	75mm	7.5kg	7mm	2400mm	50mm	Flexible	100%	BS30FLE075T020L2400S
						Rigid		BS30RIG075T020L2400S
	100mm	9.5kg				Flexible		BS30FLE100T020L2400S
						Rigid		BS30RIG100T020L2400S
	150mm	13.5kg				Flexible		BS30FLE150T020L2400S
						Rigid		BS30RIG150T020L2400S
	200mm	17.5kg				Flexible		BS30FLE200T020L2400S
						Rigid		BS30RIG200T020L2400S

**Powder coating options available to order*



Stock

Product	Weight (kg)	Pack Size	Qty required per 1m length	Item Code
75mm Connector Plate	0.2kg	15	1	BS30CON075T020L0000S
100mm Connector Plate	0.3kg		1	BS30CON100T020L0000S
150mm Connector Plate	0.3kg		1	BS30CON150T020L0000S
200mm Connector Plate	0.5kg		1	BS30CON200T020L0000S
Bison Corner 75mm Galvanised	0.2kg	1	-	BS30ICO075T020L0000S
Bison Corner 100mm Galvanised	0.3kg		-	BS30ICO100T020L0000S
Bison Corner 150mm Galvanised	0.3kg		-	BS30ICO150T020L0000S
Spiral Spike Fixing Stake (pack of 100)	8.3kg	100	10 stakes	AE10FIX300T000L0000S



Product & Installation Guide

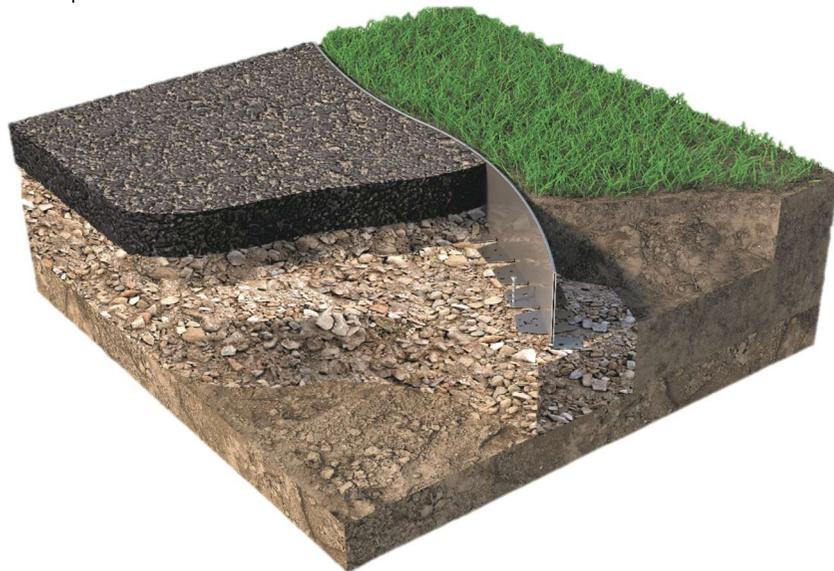
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Tools Required

- Mallet
- Hacksaw / Angle Grinder
- Level
- Tape Measure
- Spray Paint
- String Light
- Shovel / Spade

Fixings (purchased separately)

- 250mm Spiral Spike Fixing Stake
- Strip Connector



1. Marking out

Mark out where the edging is required using a stringline or spray paint. Excavate the area or trench where edging is required. Depth needs to be a minimum of 300mm from desired finish top of edging level. Bison edging requires the subbase to extend at least 150mm either side of the edging to ensure a secure fixing.

2. Sub-base & set out

Lay MOT Type 1 substrate and compact well. Thorough compaction of the sub-base is essential to ensure a successful installation. The MOT Type 1 sub-base needs to be a minimum of 150mm depth when fully compacted.

*Type 1 to be compacted 40%

3. Connecting the edging

We recommend laying a thin dry mix bedding layer (e.g. sharp sand and cement 5:1 mix) beneath the edging foot to approximately 10mm. This is designed to take out any undulations in the sub-base ensuring a continuous support under the foot of the edging.

NOTE: The edging should not require a wet concrete haunch unless in nonstandard applications.

4. Place the edge restraint and set to correct position

Level the edging using a spirit level by moving the edging around in the bedding layer and once this is done, fix the Spiral Spike Fixing Stakes through edging foot in the pre-punched holes, at a maximum of 300mm centres. Ensure the nails are firmly secured in the ground and down to the foot of the edging.

5. Alternative fixing method

Use concrete screws if fixing into a cured concrete foundation. Contact the technical team for more information.

6. Connecting the edging

Use the Strip Connector to link lengths of Bison together. Slide halfway into channel on inside of the edge restraint and connect with other length. Leave a 2-3mm expansion gap. Spiral spikes and concrete spikes to be used for secure installation.

7. Creating corners

Corners can be created with the Bison steel edging by simply using an angle grinder to cut out a triangular section in the foot so no overlap will form when bent to required angle (if using Bison in a rigid profile don't forget to cut away the rigid bar running along the back of the foot plate.) Finally, cut part way through the vertical edge on the inside of the corner, fold over a sturdy piece of timber, and finish angle with a rubber mallet.

8. Creating curves

Lay the edging down and fix at one end with the spiral spikes provided. Start to form the edging to the desired curve and continue to fix down. Additional fixings may be needed when creating a tight curve.

Product & Installation Guide

Handling & Hazards



CORNERS & EDGES

Wear gloves



BE SAFE! Wear gloves high visibility clothing, hard hats and any other PPE



HEAVY SEGMENTS! Requires two persons to lift each segment – or mechanical lifting device.



HEAVY ITEMS! Wear steel toe protection

DISCLAIMER

These instructions are for guidance only and the installer is responsible to use their discretion to install the products in the best possible way for their respective application. Kinley Systems will not be held liable for product failure or poor performance because of poor quality installation. If any errors are found in this guide, please email us at sales@kinley.co.uk

SUPPORTING DOCUMENTS

More information on the Bison products can be found at www.kinley.co.uk in the Resource Centre.

9. Laying surfaces

When more than one layer is required, the base course should be properly applied and compacted before proceeding to the final wearing course. Pay attention not to damage the edge restraint with the compaction equipment. Ensure top of edge restraint sits just below level of top surfaces, especially if top surface is to be compacted (i.e. Tarmacadam).



10. Backfill behind edging

Backfill behind edging or lay additional hard surface as required.



Hot lay surfacing

Only in relation to hot rolled surface applications. Compact surfacing with roller. Ensure first pass with roller is 50mm clear of Bison, with vibrating function turned off. Final pass should be made as close to the edge as possible. On the final wearing course, and where applicable, roller should be run over edge of Bison to ensure full compaction and a neat finish. Expansion gaps between the edging may need to be considered on long straight runs. Contact our technical team to discuss.



Product & Installation Guide

Applications

Only in relation to hot rolled surface applications. Compact surfacing with roller. Ensure first pass with roller is 50mm clear of Bison, with vibrating function turned off. Final pass should be made as close to the edge as possible. On the final wearing course, and where applicable, roller should be run over edge of Bison to ensure full compaction and a neat finish. Expansion gaps between the edging may need to be considered on long straight runs. Contact our technical team to discuss.

Installation information

By mounting on compacted substrate (e.g. MOT Type 1) using 250mm steel Spiral Spike Fixing Stakes. A bedding layer of dry mix 5:1 sharp sand / cement is recommended to ensure continual support of the edge restraint. When mounting on existing asphalt or concrete, use masonry nails or screw and plug fixings.

Storage & Handling

The product is securely packed onto a wooden pallet and sealed in clear plastic sleeving to ensure no movement of the product in transit. Depending on the size / weight of the consignment this may be palletised. Heavy-duty steel kerb for edging hard landscapes. Bison is the superior alternative to concrete kerbs. Whilst there are no specific weight restrictions on what is or is not safe to lift in manual handling, an assessment of the health and safety risks should be undertaken and measures taken to reduce the risk of injury so far as reasonably practicable.

The following guidelines may be useful:

- Each person should be fully trained in manual handling techniques.
- The use of handling aids such as a trolley, folk-lift, pallet truck or conveyor should be used if moving large volumes of cartons.
- Break up large consignments into more manageable loads.
- Ensure that the product is stored at a reasonable height, so avoiding the lifting of cartons from floor level or above shoulder height.
- Reduce carrying distances of cartons.

Fire Protection

Made from steel, Bison is completely non-combustible and poses no fire risk.

Protective Equipment

We recommend that PPE (Personal Protective Equipment) is used when installing Fort:

Good strong safety boots/shoes to protect the feet.

Protective eyewear such as safety glasses.

Strong gloves to protect the hands.

If using loud cutting equipment, ear plugs or defenders should be worn.

First Aid

The Health and Safety Regulations 1981 require all construction sites to have the following:

A first aid box with enough equipment to cope with the number of workers on site.

An Appointed Person to take charge of first-aid arrangements. The Appointed Person looks after first aid equipment and facilities and calls the emergency services when required. Appointed Persons do not need first aid training.

A First Aider who has undertaken training and holds an HSE approved qualification to administer first aid. This means that they must hold a valid certificate of competence in either:

- First aid at work (FAW) issued by a training organisation approved by HSE
- Emergency first aid at work (EFAW) issued by a training organisation approved by HSE
- A recognised Awarding body of Ofqual/Scottish Qualifications Authority.

The number of first aiders will depend on the site.



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Stability

Galvanised Steels are high performance materials that display excellent resistance to atmospheric corrosion when compared to other steels, making them exceptionally suitable for landscape edge restraint applications.

Galvanised Steel is manufactured by coating hot-rolled mild carbon steel with a thin layer of zinc. This zinc layer provides a far greater level of protection against the elements than the steel alone and inhibits rust formation.

Environmental Issues

Bison Kerb is manufactured from Galvanised Steel and is 100% recyclable. As a result, the whole life cost of Bison Kerb steel edging is excellent as it is sold for recycling not paid disposal. The principal element used in the production of steel is iron, which is second only to aluminium in terms of natural abundance in the Earth's crust. At current extraction rates there is enough iron to last another 1000+ years.

Supporting Documents

Further resources, including CAD drawings and installation guides, are available at www.Kinley.co.uk

Loading Analysis

Loading analysis was undertaken on the Bison 75mm edging using Finite Element Analysis. The first analysis was applying a distributed load of 500mm directly down on to the top of the edging and the second analysis was applying a point load. On the distributed load test, failure occurred once loading reached 62500N. On the point load test, failure occurred once loading reached 6000N. More information on the Finite Element Analysis testing is available on request.

