

# Appendix D – Specifications & Product Literature



THE PREMIUM SYSTEM.

street  
meets  
rail.



LEVEL CROSSING SYSTEMS *for highest demands*

## 6 | INSTALLATION

installing **STRAIL**® does not require substantial technical effort.

Once the track has been brought to the proper height and width, the position of the level crossing is determined and the track superstructure is prepared, ensure sleeper spacing is exactly 600 mm.

Afterwards, installation of the kerbstones can begin. The kerbstones are usually used in combination with a pre-fabricated concrete subbase.

After the T-kerbstones have been installed the road connection is completed. The bitumen road connection is made up of several layers. However, each one is easy to compact and to roll.

A permanently elastic joint compound or Tok®-tape needs to be installed between T-kerbstone and wearing layer.

Then the filler blocks and **STRAIL**® panels are inserted and secured longitudinally into one package by means of the patented lock tight system.

Basically no machines are required to install **STRAIL**® level crossing panels. Thanks to their low weight, the panels can be installed manually. For this purpose, we offer an

optional installation lever. Our 1,200 mm **STRAIL**® inner panels are easier and quicker installed with the help of an excavator. If the road connection is to be made with kerbstones, hoisting machines will be required for the concrete parts.

Detailed assembly instructions are included with delivery or available for download from [www.strail.com](http://www.strail.com).

### Guarantee / Maintenance

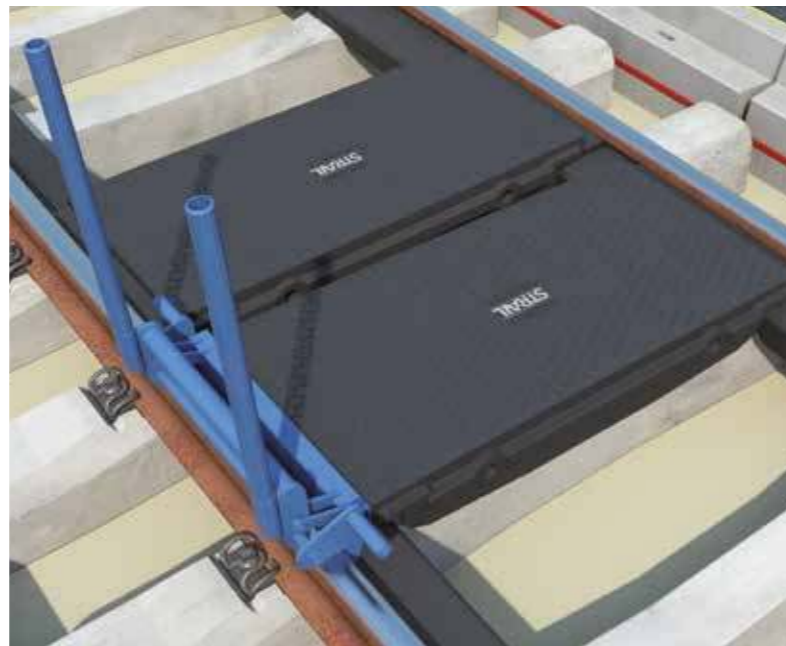
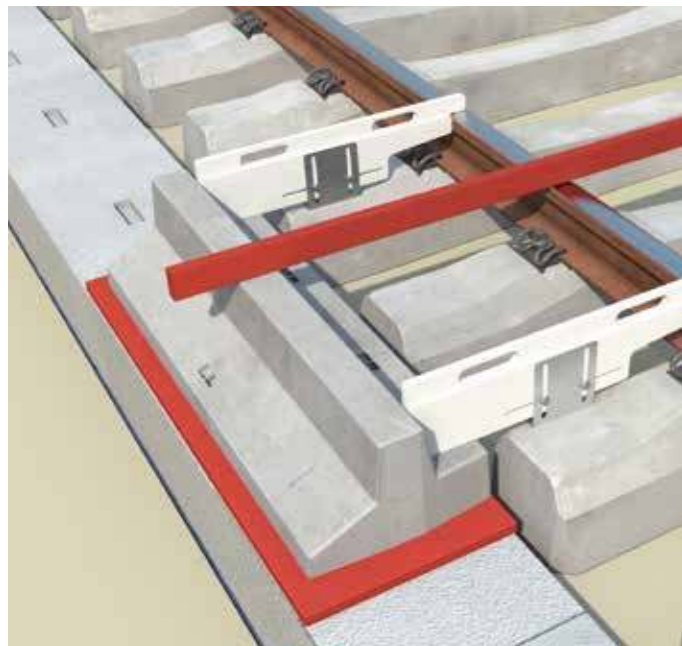
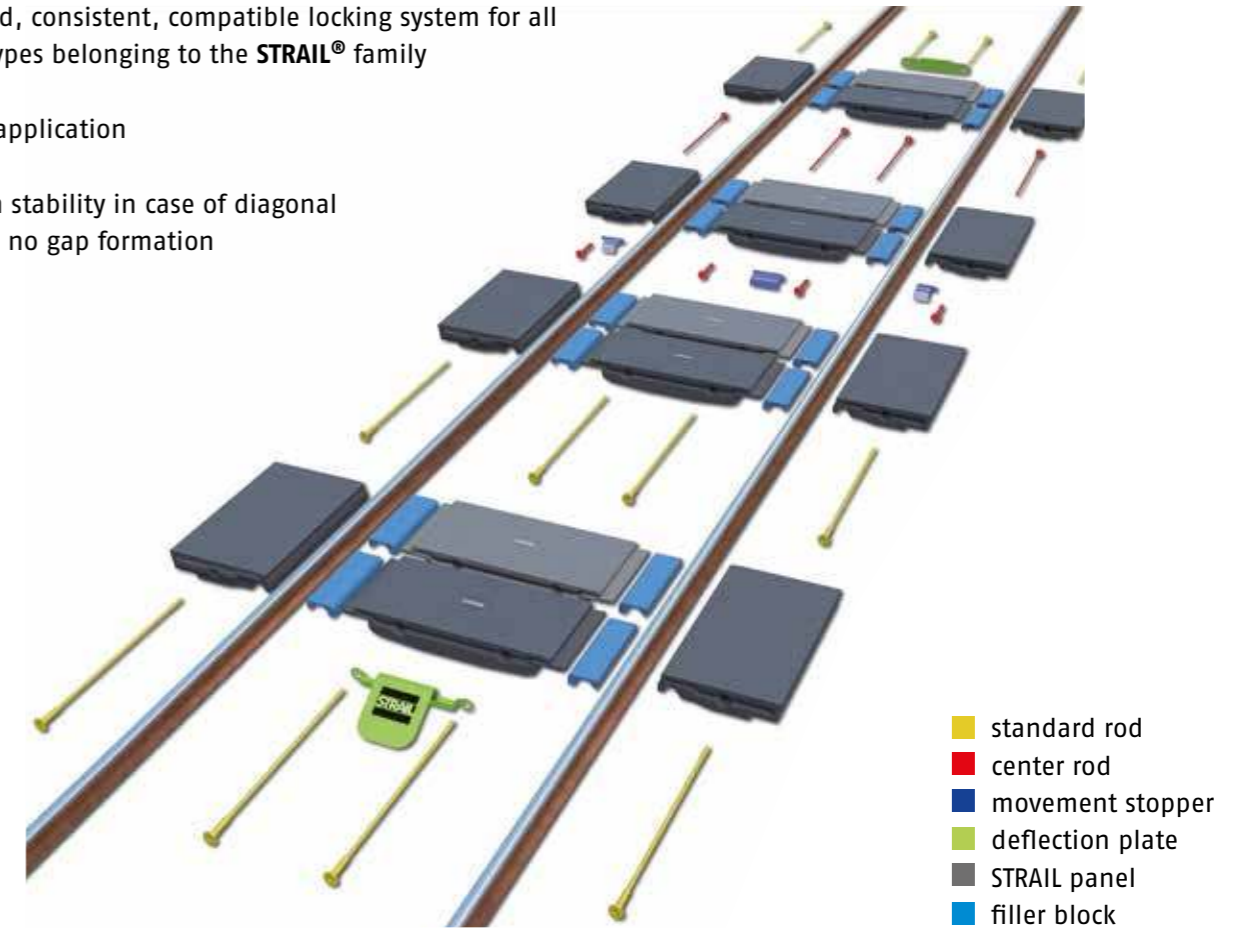
When properly installed according to installation instructions, we offer a guarantee on **STRAIL**® which goes beyond statutory warranty. **STRAIL**® requires no regular maintenance.

Service life of the level crossing depends on the respective traffic load. 15 years are the rule. Extreme increases or reductions in traffic can affect service life. In the meantime, installation lifetimes of 25 years are no longer uncommon.

## 7 | LOCK TIGHT SYSTEM

simple, intelligent, patented.

- ◆ patented, consistent, compatible locking system for all panel types belonging to the **STRAIL**® family
- ◆ simple application
- ◆ position stability in case of diagonal traffic > no gap formation



# 8 | THE STRAIL PRINCIPLE

we connect street and rail.



fast.

Traffic needs to flow, freely and quickly. With **STRAIL®** you simply are fast – for planning, building and maintenance. Our offers are typically drawn up within 48 hours. Your level crossing leaves our factory as early as two weeks after placing your order. Using a crew of 4-6 people and no additional machines, you can install a 9 m long crossing in merely three hours.

In case of track maintenance, **STRAIL®** can be removed and reinstalled quickly and without much effort. In addition, our experts are available virtually around the clock.

**STRAIL®** is profitable. From the outset.



safe.

Wherever safety is concerned, we accept no compromises. **STRAIL®** is different – ranging from its technically simple, yet fast and safe installation, to its ability to bear continuous loads on a daily basis without any gap formation.

The tongue and groove connection prevents – especially in case of diagonal traffic – the dreaded “sudden collapse” effect, well-known from other single-panel systems.

Products which are part of the **STRAIL®** family have the smallest, permissible flange groove. **veloSTRAIL** eliminates this gap entirely. And the patented surface of the **STRAIL®** rubber panels achieves the same skid resistance as asphalt (even when wet).

**STRAIL®**. Safety for your level crossings and for your investments.



reliable.

Building level crossings is one thing. Keeping them in excellent condition is quite another. “Fit & Forget” is our motto; as a result: maintenance-free level crossings. Over 30,000 crossings under varying climatic conditions on five continents form the basis of our reliable technology and materials. Besides, your experiences help us to continuously perfect **STRAIL®**.

You benefit from the long service life of our products and with the support of the worldwide operating **KRAIBURG** group we have been your reliable partner for over 40 years.

**STRAIL®** fulfills your expectations.



[www.strail.com](http://www.strail.com)



*- / level crossing systems*


**KRAIBURG STRAIL® GmbH & Co. KG**

**STRAIL® level crossing systems & STRAILastic track damping systems**

D-84529 Tittmoning / Goellstr. 8

tel. +49 (0) 8683 | 701-0 / fax -126 / [www.strail.com](http://www.strail.com)

made  
in  
germany 

STRAIL & STRAILastic are brands of the  group.

# pedeSTRAIL

**pedeSTRAIL** is developed specifically for pedestrian and cyclist crossings, railroad stations, stops, depots and industrial plants. The surface ensures a safe and comfortable use of the crossing.

The system, which is independent of sleeper spacing – has an integrated, narrow flange groove, which in particular benefits pedestrians, cyclists, as well as people using baby carriages or wheelchairs.

Due to caverns on their underside these 900 mm panels remain light and easy to handle, despite their size. The time during installation and removal is kept to a minimum, which leads to simple and cost-effective installations, as well as track maintenance.

## ADVANTAGES OF THE pedeSTRAIL PANEL

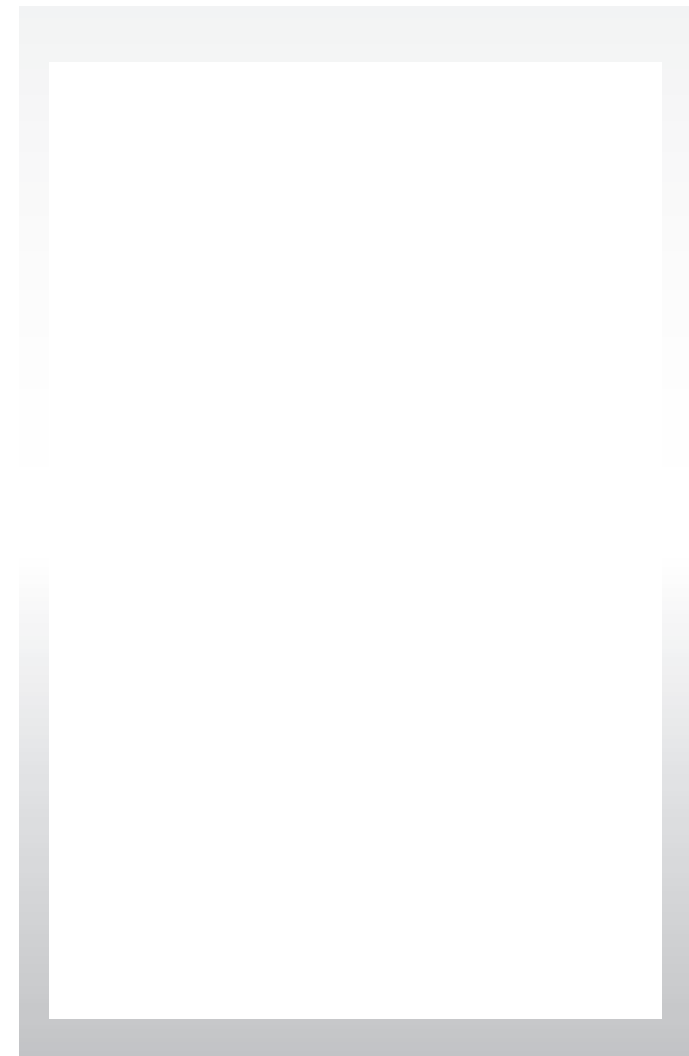
- ◆ cost-effective
- ◆ very easy installation and removal
- ◆ particularly long service life
- ◆ narrow flange groove

# LED LIGHTING

Use for **pedeSTRAIL** level crossings to help pedestrians orientate. The LED Lights are a base body with LED's, photovoltaic (solar-power) and battery. The holding plate is made of stainless steel.

## FEATURES

- ◆ Technology: solar-powered (voltaic) LED
- ◆ Reflector colours: amber, red, white, green, blue (two different colours per stud possible)
- ◆ Normal operating temperature range:  
– 20°C (-4°F) to 85°C (185°F)
- ◆ LED configuration: uni/bi directional
- ◆ Approx. max. distance to view: up to 900 m > dependent on road layout
- ◆ Output – full charge: **up to 240 working hours** with no solar input
- ◆ Time to full charge: **3hrs** on a sunny day
- ◆ Lifetime: in excess of **8 years**

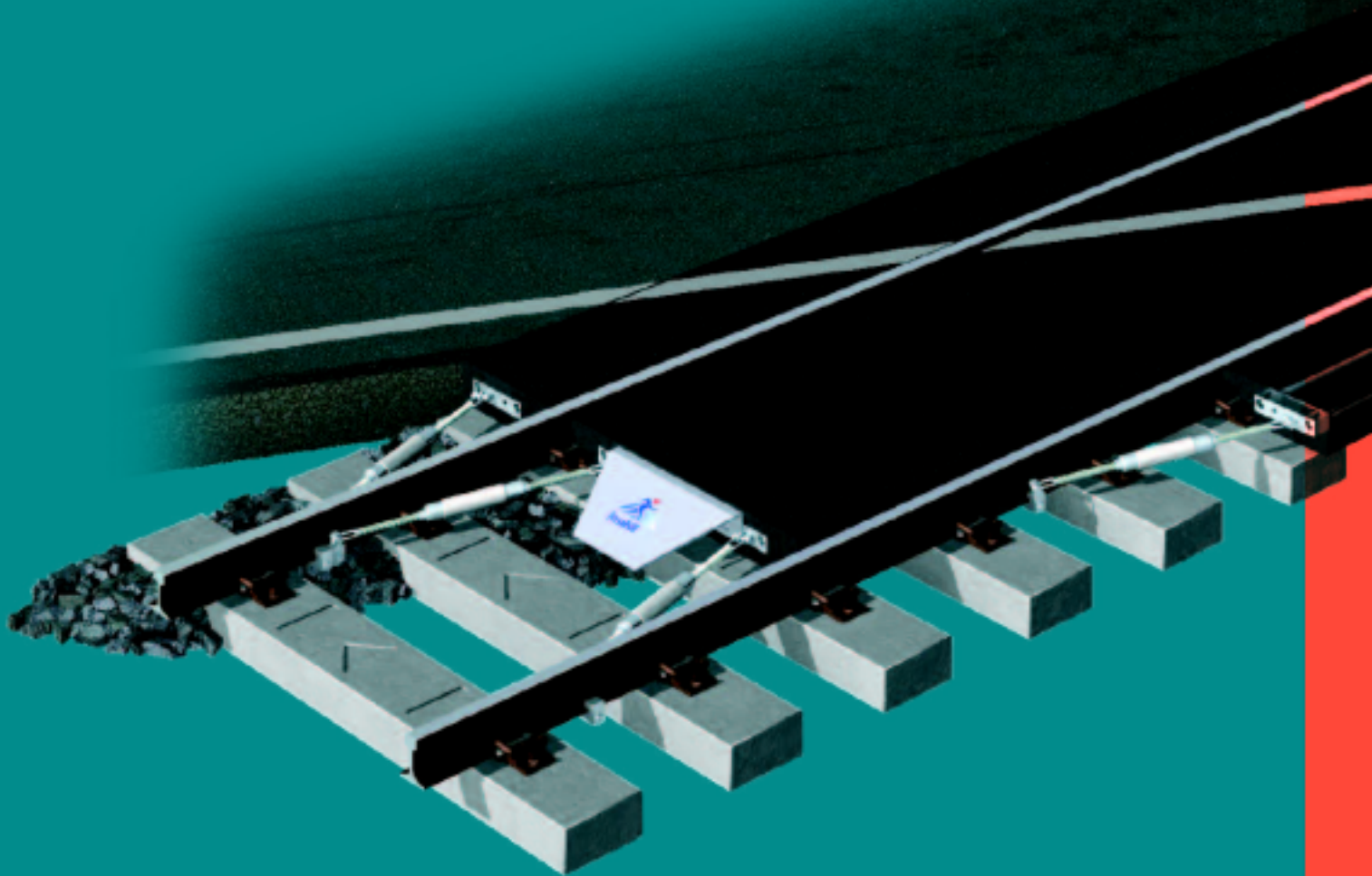




**Rosehill Rail**



# THE COMPLETE RAIL CROSSING SOLUTION



**PROVEN ENGINEERING EXCELLENCE**



## Rosehill Rail Working At The Heart of the Rail Industry

» **Rosehill rubber rail crossings have been an integral part of the Rail Industry for over 15 years.**

The Rosehill team is dedicated to meeting rail customers' needs by providing a service that operates on a global basis. Based in Sowerby Bridge, we are the largest designer and manufacturer of rubber rail crossing systems in the UK.

The support and service offered by Rosehill Rail is backed up by over 30 years experience in polyurethane and rubber technology.

- Rosehill operates a quality assurance system complying with the International Standard ISO9001:2008, which is audited annually by NQA (National Quality Assurance).
- Panels are designed to fit each bespoke crossing permutation of Gauge, Rail, Sleeper and Fastener type on sleepers at 600mm centres.
- Each panel is marked when moulded so it can be clearly read from above, the identification comprises of:
  - Crossing grade
  - Rail Type
  - Sleeper Type
  - Fastener type
  - Year of manufacturerfor example: ROAD UIC60 B70 SKL14 2011
- Traceability is achieved by recording on computer, production data, weight and visual check of each panel at the time of manufacture. Each panel can be traced to the order and manufacturing batch. This enables checking against the engineering drawings should the need arise at a later date.



Rosehill has amassed a wealth of experience during their long history in the Rail Industry, working with a range of global Rail Infrastructure Companies and Operators on a wide variety of projects. The knowledge and experience gained has enabled us to provide crossing solutions that are perfectly tailored to any requirement.

Each of the rubber panel types have their own characteristics and are designed specifically for a defined end use.

- Significant cost benefits are achieved by quick installation, reducing track possession time.
- Easy to maintain with minimal maintenance - all of our panels are strong, robust and dependable.
- Rosehill Rail Crossing Panels do not pose any risk to the environment. They are manufactured from re-cycled rubber tyres and bonded together with an advanced polyurethane binder using a revolutionary unique cold-cure manufacturing process. Once the manufacturing process is complete the panels will not react with soil, or water and will not leach chemicals into the environment, or emit any harmful vapours, or odours into the atmosphere.
- Design Rights - All components in our level crossing systems are designed by Rosehill Rail (a Division of Rosehill Polymers Limited), including those supplied under other names by our global distributors.
- Delivering excellent customer service – every time.





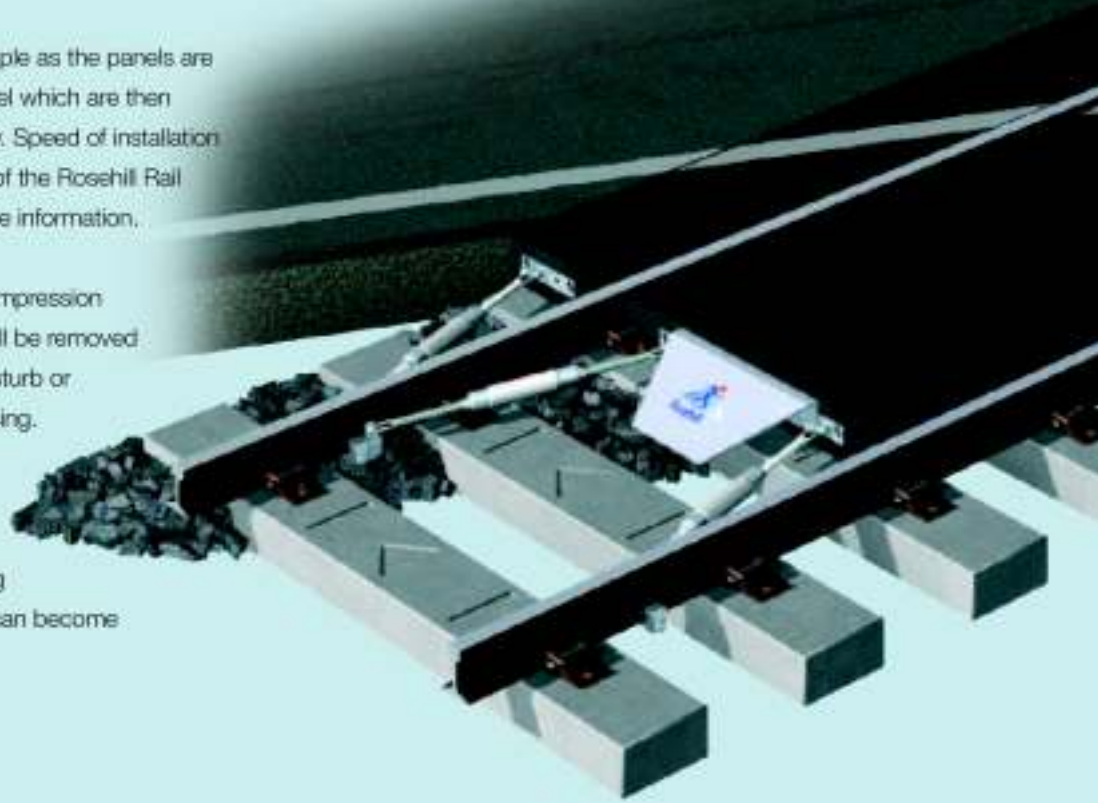
# Rodded Panel System

Providing dimensional stability at any angle  
in all operating conditions

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## ▶ ADVANTAGES

- The installation is very quick and simple as the panels are connected by just two bolts per panel which are then covered with rubber blocks for safety. Speed of installation can be further improved by the use of the Rosehill Rail safe lifting pins, see page 11 for more information.
- Even though each panel is under compression whilst insitu, individual panels can still be removed and replaced without the need to disturb or dismantle the remainder of the crossing.
- When the manufacturers installation instructions are followed correctly, the entire crossing is held in one matrix and no panels can become accidentally dislodged.



» This innovative product has been designed to provide the retention, stability and

» The panels are connected by two bolts protected by rubber cover plates

## » FEATURES

- Each individual panel is manufactured over length and by means of rods moulded within the panels is compressed down to 1.8 metres long and held under compression during its lifespan.
- This ensures dimensional stability **in all conditions** and combats compressive set which can occur from concentrated often high speed traffic, particularly at crossings at a very acute angle. Over an extended period compressive set can result in distortion and gapping which this new system avoids.
- The crossing panels can be manufactured for wide, standard or narrow gauge. This system can be used in any situation but is particularly useful for very long crossings or those at an acute angle to the road.



To view the Rodded System installation and maintenance videos, visit [www.rosehillrail.com](http://www.rosehillrail.com)

# Rosehill **Safe** Lifting Pins

- Tested to a safe working load of 350kg, each set of lifting pins is supplied with appropriate LOLER certification. Rosehill Safe Lifting Pins can be used to lift individual panels, or two sets can be used in tandem, to lift both gauge panels together for even faster installation, or removal.

To view videos of the Rosehill Safe Lifting Pins in use, please visit [www.rosehillrail.com](http://www.rosehillrail.com)



# Anti-Trespass Panels

- » **Rosehill Anti-Trespass panels are designed to deter animals, pedestrians, or metal thieves from accessing the track.**

They will fit any standard gauge rail and sleeper, are easily installed and cannot be accidentally displaced as they fit under the rail and form a complete matrix across the track.

They can be cut to fit if necessary and can be removed for tamping and replaced without damage.

Such is the effectiveness of our Anti-Trespass panels, that they are increasingly being used on platform ends at stations.





**Rosehill Rail**

## ROSEHILL RUBBER RAIL CROSSING PANELS

### ROSEHILL RAIL SALES

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Sowerby Bridge  
West Yorkshire HX6 3BW  
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[www.rosehillpolymers.com](http://www.rosehillpolymers.com)

All information is correct at time of going to press.

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Rosehill Rail is a Division  
of the Rosehill Polymers Group



CE 01465 2012

Armco crash barrier has become the generic name for this type of corrugated steel crash barrier commonly seen throughout the UK. Armco barrier systems can be widely seen as a protective measure for people and property, both indoors and outdoors, on car parks, in warehouses, loading bays and industrial yards, factories and roadsides all over the country. We can supply Armco barrier systems in single row or multi row formats, with a variety of post sizes to bolt down or to cast in to concrete. Armco is a very effective and versatile barrier system with a multitude of uses.



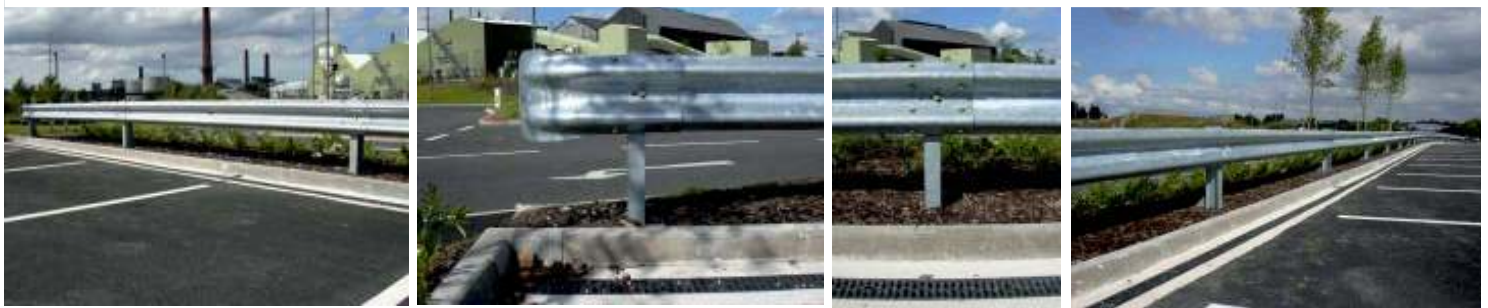
**Complete Armco barrier rail system**

**Features / Options:**

- ▲ Corrugated section dimensions: 315mm high by 85mm deep by 3mm thick mild steel.
- ▲ Box section dimensions: 200mm high (150mm at the front edge) by 150mm deep by 3mm thick mild steel.
- Post dimensions:**
- ▲ Z Section: 100mm by 32mm by 5mm steel, 785mm high (bolt down), 1200mm high (concrete in).
- ▲ I section: 127mm by 76mm steel 760mm high (bolt down), 1200mm high (concrete in).
- ▲ Alternate post lengths are available if required.

**Standard profiles available:**

- ▲ Corrugated straight sections: 1.8m, 3.2m and 3.8m long.
- ▲ Corrugated curved sections: 3.2m beam rolled to required radius.
- ▲ External and internal welded corners are available, as are fishtail ends.
- ▲ Box section beams are available in 2.4m and 4.8m lengths with 90 degree welded corners.



**Standard corrugated beam**



**Fishtail end terminal**



**Standard RSJ post for bolting to concrete**



**Standard RSJ post for mounting in concrete foundation**



**Z section post**



**External corner**



**Internal corner**



**End terminal**

# Palisade Fencing

Galvanised or Galvanised and Colour Coated

*Protecting you and your environment*



MANUFACTURERS, SUPPLIERS  
& CONTRACTORS OF  
SECURITY &  
INDUSTRIAL FENCING & GATES



Other types also available

Advanced Fencing Systems Limited • Park Farm • Park Avenue • Holmesfield • Dronfield • S18 7XA

Telephone: **0114 289 1891** • Facsimile: **0114 289 1892**

Chesterfield Office • Telephone: **01246 220 220** • Facsimile: 01246 220 221

Rotherham Office • Telephone: **01709 556 667**

E.mail • [office@afsfencing.co.uk](mailto:office@afsfencing.co.uk) • INTERNET • [www.afsfencing.co.uk](http://www.afsfencing.co.uk)

# Palisade Fencing

Palisade fencing presents a formidable barrier and is often specified when there is a need for high security.

The forbidding appearance and inherent strength of the pales provide an effective deterrent to would be intruders. It is available in a choice of head styles, both in the traditional 'D' pale profile, and 'W' section pale for added security.

Palisade is offered in a range of heights up to 3.6 metres, and is self-adjusting to slopes of up to 1 in 3. It can be supplied assembled in panels, or bundled for site assembly along with either bolts or rivets.

Palisade is available in a range of finishes, galvanised in BS 729, or galvanised and colour coated in various colours to blend with the environment.

## Specification

Height above Ground Metres	Nominal Pale Thickness (mm)		Posts RSJ	Rails RSA
	'D' Section	'W' Section		
1.80	3.00	2.00 to 3.00	102 x 44	45 x 45 x 6
2.00	3.00	2.00 to 3.00	102 x 44	50 x 50 x 6
2.10	3.00	2.00 to 3.00	102 x 44	50 x 50 x 6
2.40	3.00 or 3.50	2.00 to 3.00	102 x 44	50 x 50 x 6
3.00	3.00 or 3.50	3.00 to 3.50	127 x 76	50 x 50 x 6
3.60	3.00 or 3.50	3.00 to 3.00	127 x 76	65 x 50 x 6

Heights start from generally 900mm high. Non standard heights and alternative pale thicknesses are available with support legs to BS 1722 Pt 12. Details on application. Specifications may alter from those illustrated as part of ongoing improvements.

## Recommended Uses

All commercial and industrial premises and any site requiring a high degree of security.

## Sitework

Advanced Fencing Systems Limited are award winning contractors able to undertake both supply and supply and installation work.

- Carry components, do not drag, particularly important where materials are colour coated.
- Fixing - set posts in accordance with BS 1722: Part 12: 1990, normally at 2.75 metre centres.  
Fixing of horizontal rails to posts is normally by means of a fishplate connection. Pales are attached using either galvanised saddle head bolt and nut, zinc plated or stainless steel rivets, or bolts with anti-vandal snap-off cone nuts. Full details from the manufacturer.

## Accessories

The Palisade fencing system is offered complete with matching gate systems. Curved sections and fantails can also be manufactured.

## Appearance and Finish

Galvanised or galvanised and colour coated.

For details of finishes and colour range available, contact the manufacturer. See our colour chart below.

## Gates and Posts

Gates for use with Portcullis Palisade have been carefully designed to provide the same security level as the fencing.

Posts for use with Portcullis Palisade are manufactured from RSJ material with the top spike for a comparable degree of protection as the top of the pales. Full details from the manufacturers.

## Description

Pales are available in two sections.

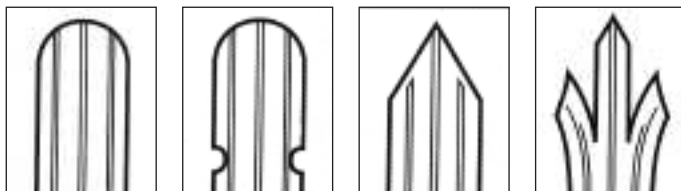


'D' Section

'W' Section

'W' section is often preferred to the more traditional 'D' section, offering increased security due to the fastener head being concealed and therefore less easily tampered with, and the pale itself being inherently a stronger profile.

Palisade is offered in a choice of heads.



Rounded Head

Rounded and notched

Single Pointed Head

Triple Pointed & Splayed\*

\*This head affords the greatest deterrent but is generally recommended for use only on fences 1.8m high and over.

## British Standards

Palisade is manufactured to BS 1722: Part 12: 1990 or other agreed specifications. All hot dip galvanised to BS 729.

ASF Fencing are approved suppliers to British Gas, MOD, HMP, many local authorities and utility service providers.

BLACK RAL 9005	GREY RAL 7037	BLUE RAL 5010	WHITE RAL 9010	GREEN RAL 6005	RED RAL 3000	YELLOW RAL 1006	BROWN RAL 8019
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# The new generation of kerbstones has arrived

Innovation Sustained by Design



- Under 5kg
- Made from recycled polymers
- Conforms to British Standards
- 100% recyclable

[www.durakerb.com](http://www.durakerb.com)





# The future of kerbstones

Durakerb is the revolutionary, lightweight and environmentally-friendly new kerbstone complying with Health & Safety guidelines concerning the manual handling of kerbstones. Manufactured from a blend of recycled polymers, the kerbstone will help all specifiers and contractors to comply with Government aims of building a sustainable future. More importantly, it will enable contractors to continue to lay kerbstones exactly as they have done for generations, but in a quicker and safer fashion.

The construction industry has made great progress over the last few years to re-engineer products, making them more user friendly and to reduce the risk of long term injury brought about through improper and/or repetitive manual handling. One product, which has resisted change up until now, has been the common kerbstone. Not any more. After several years of development the Durakerb is now available to the market.

The standard HB2 Durakerb weighs less than 5kg, compared to its concrete equivalent of 67 kg and the Health and Safety limit of 20kg for manually handled kerbstones. Durakerb can be laid without the use of cumbersome and expensive lifting equipment thus increasing the lay speeds dramatically and reducing overall fitting costs. It also reduces significantly the working space required and because it will not chip or crack, it virtually eliminates the need for any remedial work. Hence it is extremely user friendly and decreases the disruption caused on site. All this, and yet the Durakerb matches the aesthetic appearance of concrete kerbstones. Durakerb can also assist Local Authorities in achieving Agenda 21 targets.



## Innovation Sustained by Design

The Durakerb Group is the market leader in the development of recycled lightweight composite kerbstone products. Our ongoing commitment to innovation is evident from the 5 years to date spent in researching and developing the product range.

The cellular polymer construction means that many variants are achievable which is not the case with kerbstones made from concrete. Durakerb is in discussions with several parties regarding the development of specific new products including combined kerbstone drainage systems. The possibilities and advantages is endless.



## Technical Information

Durakerb is made from a composite material which includes reprocessed polymers (otherwise destined for landfill sites). The extreme lightness of the product is achieved through a combination of this highly informed material selection and a meticulous design.

The cellular construction has been utilised to further lighten the product whilst maintaining the extremely high strength, much the same as key structures have been designed in the aeronautical and automotive world. Loading in excess of 25 tons is easily achieved. Durakerb is manufactured under international patent, at temperatures of up to 260 degrees centigrade thus ensuring the Durakerb can withstand the high temperatures experienced during the laying of bituminous materials.

The positional stability of Durakerb is ensured by way of the robust flange integrated into the bottom face of the kerbstone. In addition the natural ingress of concrete up into the cellular chambers of the Durakerb during installation results in an extremely stable lay condition. UV stability is achieved through the use of UV stable materials.

## Product Testing

Durakerb has been rigorously tested by the British Board of Agrément (BBA) in accordance with BS/EN 1340, meeting all relevant test criteria. Tests for slip/skid (BS/EN 1340) and compressive strength (BS 6073/2) have been conducted as well as in-situ dynamic impact testing. Durakerb was installed at a test site where HGVs and fork lift trucks could

be driven at speed at the Durakerb, simulating the greatest real impact conditions. The HGV tests were monitored by the BBA and despite repeated impacts Durakerb remained completely intact. No cracks and no chips were experienced. Additionally, finite mechanical element analysis undertaken separately achieved the bending strength requirements of BS/EN 1340. Other testing was performed appraising the Durakerb's freeze thaw, abrasion, fire and water absorption properties, all testing producing satisfactory results.

The Durakerb has already been tested in the field by leading contractors working in liaison with local authorities and, despite extreme heavy duty applications, no product has been damaged to date.



Durakerb is patented under  
European Patent number 1305476  
International Patent Application No.  
PCT/GB2005/001070  
Unregistered UK and EU design right  
Durakerb is a registered trademark of  
Durakerb Limited, registered number 2362569



## The Benefits at a Glance:-

### LIGHTWEIGHT AT UNDER 5 KG

- Its lightweight design enables operatives to quickly position and lay the kerbs. Trials indicate lay rates up to 4 times faster. Being so light makes them extremely easy to store and transport without the use of heavy goods vehicles.

### NO MECHANICAL HANDLING EQUIPMENT REQUIRED

- Removing the need for mechanical handling equipment, speeds up lay rates and vastly reduces the working space required.

### SAFE TO HANDLE

- Durakerb is the obvious solution where the health and safety risk assessment does not permit the use of handling equipment; for example, where there is an uneven surface or where the risk of traffic accidents is too high.

### DOES NOT CHIP – NO REPLACEMENT NEEDED

- Being manufactured from polymeric material, Durakerb is extremely durable with intrinsic qualities bringing long term benefits to users with either installation or maintenance responsibilities. The product does not crack or chip either during installation or over its long term use, significantly reducing otherwise expensive ongoing remedial and maintenance costs.

### HIGHLY RESISTANT

- Durakerb is resistant to the typical chemicals and road salts used in highway construction and maintenance.

### AIDS COMPLIANCE WITH ISO 14001

- Durakerb helps achieve compliance with ISO 14001 and the objectives of the Egan report.

### REMOVAL OF EXPOSURE TO LEGAL ACTION

- The use of Durakerb removes the ever present temptation of installers to breach the manual handling guidelines, thereby removing the potential open ended exposure to expensive and time consuming litigation and prosecution. With reference to the HSE guidelines – the MHAC programme- the use of Durakerb mitigates against repetitive strain injury.

### MADE FROM RECYCLED POLYMER BLEND

- The use of reprocessed material supports government efforts to increase the volume of recycled materials used in a sustainable manner in the construction industry namely, The Government's Sustainable Buildings Task Force. Redundant Durakerb can be recycled.

### INSTALLED THE SAME WAY BUT MUCH QUICKER AND WITH IMMEDIATE 100% ALIGNMENT

- Durakerb can be installed exactly as traditional concrete kerbstones have been for decades but quicker and safer. No retraining of kerbing operatives is required. The product can be cut with hand tools making less noise and dust than with the concrete equivalent and the Durakerb is easily knocked down to level. Installers' exposure to Dermatitis and other skin disorders through concrete handling are removed. The interlocking feature ensures 100% alignment every time.



Durakerb Group is the trading name of Durakerb Limited



The Durakerb Group

Old House, Gorse Lane, Coleshill, Birmingham B46 1JU

Tel: 01675 432 109 Fax: 01675 432 119 Email: info@durakerb.com Web: www.durakerb.com

# Durakerb contact details



## For orders

Please contact Durakerb Sales on **08700 552686** or email [sales@durakerb.com](mailto:sales@durakerb.com)

## For technical enquiries

The Durakerb brochure will deal with the bulk of technical matters but should there be a need for further technical clarification please e mail your question to [technical@durakerb.com](mailto:technical@durakerb.com) Alternatively fax Durakerb Sales on **08700 552707** or call Durakerb Sales.

We would be pleased to receive your feedback on your use of Durakerbs, as part of our ongoing commitment to sustained innovation.

## Further sales brochures

Please telephone Durakerb Sales on **08700 552686** or visit [www.durakerb.com](http://www.durakerb.com)

### CONTACT INFORMATION

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Website: [www.durakerb.com](http://www.durakerb.com)

Durakerb Group is the trading name of Durakerb Limited



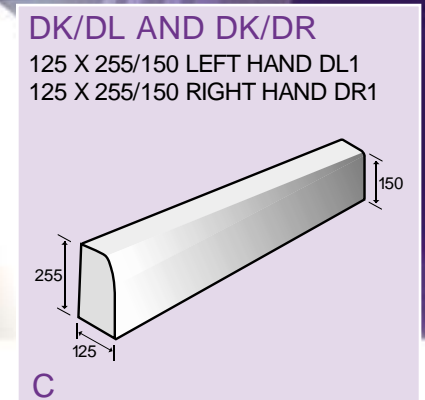
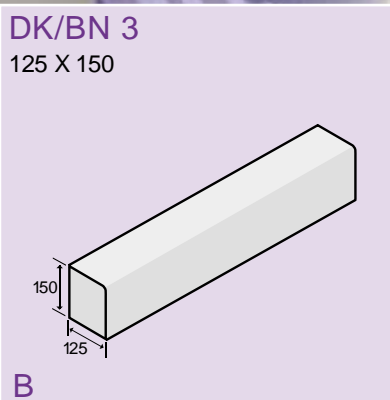
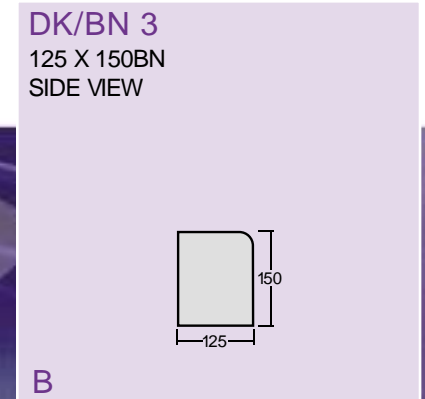
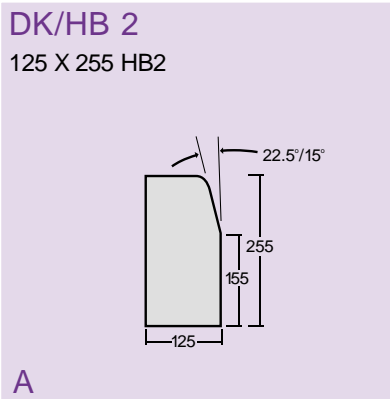
### The Durakerb Group

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Email: [info@durakerb.com](mailto:info@durakerb.com) Web: [www.durakerb.com](http://www.durakerb.com)

# Durakerb product range



Product	Dimensions (mm)	Diagram
Standard half battered (code DK/HB2)	H 255 x L 914 x D 125	A
Bull nose straight (code DK/BN3)	H 150 x L 914 x D 125	B
Half battered drop kerb left (code DK/DL)	H 255/150 x L 914 x D 125	C
Half battered drop kerb right (code DK/DR)	H 255/150 x L 914 x D 125	C

## Available colours – all products

Standard colour – buff grey

All other colours are available subject to minimum quantities.

## Quality statement

Our production process control system complies with ISO 9001:2000 and Durakerb guarantees to replace any product subject to any manufacturing fault. Furthermore Durakerb guarantees that a high proportion of reprocessed plastics is used in the manufacturing process.

## Please note

Durakerb operates a policy of continuous product improvement. As a result, product detail can be subject to change without prior notice. Whilst every effort is made to ensure the accuracy of all text and illustrations, all users of this literature are strongly advised to contact Durakerb for detailed confirmation prior to decisions affecting specific projects.

**CONTACT INFORMATION**  
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 Website: [www.durakerb.com](http://www.durakerb.com)

Durakerb Group is the trading name of Durakerb Limited



## The Durakerb Group

Old House, Gorse Lane, Coleshill, Birmingham B46 1JU  
 Tel: 01675 432 109 Fax: 01675 432 119  
 Email: [info@durakerb.com](mailto:info@durakerb.com) Web: [www.durakerb.com](http://www.durakerb.com)

# Durakerb installation testing



Independent installation testing of the Durakerb has been carried out by the following organisations:

- Cheshire County Council
- Nuttalls Construction Group
- Gloucestershire County Council
- Ringway Construction
- Birse Civils
- Dudley Borough Council
- AW Construction
- Walsall Borough Council

A summary of the results of this testing is available on the Durakerb website ([www.durakerb.com](http://www.durakerb.com)).

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# Durakerb

## costing comparison



### Kent County Council

The recent trials of lightweight kerbstones versus concrete kerbstones performed by Kent County Council in Whitstable experienced a net increase in cost for kerbing using mechanical handling, over manually handled concrete kerbstones, of between 80% and 100%.\*

Furthermore it was also noted that there was a tendency for site operatives to revert to traditional handling methods when not observed by the supervising engineer.\*

(\*Source: Surveyor Magazine April 2005)

### Cost justification

The use of Durakerbs versus traditional concrete kerbstones realises considerable cost savings, the nature and extent of which varies dependent upon the number of Durakerbs to be installed and the installer's own cost structure. These savings include:

- no need to utilise costly mechanical handling equipment
- faster laying times are achieved by installers
- substantially less remedial costs on site
- the removal of the inherent risks of legal claims being made by installers
- the risk of criminal prosecution is removed
- reduced traffic disruption due to removal of need for mechanical handling equipment
- significantly less time is needed in carrying out risk assessment otherwise required when planning the use of mechanical handling equipment.

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### The Durakerb Group

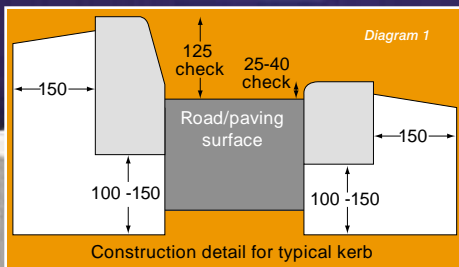
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# Durakerb

## laying method statement



### Dry and Wet Bed Method

A dry mixed concrete, or ready mixed concrete, the latter having a slump of 25mm to 35mm (ST1 / BS 8500), is required. The string line is to be set up on pins and set to correct level. The concrete is to be placed along the intended line behind the string. The concrete should then be spread and struck level with a shovel, leaving no high or low points. Check that the minimum specified thickness of concrete at least is under the struck concrete surface (Diagram 1).

The Durakerb is then to be taken from the pallet or truck and placed on the concrete bed, laying from the left offering it to the string line. This is done from the verge/footway side, holding the Durakerb with both hands. It is then to be adjusted into position using a small rubber hand maul. With a hand on the top, the surface is then to be tapped into position until flush with the string line.

The second unit is then introduced by offering it to the string line at the end of the first Durakerb. Ensure that the male alignment spigot on the end face of laid kerb is located snugly in the female slot of the kerb being laid. Leave a trowel width of 2-3mm between each kerb to allow for lateral expansion is required. The laying process is then repeated, checking that the first Durakerb has not been disturbed, adjusting as necessary with the rubber maul. Successive Durakerb units can then be added to the line.

On completion of the kerb line, backing concrete is to be run out from the chute behind the Durakerb, covering the lateral flange, keying the Durakerb to the haunching and race. The kerb layer then faces off the front of the kerb race, trimming flush to the front flange of the Durakerb. The rest of the haunching should then be trowelled into shape and then the line of the Durakerb should be checked again for accuracy.

### Single Installation

The male fitting can easily be removed if required for single installation, by cutting using either a Stihl saw or standard cross cut saw. If lengths shorter than standard kerbs are required then measure the required length and cut accordingly using a stihl saw or standard cross cut saw.

Durakerb advocates the use of lifting tongs by installers in an upright position, in order to minimise the risk of posture strain and hand/wrist injuries.

If further information is required on the laying method, please email: [technical@durakerb.com](mailto:technical@durakerb.com) or call 08700 552686.

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# Durakerb product testing



## Testing carried out by British Board of Agreement(BBA)

All testing carried out in accordance with BS/EN 45001 and as accredited by UKAS.

### Dynamic impact

BBA Report Number 2550

### Compressive to BS/EN 6073

BBA Report Number 2521

### Slip skid resistance to BS/EN 1340

BBA Report Number 2521

## Other testing carried out

### Single flame ignitability to BS/EN 11925.2:2002

Chiltern Fire International:- Classification BS/EN 13501-1:2002  
Report dated 06/09/2005

### Weathering resistance to BS/EN 4611:2001

Undertaken by Colormatrix Europe Limited ( QUV Tester)  
Report dated 02/09/2005

### Bending strength to BS/EN 1340

Nottingham Trent University  
Solid Solution Management (Solid Works Programme)  
Both Mechanical testing and Finite Element Analysis (FEA)  
Report OUTSTANDING

### Charpy Impact Test to ISO:180:1993

Luxus Plastics Ltd  
Report OUTSTANDING

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## Abrasion resistance to BS/EN 9352:2001

Testing Undertaken by Nottingham Trent University  
Taber Abrasion Test  
Report OUTSTANDING

## Freeze-thaw to BS/EN 1340

Colormatrix Europe Limited  
Report dated 17/08/2005

## Water absorption to BS/EN 1340

Colormatrix Europe Limited  
Report dated 17/08/2005

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# Durakerb safety data sheet



## 1. Identification of the substance

- A Thermoplastic with a calcium filler with a Titanium Dioxide Colorant and UV stabilizer

## 2. Identification of the company

- Durakerb Limited  
Old House, Gorse Lane, Coleshill,  
Birmingham B46 1JU

## 3. Composition/Information of Material

- Both Components are widely used in varied applications

## 4. Hazards identification

- There is little dust generated in the cutting of polyethylene, small swarfs of plastic will appear while cutting with an abrasive wheel

## 5. Manual handling

- The standard HB2 weight is 4.5kg

## 6. First aid measures

- Immediate medical attention required:- no
- Professional assistance from a physician required:- no
- Skin Contact:- None
- Eye Contact:- None

## 7. Ingestion

- Wipe hands after cutting

## 8. Fire Fighting measures

- No fire or explosive hazard.

## 9. Accidental release measures

- Not applicable:- Finished product

## 10. Handling and storage

- The product should be palletised to avoid handling apart from the actual laying operation

## 11. Exposure control/Personnel protection

- Hand Protection:- Gloves
- During Cutting:- Mask and Goggles

## 12. Physical and Chemical Properties

- Appearance:- Finished Product
- Melting Point:- > 220 Degrees C

## 13. Stability and Reactivity

- Conditions to avoid:- None
- Hazardous Decomposition:- None

## 14. Toxicological Information

- Concise description of toxicological properties, including any special health effects of constituents:-
- Cutting:- No Data

## 15. Ecological Information

- Behaviour:- Not Hazardous
- Disposal Consideration:- Recycle contact Durakerb

## 16. Safe Handling of any residue/waste product

- As a inert material:- Any solid waste reprocessor or landfill site may be used

## 17. Relative Density

- HDPE .95 / .97 Gcc
- LDPE .92 / .94 Gcc

## 18. Transport Information

- Avoid Double Handling

## 19. Regulatory Information

- Supply label information:- Not Classified

## 20. Training Advice

- Available in the form of instruction and method statement
- Wear and use of HDPE / LDPE

## 21. Source of Data

- Tarmac Central
- Colormatrix Europe Limited

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# Durakerb



## Lightweight recycled polymer kerbstone system (“the system”): Generic specification

### General

- Each kerbstone shall stand 100mm above the carriageway surface level
- The system shall be monolithic and shall have all corresponding components required for the HB2 range
- The system shall not involve a laying process different from a standard concrete kerbstone laying process
- The product shall have a retention element at the base, running laterally both sides of the unit to facilitate installation
- The system shall be supplied with a interlocking element to facilitate alignment when installing, thereby reducing the exposure to MSD injuries
- The product shall be a full size HB2 conforming dimensionally to its’ concrete counterpart but will weigh no more than 5kg, in order to comply comfortably with Health and Safety Guidelines and regulations regarding manual lifting, including compliance with the HSE’s manual handling assessment chart (MHAC)
- The production process control system shall comply with ISO 9001:2000
- The product shall have a high proportion of reprocessed polymers used in its manufacturing process

### Conformity with British Standards

- The system shall conform to BS/EN 1340, and the product shall comply with ISO 14001
- The system shall conform to BS/EN 11925.2:2002 single flame ignitability testing programme
- The system shall conform to BS/EN 6073 compressive testing programme
- The system shall conform to BS/EN 4611:2001 weathering resistance programme
- The system shall conform to BS/EN 9352:2001 abrasion resistance programme
- Testing and procedures generally shall as far as possible comply to BS/EN 45001

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We connect street and rail.

fast.  
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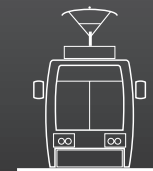
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**NEW**

**pede-**

**SOLAR**

**LED Lights.**



## Access Stairs

Modular precast concrete stairways are the ideal access solution for railway, highway and other utilities applications. The Stanton Bonna Access Stairway system has a proven track record on both Network Rail and Highways Agency schemes.



M4 embankment installation



### Main Benefits

- > System comprises modular components that can be quickly installed saving time and money over conventional methods.
- > Stairway modules can be installed with minimal ground surface preparation and without the need for heavy plant.
- > A durable system that can be used for both temporary and permanent installations.
- > Can be used with a variety of proprietary hand rail types and tailored at site to suit specific landing requirements.
- > System can be used for any angle between 25° and 45°.
- > System available with various step widths.

### Clients supplied include:

- > Network Rail.
- > Highways Agency.
- > Carillion.
- > Enterprise Mouchel.
- > High Speed 1 (Channel Tunnel Rail Link).

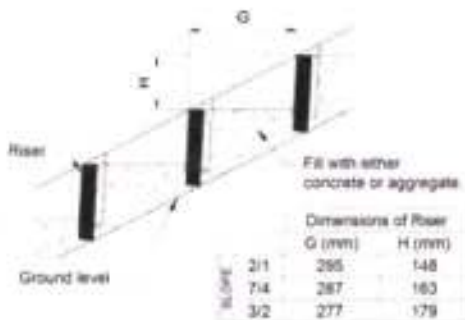


A82 Loch Ness Access Stairs



# Access Stairs

Access Stair Data		
Step Dimensions		
Step Rise	Step Run	Step Width
25"	1.30	280
45"	220	220



Modular components facilitate rapid installation

Access Stair Data		
Components	Length m	Weight kg
<b>Stairway</b>		
String	1.65	62
Riser	1.00	20
Kicker Beam	1.30	33
Complete Assembly	1.65	224

Galvanised Safety Hand Rail		
Lower Post	-	6
Intermediate Post	1.65	6
Upper Post	-	6
Lower Rail	1.65	2



Contact us to discuss your specific requirements:  
email [info@stanton-bonna.co.uk](mailto:info@stanton-bonna.co.uk) or phone 0115 944 1448

sbc rail





Warning Sign (English Version)  
Size 750mm x 600mm  
BR catalogue 56/129036



Warning Sign (Welsh Version)  
Size 750mm x 600mm  
BR catalogue 56/129037



Access Point Information Sign  
Size 750mm x 600mm  
BR catalogue 56/129038

Lowered &  
Secured in  
**3 mins**



For full details  
on all our ranges  
please visit our website at  
[www.genquip.co.uk](http://www.genquip.co.uk)

# Mobile **Secure Store** Units

Optional  
**Fully  
Galvanised  
Chassis**

The Groundhog **Mobile** Storage Units are perfect for all types of contractors who need fast, easily transported and deployed effective site security.

## Ground lowering, anti-vandal, mobile, site storage unit

Groundhog's Mobile Secure Storage Units are built using proven techniques and are a perfect solution for on-site storage, providing a safe environment for tools and equipment.



- > Approved for use on the UK rail network
- > Units are built using proven techniques
- > Fully welded, anti-vandal
- > Colours in own livery colours
- > Superior security - each mobile unit is fitted with hidden hinges, three point locking and Hercules Chubb locks



## Specifications

	G3600S	G3600ST	G5000ST	G6000ST
<b>External dimensions</b> L x W x H (mm)	3600 x 2300 x 2370	3600 x 2300 x 2370	5000 x 2300 x 2370	6000 x 2300 x 2370
<b>Overall towing height</b>	2685 mm	2685 mm	2685 mm	2685 mm
<b>Height lowered</b>	2370 mm	2370 mm	2370 mm	2370 mm
<b>Overall length inc. drawbar</b>	5200 mm	5200 mm	6100 mm	7600 mm
<b>Internal dimensions</b> L x W x H (mm)	3400 x 2170 x 2000	3400 x 2170 x 2000	4800 x 2170 x 2000	5800 x 2170 x 2000
<b>Door aperture</b> W x H (mm)	1900 x 1860	1900 x 1860	1900 x 1860	1900 x 1860
<b>Gross weight</b>	1800 kg	3500 kg	3500 kg	3500 kg
<b>Unladen weight</b>	1250 kg	1500 kg	1750 kg	2000 kg
<b>Payload</b>	550 kg	2000 kg	1750 kg	1500 kg



Anti-vandal, Static  
Site Accommodation Unit



# Fusion Range

from Groundhog

Mindful of the environment, lightweight, compact & well equipped

# Sustainable design delivering cost effective, environmentally friendly and robust Static Welfare Units.

The Fusion range has a stylish and distinctive anti-vandal exterior with four curved corners that create an individual appearance.

The unit has low level lifting along with the facility for Groundhog's Hoglift 2 lifting system (optional).



Toilet facility with hot and cold running water



## Value Proposition

Potential yearly savings for the Fusion range  
(based on units running 12 hour day and 5 day week)

- ✓ Weighs **4,300 Kg**, resulting in reduced haulage costs
- ✓ Minimum fuel savings of up to **£5,758**
- ✓ CO<sub>2</sub> emissions saving of over **40,000 Kg**
- ✓ Generator service cost saving of **£1,750**
- ✓ Potential breakdown costs saving of **£1,200**
- ✓ Low noise pollution

## Fusion+ range, **B rated**

Energy Performance Asset Rated

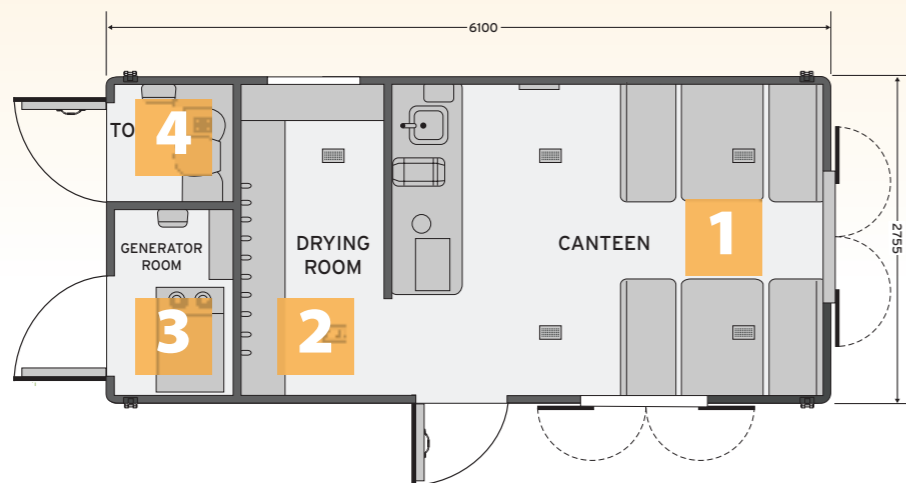
The Fusion range has been Energy Performance Asset Rated which indicates the energy efficiency of the building fabric, heating, cooling and lighting systems ventilation, making it an exceptionally eco friendly welfare unit.



## SW6100 Standard

The standard SW6100 is lightweight and compact, which meets HSE requirements and provides all your on-site needs in one compact cost effective package. The units are suitable for accommodating eight people, which provides pleasant and safe working

environments, ideal for rental companies and contractors. Once lifted into position, they provide a vandal resistant facility and can come with a number of additional money saving features.



## SWO7600 Fusion / Fusion+ (with office)

The SWO7600 offers all the cost effective and environmental features & benefits of the SW6100 but with the added feature of a spacious office giving greater flexibility onsite.

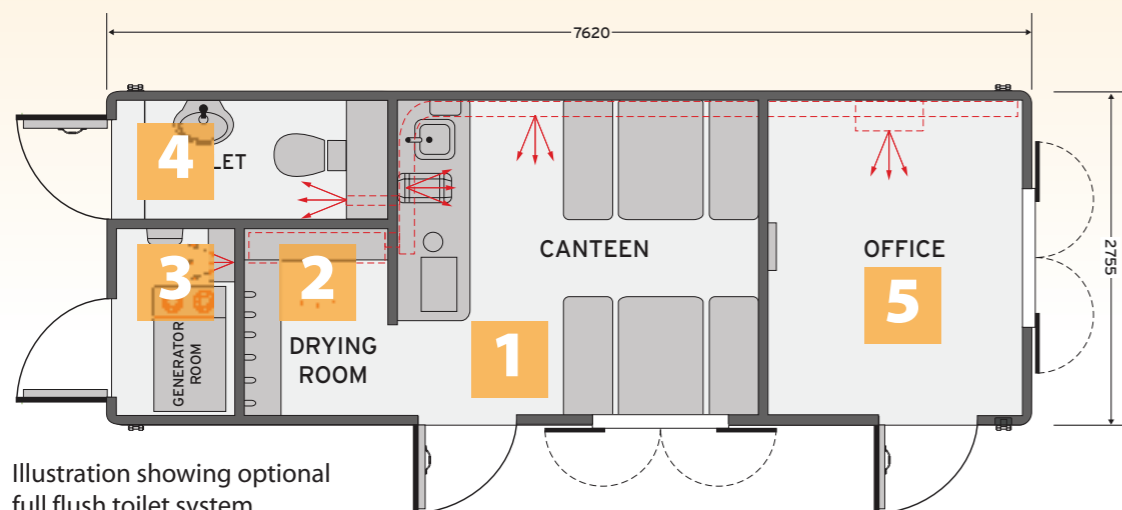


Illustration showing optional full flush toilet system

### 1. Canteen/Seating Area

- Pleasant and light rest area
- Table and bench seating for up to 8 persons
- Air blown heating system
- Stainless steel sink with instant warm water
- Microwave/Kettle
- Fresh drinking water container (20 Ltr)
- Fresh & waste water containers (20 Ltr cap each)
- 12 Volt L.E.D. Lighting PIR
- Generator control panel with hour run meter
- Paper towel dispenser
- Liquid soap dispenser
- Disposable cup dispenser
- Storage Area under counter
- Frost stat control

### 2. Drying Room

- 12 Volt L.E.D. Lighting
- Air blown heating system
- Coat hooks

### 3. Generator Room

- 6kVA Super Silent Diesel Generator with exhaust outlet and ventilation
- 12 Volt battery
- 200 Litre Diesel tank with filler neck and level gauge (optional Fuel Active system)
- 12 Volt L.E.D. Lighting
- High Capacity Battery
- 12 Volt 30amp battery charger
- Battery guard with fuse panel

### 4. Toilet Area

- Plastic Recirculating Toilet c/w ventilation pipe
- Forearm wash basin with warm water
- Toilet roll holder
- 12 Volt L.E.D. light
- Ventilation panel
- Paper towel & soap dispenser
- Flush Ceramic 12 Volt Toilet System (optional)

### 5. Office Area (SWO7600)

- Sliding window with steel shutters, which when closed are secured internally
- White Board
- Notice Board
- Office table and chair (optional)
- Double glazing (optional)
- Air blown heating system
- 12 Volt L.E.D. Light c/w P.I.R. Sensor

#### Units are manufactured in two sizes

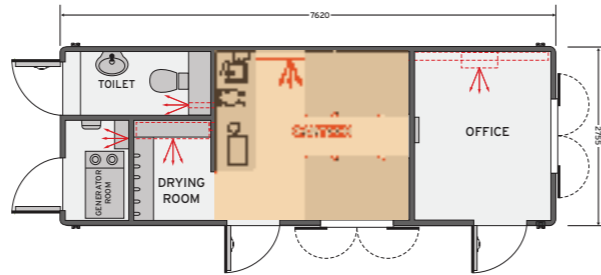
The SW6100 (6100mm x 2755mm) or the larger SWO7600 (7600mm x 2755mm) with the added benefit of an office facility. **Both units have the option of a flush toilet.**

## Canteen & seating area

The canteen area has well equipped amenities such as, work surface with stainless steel sink, under work surface storage, handwash facility with soap and paper towel dispensers, fresh drinking water and appliances which include a microwave and kettle.

The rest area provides comfortable bench seating for up to eight people.

- 12 Volt L.E.D. Light c/w P.I.R. Sensor
- Air blown heating system



Rest area that provides comfortable bench seating for up to eight people



Surprisingly light and spacious canteen area (Fusion+)



Typical control panel for generator, heating system and battery level indicator



LED lights



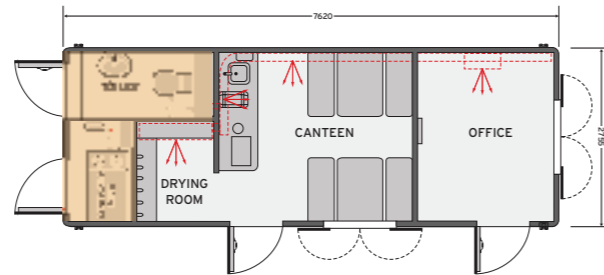
Thermostat

## Generator & toilet area

### Generator

The generator room is fitted with a 6kVA super silent diesel generator, which significantly reduces noise levels, the generator has a 200 litre diesel tank complete with filler neck and level gauge.

- 12 Volt L.E.D. lighting PIR
- Ventilation panel



Easily accessible generator

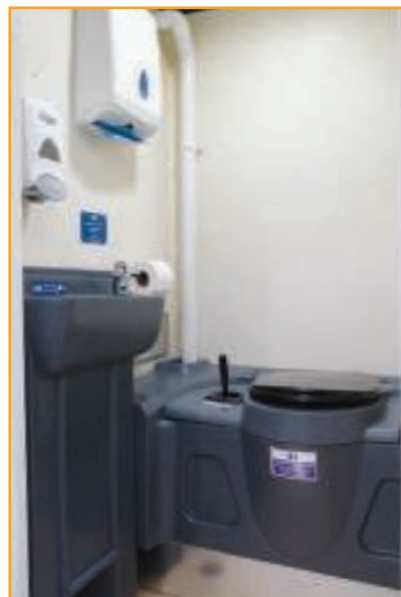
### Toilet

The Standard and Fusion range comes equipped with warm water taps and are fitted with a plastic recirculating toilet with ventilation pipe and wash basin.

- Flush ceramic 12 Volt toilet system (optional)



**Fusion**  
Forearm wash basin with hot water tap and recirculating toilet



**Fusion+**  
Forearm wash basin with hot water percussion tap and recirculating toilet



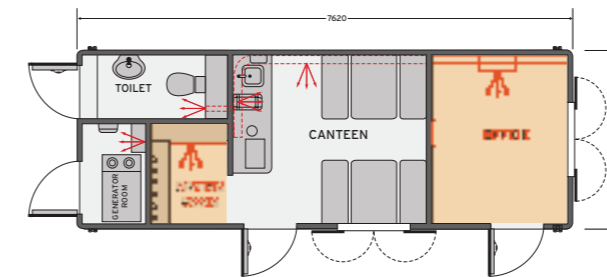
**Optional**  
Ceramic wash basin with hot water percussion tap and full flush toilet

## Office & drying area

### Office area

Light and spacious, the office area includes our air blown heating system and 12 Volt LED lighting.

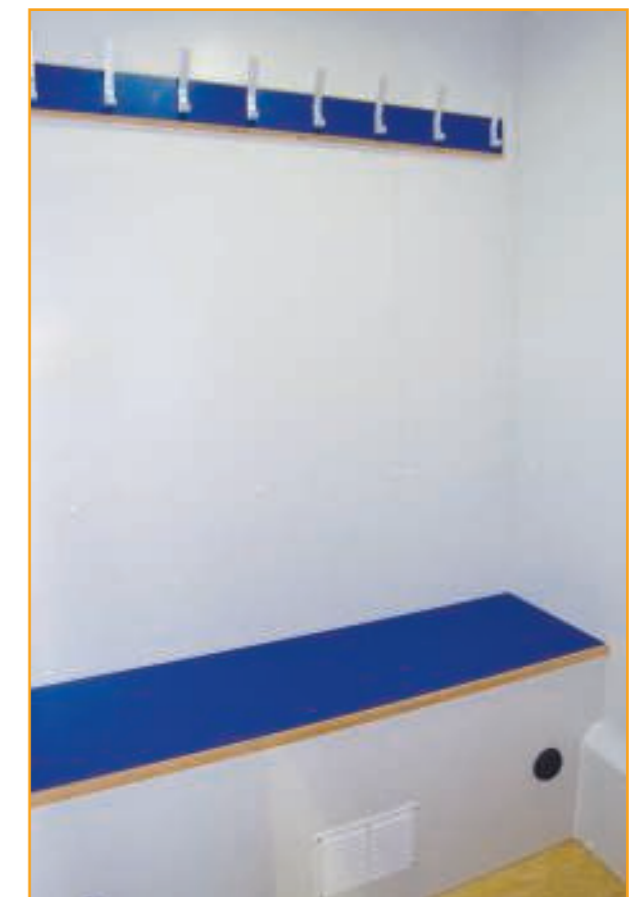
- Sliding window with steel shutters, which when closed are secured internally
- White board
- Notice board



Office area (SWO7600 range only)

### Drying area

The drying area is ideal for drying wet work clothing, and incorporates the air blown heating system with frost stat control, the room also offers coat hooks and 12 volt led lighting.



Drying area

## Hoglift 2

The unique Hoglift 2 system enables units to be lifted onto vehicles without the operator leaving ground level, contributing to Health and Safety.

The Hoglift 2 system has a reinforced steel cable which is permanently fixed at the top of the unit

while the opposite end has rings that are fastened to flat webbings for lifting.

Both systems include pre-drilled plates to enable the units to be double stacked and bolted together and are both rated to 8.8 tonnes.



### Features

6100/7600  
Fusion / Fusion+

#### Canteen

- Table and bench seating for up to 8 persons
- Air blown heating system
- Microwave/Kettle
- Fresh drinking water container (20 Ltr)
- Fresh & waste water containers (20 Ltr cap each)
- Warm water tap set over large wrist to elbow sink
- 12 Volt L.E.D. Lighting PIR
- Double 13amp socket outlet
- Consumer Board c/w RCD & MCB's
- Generator control panel with hour run meter
- Paper towel dispenser
- Liquid soap dispenser
- Disposable cup dispenser
- Carbon monoxide monitor
- Storage Area under counter
- Low battery warning light and Volt Meter

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#### Generator / Drying Room

- 12 Volt L.E.D. Lighting PIR
- Air blown heating system
- Coat hooks
- 6 kVA Diesel Generator with exhaust venting through roof area
- 200 litre fuel tank complete with fuel level gauge

- 
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- 

#### Toilet Area

- Standard Recirculating Toilet c/w ventilation pipe
- Full arm wash basin (Hot Wash)
- Toilet roll holder
- 12 Volt L.E.D. lighting PIR
- Ventilation panel

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#### Optional Extras

- Full flush 12 Volt toilet complete with fresh water tank (60 Ltr) & effluent tank (100 Ltr)
- Starter/Safety Kit
- Painted in clients corporate colour scheme
- Externally mounted pneumatic light mast
- Rain harvesting system (flush toilet models)
- Fuel Active - Fuel Delivery System
- Hoglift 2 system
- PV Solar panel

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**groundhog**  
GREEN INNOVATION

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see our channel on [www.youtube.com](http://www.youtube.com)

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## SPECIFICATION

SOLAR PANEL	4 x 14.0A @12vdc
BATTERY	6 x 150Ah Deep Cycle AGM, 12vdc
ON BOARD BATTERY CHARGER	40A / 230vac
RECHARGE TIME	11.2 Hours
RUN TIME FROM BATTERY	54 Hours
RUN TIME INCLUDING SOLAR POWER	Approx 100 Hours*
MAST MAXIMUM HEIGHT	5500mm
MAST RAISE / LOWER TIME	12 / 18 secs
MAST ROTATION / ACTUATION	360° / Hydraulic - 24vdc Power Pack
HYDRAULIC SYSTEM (MAST DEPLOYMENT)	Bio-degradable Oil
MAST SAFETY SYSTEM	Deployment Alarm & Safety System
COMPLETE SYSTEM SHUTDOWN	Complete System Shutdown & Battery Isolator
TIMER & PHOTO-CELL CONTROL	Standard
STABILISERS	4 Wind Down Legs
LAMP SPECIFICATION	4 x 55W, 24vdc
LAMP TYPE	192 x 1.14W High Power LED
ROAD LIGHTS AND REFLECTORS	Standard
DIMENSIONS FOR TRANSPORT (LxWxH)	2585mm x 1450mm x 2135mm
DIMENSIONS FULLY DEPLOYED(LxWxH)	2845mm x 3985mm x 5500mm
WEIGHT	1050kg
TYRES	185/70R 13

\* Dependent on quality of sunlight & based on 8hrs operation within every 24hrs





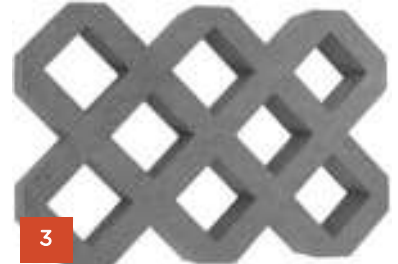
**TRUCKPAVE™ cellular  
porous pavers**

 T: +44 (0)1621 874200  
 F: +44 (0)1621 874299

**Product Data Sheet**

Issue: 01 Date: 27.07.12

Characteristics	TRUCKPAVE 80 [1&2]	TRUCKPAVE 100 [3&4]
Load-bearing capacity	Category SLW60. Vehicles up to 60t gross weight	
Textured anti-skid surface	Available option	
Connection type	Integral tongue & groove [2]	Butt jointed (no connection)
Dimensions	80mm x 400mm x 600mm	100mm x 400mm x 600mm
Cell wall thickness	40mm nominal	
Nominal internal cell dimensions	100mm x 100mm square	
% open cell	55	
Quantity per m <sup>2</sup>	4.17 pavers	
Quantity [m <sup>2</sup> ] per pallet	80 [19.18]	60 [14.39]
Nominal weight (kg) [kg/m <sup>2</sup> ]	9 [37.53]	12 [50.04]
Polymer	Recycled polyethylene	
Colour	Grey (other colours available, subject to quantity)	
Chemical resistance	Excellent	
UV resistance	High	
Toxicity	Non toxic	



As part of its continual improvement process Fiberweb Geosynthetics Ltd reserve the right to change the properties listed on this data sheet without prior notice.

TM indicates a trade mark of Fiberweb plc or a Fiberweb Group company, many of which are registered in a number of countries around the world.

Armco crash barrier has become the generic name for this type of corrugated steel crash barrier commonly seen throughout the UK. Armco barrier systems can be widely seen as a protective measure for people and property, both indoors and outdoors, on car parks, in warehouses, loading bays and industrial yards, factories and roadsides all over the country. We can supply Armco barrier systems in single row or multi row formats, with a variety of post sizes to bolt down or to cast in to concrete. Armco is a very effective and versatile barrier system with a multitude of uses.



**Complete Armco barrier rail system**

**Features / Options:**

- ▲ Corrugated section dimensions: 315mm high by 85mm deep by 3mm thick mild steel.
- ▲ Box section dimensions: 200mm high (150mm at the front edge) by 150mm deep by 3mm thick mild steel.
- Post dimensions:**
- ▲ Z Section: 100mm by 32mm by 5mm steel, 785mm high (bolt down), 1200mm high (concrete in).
- ▲ I section: 127mm by 76mm steel 760mm high (bolt down), 1200mm high (concrete in).
- ▲ Alternate post lengths are available if required.

**Standard profiles available:**

- ▲ Corrugated straight sections: 1.8m, 3.2m and 3.8m long.
- ▲ Corrugated curved sections: 3.2m beam rolled to required radius.
- ▲ External and internal welded corners are available, as are fishtail ends.
- ▲ Box section beams are available in 2.4m and 4.8m lengths with 90 degree welded corners.



**Standard corrugated beam**



**Fishtail end terminal**



**Standard RSJ post for bolting to concrete**



**Standard RSJ post for mounting in concrete foundation**



**Z section post**



**External corner**



**Internal corner**



**End terminal**

# SMC TL-90 Mobile Lighting Tower



Compact and easy to transport, the **SMC TL-90** lighting tower is one of Morris Site Machinery's most reliable and popular products. The 1000W Metal Halide lamps give a strong and even light stream of around 424,000 lumens, along with an autotilt option for directed light, and can be fully retracted for transport and storage. The lighting towers can be equipped with autostart/stop which allows the user to minimise fuel consumption by 30% or more, yet maximise efficiency.

The lighting tower functions in all climatic conditions and with a comprehensive and protected monitoring system, they are ideal for use in testing situations. Crucial safety features include an emergency stop that disconnects all electrical circuits and shuts down instantly, as well as a mast deployment alarm and a safety system which ensures the mast descends automatically when the handbrake is released, preventing collisions with overhead obstacles. It is also designed to give operators easy access for routine maintenance.



## Features:

- **Super silent operation** – reduced noise pollution at just 60dB(A) at 7m
- **Hydraulically operated mast** can be fully extended to 9m height in only 12 seconds
- **Compact and robust design** with the ability to load ten units together for ease of transportation
- **Fork lift pockets and single lift eye** for easy transportation
- **360° rotating head lamp** with telescopic mast for quick and easy operation
- **4 x 1000W Metal Halide lamps** fitted to super high output reflectors for high intensity light
- **Bio-degradable** oil in hydraulic system
- **Engine fluids fully banded** to 120% protecting the environment from spills
- **Fuel efficient** giving 85 hours of operation
- **Network Rail approved**
- **EC whole vehicle type approved trailer**

## Safety Features:

- Emergency stop button fitted as standard for safety
- Auto shutdown will operate in the event of low oil pressure/levels for enhanced safety

## Optional Extras:

- LED lamps
- Electric powertilt lamp control
- 110 Volt power outlet CTE
- Wind down prop stands
- Auto-run timer module

### Applications



Specifications are subject to change without prior notice



SPECIFICATION	
ENGINE TYPE	Kubota D905-BG 3cyl Water Cooled 7.4kW @ 1500rpm diesel
HYDRAULIC SYSTEM	Bio-degradable Oil
FUEL TANK CAPACITY	130 Litres
FUEL CONSUMPTION	1.53 l/hr (Lamps only)
RUNNING TIME	85 Hours
AVERAGE SOUND PRESSURE LEVEL @ 7 METRES	67dB(A)
ALTERNATOR	Mecc Alte LT3 110 4 Pole, 230V, 50Hz
CONTINUOUS POWER / STANDBY POWER	5.0kW /5.5kW
POWER OUTLET SOCKETS	2 x 16 amp, 230V
MAST MAXIMUM HEIGHT	9010mm
MAST RAISE / LOWER TIME	12 / 18 secs
WIND SPEED	Suitable for operation in wind speeds up to 100km/h
STABILISERS	4
LAMP SPECIFICATION	4 x 1000W Metal Halide
BUNDING	Fully banded to 120% for all fluids
ROAD LIGHTS AND REFLECTORS	Standard
DIMENSIONS FOR TRANSPORT (LxWxH)	2500mm x 1320mm x 2100mm
DIMENSIONS FULLY DEPLOYED(LxWxH)	2690mm x 2630mm x 9010mm*
WEIGHT FULLY FUELLED / UNFUELLED	1050kg / 933kg

### Optional Specifications:

#### Petrochemical specification

- Spark arrestor
- Chalwyn valve

#### Offshore specification

- Spark arrestor
- Chalwyn valve
- Fuel water trap
- Emergency stop button (fitted as standard)
- Anti-static fan belt
- Braided fuel lines
- Battery isolator switch
- Fuel isolator shut off valve

\* When fitted with powertilt option. Standard height 8740mm.



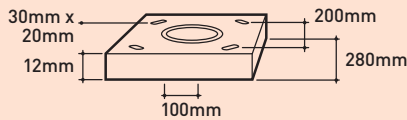
# LIGHT DUTY

## 4-8M BASE HINGED COLUMN Patent No: 968113

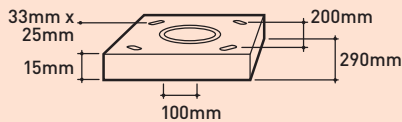
Designed to EN40. Hot dip galvanised to BS EN1461:1999. Manufactured in steel tube to EN10210

### Flange Plate

**Type 0** FA000G Bolts/cross brace M16 x 500mm  
FC020 Template



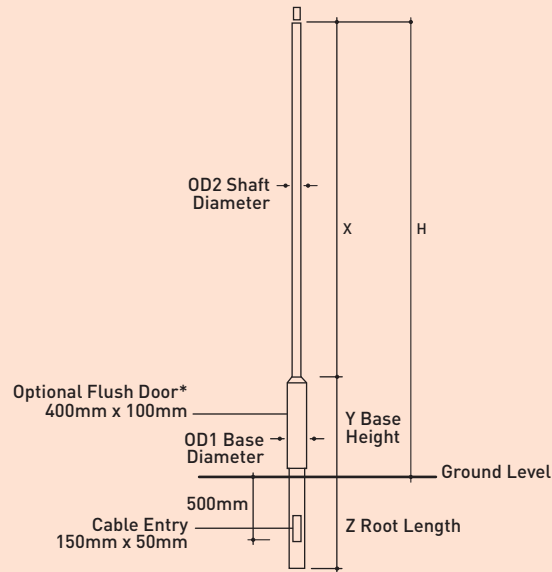
**Type 1** FA001G Bolts/cross brace M20 x 500mm  
FC021 Template



### Accessories

- XXSC003F** Tamper resistant locking screw
- XXSC003F** Key for locking screw
- ELSAB1/6A** Single fuse cut-out, 6A, loop in/out (not fitted)
- ELSAB12/6A** Twin fuse cut-out, 6A, loop in/out (not fitted)

### Column Dimensions



**\*Flush Door Option**

Flush door enables internal locking mechanism. Side fitted locking screw not required on this model. Add /FD suffix.

### Root Mounted

Product Code	Dimensions (mm)						Weight (kg)	OTM (KNm)	Shear (KN)	Min. Concrete Diameter*	Counterbalance Type & Max. Weight
	Height	OD1	OD2	x	y	z					
<b>T041RLS</b>	4m	168	76	2875	1050	600	50	4.9	1.4	1397	<b>RLS168 - Yellow</b> 10kg <b>RLS168 - White</b> 20kg <b>RLS168 - Red</b> 29kg <b>RLH168</b> - 29kg
<b>T051RLS</b>	5m	168	76	3875	1050	800	59	4.8	1.3	570	<b>RLS168 - Yellow</b> 10kg <b>RLS168 - White</b> 18kg <b>RLS168 - Red</b> 27kg <b>RLH168</b> - 27kg
<b>T061RLS</b>	6m	168	76	4860	1050	1000	68	4.7	1.2	291	<b>RLS168 - White</b> 10kg <b>RLS168 - Red</b> 18kg <b>RLS168 - Blue</b> 28kg <b>RLH168</b> - 28kg
<b>T081RLS</b>	8m	168	89	6830	1050	1200	89	5.7	1.3	198	<b>RLS168 - Blue</b> 11kg <b>RLS168 - Green</b> 17kg <b>RLH168</b> - 17kg

\*Root concrete diameter based on poor soil or better, min. 230KN/m<sup>2</sup>

## Flange Plate Mounted

Product Code	Dimensions (mm)					Flange Plate	Weight (kg)	OTM (KNm)	Shear (KN)	Concrete Dimension*	Counterbalance Type & Max. Weight
	Height	OD1	OD2	x	y						
<b>T041RLS /FP</b>	4m	168	76	2875	1050	Type 0	49	4.9	1.4	750 x 800	<b>RLS168 - Yellow</b> 10kg <b>RLS168 - White</b> 20kg <b>RLS168 - Red</b> 29kg <b>RLH168</b> - 29kg
<b>T051RLS /FP</b>	5m	168	76	3875	1050	Type 0	54	4.8	1.3	750 x 800	<b>RLS168 - Yellow</b> 10kg <b>RLS168 - White</b> 18kg <b>RLS168 - Red</b> 27kg <b>RLH168</b> - 27kg
<b>T061RLS /FP</b>	6m	168	76	4860	1050	Type 0	59	4.7	1.2	750 x 800	<b>RLS168 - White</b> 10kg <b>RLS168 - Red</b> 18kg <b>RLS168 - Blue</b> 28kg <b>RLH168</b> - 28kg
<b>T081RLS /FP</b>	8m	168	89	6830	1050	Type 1	77	5.7	1.3	750 x 900	<b>RLS168 - Blue</b> 11kg <b>RLS168 - Green</b> 17kg <b>RLH168</b> - 17kg

\*Concrete dimension based on a minimum ground bearing pressure of 150KN/m<sup>2</sup>, (S = square dimension, H = depth)

## Outreach & Floodlight Brackets

Height	Projection Length	Outreach Brackets		Spigot Lengths /SP 230mm /SP1 100mm	Floodlight Brackets	
		Single (S)	Double (D)		Overlap Fit on Shaft	Flush Fit on Spigot
<b>4m</b>		<b>T041RLS</b>	<b>T041RLS/SP+/SP1*</b>		<b>T041RLS</b>	<b>T041RLS/SP</b>
	0.30m	PR2-03/S or /D	PR1-03/S or /D*	Single	FL1/1	FLO/1
	0.50m	PR2-05/S or /D	PR1-05/S or /D*	Double (600)	FL1/2	FLO/2
<b>5m</b>		<b>T051RLS</b>	<b>T051RLS/SP+/SP1*</b>		<b>T051RLS</b>	<b>T051RLS/SP</b>
	0.30m	PR2-03/S or /D	PR1-03/S or /D*	Single	FL1/1	FLO/1
	0.50m	PR2-05/S or /D	PR1-05/S or /D*	Double (600)	FL1/2	FLO/2
<b>6m</b>		<b>T061RLS</b>	<b>T061RLS/SP+/SP1*</b>		<b>T061RLS</b>	<b>T061RLS/SP</b>
	0.30m	PR2-03/S or /D	PR1-03/S or /D*	Single	FL1/1	FLO/1
	0.50m	PR2-05/S or /D	PR1-05/S or /D*	Double (800)	FL1/3	FLO/3
<b>8m</b>		<b>Post top lanterns only</b>			<b>T081RLS</b>	<b>T081RLS/SP</b>
				Single	FL2/1	FL1/1
				Double (800)	Post top floodlight only	

\*Outreach brackets series PR1 & PR2 below 0.50m projection fit onto 100mm spigot (/SP1). 0.50m + on standard 230mm spigot (/SP)  
For complete bracket information please refer to pages 35-37

## Column Headload Capacity (m<sup>2</sup>)

Based on UK rationalised wind loading factors for EN40

Product Code	Lantern Mounting/ Projection	Max. Headload (kg)	Light 396	Medium 429	Heavy 466	Very Heavy 576
<b>T041RLS</b>	Post Top	53	1.152	1.054	0.961	0.756
	0.25m Single Outreach	8	0.363	0.332	0.303	0.24
	0.50m Single Outreach	8	0.258	0.236	0.215	0.168
<b>T051RLS</b>	Post Top	38	0.775	0.703	0.634	0.484
	0.25m Single Outreach	8	0.298	0.271	0.246	0.133
	0.50m Single Outreach	8	0.214	0.194	0.175	0.133
<b>T061RLS</b>	Post Top	28	0.528	0.472	0.418	0.302
	0.25m Single Outreach	8	0.237	0.213	0.19	0.141
	0.50m Single Outreach	8	0.171	0.153	0.136	0.099
<b>T081RLS</b>	Post Top	17	0.16	0.133	0.109	0.06
	0.25m Single Outreach	8	0.06	0.05	-	-

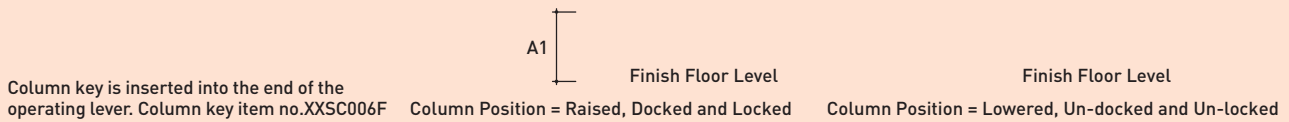
For complete information on column headloads refer to [www.abacuslighting.com/columns.asp](http://www.abacuslighting.com/columns.asp)

# COUNTERBALANCE UNITS

## TO OPERATE LIGHT DUTY BASE HINGED RANGE

### Spring Counterbalance - RLS168

The spring unit, type RLS168, is available in a range of coloured springs. Each spring type has a given capacity, based on the column height and maximum safe working load.

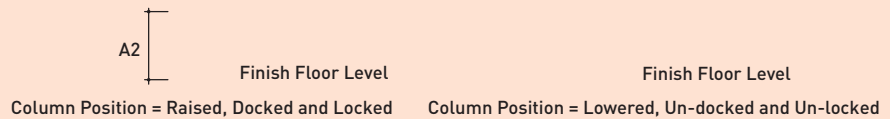


A1 Design height of the pivot above finished floor level is 300mm. If this distance is less than 230mm, difficulty in fitting counter balance will be experienced

### Hydraulic Counterbalance - RLH168

This hydraulic unit is popular with companies who have multiple column heights and headloads on one site or over a number of sites.

The advantage is that it can operate the full column range regardless of height and headload.



A2 Design height of the pivot above finished floor level is 300mm. If this distance is less than 250mm, difficulty in fitting counter balance will be experienced

Counterbalance Product Code	Column Height	Safe Working Load (kg)	Counterbalance Weights (kg)*
<b>RLS168-yellow</b>	4m, 5m	17, 10	22
<b>RLS168-red</b>	4m, 5m, 6m	27, 18, 10	23.5
<b>RLS168-blue</b>	6m, 8m	27, 18	25
<b>RLS168-green</b>	8m	17	26.5
<b>RLH168</b>	4m, 5m, 6m, 8m	27, 27, 28, 17	37.5**

\*Weight includes operating lever only when used with the light duty base hinged column range

\*\*Weight does not include operating lever (2.5kg for RLH168)

### Column Carrier - RL900M

#### Features

The Abacus Column Carrier System has been designed to safely and conveniently move base hinged columns and guide them into position for installation with minimum effort.

- Designed specifically for the root mounted spring raise and lowering column up to 168Ø and a minimum 6m mounting height
- Enables a column to be safely transported to its installation location and provides a stable platform for the column to be worked on, prior to erection
- The column carrier can be used by one man for moving columns to the installation site
- The column can be lifted into place safely and easily by two men

Note: See page 16 for further images of the product

## SPECIFICATION

SOLAR PANEL	4 x 14.0A @12vdc
BATTERY	6 x 150Ah Deep Cycle AGM, 12vdc
ON BOARD BATTERY CHARGER	40A / 230vac
RECHARGE TIME	11.2 Hours
RUN TIME FROM BATTERY	54 Hours
RUN TIME INCLUDING SOLAR POWER	Approx 100 Hours*
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MAST RAISE / LOWER TIME	12 / 18 secs
MAST ROTATION / ACTUATION	360° / Hydraulic - 24vdc Power Pack
HYDRAULIC SYSTEM (MAST DEPLOYMENT)	Bio-degradable Oil
MAST SAFETY SYSTEM	Deployment Alarm & Safety System
COMPLETE SYSTEM SHUTDOWN	Complete System Shutdown & Battery Isolator
TIMER & PHOTO-CELL CONTROL	Standard
STABILISERS	4 Wind Down Legs
LAMP SPECIFICATION	4 x 55W, 24vdc
LAMP TYPE	192 x 1.14W High Power LED
ROAD LIGHTS AND REFLECTORS	Standard
DIMENSIONS FOR TRANSPORT (LxWxH)	2585mm x 1450mm x 2135mm
DIMENSIONS FULLY DEPLOYED(LxWxH)	2845mm x 3985mm x 5500mm
WEIGHT	1050kg
TYRES	185/70R 13

\* Dependent on quality of sunlight & based on 8hrs operation within every 24hrs

