Street Lighting Products

NAL

A CRH COMPANY

Retention Socket Systems

The NAL Retention Socket system is a patented range of fittings developed to secure all types of illuminated and non- illuminated street furniture enabling a quick installation and removal with a key and a spanner. All Retention Sockets are manufactured with a cast steel or ductile iron top section and a range of base types to suit all applications. All furniture is secured into the socket by a stainless steel locking mechanism, located in a recessed side chamber in the top section of the socket. Available in sizes from 48mm to 410mm with a range of bases to suit all applications.





Duckfoot Bend

A one way duct bend offering bottom cable entry and 360 degree swivel with the ability to be shortened on site. This product is suitable for all directly cabled illuminated street furniture.



Shallow Foundation

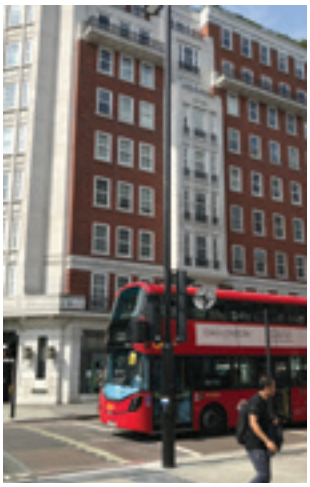
Manufactured with a strengthening plate and an overall planting depth of 200-300mm with an option of four bottom cable entry points. This product is suitable for both illuminated and non-illuminated street furniture installations with severe depth issues.



Tee Bend

A two way duct bend offering bottom cable entry and 360 degree swivel with the ability to be shortened on site. This product is suitable for all illuminated street furniture that is cabled in series.





Precast Foundations

Retention Sockets are supplied in a precast foundation which has been designed to suit the furniture being installed and also the ground conditions on site. Manufactured with high strength concrete and certified lifting points. The system is simply lifted into position, leveled and backfilled removing the need for wet trade on site.

Adapter Plate for Keep Left Bollards

The Retention Socket and Adapter Plate has been designed to fit all types of reflective flexible bollards. This unique socket allows damaged bollards to be removed and replaced within minutes and also enables customers to change to alternative bollard types in the future without any civils excavations.

Case Study

Product: **RS50x50, Keep Left Adapter**
Project: **Keep Left Bollard Installation**
Client: **Leeds City Council**

At the busy rural junction over the A58, (Whetherby Road), West Yorkshire, Leeds City Council chose the RS50x50 with an Adapter Plate for the installation of four "keep left" flexible bollards.

This product was chosen due to the high nature of collisions which have occurred on the road. The keep left flexible bollards are designed to be screwed down onto the adapter plate which mounts into the Retention Socket. If a bollard is damaged following a collision it can be removed and replaced in minutes with minimal traffic management.

Product Benefits

Installation Benefits
- Ability to be installed in shallow depth
- EN40 or BD9407 foundation design service
- Enables civils works to be completed without street furniture
- 360 degree bottom cable entry bend allows easier cabling works at ground level
- Enables furniture orientation change after installation

Additional Benefits (Precast Foundations)
- No requirement for wet trade on site
- Over 50% reduction in installation time
- Installation unaffected by weather conditions
- Enables immediate installation of furniture



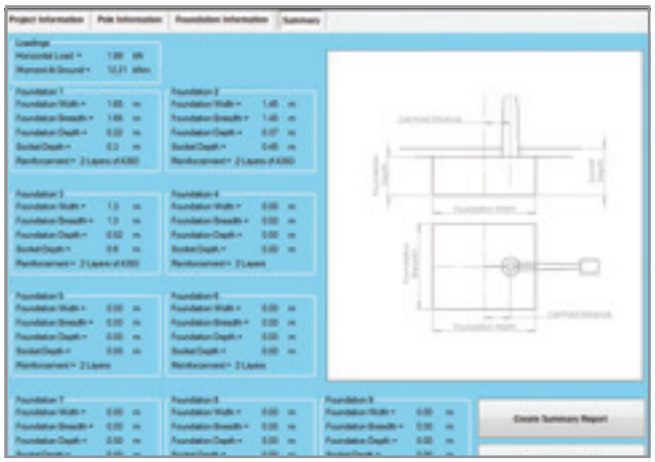

Maintenance Benefits
- Withstands unlimited impacts of any force
- Eliminates civils works on replacement of knockdowns
- Minimises disruption and traffic management cost during replacement
- Maintenance works can be carried out in a controlled environment
- Simplifies the erection and removal of seasonal street furniture



Future Benefits
- Allows public areas to be cleared for events
- New and upgraded technology can be installed quickly and cost effectively in existing Retention Sockets
- Increases the life expectancy of street furniture in Retention Sockets
- Simplifies the works involved with wide loads
- Retention Sockets have a life expectancy of 100 years. This allows for four street furniture life cycles


Free Foundation Design Service
NAL provide a free foundation design service for Retention Socket installations.

Foundations for either EN40 and BD9407 can be calculated for any non-standard installation.



Chamber and Duct Systems

STAKKAbox Modula™

The STAKKAbox™ Modula system is a range of preformed twin wall access chambers capable of withstanding vertical loads in excess of 40 tonnes without the requirement for any structural support. The system consists of 155mm deep stacking sections which form complete chambers of any depth. Chamber sizes range from 300² mm to 1200² mm clear opening and can be provided with or without pre drilled duct entry points of any size.

Product Benefits

- 40 tonne vertical loading
- Simple and quick installation
- No requirement for concrete surround
- Life expectancy in excess of 40 years
- Easily adapted to overcome services




MULTIduct™

MULTIduct™ is a range of preformed duct banks designed for the installation of ducts in shallow depths such as road crossings, bridges and tunnels. The system is manufactured from nitrogen foamed high density polyethylene resulting in a high crush resistance and loading strength. This enables the system to be installed in areas where traditional duct is not suitable. A wide range of fittings allow smooth connection from traditional duct into MULTIduct.

Product Benefits

- Tested to 100mm carriageway installation depth
- 50% more duct capacity
- Lightweight sections
- Rapid install, more cost effective than traditional ducting
- Available in a range of colours
- Fully recyclable


Steel Ducting

The Steel Ducting is a structural support system designed to house traditional twin wall duct. Tested to D400 it can withstand carriageway loading at depths as shallow as 100mm making it ideal for use in areas which have minimal cover.

Product Benefits

- High crush strength - tested to D400
- 100mm carriageway installation depth
- Eliminates risks of future cable strikes
- No requirement for earthing
- Smooth internal wall eliminates cable snagging
- Complete system with full range of components

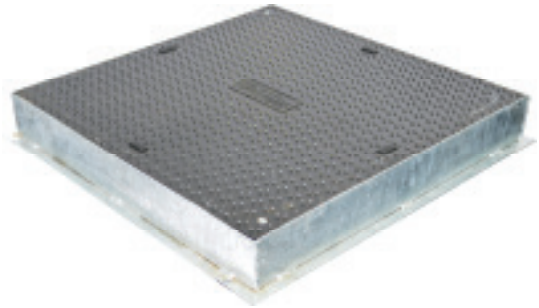

Manhole Covers and Frames

Composite Cover

A range of lightweight anti slip composite manhole covers available in both 12.5T (B125) and 25T (C250) loading. All covers weigh less than 25kgs and are supplied with a extra deep galvanised steel raising frame.

Product Benefits

- Lightweight for solo lift
- High slip resistance value
- Min. 80mm frame depth = no mortar surround required
- Frames can be secured to chamber
- No inherent scrap value

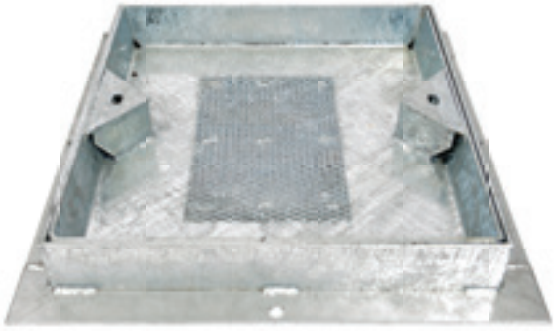


Recessed Cover

A range of covers with a single person slide out recessed tray manufactured to EN124 B125 and Kitemarked. Recessed trays are manufactured in galvanised steel with a variety of depths to suit the infill material and available in standard and bespoke sizes.

Product Benefits

- Central keyhole allow solo lift
- Tapered sides ensures easy slide out
- Expanded metal base ensures bonding of infill material
- Minimal exposed metal
- Manufactured from 6mm steel minimum



Ductile Iron Cover

A range of ductile iron covers manufactured to EN124 in A15, B125, C250 and D400 loading. Depending on loading, covers are available in lift out, slide out and hinged options.

Product Benefits

- Wide range of sizes
- Wide range of vertical load options
- Bespoke badging available
- Produced from high quality 500/7 grade ductile iron

Electrical Products

IP68 Plug and Socket

The IP68 Electrical Plug and Socket system is a range of pre-moulded IP68 watertight cable connectors developed for use with all highway street furniture. They enable quick, simple and safe connection and disconnection of electric cables feeding any illuminated furniture. The connectors can be moulded to a wide range of cable types and sizes which are available with multiple circuit layouts. Each female connector is manufactured with a pre moulded cap which protects the connections when it is not in use or if it is being pulled through a duct network.

Product Benefits

- Ideal for seasonal events, wide load routes and high risk sites
- Manufactured to BSEN60309 and EN12767
- Completely water and dust proof - IP68 rated
- Available in 3, 4, 5, 6 and 16 pin
- Can be supplied moulded to a variety of cable types

IP68 Bottle Joints

The reusable cable joints are designed for use with single and multi-core highway electrical cables. The systems unique glanding mechanism eliminates the requirement for sealing resin or gel. This allows joints to be entered and resealed without specialist tools, heat sources or chemical protection being required. The joints can be supplied with a range of internal terminal blocks and the outer canisters are fully transparent.

Product Benefits

- Eliminates all COSHH requirements
- Simple entry, re-sealable without resin or gel
- Fully tested to IP68
- Transparent enclosure enables easy inspection

Feeder Pillar

The Feeder Pillar system enables pillars to be installed in the Retention Socket allowing civils works to be completed prior to the electrical installation. All pillars are manufactured from stainless steel, with a removable gland tray. This eliminates the requirement for a carcinogenic base seal. The system allows simple removal and future replacement.

Product Benefits

- Allows all civils works to be carried out prior to electrical installation
- Retention Socket enables 360 degree orientation of pillar
- Enables simple and rapid future upgrades
- Fully ducted system

SIS (Safety Isolation System)

The NAL Safety Isolation System (SIS) has been specifically designed to meet EN 12767:2007 in its requirement to completely electrically isolate any illuminated roadside structure in the event of a collision. This includes HE, LE and NE lighting columns, signposts and traffic signal posts as well as any non-passive structure. Each electrically powered structure is fitted with a small SIS impact sensor which in turn is connected to a SIS monitor unit. In the event of a vehicular impact, the sensor provides an output to the SIS monitor unit, which in turn produces an output to an electrical isolation unit, disconnecting all volts to the impacted structure. On activation all SIS monitor units produce a range of fault outputs which can be connected to any remote monitoring system (RMS) or Central Management System (CMS). The patented Safety Isolation System can be supplied in different formats:

SIS Pillar

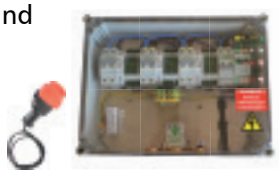
The SIS Pillar is an electrical isolation system specifically for lighting column and illuminated sign applications. The SIS Solo and Duo monitor boards are din rail mounted within a standard street lighting cabinet, providing electrical isolation to individual columns or circuits.

SIS Mini

The SIS Mini is an electrical disconnection system designed specifically for single isolation of illuminated columns. It consists of a single solo monitor board pre fitted within an enclosure and installed within a non-passively safe structure or mini pillar.

SIS Underground

SIS Underground is an electrical disconnection system designed specifically for isolation of 1 - 3 illuminated columns. It is housed within an IP67 enclosure and is located on an equipment shelf within an underground STAKKAbox Access Chamber near to the column or columns it is protecting.



Mechanical Only Breakdown Systems

MOBS is a physical termination for NE Passively Safe Columns. It is a minimum option for isolating the electricity supply to a single structure under impact. The system's activation relies on the physical disconnection on impact of a tethered in-line IP68 Plug and Socket. It can also be used as a local isolation point.

Product Benefits

General Benefits

- Fully compliant with EN12767:2007
- Officially and successfully tested at MIRA
- Disconnection time officially proven with timing device
- Suitable for use with NE, LE and HE passively safe columns
- Appropriate for use in non-passive columns

Design and Installation Benefits

- Wide range of above and below ground systems available to suit all site conditions
- Designed and built to your specification
- Simple installation onto din rail or 3U rack
- Design layout drawings and specifications provided
- Provides isolation of individual structures or circuits
- Installation simple to test and prove prior to commissioning

Operation Benefits

- Guaranteed complete electrical isolation of all volts within 0.2 seconds of impact
- System can operate with impact sensor located 3km from SIS monitor board
- Guaranteed isolation of all VOLTS even if the structure has not detached from its base
- Isolates all volts even if Impact Sensor is destroyed
- Automatic restart and recheck after power failure

Maintenance Benefits

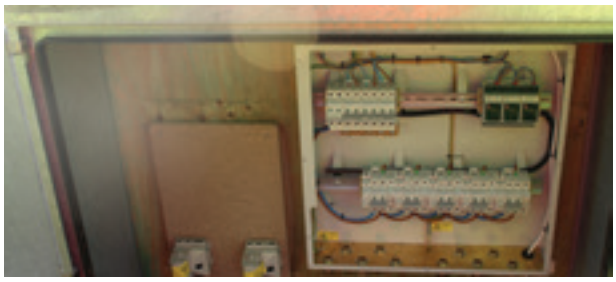
- Provides fault outputs for impact, voltage drop and other potential maintenance issues
- Impact sensors easily replaced after impact
- Simple means of re-energising circuit while impacted structure remains isolated
- Fault outputs can be connected to CMS or RMS systems
- Enables simple isolation of individual column for maintenance works
- Simple to test periodically

Case Studies

Product: SIS Pillar
Project: New Gate Lane West
Client: Hampshire County Council

Hampshire County Council specified the NAL SIS Pillar Electrical Disconnection System to be installed with all new passively safe street lighting columns on the New Gate Lane West project in Fareham. The road is a single lane carriageway with no crash barriers and a 60mph speed limit. The local authority incorporated the SIS Pillar system into the project to comply with Passive Safety legalisation EN12767. This safeguards the vehicle occupants and emergency service personnel at the scene of a road traffic incident.

Each lighting column is installed with an SIS impact sensor, this detects the force of a collision and activates the SIS monitor board located within the remote pillar. All volts to the impacted column are completely isolated within 0.2ms of the impact therefore ensuring occupants of the vehicle and attending emergency services are not at risk of electrocution. To simplify the replacement of knocked down columns NAL Retention Sockets were installed. Damaged columns are easily removed and replaced in a fraction of the time, saving the local authority time and money.



Product: SIS Pillar
Project: A1 Black Cat to Sandy
Client: ETDE

ETDE installed 362 lighting columns along 8km of the A1 between the Black Cat roundabout and Sandy. Within the scheme, there were 313 passive lighting columns, 13 new Feeder Pillars and approximately 80,000 metres of cable.

Due to a high water table within the area, ETDE specified the NAL SIS Pillar on above ground passively safe disconnection system in lieu of the traditional underground option. The system works with each passive column having an impact sensor. Upon impact, the sensor provides an open circuit to a monitor board within the feeder pillar and the circuit disconnects, isolating power to the damaged column making it safe.

Bollards

X-Last Illuminated

The X-Last Illuminate range is manufactured in a unique translucent polymer which enables an underground waterproof uplighter to light the bollard without the loss of any of its impact or safety benefits. Available in five colours and supplied as standard with a socket which houses the uplighter.

Product Benefits

- 200mm root depth
- EN12767 passively safe test result safety rating of NE4
- Head Injury Criterion (HIC) test @ 40kph - results show X-Last Bollard is 50% under irreversible injury figure
- Translucent material allows entire bollard to illuminate
- Withstands repeated impact with loads of 200-490kgs (depending on type) without loss of rigidity

Weebol Bollard

The Weebol Bollard is a robust reflective flexible bollard which fits directly into the Retention Socket without the need for an adapter plate. It utilises a unique flexible base which is designed to withstand multiple impacts without damage. Reflective panels are recessed to limit the damage to the panel during severe impacts.

Product Benefits

- Tough one piece moulded construction
- Simple installation of socket prior to bollard
- Anti twist design
- Retention Socket ensures simple replacement
- Rebated panels protect reflective material
- Withstands multiple impacts
- No power requirement

Case Study

Project: **Illuminated Cycle Routes**
Product: **X-Last Nuvo Sign (illuminated)**
Client: **Manchester City Council**

Manchester City Council has utilsed the X-Last Nuvo Sign bollard for signposting cycle routes, providing optimum safety for cyclists in the event of a collision. The flexibility of the bollard ensures minimal damage is caused returning to it's original form within 30 minutes from impact. The bollards are installed in NAL Retention Sockets allowing a quick and simple removal and replacement when required. An LED up-lighter located below ground within the socket provides light to the cycle sign-face during evening hours.

Temporary Highway Products

Temporary Foundation

The Temporary Foundation system are a range of highly stable, and portable bases which secure all types and sizes of illuminated and non-illuminated street furniture during temporary construction works. All posts are locked in position with the Retention Socket system which is precast within the foundation. This eliminates the risk of unauthorised removal or rotation of the furniture.

Product Benefits

- Highly stable bases designed to EN40
- Furniture secured in place with Retention Socket
- Certified lifting points / mechanism ensures safe movement
- Simple installation and removal of post
- Easily stored and re-usable

Temporary Cable Shroud

The Temporary Cable Shroud creates a void around the Temporary Foundation enabling the storage and protection of excess electric cables or associated equipment such as batteries. The system drastically reduces the requirement for traffic management around Temporary Foundations allowing improved public access during construction works.

Product Benefits

- Eliminates the need for traffic management around Temporary Foundations
- Reduces risk of personal injury claims
- Removes area traditionally used to discard litter
- Enables works programs to continue during public events
- Protects public from exposed cables

Guardian Access Ramp

The Guardian Access Ramp has been developed to overcome the common issues found with traditional ramps used for temporary access. Traditional tarmac ramps are both time consuming and disruptive to install and remove. Alternative ramps often use a raised edge design or have no sides at all, creating a hazard.

The Guardian Access Ramp has been designed with side access on either end, dramatically reducing the risk of slipping. The ramps modular design enables the overall width to be increased with additional sections to suit the site requirements, while the height is fully adjustable to fit different kerbs.

Product Benefits

- Main ramp complete with side ramps
- No raised edges
- Adjustable height
- PTV (skid resistance) rating of 64.1
- Modular design
- Easily stored
- Re-usable

Guardian Road Barrier

The NAL Guardian Barrier system is an innovative temporary traffic management barrier developed to provide a reusable, lightweight, flexible barrier.

The system is telescopic and designed to be fitted to standard traffic cones enabling a single barrier the flexibility of closing an area from 2 to 6 metres. Constructed from high strength lightweight fibreglass, the Guardian Barrier enables a single operative the ability to deploy the system in under 2 minutes.

Product Benefits

- Flexible telescopic system (2 to 6 metres)
- High strength and stability
- Lightweight - one person lift
- Simple attachment to standard traffic cones
- Fast and easy installation by one person
- Highly reflective and visible at night and in poor weather conditions
- Completely reusable
- Small storage footprint

Case Studies

Product: **RS193 Retention Socket**
Project: **Street Lighting Scheme**
Client: **Calderdale Council**

The NAL RS193 Retention Socket has been recognised by Calderdale Council as a more efficient alternative to traditional column installation, overcoming depth issues caused by congested foot-ways as well as providing a significant improvement on column maintenance.

To further overcome issues encountered with traditional installations the base of the Tee Bend rotates 360 degrees allowing cabling to feed from any direction, making the system the ideal solution for linking multiple street lighting columns.

Product: **STAKKAbox Modula**
Project: **Ketch Island, A38**
Client: **Worcestershire County Council**

During a year long project to revamp the A38 Ketch Island, Worcestershire County Council chose the NAL STAKKAbox Modula Access Chamber system to assist with carriageway installations.

The STAKKAbox removes the need for high maintenance brick built chambers as it's composed of a strong yet light-weight, pre-formed, patented twin wall construction. By utilising this system the contractor was able to fully establish the required access chambers in less than half the time required to construct a brick chamber saving time and expenditure.

Case Studies

Product: **Temporary Foundation**
Project: **Paddington Redevelopment**
Client: **Transport for London (TFL)**

During the Crossrail Paddington project, major redevelopment works along Praed Street and Eastbourne Terrace meant a permanent street light which had to be removed.

In its place an NAL Temporary Foundation was used to house a lighting column until the project is completed.

The client required a secure footprint which enabled power to be fed to the column. Made to the customers specification the foundation was manufactured with four certified lifting points and forklift lifting voids to simplify transportation. To house the column an RS168 Retention Socket with Duckfoot Bend was set into the concrete block allowing ducting to be fed from underground up to the column.

Once the Crossrail project concludes the foundation can be transported into storage ready for future use.

Product: **SIS Pillar**
Project: **Passively Safe Lighting Columns**
Client: **Doncaster Council**

Doncaster Metropolitan Borough Council chose the NAL SIS Pillar electrical disconnection system for installation of the passively safe street lighting columns on the Balby roundabout renewal project. By utilising the system the project and local authority is fully compliant with EN12767.

The local authority specified passively safe lighting columns due to the history of regular road traffic accidents at the site. The authority chose the SIS Pillar system as it allows easy and safe access for maintenance personnel. A SIS impact sensor was installed within each lighting column which upon impact activates the SIS monitor board located within the pillar, isolating all volts to the column within 0.2ms of the impact. With the column isolated rescue crews and maintenance operatives can safely work on site during an impact.

Due to the high level of impacts on this site all the columns were installed in the NAL Retention Socket system. This enables the rapid replacement and re-cabling of columns, removing the need for costly and disruptive excavations.

Training Opportunities



Systems and Solutions – Training Day *

Held at our National Infrastructure Centre in Worcester, attendees will hear from leading highways infrastructure experts to gain an in-depth understanding of systems and solutions, designed by NAL and other leading innovators, to support product installations. In addition, delegates will observe systems in action via a live demonstration conducted within our fully operational street scene, to prove product performance in real life situations, to see how they work and the benefits they afford. All sessions are IHE accredited with CPD points awarded to all in attendance and a full buffet lunch, along with refreshments, will be provided with our compliments.

Lunch and Learn *

The perfect option for those with time constraints and travel restrictions. A member of our technical team will visit your premises to deliver a concise presentation surrounding the latest innovations; tailored specifically to your requirements. Upon completion and if external space allows, our mobile demonstration unit ensures delegates are able to witness solutions presented in action, to further enhance understanding. Provided with a complimentary buffet and refreshments, CPD accredited sessions are held during your lunch hour.

Toolbox Talk *

Experience a best practice installation alongside one of our technical experts, who will join your team on site to provide full product and installation training. Offered at a time to suit, site operatives can expect to gain an increased understanding of how products should be installed and utilised for optimum effect, coupled with the opportunity to discuss and witness demonstrations surrounding product maintenance and removal.

Webinars

Delivered remotely and designed in direct response to the implications caused by Covid-19, CPD accredited sessions presented by our technical team, ensure delegates remain informed of the latest solutions to support existing and future projects. Convenient and providing the opportunity to network and connect with members of our industry, a variety of sessions are available weekly, with downloadable supporting documents including product data sheets and technical drawings.

Bespoke Training *

NAL can accommodate and provide bespoke training packages upon request. Please contact us to discuss your needs in order for us to create a presentation specific to your requirements.

Reserve Your Place

All training sessions are provided free of charge. Secure your place via one of the following:

Website – www.nal.ltd.uk Email – info@nal.ltd.uk Phone – 01905 427100

* **With restrictions in place to control the infection rates of Covid-19, certain training packages may not be fully available at present. Throughout the pandemic we have delivered sessions remotely and will continue to do so. In the event of restrictions easing, our paramount concern is the safety of our delegates and employees, therefore please rest assured all training packages will be delivered in strict adherence to national perimeters.**

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