Motorway Communication Products

NAL

A CRH COMPANY

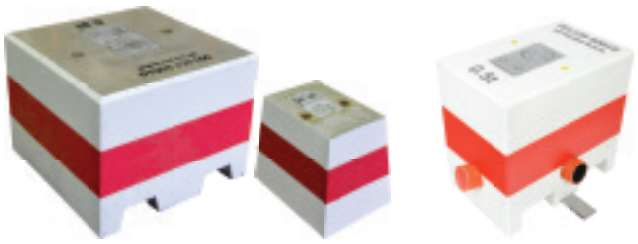
Temporary Highway Products

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 motorway infrastructure 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 infrastructure.

Product Benefits

- Highly stable bases designed to EN40
- Furniture secured in place with Retention Socket
- Certified lifting points 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 access during construction works.

Product Benefits

- Safe storage of excess cables and/or additional equipment
- Protects equipment from site vehicles
- Reflective banding ensures high visibility at night
- Reduces risk of equipment / cable thief

Temporary Controller Base

The Temporary Controller Base has been designed to enable all types of traffic signal and highway electrical cabinets to be surface mounted during temporary construction works. The systems plinth and gland tray ensure the cabinets are sealed and vented while offering a stable footprint.

Product Benefits

- Louvered ventilation and cable gland tray ensures no moisture build up
- Lifting eyes for ease of transportation and installation
- Stainless steel construction gives 25 year+ life expectancy
- Reuseable
- Available for all types of highway cabinets

Guardian Goalposts

The NAL Guardian Goalpost is a lightweight, non-conductive, telescopic red and white post which conforms to GS6 avoidance of danger from overhead electric power lines. The system is easily transported in and around the site and can be set up within minutes by one person.

Product Benefits

- Fast and easy one person installation
- Lightweight and extremely transportable
- Fully compliant with GS6
- Available with cantilever arm, bunting and solid crossbar
- Easily stored and reusable

Illuminated Bunting

The NAL Illuminated Bunting System is a lightweight illuminated cable which is used in conjunction with NAL Guardian Goalposts. This system ensures the Guardian Goalposts are clearly visible to operates at night and in adverse weather conditions without the requirement for additional lighting. Battery operated with a continuous operation time of 30 hours means there is no requirement for expensive mains power connection or generators. Waterproof and lightweight detachable power units can be recharged safely off site. Goalpost Bases can be supplied with secure housing for the power units to eliminate risk of theft of damage on site.

Product Benefits

- Lightweight Illuminated bunting
- Simple to fit to NAL Guardian Goalpost System
- Up to 30 hours of continuous illumination
- Small detachable power/ battery unit in IP67 enclosure
- Optional secure enclosure fixed to Goalpost Base
- Recharges within four hours

Case Study

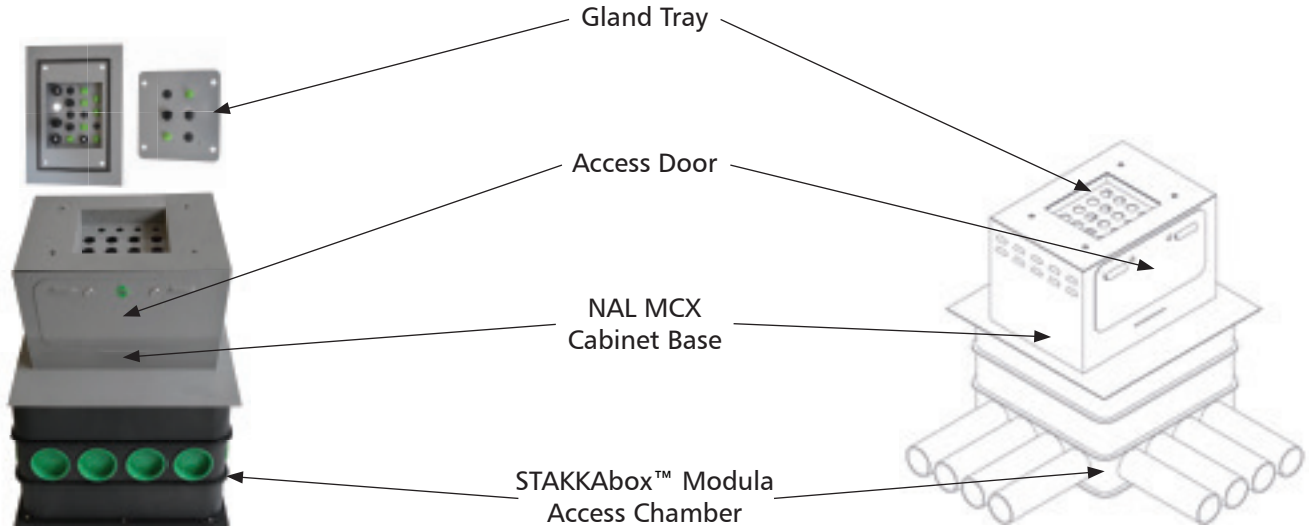
Project: **Smart Motorways M6**
Product: **GS6 Goalposts (Bunting)**
Client: **Highways England**

Highways England utilised the NAL Guardian Goalposts during the Smart Motorway project on the M6 from junctions 16-19, to ensure workers were aware of overhead power lines.

The poles are manufactured from non-conductive glass reinforced polyester resin making the Guardian Goalposts strong and lightweight enabling simple assembly by a single operative. Height adjustment is made easy with the Guardian Goalposts telescopic construction and a red and white finish ensures maximum visibility on site.

Cabinet Bases

The NAL Cabinet Base is a patented product designed to simplify the installation, maintenance and upgrading of all roadside control cabinets. The system consists of three main components, an underground structural access chamber, a cabinet base plinth and a cable gland tray. The product seals all incoming cables and also provides ventilation to all cabinets. The cabinet base also provides future access to the incoming cables by authorised personnel. The cabinet base system is manufactured from stainless steel and can be manufactured to suit any cabinet type or size with gland trays to suit any cable size or configuration.



MCX Cabinet Base

The MCX Cabinet Base is an alternative product to the traditional 610 plinth. The system removes many of the installation hazards and problems associated with the traditional 610 plinth, simplifying the civils installation and cabling of 609 and 600 MCX cabinets whilst allowing for future change. The system reduces installation time by up to 50%.

Multi Cabinet Base

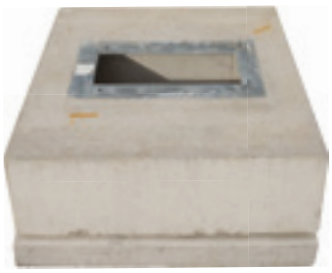
The Multi Cabinet Base has been designed to simplify the installation, upgrading and replacement of all multi cabinet sites. The STAKKAbox™ Ultima Connect provides the flexibility and structural strength to build a single access chamber to suit any type and size of multiple cabinet site. The single access chamber reduces the cabinet footprint while simplifying the civils installation and cabling between cabinets.

Combined Cabinet Base

The Combined Cabinet Base is a patented system designed to simplify the installation, cabling, and maintenance of all ICEE Combined Communication Cabinets. A single ICEE Combined Cabinet provides the equivalent equipment space to three 600 type and one 609 type cabinets. This offers a large reduction in the required cabinet footprint making it ideal for sites with verge restrictions. The system is available for single or multiple cabinet sites.

Conversion Cabinet Base

The Conversion Cabinet Base enables the upgrade of communication cabinet sites installed in traditional 610 plinths. The conversion plinth secures directly to the traditional 610 plinth allowing cables to be accessed through two above ground doors. Cables enter the base of the cabinet through a pre-drilled gland tray which removes the requirement for base seal on 600 cabinets and pea gravel on 609 cabinets.



Cabinet Bases

Case Study

Project: M6 Smart Motorway Project
Product: NAL MCX Cabinet Base
Client: Highways England

The NAL MCX Cabinet base was chosen by Keir for all the Communications (600 type) and Power (609 type) cabinets on the M6 Junction 16- 19 Smart Motorway Project. The NAL system was chosen as it simplified the civils and cabling installation process as well as future proofing the cabinets for the NRTS after the scheme is completed.

The system increases the duct capacity to and between each cabinet, and removes the requirement for base seal and pea gravel. All incoming cables are easily accessible and sealed with IP67 glands at the base of the cabinet.

Case Studies

Product Benefits

Civils Installation Benefits

- Increases incoming duct capacity by up to 400%
- Simple horizontal duct connection from all directions
- Eliminates the requirement to bend incoming ducts vertically
- No requirement for specialist lifting equipment
- Lightweight, adaptable, structural access chamber enables simple installation in congested sites
- Removes the requirement for additional access chamber in front of cabinet
- Reduces installation time by up to 50%
- Separates civils and cabling works
- Enables traffic management removal and public access on completion of civils works



Cabling Installation Benefits

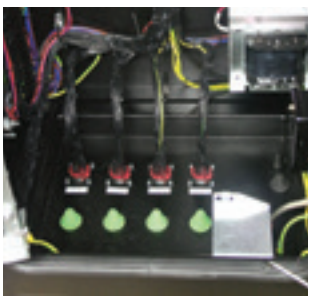
- Eliminates the requirement for base seal, pea gravel, clay balls etc.
- Removes requirement for duct bungs
- Provides IP66 / 67 seal to incoming cables
- Removes cable snagging points
- Simplifies cable installation
- Reduces risk of cable theft during installation work
- Installation time reduced by up to 50%
- Improved working height for installation and maintenance engineers
- Eliminates risk of underground gas builds up
- Removes risk of condensation to cabinets




Future Benefits

- Gland trays provide over 25% spare capacity
- Simple addition or removal of future cables in a fraction of the time and cost over traditional installations
- Allows simple upgrade to plug and play system
- Eliminates risk of flooding to cabinets
- Removes risks of rodent infestation



Chamber and Duct Systems

STAKKAbox™ Modula B, C, Loop and T Chambers

The NAL 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. Available in 750x675mm (B Chamber), 600x450mm (C Chamber), 450x450mm (Loop Chamber) and 300x300mm (T Chamber). Chambers can be provided with or without pre-drilled duct entry points of any size.

B C T Loop

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

STAKKAbox™ ULTIMA 'A' Chambers

STAKKAbox™ ULTIMA offers a flexible access chamber system with no compromise on strength. Due to the design and material used (Glass Reinforced Polyester Resin), ULTIMA should be used anywhere where sidewall loading is a concern, making it ideal for motorway installations. Available in A Chamber dimensions (1300x850mm) with all the appropriate access and cable management pre installed.

Product Benefits

- No requirement for concrete surround
- Simple and quick installation
- Fully adaptable on site
- Life expectancy in excess of 40 years
- Wide range of chamber dimensions
- 60 tonne vertical loading

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.

Product Benefits

- Tested to 100mm carriageway installation depth
- 50% more duct capacity
- Lightweight sections
- Rapid install, more cost effective than traditional ducting

Steel Ducting

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
- Smooth internal wall eliminates cable snagging
- No requirement for earthing
- Complete system with full range of components

Manhole Covers and Frames

Ductile Iron

Ductile Iron Covers are manufactured to BS EN124: D400 and the National Highway Authorities HA 104/09 specification with BSI third party certification. Manufactured in high quality 500/7 grade Ductile Iron, each cover has a life expectancy of over 50 years. Covers are supplied in A and B type, embossed Motorway Communications, with triangular leafs which hinge to one side for simple one person lift and entry.

Product Benefits

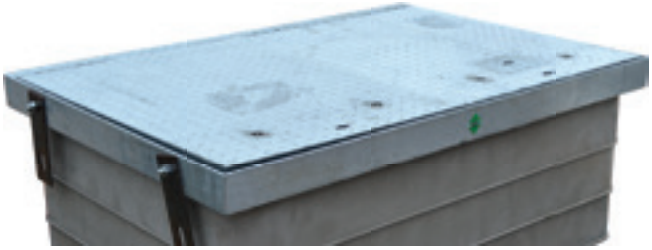
- Wide range of sizes
- Wide range of vertical load options
- Bespoke badging available
- Produced from high quality 500/7 grade ductile iron

Assisted Lift Galvanised Steel LPCB Cover

Galvanised Steel Solid Top Covers designed to withstand a five tonne slow moving wheel load are suitable for verge installations protected by VRS. All steel is hot dip galvanised to EN1461 to offer a life expectancy in excess of 25 years. Available to suit MCX A and B type chambers, all covers are manufactured with torsion spring assisted lift to enable simple one person lift and access. Covers can be provided with LPS1175 – SR3 security rating if required.

Product Benefits

- Available for A and B Chamber sizes
- One person lift single spring assisted cover with safety staybar
- Available in loading class B
- Available with LPS1175 –SR3 (Issue 7)
- Recessed locking point for NRTS padlock
- Covers badged “Motorway Communications”



Retention Socket Systems

The NAL Retention Socket system is a patented range of fittings developed to secure all types of motorway infrastructure such as; Street Lighting, ROTTMs, ERTS, Cameras, Radar, CCTV, Countdown Markers, VMS, Weather Stations, Illuminated and Non-Illuminated Signage. Infrastructure can be quickly installed, reducing the time on site.

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 infrastructure 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.





Precast Foundations

NAL Precast Foundations are ideal for use on motorways, significantly reducing installation time and the need to use wet concrete on site. Retention Sockets are supplied in a precast foundation which has been designed to suit the infrastructure 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, levelled and backfilled removing the need for wet trade on site.

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 motorway infrastructure.

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 motorway infrastructure that is cabled in series.

Non-illuminated

A flat base with no provision for cable entry but has the ability to be shortened on site. These are suitable for any type of non-illuminated infrastructure.

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 infrastructure installations with severe depth issues.

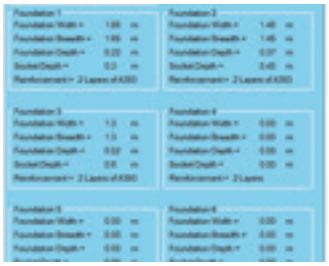
Adapter Plate

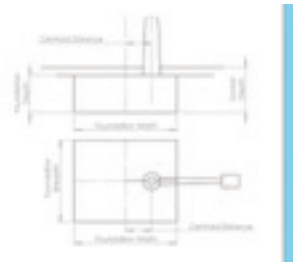
Enables all types of surface mounted highway furniture to be secured in the Retention Socket system. Available in all sizes and types, adapters are suitable for illuminated and non-illuminated infrastructure and are made to suit the specific fixing points and positions required.

Product Benefits

Installation Benefits

- Ability to be installed in shallow depth
- Free EN40 or BD9407 foundation design service
- Enables civils works to be completed without infrastructure
- 360 degree bottom cable entry bend allows easier cabling works at ground level
- Enables future 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 infrastructure
- Reduces amount of wet concrete on site

Maintenance Benefits

- Withstands unlimited impacts of any force
- Eliminates civils works on replacement of knockdowns
- Minimises disruption and traffic management cost during replacement
- Maintenance work can be carried out in a controlled environment

Future Benefits

- New and upcoming technology can be installed in existing Retention Sockets quickly and cost effectively
- Increases life expectancy of infrastructure installed in Retention Sockets
- Retention Sockets have a life expectancy of 100 years

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 Quad

The SIS Quad is an electrical isolation system designed specifically for traffic signal installations. The SIS Quad monitor unit provides four channels of monitoring, allowing isolation to four separate structures. It fits on a standard 3U rack within a control cabinet. Columns are fitted with SIS Sensors which detect any vehicular impact enabling the system to isolate all volts to the affected pole.

SIS Pillar

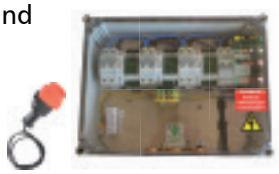
The SIS Pillar is an electrical isolation system specifically for lighting column and illuminated sign applications. The SIS Solo and Duo monitor boards are din rail mounted within a standard street lighting cabinet, providing electrical isolation to individual columns or circuits.

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.



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

IP68 Bottle Joints

The IP68 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 transparent.

Product Benefits

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

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 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 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

Additional Products

Rotating Mast Arm

The NAL Rotating Mast Arm has been specifically designed to eliminate the need for expensive and disruptive traffic management and lane closures during essential maintenance works. A unique operating mechanism within the Mast Arm allows it to rotate through 180 degrees, enabling maintenance to be carried out safely off the carriageway.

Product Benefits

- Simple installation in Retention Socket or cradle
- No requirement for traffic management and lane closures
- Increases contractor safety during maintenance
- Available in 5m - 10m outreach

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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