



EV Charging Infrastructure Solutions



A CRH COMPANY



Universal EV Foundation

The NAL Universal EV Foundation has been designed to secure all types of EV charge units from any manufacturer. The system utilises a NAL Retention Socket system installed at the civil stage, leaving the footway open to the public and free from any trip hazards. Installation of the charge units is carried out by installing the appropriate manufacturer's adapter plate into the Retention Socket, easily accessing the required utility cables and securing the charging unit onto the adapter plate.

The system simplifies the cabling installation and provides future-proofing as it allows charge units to be replaced quickly and easily if damaged or if upgrades are required.

High Power Charger (HPC) Foundation

A universal system designed to accommodate all manufactured and bespoke high-power EV charging dispenser units. This system facilitates the use of cables up to 240mm² and is fully futureproofed to allow for replacements, upgrades and any additions required in the event of damage, advancements in technology and increased demand.

Utilising the NAL Retention Socket allows installation in advance, this solution is provided with a range of adapter plates to accommodate standard and bespoke designs. The relevant adapter plate is then installed within the Retention Socket and the charge unit is secured, to provide an easy and improved access to utility cables.



Rapid Charger Foundation

Providing a universal foundation for all manufacturers of EV Rapid/Ultra Rapid Charge Units. This system incorporates the NAL Retention Socket and is available with a range of adapter plates to fit bespoke designs and accommodate all manufacturer-specific units. It can be installed at civils stage and prior to the delivery of units. If necessary, Retention Sockets are sealed with a pedestrian plug to ensure footways remain free of trip hazards and open to the public.

When ready for utilisation, the relevant adapter plate is simply installed within the Retention Socket and the charge unit is secured to the adapter plate, to provide easy and improved access to utility cables. The foundation is fully future-proofed to allow for upgrades to keep pace with evolving technology and allows for fast and straightforward replacements.



Fast Charger Foundation

Created to simplify the cabling and installation process, whilst future-proofing all installations, the NAL Fast Charger Foundation is a Universal System which utilises a standard NAL Retention Socket; this can be installed at civils stage and sealed until required. Dispensers can be surface mounted, by installing the manufacturers' specific adapter plate into the Retention Socket and then bolting the dispenser to the plate or, alternatively, can be installed directly.

Providing an improved access to all utility cables for maintenance purposes, the system also facilitates upgrades to accommodate advancements in technology; whilst affording the capacity for increased demand and allows for a swift replacement of units if necessary.



Working with Manufacturers

NAL work alongside EV OEM's to ensure the optimum solution is reached. To meet customers requirements our technical department establish the criteria of each installation site, asking the following:

- ◆ What is the configuration of the EV charger units
- ◆ Site restrictions i.e. available working area
- ◆ Cable size used to charger unit manufactures
- ◆ Intent to upgrade to high power units in the future

If an adapter plate is required for surface mounted charging units then the technical department will liaise with the manufactures to study the footprint of the charging unit so the appropriate adapter plate is designed.



Adapter Plate for EV Dispensers

EV dispenser adapter plates are designed to fit all types of EV charging units which require a surface mounted installation. Each adapter plate is a bespoke design corresponding to the unique footprint of a charger unit. A spigot insert is incorporated into the design allowing the adapter plate to be directly installed into a NAL Retention Socket.

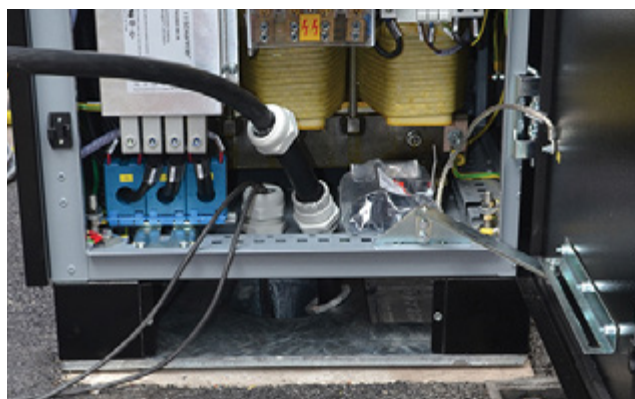
Who we have worked with

- ◇ ABB
- ◇ Swarco
- ◇ Alfen/Allego
- ◇ BP Pulse
- ◇ Efacec
- ◇ Freewire
- ◇ Tritium
- ◇ Kempower
- ◇ StarCharge
- ◇ Alpitronic
- ◇ Rolec



Product Benefits

- ◇ Shallow depth requirements reduce the amount of wet concrete – eradicating associated inconvenience and cost
- ◇ No lost time incurred waiting for manufacturers specific foundation fixings
- ◇ No requirement for costly excavation work in the event of upgrade or damage
- ◇ Foundations can be installed ahead of time to meet future increased demand
- ◇ No lost time incurred due to conflicting schedules
- ◇ Duct entry points cater for multiple cable sizes
- ◇ Provides simple and improved access to cabling, reducing installation and maintenance times
- ◇ Eliminates the risk of chargers not being landed due to installation issues with traditional foundations
- ◇ Pedestrian plug avoids disruption to the public or any health and safety implications





Cabinet Bases

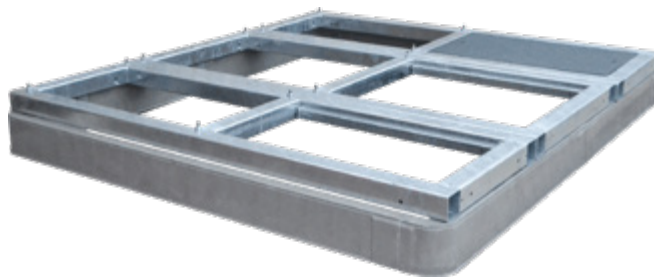
A modular solution, where one chamber provides a secure foundation for singular and multiple cabinets of varying specifications. Universal in its design, to accommodate all EV charging cabinets, the NAL EV Charging Base System facilitates an improved civils installation and cabling process and allows for both phases to be undertaken separately.

Fully future-proofed, this versatile system will accommodate upgrades; whilst providing improved accessibility to equipment and cable for ongoing maintenance requirements.

EV Cabinet Base

The STAKKAbox Ultima Connect Access Chamber provides the system with a positively ducted base and modules for each cabinet are positioned, bolted and secured to the top of the STAKKAbox.

Modules provide an area to place applications, including transformers and power/ communications cabinets, with a second area positioned in front of the cabinet - allocated for a composite manhole cover - to facilitate superior access to cables and equipment.



Product Benefits

Installation Benefits

- ◇ Modular construction eliminates wet concrete and associated problems
- ◇ 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 80%
- ◇ Separates civils and cabling works
- ◇ Enables traffic management removal and public access on completion of civils works



Product Benefits

Cabling Installation Benefits

- ◇ Eliminates the requirement for base seal
- ◇ Removes cable snagging points
- ◇ Simplifies cable installation
- ◇ Reduces risk of cable theft during installation
- ◇ Installation time reduced by up to 50%
- ◇ Improved working height for installation and maintenance engineers
- ◇ Removes risk of condensation to cabinets



Future Benefits

- ◇ 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
- ◇ Removes risks of rodent infestations





Retention Sockets for Illuminated Furniture

The NAL Retention Socket with Duckfoot Bend is a range of galvanised cast steel and ductile iron sockets which securely retain in position all types of illuminated street furniture posts. They are manufactured in a range of sizes and shapes to suit the wide variety of street furniture being installed on the highway today.

All posts are secured into the socket by stainless steel setscrews, located in a recessed chamber in the socket head, which locks the post/street furniture in place.

Duckfoot Bend

The Duckfoot Retention Socket is manufactured with a one way duct bend offering 360 degree swivel and cable entry through the base of the post.

It enables duct to be connected from any direction and with it's slow radius inner bend it simplifies the installation of cables to illuminated furniture. The Duckfoot bend accepts standard 100mm ID duct.



Product Benefits

Installation Benefits

- ◇ Ability to be installed in shallow depth
- ◇ Foundation design service to BS EN40 and BS EN12899 and the requirements of CD354
- ◇ Enables civils works to be completed without street furniture
- ◇ 360 degree bottom cable entry bend allows easier cabling works at ground level



Product Benefits

Maintenance Benefits

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



Future Benefits

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





Retention Sockets for EV Charging Furniture

Utilised to install signage and protective bollards and specified to enhance the longevity of EV Charging equipment, the NAL non-illuminated Retention Socket enables a swift and improved installation process, whilst facilitating a simple removal and replacement to optimise space or, in the event of collision, with a key and spanner.

With the capacity to be shortened on site, Retention Sockets can be installed prior to the arrival of furniture and can be sealed with a pedestrian plug, to eradicate trip hazards, guaranteeing sites remain operational.

Non-illuminated

NAL Retention Sockets are manufactured with a flat base, in cast steel or ductile iron, then galvanised. A stainless-steel locking mechanism, located within the side chamber, secures furniture in place. With no requirement for cable entry, sockets are suitable for all types of non-illuminated street furniture and are provided with a lifetime foundation warranty.



Product Benefits

Maintenance Benefits

- ◇ Bollards and signage can be demounted from the Retention Sockets to allow access for the maintenance of EV chargers
- ◇ Withstands unlimited impacts of any force
- ◇ Eliminates civils works on replacement of knockdowns
- ◇ Enables furniture orientation change after installation
- ◇ Minimises disruption and traffic management cost during replacement
- ◇ Maintenance works can be carried out in a controlled environment



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
- ◇ Enables furniture orientation change after installation
- ◇ Provides ease of access and installation of any EV chargers
- ◇ Bollards can be either demounted from the Retention Sockets or simply installed following the EV charger installation



Future Benefits

- ◇ New and upgraded technology can be installed quickly and cost effectively in existing Retention Sockets
- ◇ Allows public areas to be cleared for events
- ◇ 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





Bollards

The safest, most durable and maintenance free bollard within the marketplace due to manufacture from a unique polymer material, the NAL X-Last Bollard ensures maximum protection of EV equipment from vehicular impact; whilst preventing unauthorised access.

Designed to withstand multiple impacts in the event of collision and rebound to form within 30 minutes, motorists are highly unlikely to sustain serious injury, a stark contrast when compared to its traditional steel counterpart.

X-Last Standard

Manufactured from a non-corrosive material, hence zero maintenance expenditure, the X-Last Standard is available in a range of modern and heritage designs; in a variety of colours with optional reflective banding; to meet specific requirements and compliment surrounding aesthetics.

Supplied with all fixtures and fittings options, bollards can be installed within NAL Composite Sockets to provide a fully demountable solution.



Benefits

- ◇ 200mm shallow root depth
- ◇ EN12767 Passively Safe tested with a safety rating of NE4
- ◇ Withstands between 100 and 1500 repeated 90 degree impacts in the same direction
- ◇ Resistance up to 900kg of force
- ◇ Virtually indestructible bollard



NAL Composite Socket

Designed specifically to install the X-Last Range, the NAL Composite Socket is protected by a locking pedestrian cover, to prevent unauthorised access.

The system facilitates a simple and swift removal of bollards, by authorised personnel, to provide uncompromised access to equipment for maintenance purposes.

Product Benefits

- ◇ 200mm Installation depth
- ◇ Small foundation required
- ◇ Suitable for both illuminated and non-illuminated applications



Flexible Satellite EV Charging Bollard

The ideal solution for housing roadside EV charging units, the Flexible Satellite EV Charging Bollard, guarantees ultimate protection against damage from vehicular impacts, due to its uncompromising strength and durability.

Utilising a smart cable, eradicates the need for metre or comms connection and the system has no requirement for earthing.

Product Benefits

- ◇ Flexible X-Last bollard withstands all impacts without loss of strength
- ◇ Utilises excess power from existing street lights
- ◇ Smart cable eliminates the need for metre or comms connection
- ◇ No requirement for earthing





Access Chambers

Designed and manufactured to provide unrivalled levels of access to equipment, NAL Access Chambers are lightweight and eliminate all risks associated with manual handling.

Specification guarantees significant cost savings, when compared with traditionally constructed concrete or brick-built chambers, and systems can be provided with the NAL EN124 Recessed Cover to match surrounding aesthetics – removal of which is straightforward requiring a one person lift and slide.

STAKKAbox™ Modula

The STAKKAbox™ Modula system range of preformed, twin wall access chambers, consisting of 155mm deep stacking sections to form complete chambers of any depth. A range of sizes from 300 x 300mm to 1200 x 900mm are available, to provide a clear opening and systems can be specified with, or without pre-drilled duct entry points, of any size. Facilitating installation, without concrete in certain instances, the system affords a quick and cost-effective construction; whilst improving build quality and reducing defects to provide enhanced site safety and performance.



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 existing services



STAKKAbox™ Ultima Connect

Manufactured from high strength GRP in 150mm deep stacking sections, the STAKKAbox™ Ultima Connect consists of straight side walls and curved corner pieces, connected via a locking pin. Each section is castellated to positively interlock with the section below, and corner pieces are manufactured in left and right 'handed' designs, affording the ability to offset joints between sections to enable a brickwork design. This improves sidewall performance and guarantees construction, on or off site, to any size.

Product Benefits

- ◇ 90 tonne vertical loading
- ◇ Modular solution to suit all chamber sizes
- ◇ Simple and quick installation
- ◇ No requirement for concrete surround
- ◇ Lightweight sections for manual handling
- ◇ Easily adaptable on site without loss of strength
- ◇ Life expectancy in excess of 40 years
- ◇ Fully recyclable





Cable Protection

Designed to house and provide unrivalled protection, our cable protection range is central to our integrated system approach to cable protection and chamber access. Incredibly strong yet lightweight, these modern protection systems are the best and most cost-effective alternative to traditional cable ducting methods on the market today.

Ideal for surface mounting or areas of restricted depth, sections are lightweight and deliver increased capacity for easier cable manipulation.

MULTIduct™

Manufactured from nitrogen foamed high density polyethylene, to produce a rigid duct system with a high crush resistance and loading strength, MULTIduct™ is a range of preformed duct banks designed to house and protect cabling. Suitable for the installation of service ducts and ideal for surface mounting or areas of restricted depth, MULTIduct™ has been extensively tested in order to determine the maximum loading on each unit section. Available in a range of colours, MULTIduct™ is quick to install, making it far more cost effective when compared to traditional ducting.



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



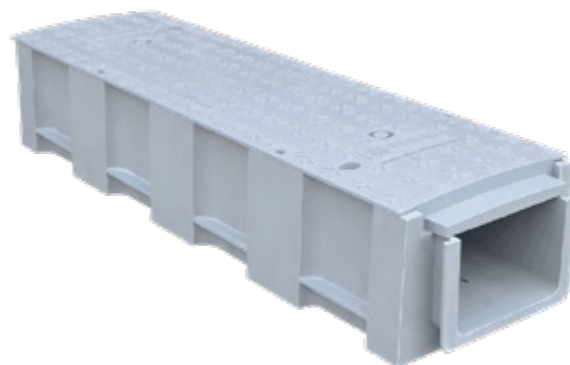
PROtrough

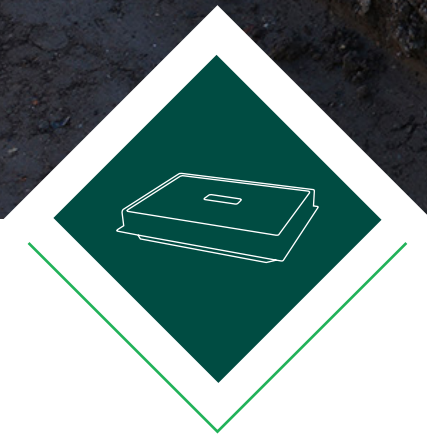
PROtrough is a GRP cable management trough that has been designed to comply with all European fire retardancy and thermal specifications, including those for tunnels and stations. The PROtrough has been designed to have no restriction on cable ambient operating temperatures and to eliminate the common heat distortion and thermal expansion issues associated with thermoplastic troughing systems. A cable divider panel enables multiple services to run alongside one another. PROtrough is modular and lightweight which enables convenient product deployment and installation throughout complex power facilities.



Product Benefits

- ◇ Superior structural integrity compared to thermoplastic alternatives
- ◇ Designed to comply with major European fire retardancy specification
- ◇ Eliminates common heat distortion and thermal expansion issues
- ◇ Extensive range of accessories to enable flexibility and ease of deployment
- ◇ Seamless integration with STAKKAbOX™ access chamber and cable protection systems



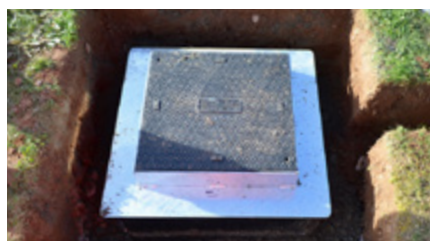


Access Covers

A range of cover and frame systems which are able to withstand greater vertical loadings than traditional counterparts. Specified with NAL Access Chambers, covers are lightweight to allow safe, one person handling and frames can be secured to chambers to provide ultimate stability – without the need for support from a concrete surround.

Composite Cover

Manufactured from glass re-enforced polyester resin, Composite Covers are produced in both B125 and C250 to withstand vertical loads of 12.5 Tonne and 25 Tonne, respectively. Standard sizes are available and supplied with a 90mm deep, galvanised steel raising frame; to allow installation of finished paving, without the need for a concrete fillet. Weighing less than 25kg, covers feature a tread pattern to the surface side to guarantee a high Slip Resistance Value (SRV) to enhance Health and Safety.



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



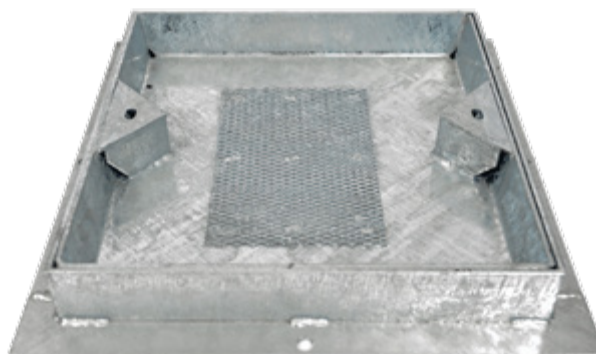
Recessed Cover

Designed with minimal metal exposure, to mask their presence and allow paving patterns to continue over access points, NAL's Recessed Cover will accommodate the aesthetics of any landscaped area. BSI Kitemarked and manufactured in accordance with EN124 – 1994 class and B125 (12.5T), covers are produced in galvanised steel. They are purposely designed to aid manual handling, featuring slide out covers with tapered sides, to allow a safe removal by one person. Supplied in a variety of depths to suit infill material, with standard and bespoke sizes available.



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



Training



Systems and Solutions

NAL provides free product training, focusing on both existing and the latest innovations to market in support of highway infrastructure.

Our CPD accredited Systems & Solutions Demonstration Day gives delegates the opportunity to hear detailed technical presentations and witness live product demonstrations carried out within our fully functional street scene. Held at our National Infrastructure Centre and delivered to you by our technical experts and other leading innovators within their field, days are free to attend and are supplied with a buffet lunch and complimentary refreshments served throughout.

Lunch and Learn

NAL provides free CPD product training, focusing on both existing and the latest innovations to the market, delivered during your lunch hour at your premises.

A member of our technical team will visit your premises and deliver a presentation tailored to your specific requirements. Utilising our mobile demonstration unit, attendees will be able to witness products discussed live in action and provided free of charge with a buffet lunch and refreshments, compliments of NAL.

Installation Training

Free on-site training is provided to educate attendees on the best practice for installation and future maintenance of their chosen NAL system.

A member of our technical team will visit your site and work with operatives involved in installing a NAL product. This 'hands-on' training approach will guarantee products are installed correctly and substantially reduce the risk of sub-standard installations. Site personnel will also witness demonstrations surrounding product maintenance and removal in the event of a collision.

Webinars

NAL provides free remote learning for our customers through a series of webinars.

Our webinars offer delegates a greater understanding of the solutions available to support existing and future infrastructure projects. Many are CPD accredited through the Institute of Highways Engineers (IHE). Attendees will hear detailed technical presentations along with the chance to put questions to our panel of experts. Convenient and providing the opportunity to connect with members of our industry, a variety of regular sessions are available, 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.

Training



Reserve Your Place

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

Website:

www.nal-ev.com

Email:

info@nal.ltd.uk

Phone:

01905 427100

EV Charging Infrastructure Solutions

NAL Ltd
Weir Lane
Worcester
WR2 4AY

T: +44 (0)1905 427100
F: +44 (0)1905 427030
E: sales@nal.ltd.uk

www.nal-ev.com

All materials are the copyright of NAL Ltd or are reproduced with permission from other copyright owners. All rights are reserved and may not be reproduced without express permission. NAL Ltd reserve the right to amend specifications or to withdraw models without prior notice. © November 2022



A CRH COMPANY