

# Forecourt Products



A CRH COMPANY



# Retention Socket Systems

The NAL Retention Socket system is a patented range of fittings developed to secure all types of forecourt furniture such as; Security Bollards, Street Lighting Columns, Illuminated and Non-Illuminated Signage, Guardrailing, EMS Signs, Jet Wash Screens, Flag Poles and EV Charging systems. 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.



## 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 forecourt 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 forecourt furniture installations with severe depth issues.



## Adapter Plate for Bolt Down EV Chargers

The Retention Socket and Adapter Plate has been designed to fit all types of rapid charge units. This unique socket simplifies maintenance and enables the charging points to be removed and upgraded in the future without any further civils excavations.





# 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 illuminated forecourt furniture.



## Product Benefits

### Installation Benefits

- ♦ Ability to be installed in shallow depth
- ♦ EN40 or BD9407 foundation design service
- ♦ Enables civils works to be completed without forecourt furniture
- ♦ Enables furniture orientation change after installation

### Forecourt Benefits

- ♦ Pouring concrete without hoop bollards create a large working area, simplifying the erection of the forecourt canopy
- ♦ Security bollards can be installed in Retention Sockets



### 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
- ♦ Simplifies the erection and removal of seasonal furniture



### Future Benefits

- ♦ New and upcoming technology can be installed quickly and cost effectively in existing Retention Sockets
- ♦ Simplifies the works involved with wide loads
- ♦ Increased life expectancy of furniture installed in Retention Sockets
- ♦ Retention Sockets have a life expectancy of 100 years



### Free Foundation Design Service

NAL provide a free foundation service for Retention Socket installations.

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

<b>Loadings</b> Horizontal Load = 1.99 kN Moment At Ground = 12.21 kNm			
<b>Foundation 1</b> Foundation Width = 1.65 m Foundation Breadth = 1.65 m Foundation Depth = 0.22 m Socket Depth = 0.3 m Reinforcement = 2 Layers of A393	<b>Foundation 2</b> Foundation Width = 1.45 m Foundation Breadth = 1.45 m Foundation Depth = 0.37 m Socket Depth = 0.45 m Reinforcement = 2 Layers of A393		
<b>Foundation 3</b> Foundation Width = 1.3 m Foundation Breadth = 1.3 m Foundation Depth = 0.52 m Socket Depth = 0.6 m Reinforcement = 2 Layers of A393	<b>Foundation 4</b> Foundation Width = 0.00 m Foundation Breadth = 0.00 m Foundation Depth = 0.00 m Socket Depth = 0.00 m Reinforcement = 2 Layers		
<b>Foundation 5</b> Foundation Width = 0.00 m Foundation Breadth = 0.00 m Foundation Depth = 0.00 m Socket Depth = 0.00 m Reinforcement = 2 Layers	<b>Foundation 6</b> Foundation Width = 0.00 m Foundation Breadth = 0.00 m Foundation Depth = 0.00 m Socket Depth = 0.00 m Reinforcement = 2 Layers		





# Retention Socket Forecourt Applications

## Security Bollards



## Lighting Columns



## Signage



## Guardrailing



## LED Price Totems



## Jet Wash Screens



## Flag Poles



## EV Charging Points



## Case Study

**Project:** Forecourt Development  
**Product:** Retention Socket  
**Client:** BP

A BP forecourt development has utilised the NAL Retention Socket System for the installation of all protective hoop bollards.

To coincide with the concrete slab work the Retention Sockets were also installed. While unused the sockets are sealed with pedestrian plugs, ready for the bollards to be installed at a later date.

Pouring concrete without the hoop bollards creates a large, unobstructed working space which simplifies the erection of the forecourt canopy. When all other forecourt work has finished the hoop bollards are simply dropped and secured into the Retention Sockets.

As the bollards are vulnerable to vehicular knockdowns, the Retention Socket makes replacing any damaged hoops quick and easy, completely cutting out the requirement for disruptive and expensive civils work.





# 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 300<sup>2</sup> mm to 1200<sup>2</sup> 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 adaptable to overcome services
- ◆ Fully recyclable material



# STAKKAbox™ ULTIMA

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.



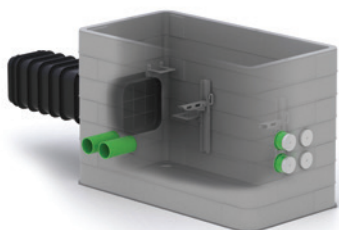
## Product Benefits

- ◆ 60 tonne vertical loading
- ◆ 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



# STAKKAbox™ ULTIMA CONNECT

Ultima Connect is manufactured in 150mm deep sections that stack one on top of another to reach desired depth. Each ring section is castellated to positively interlock with the unit above and below. Ultima Connect is composed of straight side wall and curved corner pieces. The corner pieces are manufactured in left and right handed designs, offering the ability to offset joints between sections in order to provide a brickworked design. This significantly improves the sidewall performance of the installed chamber.



## Product Benefits

- ◆ 60 tonne vertical loading
- ◆ 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





## Steel Ducting

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

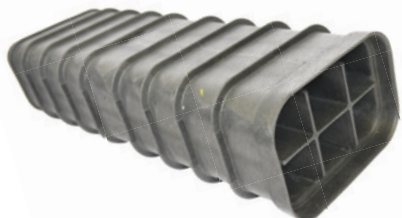
- ♦ High crush strength - tested to D400
- ♦ 100mm carriageway installation depth
- ♦ Eliminates risks of future cable strikes
- ♦ Smooth internal wall eliminates cable snagging
- ♦ No requirement for earthing
- ♦ Complete system with full range of components



## MULTIduct™

### MULTIduct™

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



## Case Study

**Project:** Forecourt Development  
**Product:** STAKKAbOX Modula  
**Client:** Applegreen

The STAKKAbOX Modula was installed at Ludlows Applegreen forecourt to enable access to cables powering the stations LED price totem. The system is composed of access sections for ducting and riser sections to provide the appropriate height. The sections are stacked together forming the chamber, requiring no concrete surround.

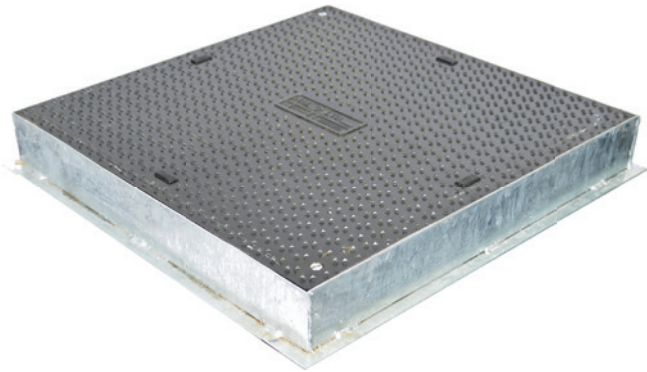
The STAKKAbOX utilises a unique twin wall design with internal and external support ribs giving the chamber superior resistance ground heave and above ground pressure.





## Composite

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 standard or 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



## Security

A range of galvanised steel security covers designed to be installed beneath the manhole cover. This provides a high level of security for entry to any type of access chamber.



### Product Benefits

- ♦ Can be retro fitted to most covers
- ♦ Minimal clear opening intrusion
- ♦ Enhancing network security
- ♦ Any size available



## Recessed

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





# Manhole Covers and Frames

## Ductile Iron

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



## X-Last Bollards

X-Last is a range of polymer bollards with unique properties making them highly resistant yet very flexible. Having undergone and passed extensive safety and impact tests, this range is classed as the safest, most durable and maintenance free bollard available. It is the ideal product for all forecourt, highway, car park or cycle route applications.



## X-Last Standard

Available in a wide range of modern and heritage designs and colours with optional reflective banding to suit customer specific requirements. The bollards are manufactured with the standard impact strength and can be supplied with all fixing options.



## X-Last Protect

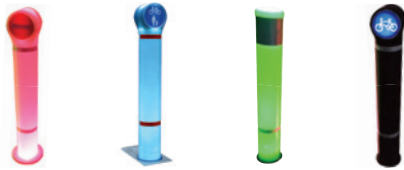
The X-Last Protect range is designed with superior strength to enable maximum protection. Bollards withstand repeated impact forces of 800kgs before bending making them the ideal choice for protection of machinery and buildings.





# 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

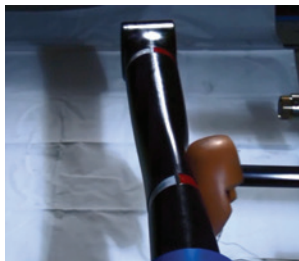
### Installation Benefits

- ♦ All bollards weigh under 6kg
- ♦ Easily core drilled
- ♦ 200mm root depth
- ♦ Minimal risk of hitting existing services
- ♦ Minimal concrete surround required



### Safety Benefits

- ♦ Head Injury Criterion (HIC) test @ 40kph - results show X-Last Bollard is 50% under irreversible injury figure
- ♦ Chest simulation impact test @ 35 Kph - results demonstrate X-Last Bollard causes no serious injury
- ♦ EN12767 passively safe test - result rating of NE4



### Maintenance Benefits

- ♦ Withstands repeated impact with loads of 200-490kgs (depending on type) without loss of rigidity
- ♦ Withstands between 100-1500 repeated 90 degree impacts in the same direction
- ♦ Polymer material is coloured throughout
- ♦ Performance temperature -20C to 60C



### Environmental Benefits

- ♦ X-Last Bollard material is 100% recyclable
- ♦ Tested to Lifecycle Analysis (LCA) by European foundation Inasmet-Technalia
- ♦ Tests found X-Last Bollard to have 50% less impact on the environment than conventional metal bollards



## Fixing Options



Retention Socket



Composite Socket



Cast In



Bolt Down







# NAL Composite Socket

The NAL Composite Socket has been introduced to compliment the X-Last range of impact resistant bollards. This chamber is protected by a locking pedestrian cover preventing unauthorised access. The system allows the rapid removal of the bollards by authorised personnel when required.

## Product Benefits

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



## Case Studies

**Project:** Forecourt Jet Wash  
**Product:** Retention Socket  
**Client:** Harry Tuffins

Harry Tuffins has opened a convenience store and fuel station forecourt on the outskirts of Welshpool. The forecourt jet wash screens have been installed in the NAL Retention Socket System. By utilising the Retention Socket means all civils installation work was completed without the need for the large glass jet wash screens being on site, significantly reducing the risk of damage. Additionally, if the jet wash screens were damaged or required maintenance, the screens can be demounted from the Retention Socket and removed from the site.



**Project:** Forecourt Development  
**Product:** Retention Socket  
**Client:** Applegreen

The NAL Retention Socket System has been installed on all protective Hoop Bollards at the Applegreen Petrol Station in Ludlow. The Retention Sockets were installed at the same time as the concrete slab works allowing the hoops to be installed at a later date. The bollards were installed in the Retention Sockets once all forecourt works were completed.

As these bollards are prone to vehicle impact, the Retention Socket enables the ability to remove and replace damaged bollards within minutes, without the need for lengthy and expensive civils and hot works. Overall the system offers substantial cost savings in the installation and maintenance of forecourt furniture.





# Demonstrations



## Would you like to know more?

Why not visit us at the National Infrastructure Centre where we will host a CPD accredited demonstration day, consisting of a presentation delivered by one of our technical specialists, followed by live demonstrations and impact tests on our fully functioning street scene. Lunch and refreshments will be provided.

## Lunch and Learn

If it is not possible to visit the National Infrastructure Centre we can come to your premises. Our technical specialists will deliver a CPD accredited presentation tailored to your specific requirements. Afterwards if external space allows, a live product demonstration will be held to help further increase your understanding of our products. Lunch and refreshments will be provided.

## Regional Demonstration Centres

NAL have a number of demonstration areas around the UK to reduce travel time, regardless of your location. These events are hosted by our technical specialists who will deliver a CPD accredited presentation tailored to suit the audience, followed by live demonstrations and impact tests. Lunch and refreshments will be provided.



## To Book

If you are interested in booking a Demonstration Day or Lunch and Learn presentation email [info@nal.ltd.uk](mailto:info@nal.ltd.uk) or call us on 01905 427100.



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