NAL X-Last Bollards are an innovative range of bollards with unique properties which make them both highly resistant yet very flexible. This makes them one of the safest, most durable maintenance free bollards available.

Their high resistance and rigidity make them an ideal choice in preventing vehicles from entering prohibited zones such as footpaths and pedestrian areas, whilst their flexibility enables them to return to their original shape and position even after the most severe impact. Compared to metal bollards that can cause serious harm to pedestrians, the X-Last range offers minimal risk of injury.

They are manufactured from a non-corrosive material and therefore require zero maintenance expenditure.

All X-Last Bollards can be installed with the X-Last Socket System, enabling them to be removed within minutes making them ideal for any non-permanent sites.

### Unique Characteristics
- **Exclusive formula** - Polymer composite with minute reinforcing particles
- **Results in highly rigid & flexible bollard**
- **Non corrosive material & UV stabilised**
- **Withstands impact loads between 200kgs - 490kgs (depending on type)**
- **Withstands between 100 - 1500 repeated complete knockdowns in same direction**
- **Performance temperature -20°C to 60°C**
- **CE marked**

### Installation
- Manual handling (all bollards under 6kgs)
- 200mm max root depth
- No risk of hitting services
- Less spoil to remove
- 50mm concrete surround
- Easily core drilled
- No risk of damage during installation

### Environment

ACV (analysis of Life Cycle) conducted by the European foundation INASMET – Tecnalia

Result: X-LAST Bollard = 5,000 Milipoints/Kg
Metal Bollard = 10,345 Milipoints/Kg

50% less impact on the environment than conventional metal bollards looking at
- Raw materials used
- Manufacturing process
- Transportation
- Installation
- Disposal
- X-LAST material is fully recyclable

### Passive Safety

**Head Injury Criterion (HIC) Test @ 40kph**
Result - Value : 460
(1000 is irreversible injury)
- 50% under irreversible injury = Saves lives
- Metal bollard HIC value 3500 = Saves lives

**Chest Simulation Impact test @ 35kph**
Result:
- Cushions impact = Saves lives
- No serious injury = Saves lives

Safety results mean the X-LAST bollard is ideal for:
- **Cycle routes**
- **Roadside Traffic Bollards**
- **Car parks**
- **Passively Safe Schemes**

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**Design - Finish - Colour**

- Standard range with bespoke designs available
- Can be produced in any RAL colour
- Customised with reflective bands, motifs, logos or QR codes
- All paint is an elastic coating to prevent cracking
- Concrete in, bolt down and removable socket bases available
- Bollards can be internally illuminated when translucent colours are used

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<th>HEIGHT ABOVE GROUND AVAILABLE</th>
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Illuminated X-Last with RS Base LED system

NAL offer the X-Last range in a translucent material. This allows the bollard to be internally illuminated.

Combined with the NAL Socket Systems it allows the IP68 LED’s and driver to be installed below ground level ensuring they cannot be damaged in a vehicular impact.

Illuminated bollards are available in 5 colours (white, yellow, red, blue and green) and they offer the same benefits as the non-illuminated range.

Retention Socket System

RETENTION SOCKETS are available for installing all street furniture including:-
Guard rail, bollards, signage and your application??

Retention Sockets allow damaged street furniture to be removed and replaced within minutes.

Please refer to RS Data Sheets

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