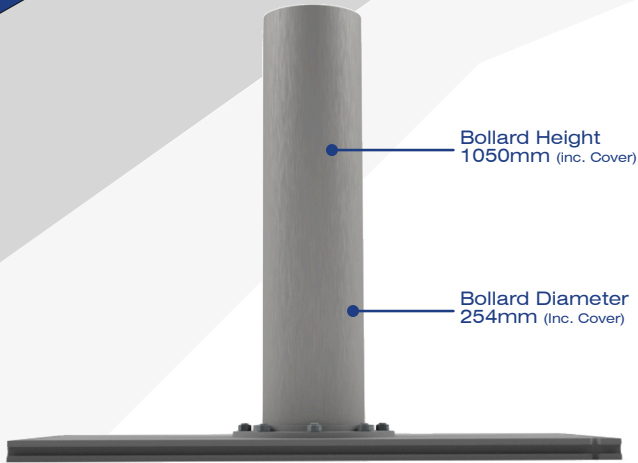


HEALD[®]

SYNERGY

BRIDGE BOLLARD SYSTEM
REVOLUTIONARY SURFACE
MOUNTED BOLLARD SYSTEM



Bollard Height
1050mm (inc. Cover)

Bollard Diameter
254mm (inc. Cover)

Heald's Bridge Bollard System consists of nine fixed bollards on individual base plates which are bolted together. It is a completely unique product which requires no pinning.

Designed for bridges in particular, the unique interlocking design provides shared distribution of the load, while patent applied technology offers additional protection by anchoring the bollards into the ground upon impact, preventing the vehicle from penetrating the area the bollards are protecting.

The product has been crash tested with an array of nine interconnected bollards, with the design allowing for additional bollards to be added to expand the area being protected.

The bollards remained intact during testing and there was no encroachment of the vehicle onto the foot-way. Minimal dispersion and debris was recorded, ensuring pedestrian safety. The product has been tested at 30 degrees to demonstrate how a vehicle could impact the bollards on a bridge.

Although the product has been designed to address the challenges specifically faced in protecting bridges, it is also ideal for any locations where even bolting to the ground is not possible.

The bollards take approximately 45 minutes to deploy excluding civil works. With no requirement for a concrete base, the existing pavers are simply lifted, the bollards are fitted and the existing pavers are then refitted. A variety of different bollard covers are also available.

The Bridge Bollard System is easily transported, due to its modular design and each bollard is simply bolted to the next one on site.

Crash Test Results

Crash tested to halt a 7.2 N3C Vehicle (18 Tonne) travelling at 48 kph (30mph).

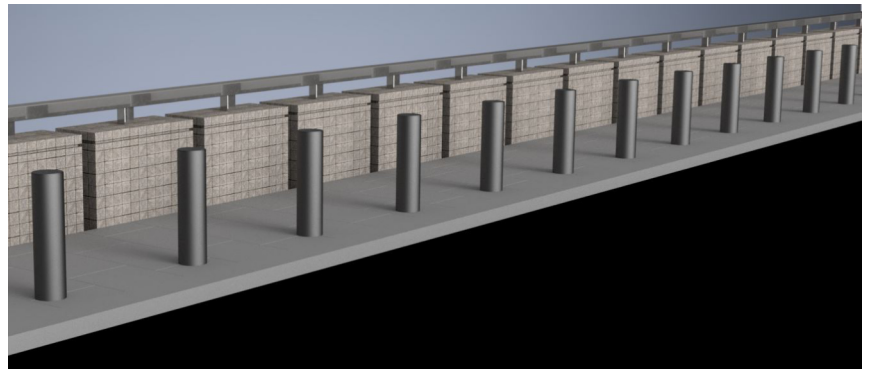
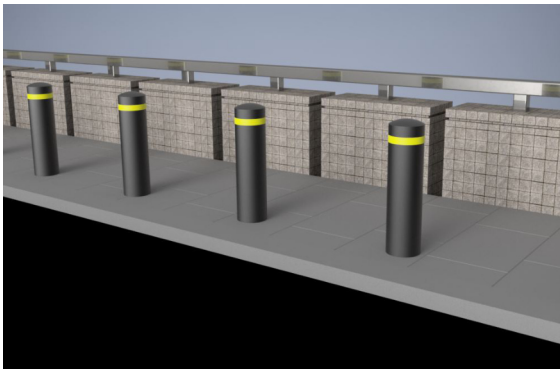
Classification

Specifications:

IWA 14-1:2013 Bollard V/7200[N3C]/48/30:0.9

IWA 14-1:2013 Bollard V/7200[N2A]/48/90:4.2

(minimum array of 9) Bollards remained intact after impact.



Bollard Height

875mm (excluding cover)

955mm to the top of the BBS base

Bollard Width

220mm (excluding cover)

Excavation Depth

No pinning required

Product Weight

455Kg

Bollard Spacing

1200mm between each bollard

Base Plate

1420mm x 1200mm

Patent Number

GB Patent Application Number GB2000701.9

Options

Stainless steel covers
(Various cover options available upon request).

Please contact for further details:

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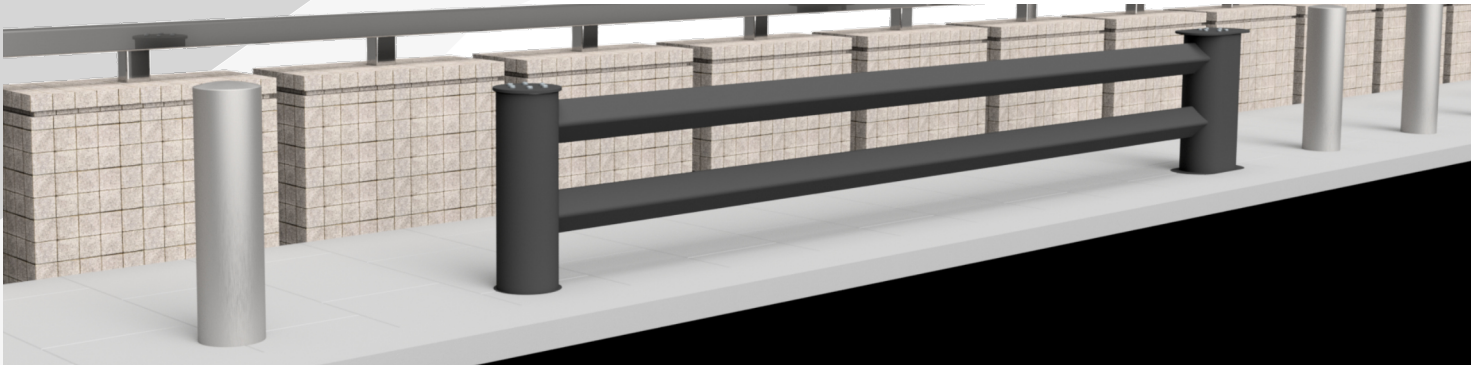
© Heald Ltd 2010
GB Patent Application: GB2000701.9

HEALD[®]

SYNERGY

BRIDGE BOLLARD SYSTEM

EXPANSION JOINT UNIT



Heald's Bridge Bollard System Expansion Joint consists of a 5400mm barrier creating a free space of 4000mm between the two bollards as part of the Heald Bridge Bollard System. This unit was designed to provide capacity for bridge expansion, allowing for lateral movement of up to 150mm. The unique design requires no pinning and no excavation into the carriageway.

Designed for bridges in particular, the unique interlocking design of the bollard system provides shared distribution of the load upon impact.

Although the product has been designed to address the challenges specifically faced in protecting bridges, it is also ideal for any locations where even bolting to the ground is not possible. The opening provided by the Expansion Joint Unit is beneficial to provide protection over areas with manhole covers or near surface utilities which prevent the installation of bollards. This will allow for a continuous line of HVM protection.

Crash Test Results

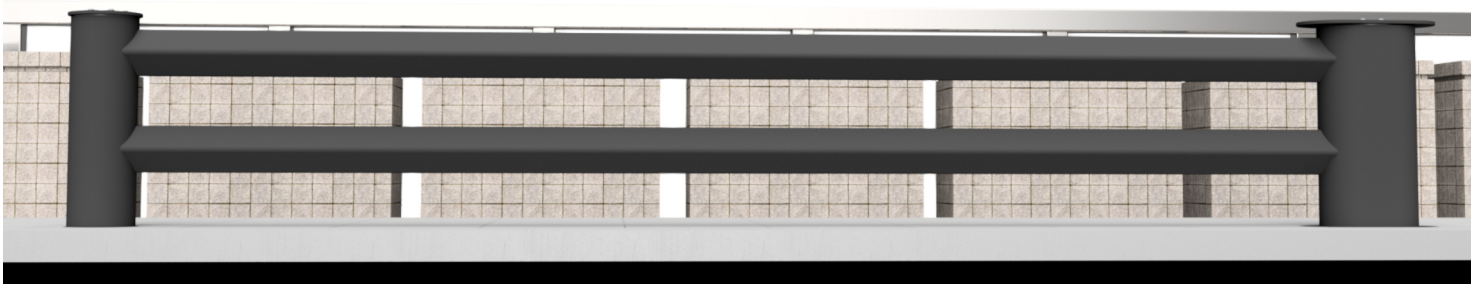
Crash tested to halt a 7.2 N3C Vehicle (18 Tonne) travelling at 48 kph (30mph).

Classification

Specifications:
IWA 14-1:2013 Bollard V/7200[N3C]/48/30:0

The bollards take approximately 45 minutes to deploy excluding civil works. With no requirement for a concrete base, the existing pavers are simply lifted, the bollards are fitted and the existing pavers are then refitted. A variety of bollard covers are also available.

The Bridge Bollard System is easily transported, due to its modular design and each bollard is simply bolted to the next one on site.



Free Space Between Base Plates

4000mm - Other lengths can be accommodated

Bollard Height

875mm (excluding cover)
955mm to the top of the BBS base

Bollard Width

220mm (excluding cover)
450mm (with cover) (to allow for 75mm lateral movement in either direction from centre)

Expansion Joint Height

885mm

Lateral Movement Accommodated

150mm

Expansion Joint Width

5400mm - Bollard centre to bollard centre

Base Plate

1420mm x 1200mm

Patent Number

GB Patent Application Number GB2000701.9

Options

Stainless steel covers
(Various cover options available upon request).

Please contact for further details:

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GB Patent Application: GB2000701.9