

**CSG 10800**  
Articulated Shallow Depth Static Bollard



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**PRODUCT OVERVIEW**

The CSG 10840/50 Bollards have been designed specifically to protect critical national infrastructure from vehicle borne improvised explosive devices, whilst maintaining the most stringent aesthetic requirements and capable of being installed into utility rich, undulating shallow substructure.

Current shallow depth bollard systems are restricted to straight line arrays on level sites - any directional or level changes necessitate bases and linkages to be specially engineered to suit the particular site conditions.

With this in mind, CSG have devised and tested a unique articulated linkage which not only allows for each bollard unit to accommodate gradients up to 3.6° (1:16), but allows for convex and concave arrays.

This unique feature eliminates the necessity to survey and individually design and manufacture special units, allowing complete on-site freedom to adjust for height and position before tightening up connector plates to form a strong rigid link.

The system has been fully tested at the Transport Research Laboratories, Wokingham, Berkshire, including full testing of the end units in arrays of three bollards.

**PAS 68 CRASH TESTING**

Test Rating: PAS 68:2010 V/7500[N3]/80/90:0/17.9\*  
Test Rating: PAS 68:2010 V/7500[N3]/80/90:2.8/9.8\*

RESULTS TABLE	CSG 10840	CSG 10850
Vehicle Test Weight:	7500kg	7500kg
Vehicle Class:	N2	N2
Vehicle Speed mp/h:	40	50
Vehicle Speed km/h:	64	80
Vehicle Angle:	90	90
Vehicle Penetration:	0.0	2.8
Dispersion Distance:	17.9	9.8

## DIMENSIONS

Core Diameter: 254mm  
Full Height: 1100mm from FFL  
Nominal Height Topping: 1050mm  
Stainless Steel Sleeve Diameter: 279mm

Other sizes available on request.

## CONSTRUCTION

- Mild steel circular hollow section
- Foot of bollard is embedded in 210mm concrete foundation.
- Unique articulated arm system allows the bollards to be installed on gradients, curved arrays and 90 degree angles achievable.

- Each bollard can be individually levelled via four jacking screws
- Left and right-hand end units fully tested to PAS 68:2010

## OPTIONS

- Reflective 50mm wide band option sandwiched between two stainless steel bands
- Stainless steel sleeve option with DDA compliant band

## FINISH

Available in Galvanised or sleeved, painted to a specific RAL No



**If required, please contact CSG for a bespoke solution.**

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