



SECURITY BOLLARDS



SECURITY BOLLARDS & POSTS



INTRODUCTION

Sensitive solutions to site security

Deterrent and prevention against vehicular strikes on buildings and facilities is a paramount consideration for many new developments and existing sites. Whilst simply 'ring-fencing' a site may provide an effective security zone, careful consideration should be given to the appearance of such features - how they integrate with the surrounding environment, whether they need to be employed at all times, and if any opportunities exist for added functionality. This brochure includes a wide range of security bollard options, divided into the following sections:



- **Fixed steel & stainless steel bollards**

From rudimentary posts to high quality engineered architectural-style bollards, steel and stainless steel offers a wide range of standard options.



- **Fixed cast iron bollards**

A selection of our standard cast iron bollards are offered with a steel reinforcement core for a more decorative security solution, which are well suited to heritage sites.



- **Telescopic and removable bollards**

When planned access is required through a security line, telescopic or removable bollards are the ideal solution and are available in a range of materials and styles.



- **Bell and Avector bollards**

In addition to their primary use as a traffic control measure preventing vehicular overrun off the highway, these bollards can also be employed as security devices.



- **Fixed concrete bollards and benches**

Concrete bollards and blocks offer a substantial physical presence, with some designs also serving as informal seating units, in a range of mixes and finishes.



- **Secureplus sleeves & embellishments**

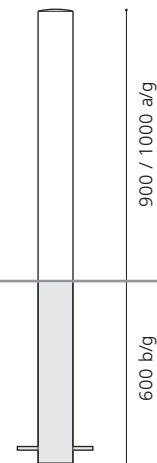
Cast iron or aluminium sleeves and embellishment kits, fitted over engineered steel cores, make for an attractive product that disguises its security function.

ZENITH SECURITY BOLLARDS

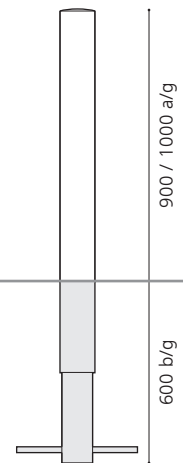
The industry standard for over 15 years

Since the popular introduction of stainless steel to the street furniture market in the late 1990s, Furnitubes' Zenith range has become the benchmark of quality design and manufacture. With understated styling, Zenith bollards fit well within most contemporary settings, and in stainless steel they offer a hard-wearing, low maintenance and a 100% recyclable solution for vehicular and pedestrian traffic management purposes. In security applications the Zenith range can be employed at front or back of store. The bollard comprises 3 basic styles of product - plain, sloped top and banded - in a range of materials, sizes and finish options, including:

- Standard height and DDA (1000mm high) versions
- Stainless steel in grades 304 or 316
- Polished stainless steel to various finish grades
- Mild steel in galvanised finish or painted / powder coated



Security bollard
(steel)



Security bollard
(stainless) + steel core

Zenith bollard standard dimensions & details

ZENITH SECURITY BOLLARDS

Standard bollard options

Refer to the table for individual product codes for the sizes and specifications offered as standard. Standard specification is Grade 304 stainless steel in a satin polished finish.

A/g:	900mm	1000mm
B/g:	600mm	600mm



ZENITH PLAIN

The circular bollard with shallow domed top available in stainless steel and galvanised mild steel. This plain bollard is the most cost effective in the Zenith range and is extensively used at retail parks and transports hubs in particular. The plain bollard is available in stainless steel and galvanised mild steel.

Ø114mm	ZEN 701 SC	ZEN 801 SC
Ø140mm	ZEN 703 SC	ZEN 803 SC
Ø153mm	ZEN 705 SC	ZEN 805 SC
Ø170mm	ZEN 702 SC	ZEN 802 SC
Ø204mm*	ZEN 704 SC	ZEN 804 SC



ZENITH SLOPED TOP

Adding an elliptical top plate sloped at 45 degree angle to the circular bollard adds visual interest compared with the plain bollard, and looks more aggressive in security situations, particularly for the larger sized bollards. This version is available in both stainless steel and galvanised mild steel.

Ø114mm	ZEN 451 SC	ZEN 851 SC
Ø140mm	ZEN 453 SC	ZEN 853 SC
Ø153mm	ZEN 455 SC	ZEN 855 SC
Ø170mm	ZEN 452 SC	ZEN 852 SC
Ø204mm*	ZEN 454 SC	ZEN 854 SC



ZENITH BANDED

Circular stainless steel bollard in satin polished finish with shallow domed top and two bands in bright polished finish as standard (the reverse is also available on request). Bands vary in dimension according to the bollard diameter, but generally retain the proportions as shown in this example.

Ø114mm	ZEN 721 SC	ZEN 821 SC
Ø140mm	ZEN 723 SC	ZEN 823 SC
Ø153mm	ZEN 725 SC	ZEN 825 SC
Ø170mm	ZEN 722 SC	ZEN 822 SC
Ø204mm*	ZEN 724 SC	ZEN 824 SC

Notes:

- * Ø204mm bollards are available in stainless steel only.
- Stainless steel security bollards comprise an inner core in galvanised mild steel, over which an outer sleeve in stainless steel is fitted.
- Mild steel security bollards are a single piece construction.

OPTIONS:

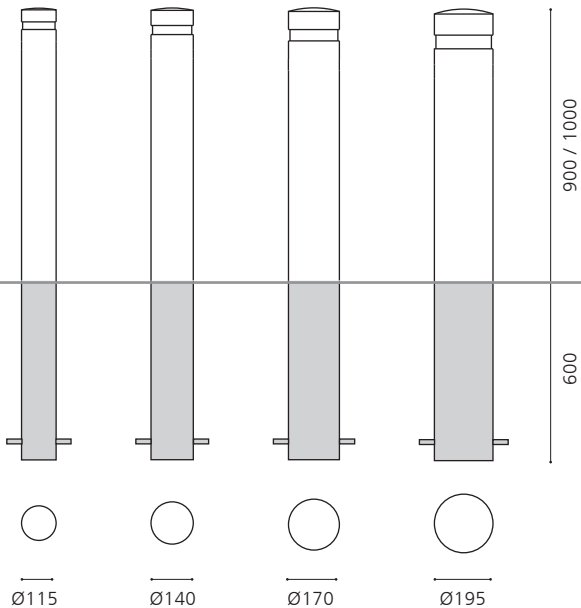
Base plated bollards
Grade 316 stainless steel
Stainless steel in bright polished finish
Mild steel in galvanised finish, or with painted / coated finish (not Banded versions)
Reflective tape in various colours & sizes



KENTON SECURITY BOLLARDS

Circular necked bollards

Kenton steel bollards are longstanding favourites from our security bollard range and are used extensively at retail parks in particular. The all-steel construction bollard is available in four different material sizes, two heights, and each with a single or double inset neck detail, which is ideal for the addition of reflective tape to make the bollards more visible in highway and car park situations.



	KENTON RANGE SINGLE NECK		KENTON RANGE DOUBLE NECK	
A/g:	900mm	1000mm	900mm	1000mm
B/g:	600mm	600mm	600mm	600mm
Ø115mm	KEN 111 SC	KEN 311 SC	KEN 121 SC	KEN 321 SC
Ø140mm	KEN 112 SC	KEN 312 SC	KEN 122 SC	KEN 322 SC
Ø170mm	KEN 113 SC	KEN 313 SC	KEN 123 SC	KEN 323 SC
Ø195mm	KEN 114 SC	KEN 314 SC	KEN 124 SC	KEN 324 SC

STANDARD SPECIFICATION:
Mild steel galvanised finish

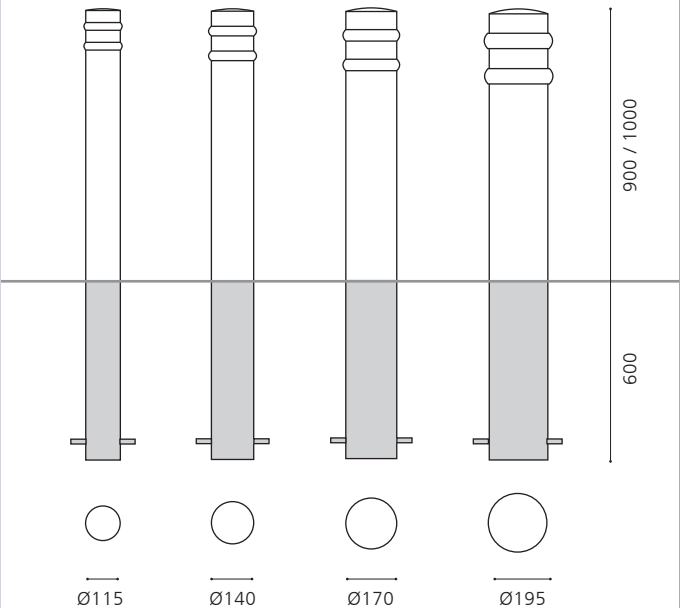
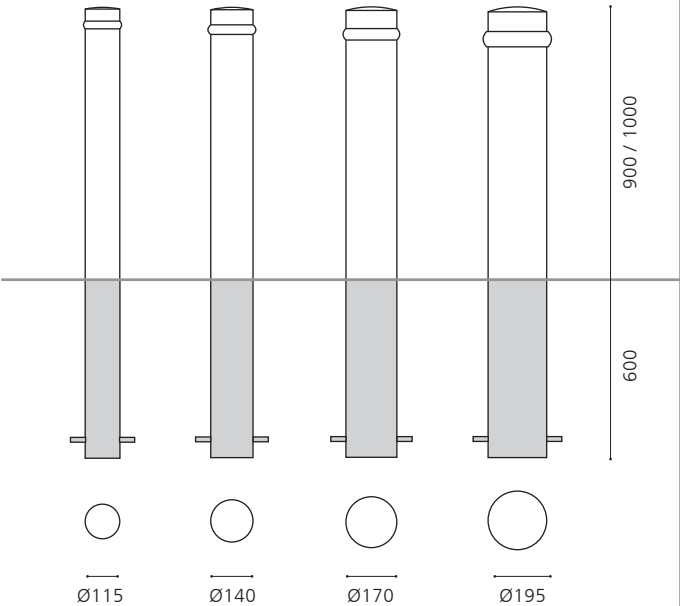
OPTIONS:
Base plated bollards
Grade 304 or 316 stainless steel, satin or bright polished finish
Reflective tape in colour / size / positions as required



HARROW SECURITY BOLLARDS

Circular ringed bollards

The Harrow range offers a versatile choice of steel bollards suitable for front and rear of house applications. The addition of feature rings make the bollards more decorative than simple circular steel tubes and therefore more suited for areas with public access. The all-steel, all-welded construction is hot dip galvanised as standard. On the double banded versions reflective tape can be fitted between the bands to improve their visibility in highway and car park situations.



HARROW RANGE SINGLE RING

A/g:	900mm	1000mm
B/g:	600mm	600mm
Ø115mm	HAR 211 SC	HAR 311 SC
Ø140mm	HAR 212 SC	HAR 312 SC
Ø170mm	HAR 213 SC	HAR 313 SC
Ø195mm	HAR 214 SC	HAR 314 SC

HARROW RANGE DOUBLE RING

900mm	1000mm
600mm	600mm
HAR 221 SC	HAR 321 SC
HAR 222 SC	HAR 322 SC
HAR 223 SC	HAR 323 SC
HAR 224 SC	HAR 324 SC

STANDARD SPECIFICATION:
Mild steel galvanised finish

OPTIONS:
Base plated bollards
Grade 304 or 316 stainless steel, satin or bright polished finish
Reflective tape in colour / size / positions as required



ALPERTON SECURITY BOLLARDS

Square necked bollards

The clean design of Alperton makes these bollards a popular choice for contemporary developments in particular. Manufactured from box section steel and hot dip galvanised as standard, the bollards offer a robust security solution. The range comprises three sectional sizes and two heights, each with the option of a single or double necked feature. The necked sections are ideal for the application of reflective tape to make the bollards more visible in highway and car park situations.



ALPERTON RANGE SINGLE NECK

A/g:	900mm	1000mm
B/g:	600mm	600mm
120mm sq	ALP 311 SC	ALP 511 SC
150mm sq	ALP 312 SC	ALP 512 SC
200mm sq	ALP 313 SC	ALP 513 SC

ALPERTON RANGE DOUBLE NECK

900mm	1000mm
600mm	600mm
ALP 321 SC	ALP 521 SC
ALP 322 SC	ALP 522 SC
ALP 323 SC	ALP 523 SC

STANDARD SPECIFICATION:

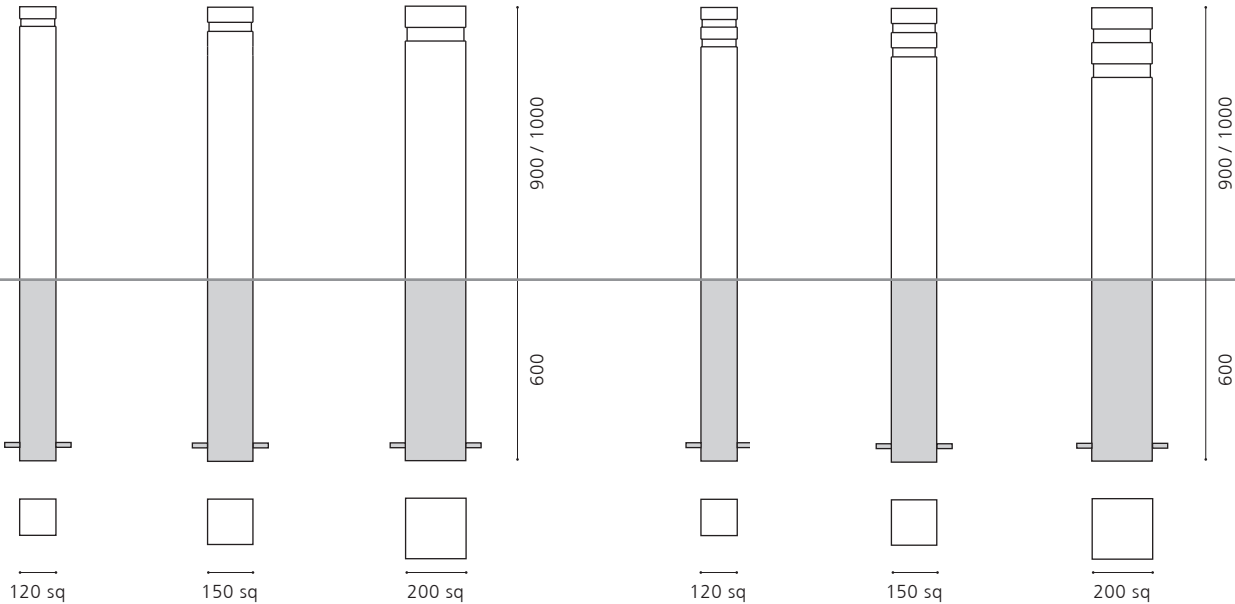
Mild steel galvanised finish

OPTIONS:

Base plated bollards

Grade 304 or 316 stainless steel, satin or bright polished finish

Reflective tape in colour / size / positions as required



SUDBURY SECURITY BOLLARDS

Square ringed bollards

The square form of the Sudbury range of bollards offers a stronger visual statement and more imposing obstacle compared with the circular equivalent Harrow range. All products within the range are manufactured from robust box section steel and hot dip galvanised as standard to provide the ultimate protection against corrosion. Decorative paint finishes can be applied on site after installation, or factory-applied by wet painting or polyester powder coating.



SUDBURY RANGE SINGLE RING

SUDBURY RANGE DOUBLE RING

A/g:	900mm	1000mm	900mm	1000mm
B/g:	600mm	600mm	600mm	600mm
120mm sq	SUD 411 SC	SUD 511 SC	SUD 421 SC	SUD 521 SC
150mm sq	SUD 412 SC	SUD 512 SC	SUD 422 SC	SUD 522 SC
200mm sq	SUD 413 SC	SUD 513 SC	SUD 423 SC	SUD 523 SC

STANDARD SPECIFICATION:

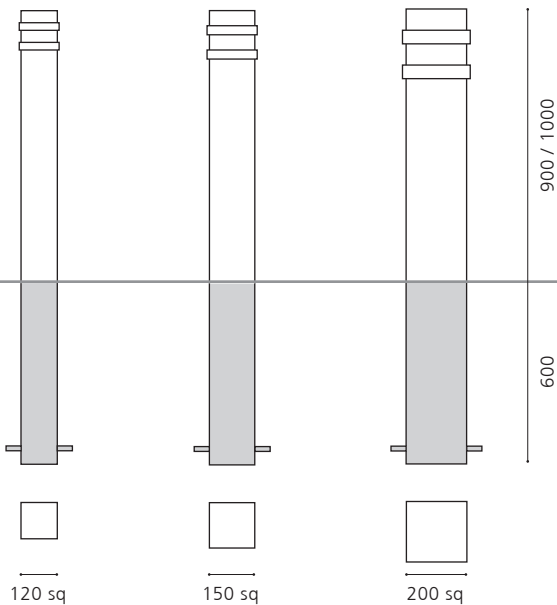
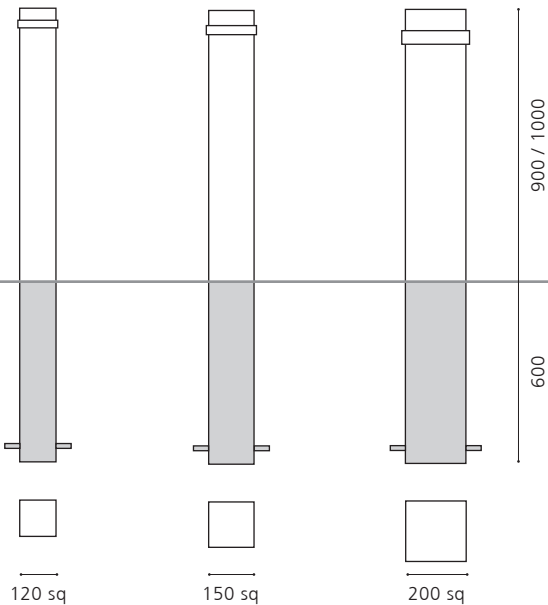
Mild steel galvanised finish

OPTIONS:

Base plated bollards

Grade 304 or 316 stainless steel, satin or bright polished finish

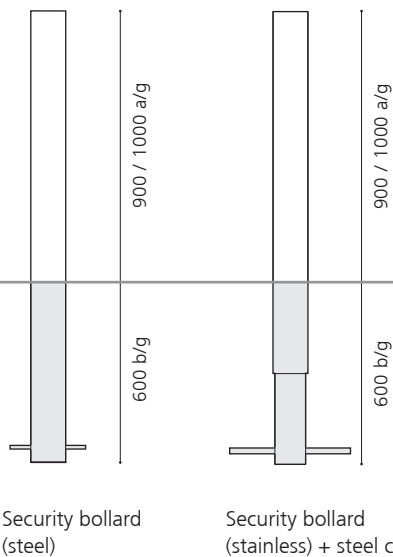
Reflective tape in colour / size / positions as required



STIRLING SECURITY BOLLARDS

Simple-form range of budget bollards

The Stirling is our most competitively priced range of steel and stainless steel bollards, ideal for schemes where cost is the primary consideration and are a popular choice for rear-of-house locations. These simplified versions of the Zenith range equivalents - circular section bollards with a flat rather than domed top plate - are available in a comprehensive range of materials, finishes and sizes.



STIRLING RANGE

A/g:	900mm	1000mm
B/g:	600mm	600mm
Ø102mm	STL 700 SC*	STL 800 SC*
Ø114mm	STL 701 SC	STL 801 SC
Ø140mm	STL 703 SC	STL 803 SC
Ø153mm	STL 705 SC	STL 805 SC
Ø170mm	STL 702 SC	STL 802 SC
Ø193mm*	STL 704 SC	STL 804 SC

STANDARD SPECIFICATION:
Mild steel galvanised finish

OPTIONS:
Painted / coated finish
Stainless steel G304 / G306, satin or bright polished
Reflective tape in colour / size / positions as required
Base plated bollards

Stirling bollard standard dimensions & details

Notes:

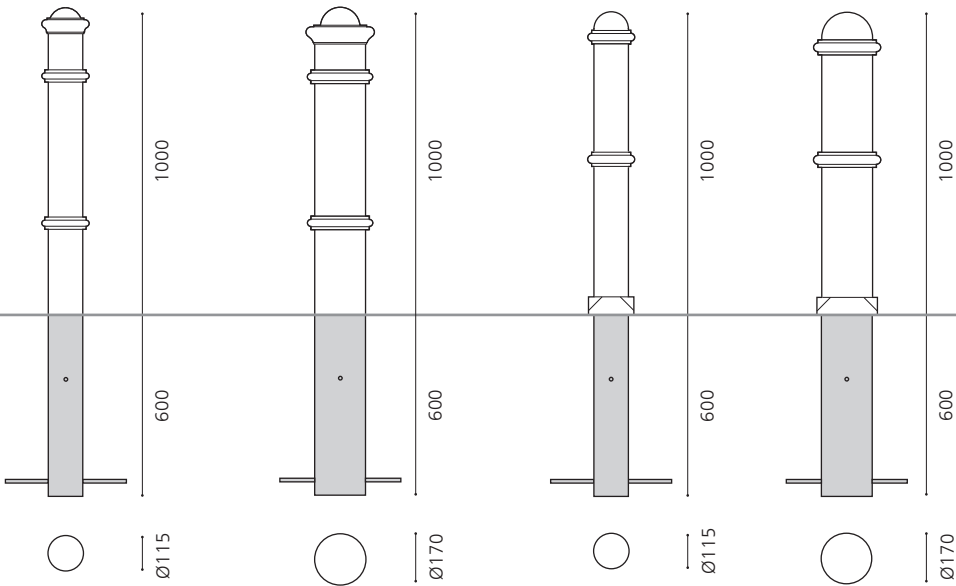
- * Ø102 & Ø193mm bollards are available in mild steel only.
- Stainless steel security bollards comprise an inner core in galvanised mild steel, over which an outer sleeve in stainless steel is fitted.
- Mild steel security bollards are a single piece construction.
- On mild steel bollards small galvanising vent holes are located on the side of the bollard just beneath the top plate, which are left unfilled on this range. There are no such holes on stainless steel versions of the product.



HOLBORN & SALISBURY SECURITY BOLLARDS

Decoration + strength

Holborn and Salisbury bollards are a steel / cast iron composite construction designed to replicate our traditional Cannon and Warminster bollards respectively. Manufactured from a steel tube with a decorative cast iron cap and collars, these bollards are much lighter in weight than their cast iron equivalents, but at the same time much stronger and are suitable therefore for security applications. Holborn and Salisbury bollards are available in two sizes - Ø115mm and Ø170mm - both with a long root for deep embedment in the concrete foundation. The steel shaft of the bollard is galvanised prior to application of primer and topcoats.



HOLBORN SECURITY

HOL 510 SC

Steel / iron bollard

HOLBORN MAJOR SECURITY

HOL 520 SC

Steel / iron bollard

SALISBURY SECURITY

SAL 530 SC

Steel / iron bollard

SALISBURY MAJOR SECURITY

SAL 540 SC

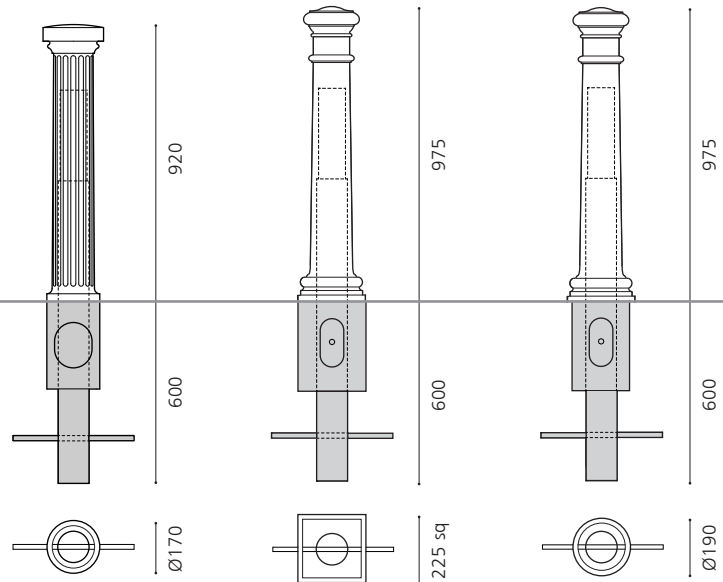
Steel / iron bollard



CAST IRON SECURITY BOLLARDS

Decorative bollards with inner strength

Cast iron has been the traditional material used for bollards on our streets for many centuries. It has a familiar aesthetic that blends well with the fabric of our historic town centres in particular. Cast iron alone isn't well suited to security applications though - whilst very heavy and with good strength in compression, it is relatively weak in shear, which can make it vulnerable to breakage if impacted by vehicles. To counter this, we are able to reinforce selected bollards from our cast iron range with a steel core - a loose-fit fabrication in a variety of sections as best suits individual bollards - which also extends the root depth of the bollard for embedment in a deeper foundation. Extra-long tie bars through the steel core also serve to key the bollard assembly into the foundation block. When the concrete of the foundation passes through the casting aperture and around the steel core, the overall assembly forms a suitably robust security installation. We offer a total of eight of our most popular cast iron bollards as security versions, from our range of over 50 designs. Please contact us if you would like to discuss the feasibility of reinforcing any of the other bollards from our cast iron range.



DORIC SECURITY

DOR 520 SC

Cast iron bollard c/w steel section core in primed finish
Weight: 75kg

MANCHESTER SQUARE BASE SECURITY

MAN 536 SB SC

Cast iron bollard c/w steel section core in primed finish
Weight: 65kg

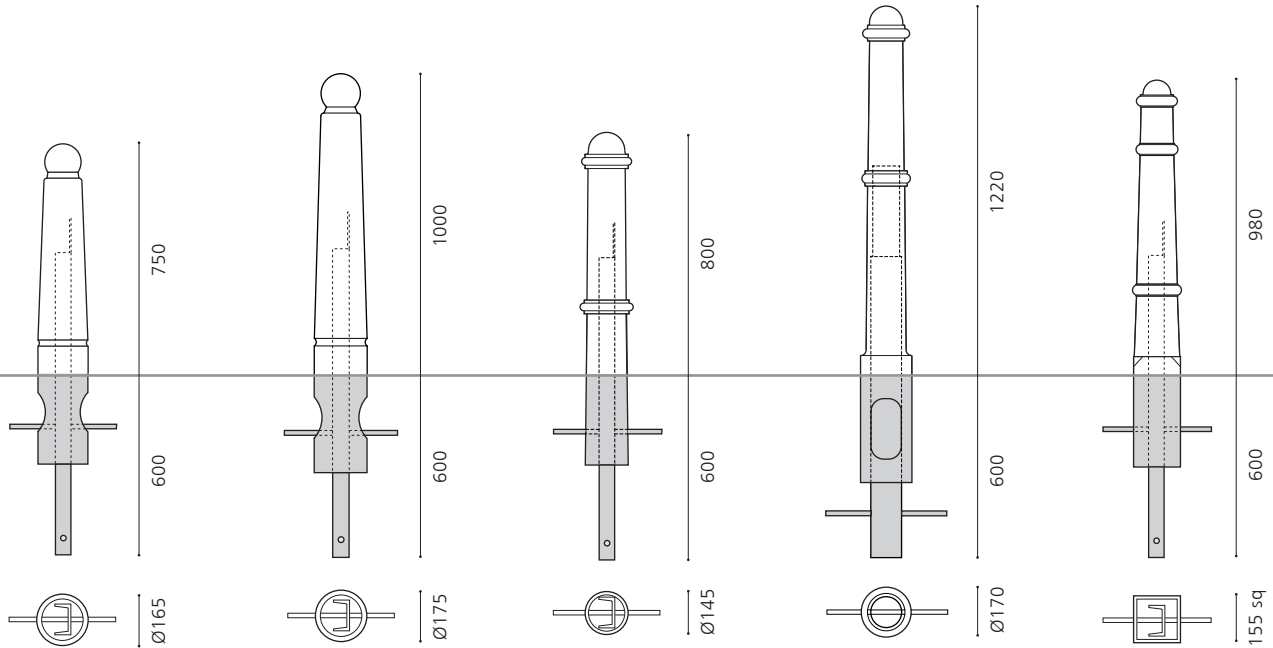
MANCHESTER ROUND BASE SECURITY

MAN 536 RB SC

Cast iron bollard c/w steel section core in primed finish
Weight: 70kg



CAST IRON SECURITY BOLLARDS



GUNNER SECURITY

GUN 503 SC

Cast iron bollard c/w steel section core in primed finish
Weight: 50kg

GUNNER MAJOR SECURITY

GUN 100 SC

Cast iron bollard c/w steel section core in primed finish
Weight: 65kg

WARMINSTER MEDIUM SECURITY

WAR 811 SC

Cast iron bollard c/w steel section core in primed finish
Weight: 45kg

WARMINSTER LARGE ROUND BASE SECURITY

WAR 511 RB SC

Cast iron bollard c/w steel section core in primed finish
Weight: 65kg

TRAFALGAR MEDIUM SECURITY

TRA 631 SC

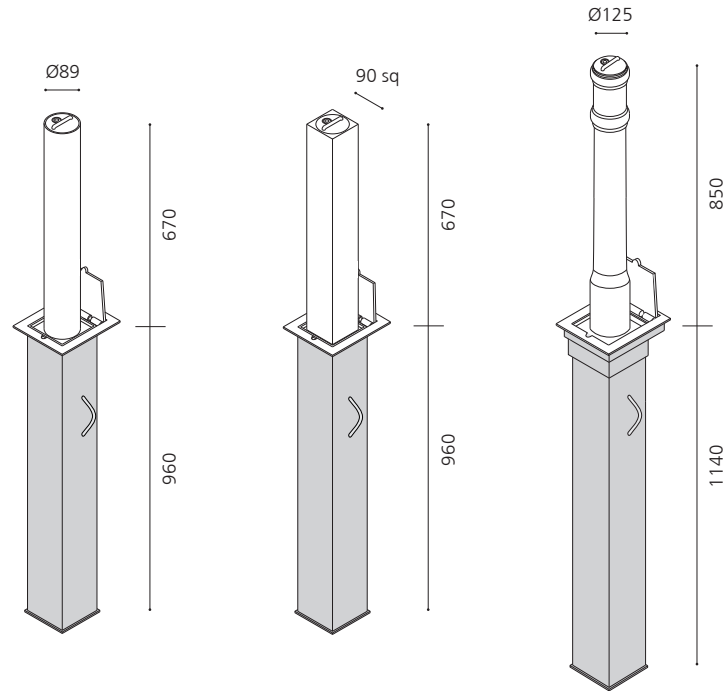
Cast iron bollard c/w steel section core in primed finish
Weight: 55kg



TELESCOPIC SECURITY BOLLARDS

Robust in place, discrete when lowered

Furnitubes' range of telescopic bollards provide a robust security solution when raised into their upright position and minimal visual intrusion when lowered into the ground. The range comprises a variety of specification, shape, size and material options to suit many different applications - from prevention of unauthorised use of car parking spaces, through to protection against vehicular attacks. The bollards are designed with ease of use in mind - they are raised and locked into place with the integral high security lock in mere seconds. When not in use the posts are completely concealed in a ground socket with a hinged lid, which when lowered will protect against water and dirt ingress and also provides flush-fitting surface that does not present a trip hazard. If you require advice as to which model is best for your application, please contact our sales department who will be happy to discuss the options available and recommend the most appropriate product.



ROUND TELESCOPIC

TPR 800

Anti-ram raid specification, galvanised steel

OPTIONS:

Polyester powder coated
Ornamental bollard cap

TPR 390

Anti-ram raid specification, stainless steel in satin finish

SQUARE TELESCOPIC

TPS 800

Anti-ram raid specification, galvanised steel

OPTIONS:

Anti-cut 100mm square
Polyester powder coated

BURY - PU TELESCOPIC

TPB 725

Anti-ram raid specification
Polyurethane elastomer outer over steel core in two-pack polyurethane coated finish
Galvanised steel socket

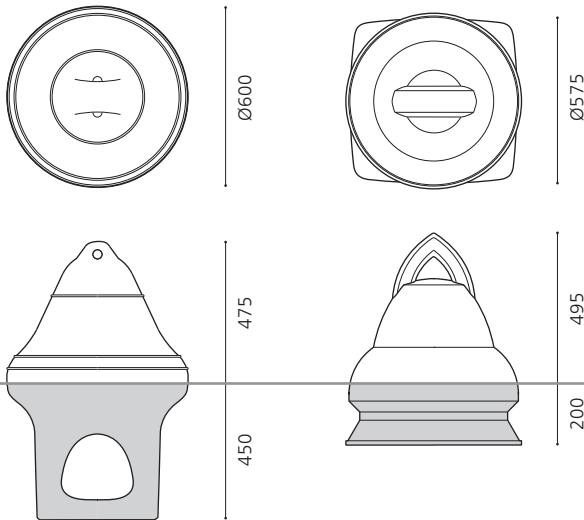
OPTIONS:

Fixed bollard

BELL + AVECTOR BOLLARDS

Traffic calming and security

The effectiveness of the Bell bollard, and its new sister product the Avector, as traffic-calming products has well been established over many years. Manufactured in heavy duty cast iron, and set in a very large concrete foundation, both bollards can also be used for site security purposes, as a front line defence or for reducing vehicle speeds on the approach to sites. There are 9 versions of the Bell, which are designed to suit almost any site situation. For the full range of Bell and Avector bollards please refer to the product-specific e-brochure on our website, which can be found at: <http://www.furnitubes.com/brochures/bollards-e-brochures>



BELL - FULL

BELL 100

Cast iron traffic bollard
Weight: 165kg

OPTIONS:

Bell Full - Bolt-down & Sub-frame
Bell Three Quarter & Half
Bell Kerbline
Bells combined with taller bollards

AVECTOR

AVE 100

Cast iron traffic bollard
Weight: 90kg



Bell Bollards. All rights reserved.

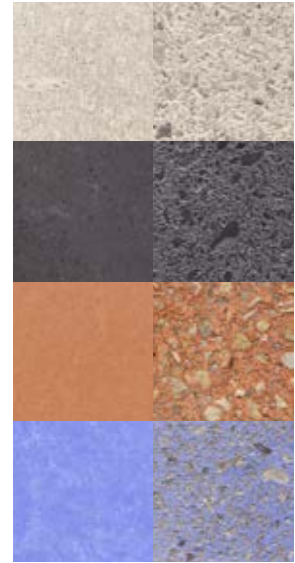
Bell Shaped Traffic Bollards in this or other forms, with or without surface decoration are Copyright Protected (filed in accordance with Universal Copyright Convention in London) & may not be reproduced without the prior permission of Furnitubes International Limited or the original Copyright holder. Registered at Stationers' Hall, London. No B9/1082/36020 Copyright © 1986 Paul M. Harris Innovation and New Product Design.



CONCRETE PRODUCTS

Bollards, benches and planters

Concrete has enjoyed a resurgence in popularity in recent years, and this weighty and robust material is ideal for security applications. As well as a choice of bollards, Furnitubes also offers an extensive range of seating in concrete. If installed in an appropriate arrangement, and if suitably tied into a fixed ground foundation, seating can also serve as a security function - making for a more useful and subtle approach to site security than simple bollards. Planters can be used in a similar way, with the added advantage of introducing a softer green aspect to a site. Concrete is offered in a range of colour mixes and finishes that can be selected to complement the surrounding built form and paving materials. Shown here are just a few examples of our concrete products - please refer to the bollards, seating and planter sections of our website to see the full range of products available.



Examples of standard concrete colour mixes & finishes

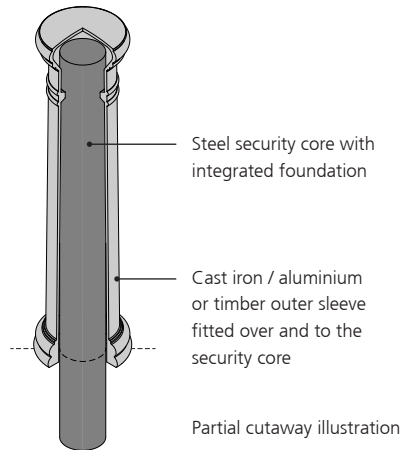


SECUREPLUS BOLLARD SLEEVES & EMBELLISHMENT SETS

Custom-made solutions

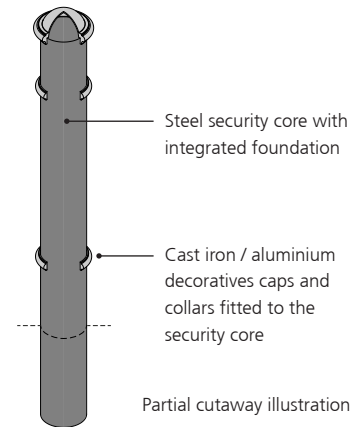
Whilst Furnitubes offers a wide range of standard security bollards that are suitable for most sites (both in terms of appearance and performance) some projects demand a more bespoke solution. This is particularly the case for sites of national security importance, for which the engineering specification is generally much higher, which in turn means much larger products. When these sites are set in historic areas, the placement of large unadorned security products is often unacceptable to local authority planners. Furnitubes is able to offer our expert knowledge of bollards and other street features to design and produce additions to steel security cores that complement the surrounding built environment - an approach that we collectively refer to as 'SecurePlus'. Shown here are selected examples of Secureplus products, in a variety of styles and materials.

Note, we are unable to supply full details of the sites to which we have supplied Secureplus products, due to their sensitive security status



Various shapes can be cast which completely cover and disguise the security core within. The overall mass of the bollard is much larger than for embellishment kit solutions with the same size core.

Design principles:
Secureplus sleeve



The body of the core is visible between the embellishments. The overall mass of the bollard is much smaller than for sleeve solutions with the same size core.

Design principles:
Secureplus embellishment kit

Secureplus sleeves

International Embassy, Westminster

Large scale cast aluminium sleeves, complete with the City of Westminster crest, were designed to complement the traditional 'William IV' style bollards that are used in the surrounding areas.



SECUREPLUS BOLLARD SLEEVES & EMBELLISHMENT SETS

Secureplus embellishment kits

Hotel / railway station, London

A kit of parts - comprising a cap, ring, base colour and decorative floral bosses - were based on the designs of historical bollards originally used in the St Pancras area of north London.



Secureplus sleeves

Commercial buildings, London

The design is based on the traditional City of London bollard, but expertly re-proportioned to fit over the inner security core. Cast in aluminium, the bollard replicates the fine detailing of the originals and were painted to match.



SECUREPLUS BOLLARD SLEEVES & EMBELLISHMENT SETS

Secureplus sleeves

Bomber Command Memorial, London

The design is an oversize version the traditional Doric bollard, which is used extensively throughout the Royal Parks in central London, but re-proportioned to fit over the inner steel core. Cast in aluminium, and painted black, the decorative nature of this bollard sleeve perfectly disguises the high security functionality of the inner core.



Secureplus sleeves

Government buildings, London

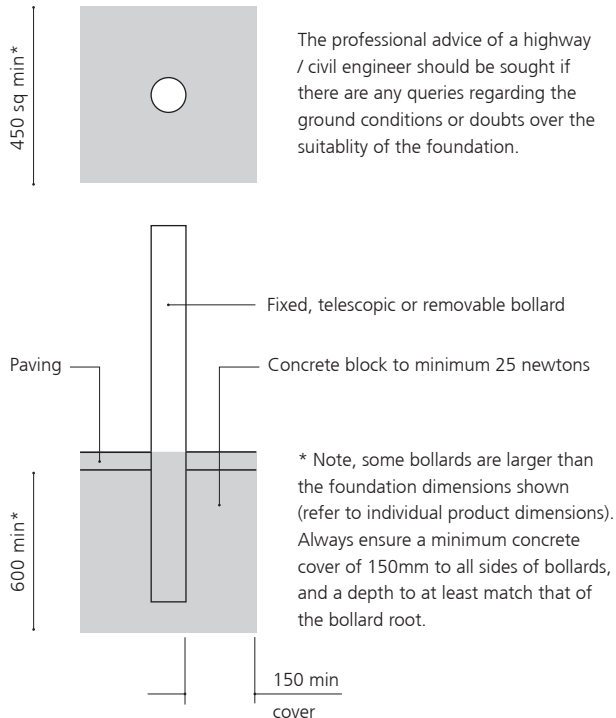
Oak sleeves - hollow assemblies with a lid - fit over a steel inner core to completely disguise the function of these bollards and dramatically change their aesthetic appearance.



SECURITY BOLLARDS - GENERAL INFORMATION

Product layout & installation details

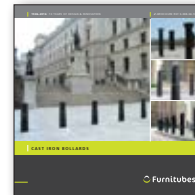
Appropriate setting out of bollards is an important first step towards the implementation of a secure site. Each site must be looked at on its own merits, identifying the vulnerable areas and designing a layout that is 'watertight', and specialist vehicle sweep path software may be useful in this respect. To present a secure line against standard vehicles we recommend a maximum gap of 1.2m between the faces (not the centres) of adjacent bollards. It is also important that bollards have a suitable foundation in order that they perform their security function in the event of a vehicle strike. Shown below is the minimum recommended requirement for a concrete foundation block for an individual fixed, telescopic or removable bollard in a typical installation in normal ground conditions. Particular attention should be paid to setting the bollard at the specified depth / height and ensuring that the concrete foundation is well compacted around the bollard / socket root.



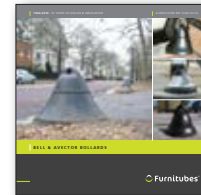
Coordinated products

Many of our security products have evolved from standard specification equivalents, to which we have added features and used heavier duty materials / construction to create higher specification security versions. If you are unable to find a product in this e-brochure that suits your requirement, please browse our standard product ranges for alternatives that might be more appropriate, and call us to discuss the feasibility of upgrading such products to a security specification. Shown below are a selection of e-brochures that contain mostly standard specification products which can be used in conjunction with security products for a fully coordinated scheme design. The brochures can be viewed at:

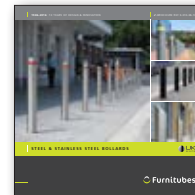
<http://www.furnitubes.com/brochures>



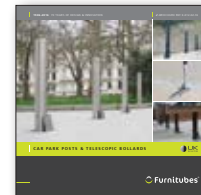
Cast iron bollards



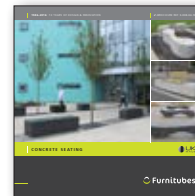
Bell & Avector bollards



Steel & stainless steel bollards



Car park posts & telescopic bollards



Concrete seating range

Please check our website for up-to-date information on our full range of standard products and regular new additions to our ranges



SECURITY BOLLARDS



SECURITY BOLLARDS



View or download other product e-brochures at the following link:

www.furnitubes.com/brochures



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