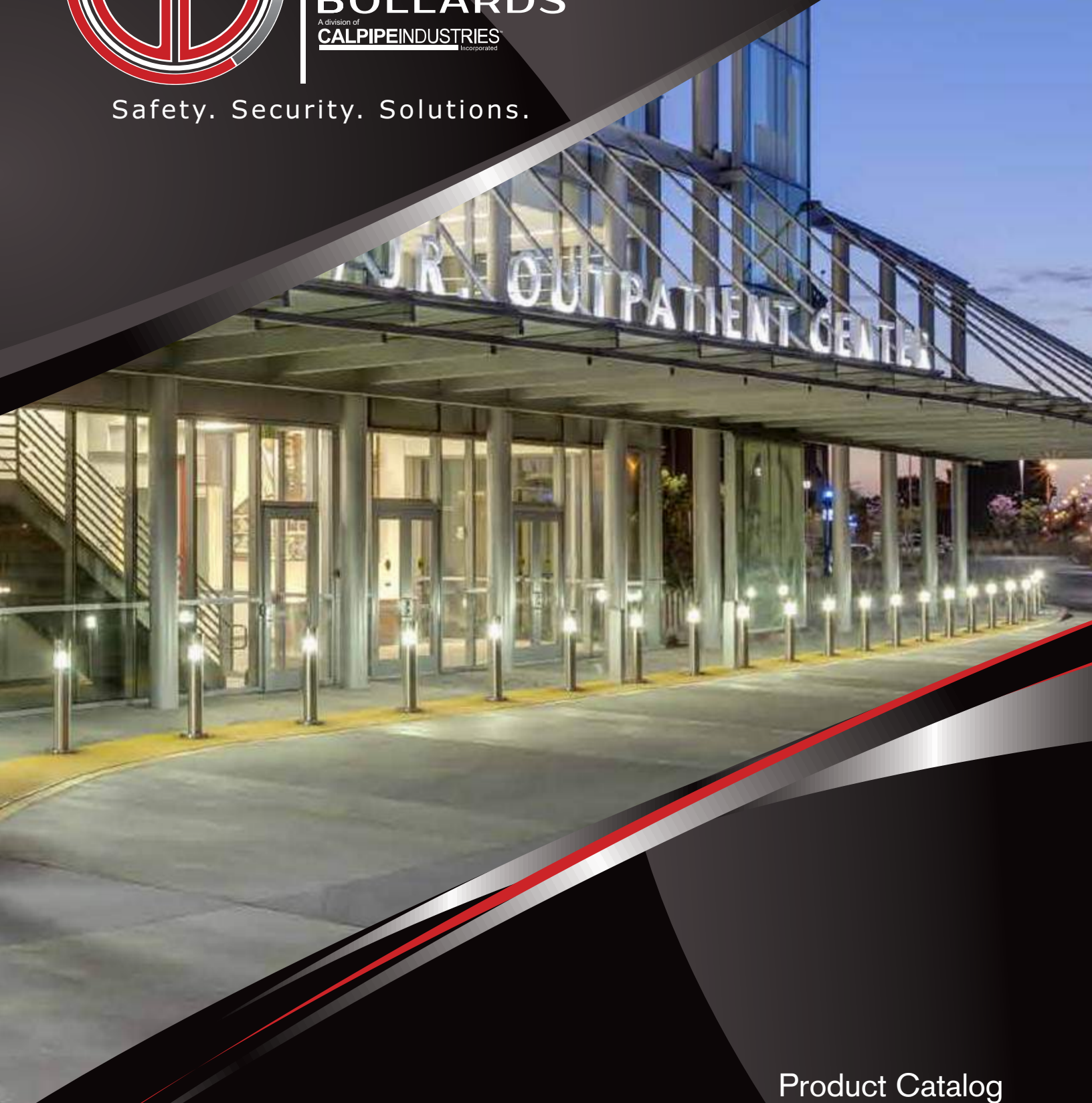




**CALPIPE
SECURITY
BOLLARDS™**

A division of
CALPIPE INDUSTRIES
Incorporated

Safety. Security. Solutions.



Product Catalog

calpipebollards.com

CALPIPE SECURITY BOLLARDS



BOLLARDS MADE IN THE USA — IT'S ALL WE DO

With the industry's broadest range and largest selection of bollards manufactured in the USA, Calpipe Security Bollards meets the aesthetic and functional requirements for a wide range of security, architectural, and landscaping installations. Select from lighted, high security/ASTM F2656-07/M-Rated, or shallow mount bollards. Select styles available in retractable, removable, or embedded. Our bollard experts will work with you to determine the exact bollard needed for your application. Headquartered in Rancho Dominguez, CA, Calpipe Security Bollards (CSB) is a division of Calpipe Industries, Inc.

PARTNERS FROM THE START

Calpipe Security Bollards collaborates with project managers and national architectural firms from conceptualization to installation and provides custom designed bollards to fit your needs. No matter what style, size, color, material, finish, or decorative element your project requires, we are committed to configuring the right bollard for your project. Because bollards are our business, we provide the highest level of support and service, making us the most responsive bollard supplier in the industry.

MARKETS WE SERVE

Since 1998, our impact tested and field certified products have been utilized in commercial, retail, industrial, high security, government, and military applications. With thousands of bollards to date installed in the USA and abroad, we offer experience and expertise from the early stages of design and specification through final installation.




DURABILITY

Calpipe's stainless steel and carbon steel bollards withstand harsh outdoor environments while retaining an unblemished appearance. Stainless steel bollards are corrosion resistant and will never need to be repainted, resulting in a long lasting product with the lowest cost of ownership.

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BOLLARD STYLES

<p>FIXED BOLLARDS</p>  <p>Fixed post bollards are the most commonly used. By creating a physical barrier, they protect pedestrians and buildings from oncoming vehicles, while allowing free movement in between the bollards.</p>	<p>FIXED BASE PLATE BOLLARDS</p>  <p>Fixed base plate bollards are primarily used in multi-level parking structures, warehouses or distribution centers to protect structures and equipment from fork lifts and pallet jacks. FIXED BASE PLATE BOLLARDS ARE VISUAL DETERRENTS ONLY.</p>	<p>INTERNAL LOCKING REMOVABLE BOLLARDS</p>  <p>Internal locking removable bollards are the most versatile bollard. Incorporating a tamper-resistant lock, the internal locking bollard delivers unmatched security with the flexibility of a removable bollard. Each bollard comes with an embedment sleeve for easy installation.</p>
<p>EXTERNAL PADLOCKING REMOVABLE BOLLARDS</p>  <p>Removable bollards with external padlocks are ideal for restricting access to alleyways, bike trails and parking lots, as well as protecting property and people from oncoming traffic. Each bollard comes with an embedment sleeve for easy installation.</p>	<p>MANUALLY OPERATED RETRACTABLE BOLLARDS</p>  <p>Manually operated bollards are used for a wide range of applications, from parking and traffic control to protecting walkways. The bollard lifts easily and locks into place. It retracts with a turn of the lock. The locking stainless steel lid provides extra security and covers the bollard to prevent pedestrian injuries.</p>	<p>ASSISTED LIFT RETRACTABLE BOLLARDS</p>  <p>Assisted lift bollards incorporate an industrial grade gas strut that raises and lowers the bollard into place with the turn of a key. The assisted lift mechanism allows for a heavier bollard, with easier lift and higher security.</p>
<p>AUTO PNEUMATIC RETRACTABLE BOLLARDS</p>  <p>Designed for repetitive cycles, the auto pneumatic retractable bollard system is ideal for restricted parking lots, access control gates, commercial building entrances, or military bases. Operation of these bollards can be integrated with most existing access control systems.</p>	<p>LIGHTED ARCHITECTURAL BOLLARDS</p>  <p>Manufactured from type 304 stainless steel, lighted bollards are not only built to withstand vehicle impact, but also provide an aesthetic appeal while illuminating the surrounding landscape.</p>	<p>LIGHTED SECURITY BOLLARDS</p>  <p>Lighted bollards are available in high security crash-rated models to provide superior protection against vehicle intrusion while illuminating the surrounding landscape.</p>
<p>HIGH SECURITY BOLLARDS</p>  <p>Calpipe Security Bollard's M30/K4 and M50/K12 meet specific safety and security requirements, and provide the flexibility and versatility for any structural and environmental need. The K4-Engineered and K12-Rated products are available in a variety of types, sizes and styles, including retractable removable and fixed versions.</p>	<p>SHALLOW MOUNT BOLLARDS</p>  <p>M30/K4 and M50/K12 rated bollards are designed for the highest level of protection. They utilize a shallow 12" embedment base designed to overcome depth restrictions found in conventional bollard installations. These bollards are used around corporate campuses, government buildings, airports and other urban environments where depths and utilities may be an issue.</p>	<p>SAFE-T-POST BOLLARDS</p>  <p>Safe-T-Post bollards are non-domestically manufactured items designed for light to medium security. Available in manual or automatic retractable styles, these bollards offer a variety of solutions at an affordable price.</p>

BOLLARD DESIGNS AND FINISHES







Carbon Steel

Calpipe Security Bollards are manufactured from the highest quality ASTM A53 carbon steel. The bollards can be galvanized, primed for painting, or powder coated from a choice of over 180 custom colors. Our carbon steel bollards will fit most of your perimeter security needs.

Stainless Steel

Stainless steel has always been regarded as top-of-the-line for aesthetics and durability. Calpipe Security Bollards come standard in Type 304 grade stainless steel. For harsher environments, please request type 316. The stainless steel is polished to a #4 finish. Choose from a variety of architectural details.

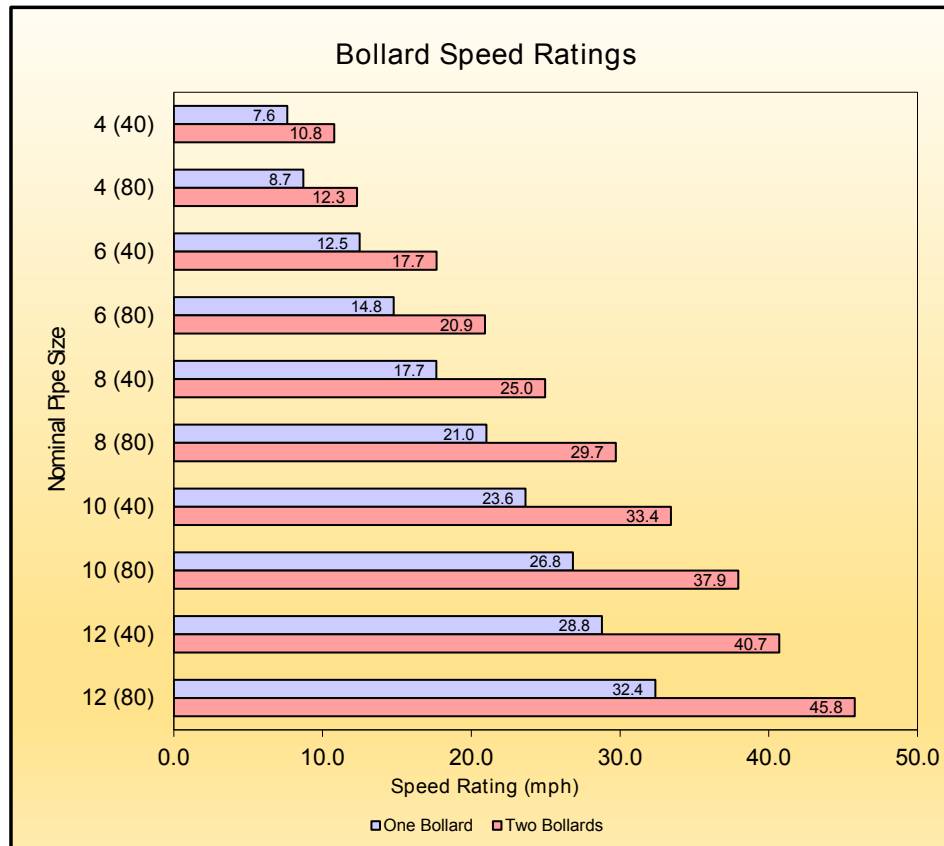
BOLLARD CAP CHOICES			
Choose from a variety of styles to top off your bollard			
DOME	STANDARD FLAT	VIKING	KNIGHT
			

PEDESTRIAN SAFETY CALCULATOR

BOLLARD STRENGTH TABLE

Steel Type **ASTM-A53**
Yield Strength **30000 psi**
Ultimate Strength **48000 psi**
Allowable Bollard Deflection Distance **2 ft**
Vehicle Weight **5000 lb**
Contact Height **14 in**

NOMINAL PIPE SIZE (IN) (SCH.)	ASTM STEEL TYPE			ASTM STEEL TYPE		ASTM STEEL TYPE	
	I.D. (IN)	O.D. (IN)	WALL THICKNESS (IN)	YIELD SPEED ¹ (MPH)	SPEED RATING ² (MPH)	YIELD SPEED ¹ (MPH)	SPEED RATING ² (MPH)
4 (40)	4.026	4.500	0.237	9.3	7.6	13.2	10.8
4 (80)	3.826	4.500	0.337	10.7	8.7	15.1	12.3
6 (40)	6.065	6.625	0.280	15.3	12.5	21.6	17.7
6 (80)	5.761	6.625	0.432	18.1	14.8	25.6	20.9
8 (40)	7.981	8.625	0.322	21.6	17.7	30.6	25.0
8 (80)	7.625	8.625	0.500	25.7	21.0	36.4	29.7
10 (40)	10.020	10.750	0.365	28.9	23.6	40.9	33.4
10 (80)	9.750	10.750	0.500	32.9	26.8	46.5	37.9
12 (40)	12.000	12.750	0.375	35.3	28.8	49.9	40.7
12 (80)	11.750	12.750	0.500	39.6	32.4	56.1	45.8



PEDESTRIAN SAFETY CALCULATOR



www.storefrontsafety.org

www.eng-sciences.com



¹ The Yield Speed is based upon an energy analysis that assumes that the ability of a bollard to resist the movement of an impacting vehicle is limited by the yield strength of the material from which it is constructed. This assumption provides a conservative analysis, since a bollard's ability to resist an impact is actually limited by its ultimate strength. The Yield Speed has been estimated from an energy analysis that includes considerations for the material properties of various grades of steel pipe and cured concrete under static loads, but does not take into account the impulse force of an actual vehicle collision. The Yield Speed should not be interpreted as the true limit of a bollard's performance, or an indication of the speed at which a vehicle could impact a bollard and be stopped.

² The Speed Rating is based upon the same analysis as is the Yield Speed, with the additional assumption that the steel will only provide 66% of its specified yield strength under an impact condition. This assumption provides a safety factor to account for the differences between static loads and vehicle impacts, and to ensure that the actual performance of the bollard material will always exceed the Speed Rating.

This worksheet is intended to illustrate the relative material strength of various sizes of concrete-filled pipe bollards for planning purposes only. It is not intended to be a design tool, or provide engineered solutions to your storefront protection requirements. Bollard systems for any specific site must be part of a complete design that takes into consideration the site's land use, local geotechnical data, hydrologic data, traffic patterns, existing and proposed utilities, elevation differentials (e.g. curbs), and other important features that might not be apparent.

All of the calculations in this worksheet assume that the bollard(s) are embedded in a foundation that can withstand the internal pressure induced by the applied loads, and is adequate to counter the applied force and over-turning moment generated by this force without excessive movement. If you intend to install a bollard system as a protective device for your storefront or other location, it is critical that the foundation(s) for each bollard system be designed in accordance with the expected loads, local building codes, and site-specific data. Bollard foundations must be specifically engineered as a part of the overall design or retrofit of a facility. Expert Engineering Sciences can provide civil engineering services for the installation of bollards at storefronts, building sites, and for other permanent and temporary projects.

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APPLICATION AND INSTALLATION

SAMPLE FOOTINGS

To ensure that bollards would meet their full impact capabilities, it is extremely important to combine the bollard with a properly engineered footing. In most simple installations, a strip footing is the best and strongest to use. If a strip footing is not practical for your site, individual bollard footings would have to be utilized.

Calpipe Security Bollards always recommends that a local engineer be consulted on installations as soil conditions, water tables, and frost lines will vary from region to region.

Example Strip Footing



Example Individual Footing



INSTALLATION

Calpipe Security Bollards is a manufacturer and does not provide installation. However, we will provide engineering help and installation documentation for high security and specialized product installations.



LIGHTED BOLLARDS

Calpipe Security Bollards manufactures a full line of lighted bollards engineered and built to withstand vehicle impacts while illuminating pathways and sidewalks to guide pedestrians. The sleek 304 stainless steel finish, lighting options, and various aesthetic styles bring a sophisticated look to any landscape or building. Lighted bollards are available in high security crash-rated models to provide superior protection against vehicle intrusion.

SLOTTED

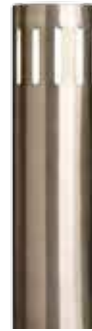
Lighted Security Bollard

Stainless Steel

Dome Top

Flat Top

Shown with Opal Lens and LED Lamp



360°

Lighted Security Bollard

Stainless Steel

Dome Top

Flat Top

Shown with Opal Lens and LED Lamp



PANORAMA

Architectural Bollard

Stainless Steel

Dome Top

Flat Top

Shown with Clear Lens and HID Lamp (metal halide)



LIGHTED BOLLARDS



LIGHTED BOLLARD SPECIFICATIONS

- Corrosion-resistant stainless steel
- Brushed #4 finish
- Flat or dome top
- Steel security inner core

LIGHTING TYPES

- CFL-Compact Fluorescent Lamp
- HID
- Eco-friendly LED
- Induction

LED ENVIRONMENTAL BENEFITS/LEED CERTIFICATION

- Eco-friendly LED-lit bollards contribute to attaining LEED certification/points
- LED lighting is energy efficient
- LED lighting is mercury free

LENS MATERIAL

- Vandal-resistant polycarbonate (opal or clear)

OPTICS

- Patterned borosilicate glass refractor or stacked louvre

STANDARD SIZES

- 6", 8", or 12" nominal diameters, 36" or 42" above grade

WEATHER-RESISTANT

- Sealed at all points to prevent the intrusion of rain, insects, dust and other contaminants

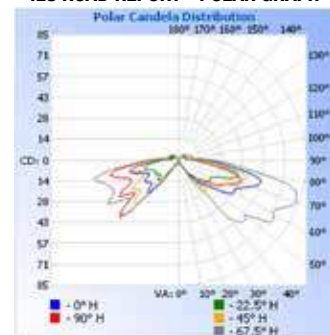


ETL listing #4004384 conforms with
UL Standard 1598, wet location

LIGHTED BOLLARDS	
MEDIUM/HEAVY SECURITY BOLLARDS	
Item Number	Wall Thickness
SSLS06050	1/2"
SSLS06075	3/4"
SSLS08050	1/2"
SSLS08075	3/4"
SSLS12050	1/2"
SSLS12100	1"

LIGHTED BOLLARDS	
ARCHITECTURAL LIGHTED BOLLARDS	
SSLA06000	
SSLA08000	

IES ROAD REPORT - POLAR GRAPH



IES files available to design professionals.

FIXED POST BOLLARDS



For most installations, fixed post security bollards provide solid, uncompromising protection against vehicle incursion. Embedded bollards with an engineered footing offer the most dependable protection and are offered in carbon steel and stainless steel. For locations where surface penetration is impractical or impossible, plate-mounted bollards in carbon steel or stainless steel create a visual deterrent to protect property and pedestrians.

FIXED POST BOLLARDS

The fixed bollard is ideal for nearly any application, from simple traffic control, to the toughest of perimeter defense needs, and is also available in high security wall thickness. Custom lengths are available. Call for details and quote.

FIXED BOLLARDS RECOMMENDED USAGE		
LIGHT SECURITY	MEDIUM SECURITY	HEAVY SECURITY
Parking Lots	Hospitals	Government Facilities
Parking Structures	Malls	Power Plants
Entrances	Retail/Lifestyle Centers	Financial Institutions
Retail Storefronts	Stadiums/Arenas	Chemical Plants
Loading Areas	Colleges/Universities	Water Treatment Plants
Utilities	Industrial/Commercial	Military Facilities

SHALLOW MOUNT BOLLARDS		
Item Number		Diameter
PDT8080SMF	K4/M30 Fixed Shallow Mount	8"
PDT10080SMF	K12/M50 Fixed Shallow Mount	10"

AVAILABLE MATERIALS	
Carbon Steel	Stainless Steel
	
IBF SERIES	SSF SERIES

STANDARD SIZING *custom sizing available upon request*				
Item Number	Nominal Pipe Size	Above	Depth	Length
03000	3" Sch.10	36"	12"	48"
03040	3" Sch.40	36"	12"	48"
03080	3" Sch.80	36"	12"	48"
04000	4" Sch.10	36"	12"	48"
04040	4" Sch.40	36"	12"	48"
04080	4" Sch.80	36"	12"	48"
05000	5" Sch.10	36"	12"	48"
05040	5" Sch.40	36"	12"	48"
05080	5" Sch.80	36"	12"	48"
06000	6" Sch.10	36"	12"	48"
06040	6" Sch.40	36"	12"	48"
06080	6" Sch.80	36"	12"	48"
08000	8" Sch.10	36"	12"	48"
08040	8" Sch.40	36"	12"	48"
08080	8" Sch.80	36"	12"	48"
10000	10" Sch.10	36"	18"	54"
10040	10" Sch.40	36"	18"	54"
10080	10" Sch.80	36"	18"	54"
12000	12" Sch.10	36"	18"	54"
12040	12" Sch.40	36"	18"	54"
12080	12" Sch.80	36"	18"	54"

FIXED POST BOLLARDS

FIXED BOLLARDS

Fixed bollards are simple to install and unlike concrete barriers, they allow free movement in between the bollards. Common applications include:

- Building entrances
- Store windows
- Gas pumps
- High voltage electrical junction boxes

They are also used to protect pedestrians from cars on busy streets.

FIXED CARBON STEEL BOLLARDS					
LIGHT SECURITY		MEDIUM SECURITY		HEAVY SECURITY	
Item Number	Nominal Pipe Size	Item Number	Nominal Pipe Size	Item Number	Nominal Pipe Size
IBF03040	3" Sch.40	IBF04080	4" Sch.80	IBF08040	8" Sch.40
IBF03080	3" Sch.80	IBF05040	5" Sch.40	IBF08080	8" Sch.80
IBF04040	4" Sch.40	IBF05080	5" Sch.80	IBF10040	10" Sch.40
		IBF06040	6" Sch.40	IBF10080	10" Sch.80
		IBF06080	6" Sch.80	IBF12040	12" Sch.40
				IBF12080	12" Sch.80



FIXED STAINLESS STEEL BOLLARDS					
LIGHT SECURITY		MEDIUM SECURITY		HEAVY SECURITY	
Item Number	Nominal Pipe Size	Item Number	Nominal Pipe Size	Item Number	Nominal Pipe Size
SSF03040	3" Sch.40	SSF04080	4" Sch.80	SSF08040	8" Sch.40
SSF03080	3" Sch.80	SSF05040	5" Sch.40	SSF08080	8" Sch.80
SSF04040	4" Sch.40	SSF05080	5" Sch.80	SSF10040	10" Sch.40
		SSF06040	6" Sch.40	SSF10080	10" Sch.80
		SSF06080	6" Sch.80	SSF12040	12" Sch.40
				SSF12080	12" Sch.80

BASE PLATE BOLLARDS

Fixed base plate bollards are primarily used when the slab that they are being mounted on is too shallow for a deeper, more secure concrete footing. Base plate bollards should not be used for stopping vehicles or as a perimeter security application.

BASE PLATE CARBON STEEL	
SAFETY BOLLARDS	
Item Number	Nominal Pipe Size
IBB03040	3" Sch.40
IBB04040	4" Sch.40
IBB05040	5" Sch.40
IBB06040	6" Sch.40
IBB08040	8" Sch.40
IBB10040	10" Sch.40
IBB12040	12" Sch.40

BASE PLATE STAINLESS STEEL	
SAFETY BOLLARDS	
Item Number	Nominal Pipe Size
SSB03000	3" Sch.10
SSB04000	4" Sch.10
SSB05000	5" Sch.10
SSB06000	6" Sch.10
SSB08000	8" Sch.10
SSB10000	10" Sch.10
SSB12000	12" Sch.10



INTERNAL LOCKING REMOVABLE BOLLARDS



The internal locking removable bollard is our most versatile bollard. Turning the key locks the bollard into its embedment sleeve, and it can only be removed by unlocking the conveniently located tamper-proof lock. When the bollard is removed, the flip top lid on the embedment sleeve will fall down, covering the exposed hole. Internal locking removable bollards used in conjunction with fixed bollards creates a flexible barrier system that can allow large objects or vehicles to move through the passageway when necessary, while maintaining superior stopping strength when needed.

INTERNAL LOCKING REMOVABLE BOLLARDS RECOMMENDED USAGE

LIGHT SECURITY	MEDIUM SECURITY	HEAVY SECURITY
Storefronts	Malls	Government Facilities
Utility Boxes	Retail/Lifestyle Centers	Oil Refineries
Driveways	Farmers Markets	Water Treatment Plants
Schools	Colleges/Universities	Chemical Plants
Traffic Flow Control	Stadiums/Arenas	Military Facilities
Parking Lots	Roll-up Doors	Financial Institutions

AVAILABLE MATERIALS



STANDARD SIZING *custom sizing available upon request*

Item Number	Nominal Pipe Size	Above	Depth	Length
03000	3" Sch.10	36"	12"	48"
03040	3" Sch.40	36"	12"	48"
03080	3" Sch.80	36"	12"	48"
04000	4" Sch.10	36"	12"	48"
04040	4" Sch.40	36"	12"	48"
04080	4" Sch.80	36"	12"	48"
05000	5" Sch.10	36"	12"	48"
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06000	6" Sch.10	36"	12"	48"
06040	6" Sch.40	36"	12"	48"
06080	6" Sch.80	36"	12"	48"
08000	8" Sch.10	36"	12"	48"
08040	8" Sch.40	36"	12"	48"
08080	8" Sch.80	36"	12"	48"
10000	10" Sch.10	36"	18"	54"
10040	10" Sch.40	36"	18"	54"
10080	10" Sch.80	36"	18"	54"
12000	12" Sch.10	36"	18"	54"
12040	12" Sch.40	36"	18"	54"
12080	12" Sch.80	36"	18"	54"

INTERNAL LOCKING REMOVABLE BOLLARDS

INTERNAL LOCKING REMOVABLE BOLLARDS

These bollards are manufactured from carbon steel and stainless steel for a variety of strengths and options. Powder coats are available in 180+ colors, or the bollards can be galvanized or primed only.

For extra vehicle stopping power, these bollards are also available in high security wall thickness. To avoid possible injury due to an opening when the bollard is removed, we provide two options: an attached lid that folds down to cover the opening, or a lockable/removable lid that locks into place when the bollard is removed.

The internal locking removable bollard is ideal for any application that requires the strength of a fixed bollard with the flexibility to remove the bollards to allow for authorized vehicle traffic, equipment, or large items.



INTERNAL LOCKING REMOVABLE BOLLARD CARBON STEEL					
LIGHT SECURITY		MEDIUM SECURITY		HIGH SECURITY	
Item Number	Nominal Pipe Size	Item Number	Nominal Pipe Size	Item Number	Nominal Pipe Size
IBR03040	3" Sch.40	IBR04080	4" Sch.80	IBR08040	8" Sch.40
IBR03080	3" Sch.80	IBR05040	5" Sch.40	IBR08080	8" Sch.80
IBR04040	4" Sch.40	IBR05080	5" Sch.80	IBR10040	10" Sch.40
		IBR06040	6" Sch.40	IBR10080	10" Sch.80
		IBR06080	6" Sch.80	IBR12040	12" Sch.40
				IBR12080	12" Sch.80

INTERNAL LOCKING REMOVABLE BOLLARD STAINLESS STEEL					
LIGHT SECURITY		MEDIUM SECURITY		HIGH SECURITY	
Item Number	Nominal Pipe Size	Item Number	Nominal Pipe Size	Item Number	Nominal Pipe Size
SSR03040	3" Sch.40	SSR04080	4" Sch.80	SSR08040	8" Sch.40
SSR03080	3" Sch.80	SSR05040	5" Sch.40	SSR08080	8" Sch.80
SSR04040	4" Sch.40	SSR05080	5" Sch.80	SSR10040	10" Sch.40
		SSR06040	6" Sch.40	SSR10080	10" Sch.80
		SSR06080	6" Sch.80	SSR12040	12" Sch.40
				SSR12080	12" Sch.80

EXTERNAL PADLOCKING REMOVABLE BOLLARDS



The external padlocking removable bollard is commonly used in industrial applications. The external padlock on the bollard allows easy access for public service vehicles, as well as emergency access to allow fire and police departments into restricted areas. The external padlocking removable bollard offers the same versatility as the internal locking removable bollard in a mixed barrier application of fixed and removable bollards to quickly and easily allow movement of large objects through the barrier.

EXTERNAL PADLOCKING REMOVABLE BOLLARDS		
NON-SECURITY	MEDIUM SECURITY	HIGH SECURITY
Car Dealerships	Malls	Government Facilities
Utility Boxes	Retail/Lifestyle Centers	Oil Refineries
Driveways	Farmers Markets	Water Treatment Plants
Schools	College/Universities	Chemical Plants
Traffic Flow Control	Stadiums/Arenas	Military Facilities
Parking Lots	Industrial Applications	Financial Institutions

AVAILABLE MATERIALS	
Carbon Steel	Stainless Steel
	
IBP SERIES	SSP SERIES

STANDARD SIZING *custom sizing available upon request*				
Item Number	Nominal Pipe Size	Above	Depth	Length
03000	3" Sch.10	36"	12"	48"
03040	3" Sch.40	36"	12"	48"
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06000	6" Sch.10	36"	12"	48"
06040	6" Sch.40	36"	12"	48"
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10040	10" Sch.40	36"	18"	54"
10080	10" Sch.80	36"	18"	54"
12000	12" Sch.10	36"	18"	54"
12040	12" Sch.40	36"	18"	54"
12080	12" Sch.80	36"	18"	54"

EXTERNAL PADLOCKING REMOVABLE BOLLARDS

EXTERNAL PADLOCKING REMOVABLE BOLLARDS

Calpipe Security Bollards manufactures an external padlocking series of removable bollards from carbon steel or stainless steel for a variety of strength and options. Powder coats are available in 180+ colors, or the bollards can be galvanized or primed only.

These bollards are also available in heavy security wall thickness for extra vehicle stopping power.

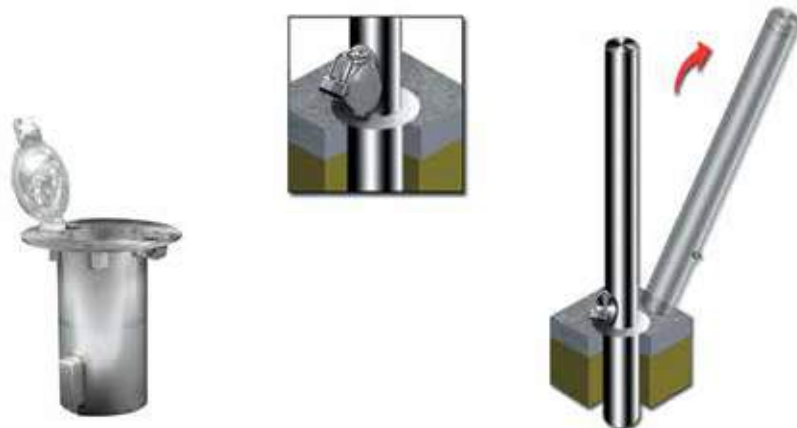
To avoid possible injury due to an opening when the bollard is removed, we provide two options: an attached lid that folds down to cover the opening, or a lockable/removable lid that locks into place when the bollard is removed.

EXTERNAL LOCKING REMOVABLE CARBON STEEL BOLLARDS					
LIGHT SECURITY		MEDIUM SECURITY		HIGH SECURITY	
Item Number	Nominal Pipe Size	Item Number	Nominal Pipe Size	Item Number	Nominal Pipe Size
IBP03040	3" Sch.40	IBP04080	4" Sch.80	IBP08040	8" Sch.40
IBP03080	3" Sch.80	IBP05040	5" Sch.40	IBP08080	8" Sch.80
IBP04040	4" Sch.40	IBP05080	5" Sch.80	IBP10040	10" Sch.40
		IBP06040	6" Sch.40	IBP10080	10" Sch.80
		IBP06080	6" Sch.80	IBP12040	12" Sch.40
				IBP12080	12" Sch.80

EXTERNAL LOCKING REMOVABLE STAINLESS STEEL BOLLARDS					
LIGHT SECURITY		MEDIUM SECURITY		HIGH SECURITY	
Item Number	Nominal Pipe Size	Item Number	Nominal Pipe Size	Item Number	Nominal Pipe Size
SSP03040	3" Sch.40	SSP04080	4" Sch.80	SSP08040	8" Sch.40
SSP03080	3" Sch.80	SSP05040	5" Sch.40	SSP08080	8" Sch.80
SSP04040	4" Sch.40	SSP05080	5" Sch.80	SSP10040	10" Sch.40
		SSP06040	6" Sch.40	SSP10080	10" Sch.80
		SSP06080	6" Sch.80	SSP12040	12" Sch.40
				SSP12080	12" Sch.80

REMOVABLE BOLLARD EMBEDMENT SLEEVE

Calpipe Security Bollards manufactures embedment sleeves for use with our removable bollards. Available in either T304 or T316 stainless steel, these embedment sleeves are designed to securely house both external and internal locking removable bollards. Equipped with a hinged lid that falls into place upon removal of the bollard, to cover the exposed opening and prevent possible injury.



MANUAL & ASSISTED LIFT RETRACTABLE BOLLARDS

MANUAL LIFT BOLLARDS

The manual lifting bollard is perfect for all of your light security needs. From traffic control to limited access pathways, this bollard is the obvious choice for ease of use and economical, maintenance-free operation. The same key which is used to unlock and lower the bollard is also used to lock the cover plate when the bollard is in the retracted position.

The LBMR series is made from stainless steel and polished to a #4 finish. It is designed to last for years, withstanding frequent operation, and can operate under very cold conditions and climates.

MANUAL OPERATED RETRACTABLE RECOMMENDED USES

LIGHT SECURITY
Parking Garages
Traffic Control
Entrances
Schools

MANUAL OPERATED RETRACTABLE BOLLARD

LIGHT SECURITY		
Item Number	Nominal Pipe Size	Length Above
LBMR04040	4" Sch.40	36"
LBMR04080	4" Sch.80	36"
LBMR06040	6" Sch.40	36"

AVAILABLE MATERIALS

Stainless Steel



LBMR SERIES

MANUAL LIFT BOLLARDS

Sometimes retractable or telescoping bollards are required for a specific site. Our entry level model is manually operated, easily lifts and locks into place. When the bollard retracts, the stainless steel lid locks with a tamper resistant key for extra security. The LBMR manual lift bollard is manufactured from Type 304 stainless steel for long-lasting durability, low maintenance and ease of installation and operation. It is our most economical retractable bollard.

MANUAL ASSISTED LIFT BOLLARDS

If your site requires heavy security and flexibility, the ideal option is to install retractable bollards which do not require manual lifting. The manual assisted retractable bollard was designed for these higher security applications. We manufacture these bollards with a heavy industrial grade gas strut which has the capability to lift hundreds of pounds with just the twist of a key.

MANUAL ASSISTED LIFT BOLLARDS

The manual assisted lift bollard is best utilized in areas with restricted access and high security needs. The bollard operates with very little effort on the users' part. With the turn of a key, the bollard rises up and locks into position.

AVAILABLE MATERIALS

Stainless Steel



LBMA SERIES

MANUAL ASSISTED LIFT RECOMMENDED USAGE

MEDIUM SECURITY	HIGH SECURITY
Malls	Government Facilities
Farmer's Markets	Oil Refineries
Stadiums/Arenas	Chemical Plants
College/Universities	Military Facilities

MANUAL ASSISTED LIFT RETRACTABLE BOLLARDS

LIGHT SECURITY					
Item Number	Nominal Pipe Size	Length Above	Item Number	Nominal Pipe Size	Length Above
LBMA06040	6" Sch.40	36"	LBMA8080	8" Sch.80	36"
LBMA06080	6" Sch.80	36"			
LBMA08040	8" Sch.40	36"			

PNEUMATIC AUTOMATIC RETRACTABLE BOLLARDS

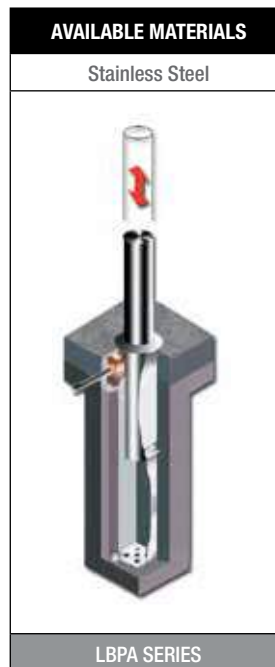


LBPA Series pneumatically driven automatic bollards provide an environmentally sustainable system that offers both security and ease of use. Manufactured completely from stainless steel, the applications for these bollards are endless. Such systems are used to control entrances and exits or used for high level traffic control. Applications include sports facilities, corporate campuses, industrial installations, and high security government and military facilities.

AUTOMATIC RETRACTABLE BOLLARDS

Pneumatic bollards can be integrated with any access control option, whether a key system, guard operated, proximity card, or any other system or software. The system is geared for both high operation cycles or minimal use. All of Calpipe Security Bollards retractable bollards are manufactured entirely from stainless steel. Bollards that retract into the ground are stainless steel in order to avoid corrosion from snow, sand, salt, rain, and other harsh environments.

AUTOMATIC RETRACTABLE BOLLARD RECOMMENDED USAGE		
LIGHT SECURITY	MEDIUM SECURITY	HIGH SECURITY
Employee Parking	Loading Dock	Financial Institutions
Restricted Access Areas	Stadiums/Arenas	Gov't Facilities
Parking Structures	Corporate HQ	Military Facilities
Street Closures	Farmer's Markets	Water Treatment Plants



PNEUMATIC AUTOMATIC RETRACTABLE BOLLARDS		
LIGHT SECURITY		
Item Number	Nominal Pipe Size	Length Above
LBPA06040	6" Sch.40	36"
LBPA06080	6" Sch.80	36"
LBPA08040	8" Sch.40	36"
LBPA08080	8" Sch.80	36"

HIGH SECURITY K4/M30 & K12/M50 BOLLARDS



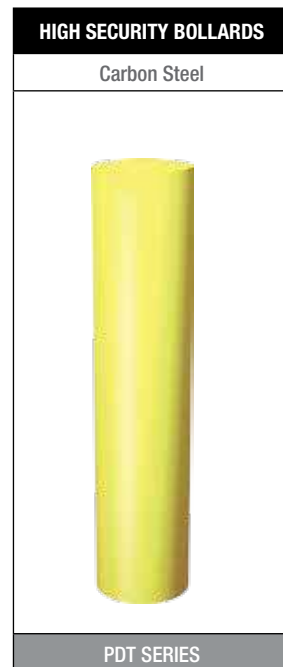
When the highest level of safety and security is required, bollard designs still require flexibility and versatility to meet the needs of a structure's purpose and environment. Calpipe Security Bollards' M50 or M30 rated product lines are available in a wide variety of types, sizes and styles—including retractable, removable, fixed and shallow mount versions.

The M50 rated products offer the highest security rating available today and can stop a 15,000-pound vehicle at a speed of 50 miles per hour. The M30 rated products can stop the same vehicle at 30 miles per hour.

SHALLOW MOUNT "M" RATING OR F2656 - RATED BOLLARDS

Designed for the highest level of protection, these bollards are found around corporate campuses, government buildings, power and water plants and airports. These bollards use a shallow 12" embedment. The shallow mount fixed or removable bollard is designed to protect a facility's most valuable assets – people and property. The shallow mount bollard installation will also result in significant savings over deep mount bollards installations.

ASTM F2656	
M30 RATED BOLLARDS	
PDT08080F	Fixed (engineered)
PDT08080R	Removable (engineered)
PDT08080SMF	Shallow Mount Fixed
PDT08080SMR	Shallow Mount Removable
M50 RATED BOLLARDS	
PDT1200M	Manual Retractable
PDT1200P	Pneumatic Automatic Retractable
PDT1200F	Fixed 36" Height
PDTDS22	Fixed 39" Height
PDTDS22R	Removable 39" Height
PDT10080SMF	Shallow Mount Fixed
PDT10080SMR	Shallow Mount Removable



HIGH SECURITY SHALLOW MOUNT BOLLARDS

ADVANTAGES OF SHALLOW MOUNT BOLLARDS

Shallow mount bollards provide a cost savings:

- No rebar needed – just mesh and concrete
- Lower overall cost of installation

Shallow mount bollards are best utilized in urban areas where there may be underground utilities:

- No depth restrictions
- Ideal for subways, streets, ports and water treatment facilities
- Minimum excavation and disruption



SHALLOW MOUNT RATED BOLLARDS

Shallow mount bollards are best utilized in urban areas where depth may be an issue. At 12" depth, the shallow mount bollard provides the highest level of security needed without the costly delays of installing deep mount bollards while working around utilities and restrictions.

SHALLOW MOUNT BOLLARDS				
Item Number	Rating	Diameter	Length Above	Embedment Depth
FIXED				
PDT8080SMF	K4/M30	8"	36"	12"
REMOVABLE				
PDT8080SMR	K4/M30	8"	36"	12"
FIXED				
PDT10080SMF	K12/M50	10"	36"	12"
REMOVABLE				
PDT10080SMR	K12/M50	10"	36"	12"

SAFE-T-POST BOLLARDS

SPECIFICATIONS

- Available in 6" and 8" diameters
- Manual retractable option
- Automatic retractable option with control panel and remote control activation. Safety loop and lights can be programmed
- Powder coated carbon steel, type 304 and 316 stainless steel finish

FEATURES

- Available upon request: LED lights, reflective tape grooves
- Can be integrated with ticket dispenser, card reader and other systems to trigger automatic control functions
- Electronic control, rise/fall automatically (optional)



FREQUENTLY ASKED QUESTIONS

Bollards come in many different shapes and sizes. Deciding what type of bollard is needed for your application can be a difficult task. At Calpipe Security Bollards, our experts will always be able to assist you in the decision-making process. The following FAQ's will help clarify most questions concerning the types of bollards that we manufacture, as well as the use and applications of our bollards.

1. What type of bollard should I use?

Many factors go into the decision of what type of bollards should be used for a particular application. A few questions to consider before selecting a bollard would be: What am I trying to accomplish? Is it a traffic deterrent or a security issue? If it is a security issue, what size vehicle do I want to stop and how fast could it be traveling when it makes impact?

2. What bollard styles do you offer?

There are 4 different styles of bollards. Fixed/embedded, base plate/surface mount, locking-removable, and retractable.

3. What type of footing or embedment do I need to use?

Calpipe Security Bollards recommends a strip footing. For maximum security protection, a strip footing with a rebar cage tied into the bollards will make them more secure and much stronger because the entire footing will absorb any impact as opposed to an individual footing for each bollard.

4. What if there are utilities and underground pipes which I am not aware of?

Prior to the installation process, it is always recommended that you x-ray the area that will be excavated. In the case of underground utilities or other areas with depth restrictions, you can select Calpipe Security Bollard's shallow-mount bollards. These bollards use a shallow 12" embedment base design in order to overcome depth restrictions found in conventional bollard installations. If there are any concerns, please contact us regarding a custom engineered solution.

5. I have a parking structure. Can I core drill into the suspended slab?

Calpipe Security Bollards never recommends core drilling into a slab. We recommend a base plate bollard in that situation. Although it will not have the vehicle stopping capacity that an embedded or removable bollard has, it will be a visual deterrent and will have some degree of protection.

6. I have a need to shut down certain sections of a street at specific times times for farmer's markets, events, parades, etc. What should I use?

Calpipe Security Bollards recommends the use of either removable or retractable bollards to provide safety and security from vehicles while still allowing for easy same day setup and removal. Both options require a simple one-time installation in the street which allows for a safe, secure and fast deployment.

Retractable bollards are installed in a roadway and are ready to be unlocked and deployed in seconds. They can be operated manually or automatically depending on the requirements and budget. When the event is over and the street can be reopened, the bollards are quickly lowered and ready for future use.

Removable bollards are usually stored near the areas where they will be used. When a street closure is called for, the bollards are inserted into our proprietary embedment sleeve and locked in place using either a security key or a padlock. When the event is over, the bollards are removed and the embedment lid is locked in place.

7. I need a large bollard for a medium to high security application, but I also need to be able to remove it occasionally. What should I use?

A bollard over 6" in diameter becomes very difficult to move in and out of place. A manual retractable bollard has an assisted lift feature built into the bollard so raising it from the ground is as simple as turning a key and watching it float and lock into position. Retracting the bollard is just as simple. Turn the key and with very gentle pressure, push the bollard down and step on it until it locks in the down position. An automatic retractable bollard should be chosen for high use areas such as a guard gated entrance, an entrance with numerous deliveries per day, or any situation where the bollards will be going up and down on a near continuous basis.

8. What are your bollards made from?

Calpipe Security Bollards manufactures bollards in ASTM A53, T304 stainless steel or T316 stainless steel for highly corrosive areas.

9. What are the colors or finishes available to me?

In the case of stainless steel bollards, we polish to a #4 satin finish. We can electrostatically powder coat our carbon steel bollards with your choice of either safety yellow or black as standard colors. We also have over 180 custom finishes to choose from.

10. What are the sizes/diameters of the bollards?

Our bollards range in size from 3" diameter to 12" diameter for the majority of our bollard product lines.

11. What are the differences or advantages of an internal locking bollard and an external locking bollard?

The most obvious difference is that an internal locking bollard is virtually tamper proof. Another feature of the internal locking bollard is that when in place, it will look the same as the embedded bollard. The lock is waste high on the internal locking bollard, so there is no kneeling on the ground to unlock the padlock. The padlock bollard is preferred if it is an industrial application. Police or fire departments usually prefer the padlock because they have the universal key – the bolt cutter. Unfortunately, so do many unauthorized individuals.

12. Is a base plate mounted bollard as strong as a fixed/embedded or locking removable bollard?

No. The base plate bollard should be used when there is either a suspended slab or underground utilities that can't be disturbed, or inside of warehouses and distribution centers. The base plate bollard is only as strong as the bolts it is mounted with.

13. Are the bollards manufactured in The United States?

Yes, Calpipe Security Bollards are manufactured in the United States.

14. Do I need to fill the bollard with concrete?

That is entirely up to the specifier. While it is commonly thought that a cement filled bollard makes it stronger, it may only be that cement makes it heavier. The strength of any steel bollard comes from the strength of the steel cylinder itself, which is determined by the diameter of the bollard and the wall thickness. It is the impact resistance and inherent strength of the steel, coupled with proper installation in a proper footing that determines how secure an installation will be. Calpipe Security Bollards always recommends that you consult your engineer as local site conditions can vary.

15. What sort of precautions should be taken when handling removable bollards?

Safety concerns for personnel include metal safety shoe covering for the toe and top of the foot, back braces and keeping the hinged lid in the closed position except for placement and extraction of the removable parking bollards. The total weight of the removable bollards varies depending on the diameter, wall thickness and length of the bollards, therefore the safety supervisor at your company should review these considerations. It could be beneficial for a company to have two personnel extract and place the bollards. We recommend the use of bollard storage racks. We also recommend that you consult with your safety supervisor prior to ordering the removable traffic bollards.



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