



Perimeter Protection



Static Bollards



Telescopic Bollards



Hoop Barriers





YOUR SECURITY, OUR STRENGTH

Rhino specialise in perimeter protection, providing exceptional security and peace of mind. We provide comprehensive ranges of static bollards, telescopic bollards and hoop barriers. Each range includes products in different specifications and styles so that you can choose items that will deliver both the security and look that your project requires. With Rhino products you can be assured that you have specified the best protection for your scheme, whether it be to provide access control, ram raid deterrence or pedestrian walkways.

Rhino products are manufactured by Marshalls Street Furniture, a Specialist Business of Marshalls plc. Marshalls Street Furniture is unique as a street furniture supplier in that we have manufacturing capabilities in a wide variety of materials including concrete, natural stone, cast iron, steel, stainless steel and polyurethane. Categories of furniture include: seating, cycle parking, litter bins, planters, post and rail and tree protection.

Quality and Performance

The Rhino name has become synonymous with quality and trusted performance. As manufacturers of 'The Original Rhino Post' we have over fifteen years of experience within the perimeter protection market.

Selected telescopic posts have been independently tested and certified by the Home Office 'Sold Secure' organisation. Bollards are extensively tested by professional locksmiths to withstand a variety of potential methods of theft. The Rhino Posts tested achieved the 'Automotive Gold' standard and are certified as suitable for inclusion on the Sold Secure Approved List in the Automotive Category.



Marshalls are also a 'Secured by Design' License Holder. Managed by the Association of Chief Officers Crime Prevention Initiatives (ACPO CPI), Secured by Design is a U.K. Police Flagship initiative. It supports the principles of designing out crime by use of effective crime prevention and security standards, covering a range of applications.



Manufacturing Standards

To ensure that products meet the requirements and specifications of our customers, Marshalls Street Furniture has established a quality system confirmed by registration under BS EN ISO 9001:2000. All sites have gained accreditation and this covers processes that include the design, manufacture, supply and installation of street furniture. Through continued assessment of our quality procedures, Marshalls Street Furniture continually improve all aspects of product quality, performance and customer service.

In 2008 The Royal Society for Prevention of Accidents presented Marshalls Street Furniture the Gold Award for Occupational Health and Safety. Granted in recognition of the achievement of satisfactory health and safety management, systems and culture, the award took into account, amongst other criteria, improved compliance with control measures for principal risks and action on health issues.

Approved Rhino Distributors

Our network of Approved Rhino Distributors contains specialists in the security industry. Each distributor has been carefully selected to meet specific criteria, including service, quality, industry experience and geographical location. Located throughout the U.K. the distributors provide national coverage and distribution for Rhino products.



Approved Rhino Distributors can provide you with expert advice on choosing the most appropriate product for your project. They have unrivalled knowledge and experience of Rhino products and their applications.

Approved Rhino Distributors can also offer a full installation service. Highly skilled and experienced teams of installers will ensure that projects of any size and complexity are completed, quickly, efficiently and to the highest standard.

Maintenance and Repair

A full spares and repair service is available throughout the UK for Rhino perimeter protection products. Replacement keys for telescopic bollards are usually despatched within 24 hours and spares within 48 hours of receiving your order.

Further information

For further information including technical details, photography and case studies please contact your Rhino Distributor.



Your Security, Our Strength

Static Bollards

Static bollards are available in a range of styles in steel, stainless steel and Ferrocast. Bollards can be specified to meet your specific requirements, with a full choice of standard RAL colour and reflective banding options available. DDA compliant specifications are also available.

Steel bollards act as a true deterrent and provide an exceptionally strong solution to clients' perimeter protection needs.

Stainless steel bollards are extremely robust. Manufactured from grade 316L stainless steel, they require very little maintenance to retain their original, contemporary appearance.

Ferrocast bollards are available in a wide range of traditional and contemporary styles. Manufactured from an engineering grade polyurethane, they provide an extremely durable, maintenance free solution.

Telescopic Bollards

Rhino telescopic bollards provide a secure method of protecting premises and vehicles, whilst still allowing access when required. Telescopic bollards are raised vertically and easily locked into place to provide excellent security and can be lowered into the ground in no time to allow vehicle access if needed.

Rhino Perimeter Protection provides a comprehensive range of telescopic bollards in a variety of materials, to suit any application, from domestic driveways to areas of high ram-raid risk.

Selected bollards are now available with a lift assist mechanism. Lift Assist bollards are fitted with an internal gas spring, which helps to aid manual handling and reduces the operating weight by approximately 70%.

Hoop Barriers

Hoop barriers are an ideal method of securing large perimeters, allowing pedestrian access whilst denying vehicular entry. Hoop barriers may be supplied in a static or detachable form. Detachable barriers can be part lifted to act as a gate, allowing quick vehicle access and can be completely removed if required, whilst static barriers provide a more permanent method of protection.



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RB 105 Steel Bollards on Natural and Buff Perfecta Paving, Galleons Reach, Becton

Static Bollards

Steel



RB 111 Steel Bollards with yellow banding on Tegula block paving in Traditional and Pennant Grey, Harrop Fold High School, Salford

Rhino static steel bollards provide security to any landscape. The exceptional strength of steel makes it ideal for ram-raid deterrence, protected parking and the demarcation of pedestrian walkways.

Manufactured to the highest standard, Rhino steel bollards are hot dip galvanised to BS EN ISO 1461 (1999). Bollards are polyester powder coated in RAL black 9005 as standard, and can be specified to match almost any British Standard or RAL colour if required.

Specification options

Dependent on the level of protection required, a number of specification options are available:

Standard: Standard steel bollards are exceptionally strong and will not fracture on impact.

Anti Ram: For increased internal strength, a steel joist can be added. This makes the bollards ideal for ram raid deterrence and preventing any vehicles from penetrating beyond the bollard.

Fixing Options

Root Fixing: Rhino 1000mm bollards are supplied with a 500mm root depth as standard, which is to be placed underground and secured using concrete. A cross bar keys into the concrete for added strength, ensuring that the bollard cannot be moved or twisted. A variety of heights are available, however the required root depths will differ based on the option selected. Specific lengths are also available on request.

Base Plate: Bollards can be supplied complete with an integral base fixing plate which is attached to the ground using bolts. This option is ideal for applications where ground excavation is not an option.

Lift out and Lockable: Removable bollards allow temporary vehicle access and can be replaced when works are complete.

Customisation Options

Hazard Banding

- Rhino Bollards are available with an option of Class 2 reflective banding for increased visibility and safety.
- Banding is available in a choice of three standard colour options; Amber, red and white. Additional colours are available on request.


Chain Connectors: Allows a chain to be fixed to the bollards to form sections that cannot be opened.

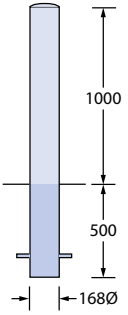
Static Bollards

Steel



RB 101




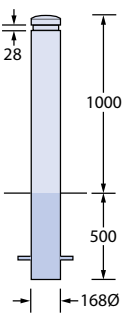


Also available
ex-stock
114 x 1500


EX STOCK

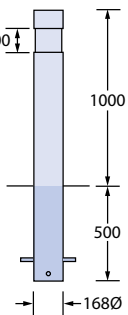
RB 109






RB 119

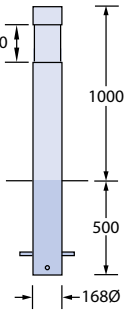





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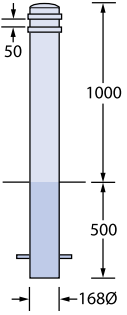
RB 150






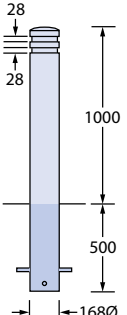
RB 105






RB 111

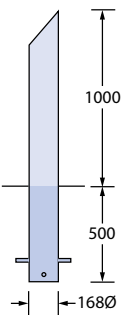





EX STOCK

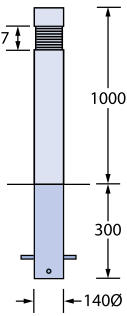
RB 123





LEEDS BOLLARD





Static Bollards

Steel



RB 119 bollards, City of Manchester Stadium

							Options									
Product Description	Product Reference	Diameter (mm)	Height		Weight (kg)	Standard Finish	Optional Heights		Cap		Fixing Method		Spec Anti Ram	Finish Galv. Only	Add Ons	
			Overall Height (mm)	HAG (mm)			Length 1250 / HAG 900 (mm)	Length 1800 / HAG 1200 (mm)	Flat Cap	Separate Cap	Base Plate	Lift Out & Lockable**			Hazard Banding	Chain Connectors
Semi dome top plain bollard	RB 101	114	1500	1000	20	PC Black 9005	■	■	■	■	■	■	■	■	■	■
	RB 101	139	1500	1000	25	PC Black 9005	■	■	■	■	■	■	■	■	■	■
	RB 101	168	1500	1000	30	PC Black 9005	■	■	■	■	■	■	■	■	■	■
	RB 101	194	1500	1000	40	PC Black 9005	■	■	■	■	■	■	■	■	■	■
Semi dome top double ring bollard	RB 105	114	1500	1000	20	PC Black 9005	■	■	■	■	■	■	■	■	■	■
	RB 105	139	1500	1000	25	PC Black 9005	■	■	■	■	■	■	■	■	■	■
	RB 105	168	1500	1000	30	PC Black 9005	■	■	■	■	■	■	■	■	■	■
	RB 105	194	1500	1000	40	PC Black 9005	■	■	■	■	■	■	■	■	■	■
Semi dome single indent bollard	RB 109	114	1500	1000	20	PC Black 9005	■	■	■	■	■	■	■	■	■	■
	RB 109	139	1500	1000	25	PC Black 9005	■	■	■	■	■	■	■	■	■	■
	RB 109	168	1500	1000	30	PC Black 9005	■	■	■	■	■	■	■	■	■	■
	RB 109	194	1500	1000	40	PC Black 9005	■	■	■	■	■	■	■	■	■	■
Semi dome double indent bollard	RB 111	114	1500	1000	20	PC Black 9005	■	■	■	■	■	■	■	■	■	■
	RB 111	139	1500	1000	25	PC Black 9005	■	■	■	■	■	■	■	■	■	■
	RB 111	168	1500	1000	30	PC Black 9005	■	■	■	■	■	■	■	■	■	■
	RB 111	194	1500	1000	40	PC Black 9005	■	■	■	■	■	■	■	■	■	■
Flat top large indent bollard	RB 119	114	1500	1000	20	PC Black 9005	■	■	■	■	■	■	■	■	■	■
	RB 119	139	1500	1000	25	PC Black 9005	■	■	■	■	■	■	■	■	■	■
	RB 119	168	1500	1000	30	PC Black 9005	■	■	■	■	■	■	■	■	■	■
	RB 119	194	1500	1000	40	PC Black 9005	■	■	■	■	■	■	■	■	■	■
Mitre top bollard	RB 123	114	1500	1000	20	PC Black 9005	■	■			■	■	■	■	■	■
	RB 123	139	1500	1000	25	PC Black 9005	■	■			■	■	■	■	■	■
	RB 123	168	1500	1000	30	PC Black 9005	■	■			■	■	■	■	■	■
	RB 123	194	1500	1000	40	PC Black 9005	■	■			■	■	■	■	■	■
Flat top bollard with single DDA band	RB 150	114	1500	1000	20	PC Black 9005			■		■	■	■	■	■	
	RB 150	139	1500	1000	25	PC Black 9005			■		■	■	■	■	■	
	RB 150	168	1500	1000	30	PC Black 9005			■		■	■	■	■	■	
	RB 150	194	1500	1000	40	PC Black 9005			■		■	■	■	■	■	
Leeds Bollard	Leeds Bollard	140	1300	1000	25	PC Grey 706							■			

*Bold text indicates standard bollard option
** Lift and Lockable option available dependant on diameter



RS 001 Bollards with red keycheck paving, Fort Retail Park, Manchester

Static Bollards

Stainless Steel



RS 001 Stainless Steel Bollards, Basingstoke

Rhino stainless steel static bollards provide perimeter protection whilst also adding contemporary style and elegance to the surrounding landscape. Bollards are available in a number of modern styles, with each bollard available in a variety of length and diameter options.

Rhino stainless steel bollards are manufactured from a carefully selected grade of 316L stainless steel (1.4401). Exceptionally strong and requiring very little maintenance, they are ideal for a wide variety of applications including pedestrian walkways and areas of protected parking.

The use of grade 316L (1.4401) stainless steel offers a number of significant advantages:

Higher resistance to corrosion: Whilst stainless steel is corrosion resistant, the naturally forming chromium rich oxide film that protects it can be broken down over time by chlorine and chlorides. However, due to the increased levels of nickel in its alloy structure, grade 316L (1.4401) has a much higher resistance to corrosion.

Greater resistance to pitting and staining: In comparison with other grades of stainless steel, grade 316L (1.4401) is less susceptible to surface pitting.

Low Maintenance: As a result of its quality, grade 316L (1.4401) requires very little maintenance to retain its original appearance. This means that the material provides attractive 'life cost' benefits when compared to alternatives, such as carbon steels.

Recyclable: Stainless steel is 100% recyclable. Around 90% of stainless steel is made from recycled scrap. Due to this, stainless steel has much less of an impact on the environment and scarce resources, providing an all round "Green" material for architects to specify.

See page 11 for specification and fixing options.

Static Bollards

Stainless Steel

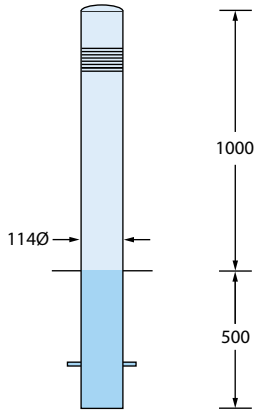



RS 001

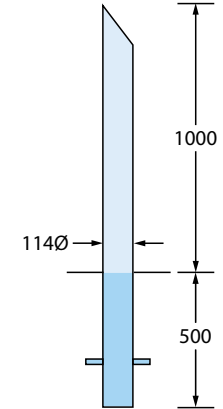



Also available with a 500mm root depth

RS 002



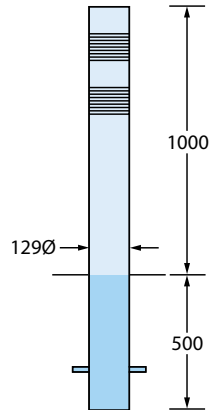

RS 004



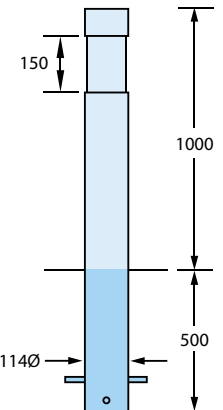

RS 005



RS 007



RS 150



Static Bollards

Stainless Steel



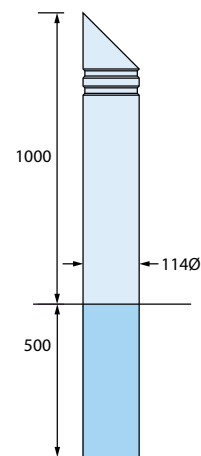

M3 FLAT TOP BOLLARD



Shown with yellow reflective bands

1200mm option also available

M3 MITRE TOP BOLLARD



Shown with base plate

							Options									
Product Description	Product Reference	Diameter (mm)	Height		Weight (kg)	Standard Finish	Length		Specification		Fixing Method		Optional Extras		Utility Options	
			Overall Height (mm)	HAG (mm)			Length 1250 HAG 900	Length 1800 HAG 1200	Reinforced	Anti Ram	Lift Out & Lockable	Base Plate	Hazard Banding	Stainless Steel Bezel	Water Standpipe	Electrical Supply
Semi dome top SS bollard	RS001	101	1500	1000	7	Brushed Satin	■		■		■	■	■	■		
	RS001†	114	1300	1000	9	Brushed Satin	■	■	■	■	■	■	■	■		
	RS001	129	1500	1000	12	Brushed Satin	■	■	■	■	■	■	■	■		
	RS001	154	1500	1000	15	Brushed Satin	■		■	■	■	■	■	■		
Semi dome top engraved bollard	RS002	114	1500	1000	9	Brushed Satin	n/a		■	■	■			■		
Mitre top ss bollard	RS004	101	1500	1000	7	Brushed Satin	■		■	■	■	■	■	■	■	
	RS004	114	1500	1000	9	Brushed Satin	■		■	■	■	■	■	■	■	
	RS004	129	1500	1000	12	Brushed Satin	n/a		■	■	■	■	■	■	■	
	RS004	154	1500	1000	15	Brushed Satin	n/a		■	■	■	■	■	■	■	
Flat top SS bollard	RS005	114	1500	1000	9	Brushed Satin	■					■	■	■		
Flat top matt band SS bollard	RS007	101	1500	1000	7	Bright Polish	n/a					■				
	RS007	114	1500	1000	10	Bright Polish	■					■				
	RS007	129	1500	1000	12	Bright Polish	n/a					■				
	RS007	154	1500	1000	15	Bright Polish	n/a					■				
Flat top Bollard with single DDA Band	RS150	101	1500	1000	7	Brushed Satin			■	■	■	■	■	■	■	
	RS150	114	1500	1000	9	Brushed Satin			■	■	■	■	■	■	■	
	RS150	129	1500	1000	12	Brushed Satin			■	■	■	■	■	■	■	
	RS150	154	1500	1000	15	Brushed Satin			■	■	■	■	■	■	■	
M3 Flat Top SS Bollard		89	1500	1000	9	Brushed Satin	■				■		■			
		114	1500	1000	10	Brushed Satin	■				■	■	■	■		
		168	1500	1000	16	Brushed Satin	■						■			■
M3 45 Mitre top SS bollard		89	1500	1000	8	Brushed Satin	■				■		■			
		114	1500	1000	9	Brushed Satin	■				■	■	■	■		
		168	1500	1000	15	Brushed Satin	■						■			■

* RS001 with 114mm diameter is also available with a total length of 1500mm
* Please turn to pages 11 and 12 for specification and customisation options
** Products in bold text indicate standard option.

Static Bollards

Stainless Steel



RS 001 lift out lockable bollards with Sineu Graff Diamond Point Elliptical litter bins and bespoke cycle parking on Conservation Paving, Crown Point, Denton

Specification options

Rhino Stainless Steel Static bollards are available with a variety of specification options to meet the requirements of any application:

Standard: Ideal for demarcation purposes, standard bollards provide visual separation between vehicle and pedestrian areas. Standard Rhino stainless steel bollards feature a 2mm wall thickness, with the exception of the M3 Flat and Mitre top bollards, which feature a greater 6mm thick wall for increased strength.

Reinforced: A galvanised steel tube is added for increased internal strength. Suitable for areas where there is a higher risk to pedestrians or premises from moving vehicles.

Anti Ram: Reinforced with two internal steel tubes to further increase the strength of the bollard. This specification is ideal for ram-raïd deterrence and preventing vehicles from penetrating beyond the bollard.

Reinforced Anti Ram: Bollards are reinforced with three mild steel tubes for areas requiring maximised ram-raïd protection.

Fixing Options

Root Fixing: Rhino 1000mm bollards are supplied with a 500mm root depth as standard, with the exception of the 114mm diameter RS 001 bollard, which has a 300mm root. The root is placed underground and secured using concrete. A cross bar keys into the concrete for added strength, ensuring that the bollard cannot be moved or twisted. Differing heights are also available, however the required root depths differ dependent on the option selected. Specific lengths are also available on request.

Base Plate: Bollards can be supplied complete with an integral base fixing plate which is attached to the ground using bolts. This option is ideal for applications where ground excavation is not an option.

Lift out and Lockable: Removable bollards allow temporary vehicle access and can be replaced when works are complete.

Static Bollards

Stainless Steel



FINISHES



Finishes

- Rhino stainless steel static bollards are supplied with a satin polished finish with the exception of the RS 007, which is supplied with a bright polished finish and two etched bands.

HAZARD BANDING



Hazard Banding:

For increased visibility and safety.

- Rhino stainless steel bollards are available with an option of Class Ref 2 reflective hazard banding for increased visibility and safety.
- Banding is available in a choice of three standard colour options; amber, red and white. Additional options are also available on request.

OPTIONAL EXTRAS



Stainless Steel Bezel

- Stainless steel bezels are available in a brushed satin finish in standard diameters.
- The bezel is ideal for applications where the bollards are installed into existing paving, ensuring that any gaps or cracking caused during installation are completely hidden from view.



RS 001 Bollards with Marshalls Harvest Buff Tegula Paving



Ferrocass Deansgate bollards with yellow reflective bands, Manchester Central Arena

Static Bollards

Ferrocass



Ferrocass root fixed and removable Seaham bollards, Bewdley, Worcestershire.

Ferrocass is an engineering grade polyurethane which was originally developed for use in the mining, quarrying and North Sea Oil Industries. Its success in such harsh environments provided proof that the material would be ideal for the manufacture of street furniture capable of withstanding the rigours of the modern urban environment.

The durability of Ferrocass makes it a preferred material in the specification of street furniture. It provides a longer maintenance free life span, which helps to reduce ongoing costs.

Ferrocass Bollards are manufactured from high quality polyurethane and cast around an internal steel core for added strength. The extremely strong, non-ferrous exterior ensures that the bollards will not rust, corrode or degrade to the effects of the surrounding environment. These properties make Ferrocass ideal for coastal applications, where high levels of saline are present.

Bollards are supplied with a standard finish of a black, two part polyurethane coating, which chemically bonds itself to the Ferrocass. A pigment is also added to the polyurethane during the coating process, making it the same colour as its paint finish. This ensures that any chip or abrasion damage to the bollard will not be visibly noticeable. A full range of RAL colours is available.

Ferrocass bollards are available in a vast range of styles to complement any landscape. The following section provides only a small selection of the many styles available. For information on the full range of Ferrocass bollards, please contact our sales office.

Fixing:

Root fixing is offered as standard. Base plate fixings and a removable option are also available for most Ferrocass bollards.

Options:

Marshalls offer a range of options to tailor the bollards to your individual needs. These include reflective discs, a second colour, coats of arms, crests and logos.

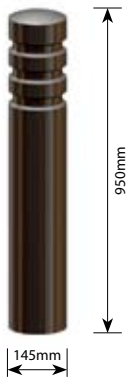
Bespoke Design service:

In addition to our standard range of Ferrocass bollards, Marshalls also provide a bespoke design service. We can design and manufacture bollards to a specific brief, to fit in with any project or scheme. We are also able to re-create existing cast iron bollards in Ferrocass. Please contact our sales office for more details.

CHELTENHAM



CITY



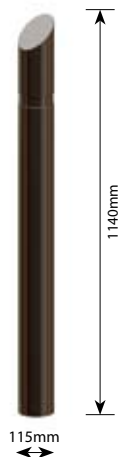
CLAPHAM JUNCTION



CORNWALL



DEANSGATE



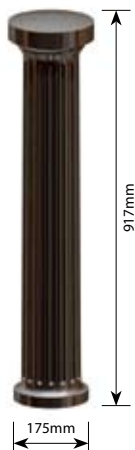
EAST SUSSEX



HACKNEY



HEXHAM



MANCHESTER



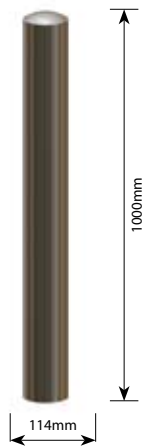
MORPETH



STOCKPORT



WOLVERHAMPTON



Static Bollards

Ferrocast



Ferrocast Anti Ram Bollards, PC World, Lancaster

Anti Ram

Ferrocast bollards can be manufactured to an anti ram specification for applications requiring maximum security. Anti ram bollards are moulded around several steel inner cores for increased strength and optimum performance on impact.

Marshalls are an approved supplier to several major retailers who specify Ferrocast anti ram bollards at their many superstores, retail parks and supermarkets.

						Options								
						Fixing Method						Add Ons		
Product Description	Product Code	Diameter	Overall Length (mm)	HAG (mm)	Weight (kg)	Base Plate	Removable	Anti Ram	Reflective Tape	Ballotini Ring	Hand Paint	Signs	Locking Socket	Chain Connectors
Cheltenham	BL176	165	1520	1220	20	■	■	■		■	■	■	■	■
City	BL196	145	1250	950	24	■	■	■	■	■	■	■	■	■
Clapham Junction	BL208	125	1300	1000	15	■	■	■	■	■	■	■	■	■
Cornwall	BL228	124	1395	1095	17	■	■	■		■	■	■	■	■
Deansgate*	BL256	115	1440	1140	21	■	■	■	■	■	■	■	■	■
East Sussex	BL296	168	1215	915	17	■	■	■	■	■	■	■	■	■
Hackney	BL348	155	1270	970	20	■	■	■		■	■		■	■
Hexham	BL372	175	1217	917	22	■	■	■		■	■	■	■	■
Manchester	BL432	225	1265	965	21	■	■	■	■	■	■	■	■	■
Morpeth	BL452	110	1200	900	12	■	■	■	■	■	■	■	■	■
Seaham*	BL528	150	1150	850	19	■	■	■		■	■		■	■
Stockport	BL552	190	1515	1215	35	■		■		■	■			■
Wolverhampton	BL602	114	1300	1000	16	■	■	■				■	■	■
Dixon Anti Ram	BL272	155	1300	1000	34		■	■				■	■	■

* Deansgate and Seaham bollards shown in situ on pages 13 and 14



RT R14 HD telescopic bollards, Audi Watford

Telescopic Bollards



RT R14 HD telescopic Bollards with hazard banding, Galleries Retail Park, Washington

Rhino Telescopic Security Posts provide a secure, simple and cost effective method of protecting premises and vehicles. Rhino posts can be located in forecourts, car parks or shop fronts to provide excellent levels of protection. Fully retractable, the bollards can be lifted out of the ground in seconds and lowered just as easily.

The bollards lock into their upright position with an integral high security push button lock. When the posts are not required, they simply slide into their host tube below ground and the steel flap is closed flush.

As a result of the continuing trend towards products offering maximum protection and security, Rhino now offer their reinforced anti-ram specification as standard throughout the entire commercial telescopic bollard range. For applications which do not require this level of security, non reinforced equivalents are available. Coordinating static posts are also available on request.

Selected bollards are now available with a lift assist mechanism. Lift assisted bollards are fitted with an internal gas spring, which helps to reduce the operating weight by approximately 70%. The mechanism enables the bollards to be lifted effortlessly into place and gently lowered with a smooth, cushioned descent. The Rhino gas spring and surrounding body is manufactured from a grade 316L stainless steel, meaning that it will not rust or corrode, thus minimising ongoing maintenance costs.

Rhino telescopic bollards are manufactured using an automated robot welding process for greater precision and accuracy. Our products are quality checked at each stage of manufacture to ensure they are always of the highest quality.

Specification

Rhino Telescopic Bollards are available in steel, stainless steel and polyurethane:

Steel: Bollards can be supplied in a galvanised or powder coated finish. All steel products are hot dip galvanised to BS EN ISO 1461 (1999). Powder coating is available in most RAL or British Standard colours.

Stainless steel: Bollards are manufactured in high quality grade 316 (1.4401) austenitic steel for maximised durability.

Polyurethane: Bollards are made from Ferrocast, Marshalls' two part polymer set around an internal steel core. Polyurethane bollards can also be supplied in a full range of colours.

See page 22 for banding options.

Installation, maintenance and replacement components

Full Installation: Available on selected schemes.

Repair or Full Service: Option available for all products.

Locks and Keys

Master Key Facilities: Locks can be keyed alike or to differ.

Anti-tamper locking mechanism: Selected bollards feature a 10 pin 'anti-drill' push button lock.

Overnight Service: Replacement of lost keys.

Sold Secure

The Sold Secure organisation is dedicated to reducing the risk of crime through assessing the performance of security products. Established in 1992 by Northumbria and Essex Police with the backing of the Home Office, Sold Secure is now administered by the Master Locksmiths Association.

Selected telescopic bollards have been independently tested and certified by Sold Secure to the 'Automotive Gold' standard and are suitable for inclusion in the Sold Secure Approved Category List.

The accreditation is awarded in reference to the Rhino 10 pin 'anti-drill' push button locking mechanism, which is used on selected bollards throughout the telescopic bollard range.

Secured by Design

Secured by Design is a UK Police Flagship initiative, supporting the principles of designing out crime, crime prevention and security standards for a range of applications.

Managed by the association of Chief Police Officers Crime Prevention Initiatives (ACPO CPI), Secured by Design guarantees police approval of accredited security products. Marshalls Street Furniture is a Secured by Design Accredited Organisation.



Telescopic Bollards

Domestic



RT RD4 SS Domestic Telescopic Bollard with single white band

Designed predominantly for domestic applications, Rhino domestic telescopic bollards are ideal for driveway installations to restrict access to properties and protect parked vehicles.

RT RD4

- A round telescopic bollard which locks securely into place with a 500mm height above ground and features a 76mm diameter.
- Manufactured from mild steel to BS 1440, it is galvanised to BS EN ISO 1461 (1999) providing increased resistance to rust and corrosion.
- The RT RD4 is supplied polyester powder coated in either RAL Black 9005 or Yellow 1021 as standard. Other RAL colours are also available on request.
- A coordinating static post (**Ref: RS D4**) is also available

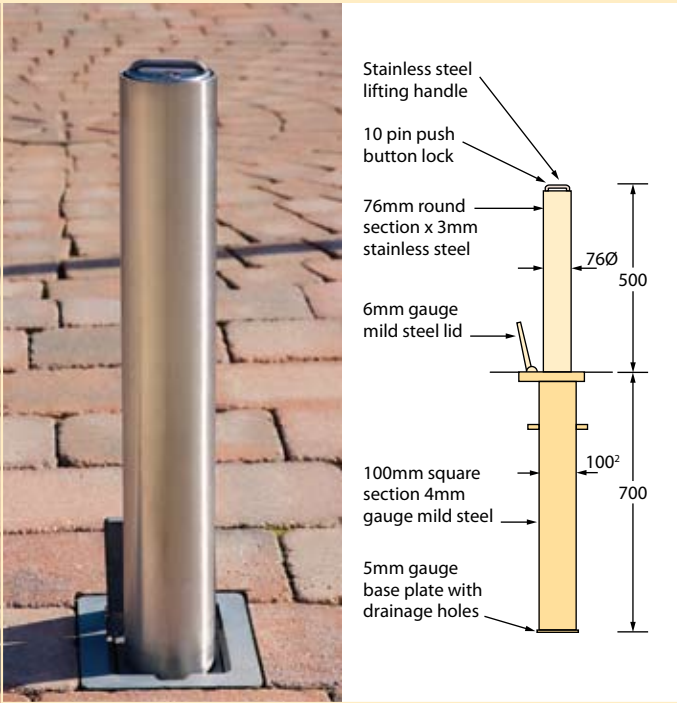
RT RD4 SS

- A round telescopic bollard manufactured from a carefully selected grade of 316L (1.4401) stainless steel.
- Exceptionally strong and requiring little maintenance, the RT RD4 SS offers a secure, durable and contemporary solution for domestic applications.
- The RT RD4 SS is 500mm high when extended above ground and has a 76mm diameter.
- A coordinating static post is also available (**Ref: RS001 D4**).

RT RD4



RT RD4 SS



Telescopic Bollards



RT R8 HD telescopic bollards, Peugeot garage

Rhino commercial telescopic bollards are supplied with our heavy duty specification as standard, making them ideal for anti ram raid applications. For applications requiring a lower level of security, non reinforced bollards are also available.

The **RT R8 HD** and **RT SQ8 HD** are manufactured from mild steel to BS 1440 and are galvanised to BS EN ISO 1461 (1999).

Designed for commercial usage, the bollards are ideal for providing ram raid protection to garage forecourts, driveways and pedestrian zones, town centres and commercial entrances.

The bollards feature a 10 pin 'anti-drill' push button lock for added security.

RT R8 HD

- A round telescopic bollard with a height above ground of 670mm and a 90mm diameter.
- The bollard is reinforced with a high strength inner post sleeve, manufactured from 76.1mm x 2mm steel, for increased performance on impact.
- A non reinforced option (**Ref: RT R5**) is available on request for lower risk applications. A coordinating static post is also available (**Ref: RSP R8**).

RT SQ8 HD

- A square telescopic bollard with a height of 670mm and a 90mm x 90mm width.
- As with the RT R8 HD, the SQ8 HD is reinforced with an inner post sleeve for added impact performance.
- A non reinforced option (**Ref: RT SQ5**) is available on request for lower risk applications. A matching static post is also available (**RSP SQ8**).

RT R8 HD



RT SQ8 HD



Telescopic Bollards



RT SS5 telescopic bollards, Wembley Stadium Station

RT SS5

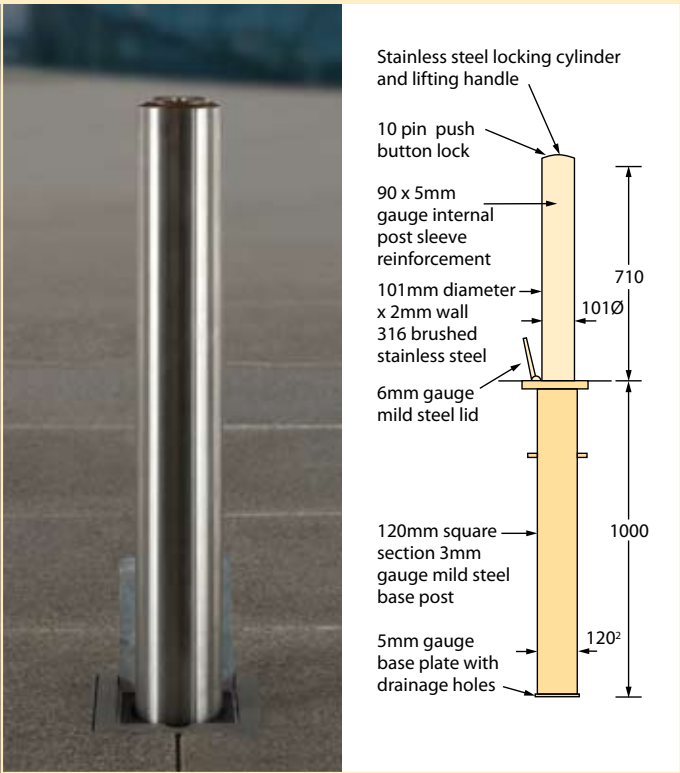
- A round telescopic bollard manufactured from grade 316L (1.4401) stainless steel.
- The bollard rises to 710mm above ground and features a 101mm diameter.
- Supplied with a brushed satin finish, the exceptionally strong stainless steel outer is 2mm thick and is reinforced with a 90mm x 5mm steel internal post sleeve for added performance.
- A coordinating post (**SSB01**) is available on request.
- The **RT SS5** features a 10 pin push button lock for added security.

RT SS5 Lift Assist

- The **RT SS5** is available with an internal lift assist mechanism to significantly reduce the operating weight and aid manual handling.
- The bollard is fitted with an internal gas spring, which reduces the lifting weight to around one third of that of its standard equivalent.
- The Rhino gas spring is manufactured from stainless steel, which means that it will not rust or corrode like some steel equivalents, thus minimising ongoing maintenance costs.



RT SS5



Telescopic Bollards



RT 114/670 HD

- A round telescopic bollard manufactured from high strength mild steel to BS 1440 and galvanised to BS EN ISO 1461 (1999).
- The bollard locks into place 670mm above ground and features a larger 114mm diameter.
- Features a 10 pin 'anti drill' push button lock for added security.
- The **RT 114/670 HD** is reinforced with a 101mm x 4mm steel inner post sleeve for enhanced performance on impact, making the bollard ideal for high risk anti ram applications.
- Supplied galvanised as standard, the **RT 114/670 HD** can be polyester powder coated to a RAL colour of your choice.

RT 114/670 HD Lift Assist

- The **RT 114/670 HD** is available with an internal lift assist mechanism to substantially reduce the operating weight and aid manual handling.
- This stainless steel gas spring reduces the lifting weight by approximately 70%, from 22.5kg to around 6-7kg.



RT 114 / 670 HD



RT R14 HD

- A round telescopic bollard manufactured from high strength mild steel to BS 1440 and galvanised to BS EN ISO 1461 (1999).
- The **RT R14 HD** has a height above ground of 850mm and diameter of 114mm.
- Features a 10 pin 'anti drill' push button lock for added security.
- The bollard is reinforced as standard with a 101 x 4mm internal post sleeve for added strength and security, making it the ideal choice for anti ram applications.
- A non reinforced option is also available for applications of lower risk (**Ref: RT R14**). A coordinating static post (**Ref: RB 114**) is available on request.

RT R14 HD Lift Assist

- The **RT R14 HD** is now available with a lift assist mechanism. This enables the specification of a telescopic bollard of significant size and operating weight, whilst reducing the lifting weight by approximately 70%, enabling effortless functionality.
- The internal gas spring reduces the operating weight from 26.5kg to around 7kg.



RT R14 HD



Telescopic Bollards

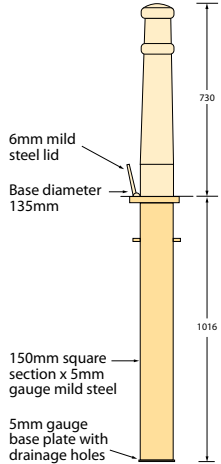
Ferrocast



RT SU5 SUNDERLAND TELESCOPIC BOLLARD (FERROCAST)

The **RT SU5** Sunderland bollard is a telescopic post manufactured from Ferrocast Polyurethane. The bollard rises to 730mm above ground and has a 135mm diameter. A coordinating static bollard (**Sunderland Low**) is also available.

Ferrocast bollards are manufactured from high quality polyurethane and cast around an internal steel core for increased strength. The strong, non ferrous exterior ensures that the bollards will not rust or corrode, thus minimising ongoing maintenance costs.



OPTIONAL EXTRAS

Banding Options

Rhino commercial telescopic bollards are available with a choice of three standard banding options:

- **Single Band:** A single recessed 100mm band supplied with Class 2 reflective tape. Available in either one or two colours.
- **Double Band:** Two recessed bands supplied with Class 2 reflective tape.
- **Hazard Banding:** For increased visibility and safety.

Banding is available in three standard colours; amber, red and white. For additional options, please contact our sales office.

Security Options

Square security cover - To add further security to your bollard, a square security cover is available. The cover is suitable for use on the **RT SQ8 HD** and its non-reinforced equivalent (**RT SQ5**). The cover is 100mm x 100mm.

Ornamental Locking Top - Suitable for use on the **RT R8 HD** telescopic bollard and its non reinforced equivalent (**RT R5**), the Ornamental Locking Top provides a traditional finish to the bollard, whilst providing the added security of a second locking mechanism. The cover features a diameter of 170mm.

The **RSP VIC8** is a galvanised steel static post with an ornamental locking top and decorative surface trim plate around the bottom. The bollard is 710mm high and has surface diameter of 90mm. The RSP VIC8 is designed to co-ordinate with telescopic bollards specified with the ornamental locking top option.

BANDING OPTIONS



SQUARE SECURITY COVER



ORNAMENTAL LOCKING TOP



RSP VIC8

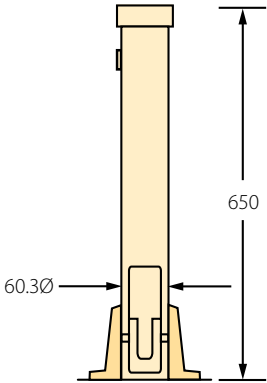


Telescopic Bollards

Fold Down and Lift Out and Lockable

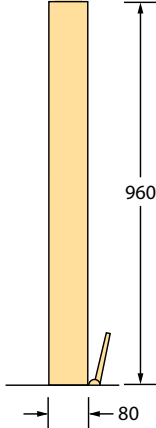


RT KEY OP1 (FOLD DOWN) BOLLARD



The **RT Key OP 1** steel bollard is 650mm high and has a 60mm diameter. Supplied powder coated in RAL Yellow 1021 as standard, the bollard can be folded down to temporarily allow vehicle access.

RTL 80 (LIFT OUT LOCKABLE) BOLLARD



The **RTL 80** is a square lift out lockable bollard. Manufactured from galvanised steel, the bollard is 960mm high and 80 x 80mm wide.

								Options						
Product Description	Product Reference	Diameter (mm)	Height		Weight		Standard Finish	Available with Lift Assist	Spec	Finish	Reflective Banding			Add Ons
			HAG (mm)	HBG (mm)	Weight (kg)	Operating Weight (kg) *					Single Groove Band	Double Groove Band	Hazard Banding	Separate Locking Top
Domestic Telescopic Round 76/500	RT RD4	76	500	700	22	6	PC Black 9005 or Yellow 1021						■	
Static Round 76/500	RS D4	76	500	300	7	n/a	Galvanised			■			■	
Domestic Telescopic Round 76/500 Stainless Steel	RT RD4 SS	76	500	700	22	6	Stainless Steel						■	
Domestic Static Round 76/500 Stainless Steel	RS001 D4	76	500	250	18	n/a	Stainless Steel						■	
Telescopic Round 90/670 Heavy Duty	RT R8 HD	90	670	700	44	14	Galvanised		■	■	■	■	■	Ornamental
Telescopic Round 90/670 Non Reinforced	RT R5	90	670	950	42	11	Galvanised			■	■	■	■	Ornamental
Static Round 90/670	RS PR8	90	670	580	16	n/a	Galvanised			■			■	
Telescopic Square 90/670	RT SQ8 HD	90 x 90	670	950	44	15	Galvanised		■	■			■	Square
Telescopic Square 90/670 Non Reinforced	RT SQ5	90 x 90	670	950	42	13	Galvanised			■			■	Square
Static Square 90/670	RSP SQ8	90 x 90	670	580	19	n/a	Galvanised			■			■	
Telescopic Round 101/710 Stainless Steel	RT S55	101	710	1000	37	17 (5)	Stainless Steel	■	■		■	■		
Static Round 101/710mm Stainless Steel	SSB 01 HD	101	710	540	43	n/a	Stainless Steel		■				■	
Telescopic Round 114/670 Heavy Duty	RT 114/670	114	670	960	55	22.5 (6-7)	Galvanised	■	■	■	■	■		
Telescopic Round 114/850 Heavy Duty	RT R14 HD	114	850	1125	66	26.5 (7)	Galvanised	■	■	■	■	■	■	
Telescopic Round 114/850 Non Reinforced	RT R14	114	850	1125	54	17	Galvanised			■	■	■	■	
Static Round 114/850	RB 114	114	850	650	18	n/a	Galvanised			■				
Telescopic Round 730mm Ferrocast	RT SU5	135	730	1020	30	16	Polymer		■		■			
Static Ferrocast Sunderland Low	RCB 74	89	730	300	42	n/a	Polymer				■			
Fold Down 650mm	RT KEY OP 1	60	650	n/a	7	n/a	PC Yellow 1021			■			■	
Lift Out 960mm	RTL 80	80 x 80	960	n/a	21	n/a	Galvanised						■	

* Figure in brackets indicates approximate operating weight with lift assist mechanism.



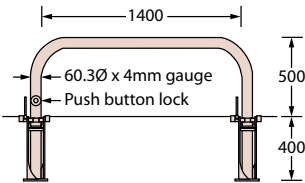
RB 76/HD Barriers Caffyns PeuGeot

Hoop Barriers

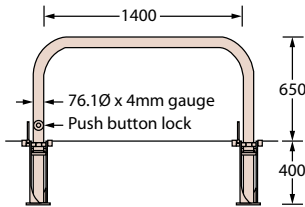


RB 76/HD, Hoop barriers, Audi Watford.

RDB 60



RDB 76/HD



Rhino Hoop Barriers are an effective method of access restriction within many landscapes. Popular uses include retail parks, car parks and garage forecourts, where effective perimeter protection is essential.

The Rhino Hoop Barrier range consists of a number of styles and sizes, as well as both detachable and permanent options.

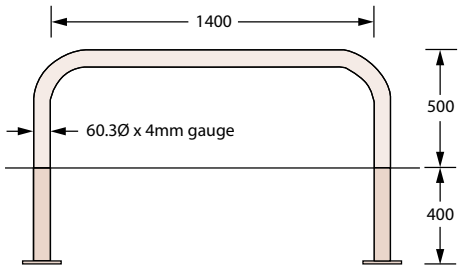
Detachable Barriers

- The detachable range of Rhino barriers consists of the **RDB 60** and **RDB 76/HD**. The RDB 60 is manufactured from 60mm diameter steel and the RDB 76/HD features a larger 76mm diameter.
- The steel is hot dip galvanised to BS EN ISO 1461 (1999) to protect the barriers from the development of rust and corrosion. Powder coating is also available as an option.
- The roots of each barrier are locked into place using a push button lock which allows for quick and easy locking and unlocking.
- Root sockets are supplied complete with a dust cover for when the barrier is not in use.

Permanent Barriers

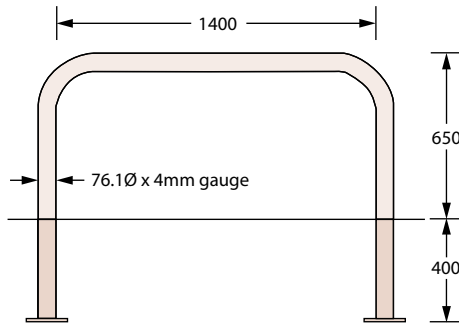
- The **RB 60**, **RB 76/HD** and **RB 90/HD** form our range of permanent Rhino barriers. The RB60 features a diameter of 60mm, whilst the RB 76/HD and RB 90/HD measure 76mm and 90mm respectively.
- Each barrier is manufactured from hot dip galvanised steel and can be powder coated on request. A full range of British RAL colours is available for all steel hoop barriers.
- The RB 60 and RB 76/HD Rhino barriers are also available in grade 316L stainless steel (Ref: **RB 60 SS** and **RB 76 SS**). However, the dimensions of the RB 60 SS differ slightly from that of its steel equivalent. See table on page 27 for more details.
- Varying barrier lengths are available on request.

RB 60



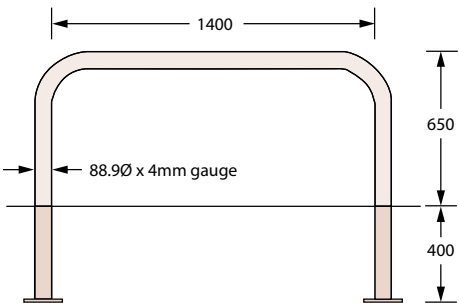
*Also available in stainless steel. See table below for more information

RB 76/HD



*Also available in stainless steel. See table below for more information

RB 90/HD



Product Description							Options									
							Height			Weight (kg)			Fixing Method			Finish
													Ground Fixing	Base Plate	Removable	
Product Reference	Diameter (mm)	Overall Height (mm)	HAG (mm)			Standard Finish										
Removable Hoop Barrier 60Ømm	RD B60	60Ø	900	500	28	Galvanised Steel	■		■	■						
Removable Hoop Barrier 76Ømm	RD B76/HD	76Ø	1050	650	37	Galvanised Steel	■		■	■						
Hoop Barrier 60Ømm	RB 60	60Ø	900	500	20	Galvanised Steel	■	■		■						
Hoop Barrier 60Ømm Stainless Steel	RB 60/SS	60Ø	950	650	20	Grade 316 Stainless Steel	■									
Hoop Barrier 76Ømm	RB 76/HD	76Ø	1050	650	27	Galvanised Steel	■	■		■						
Hoop Barrier 76Ømm Stainless Steel	RB 76/SS	76Ø	1050	650	25	Grade 316 Stainless Steel	■									
Hoop Barrier 90Ømm	RB 90/HD	90Ø	1050	650	37	Galvanised Steel	■	■		■						

Street Furniture



M3 Stainless Steel Serpentine Bench, Galleries Retail Park, Washington.

Rhino bollards and hoop barriers are often specified as part of large projects and schemes, which incorporate a wide variety of other street furniture products such as seating, litter bins, tree grilles and cycle parking.

Marshalls are a unique supplier of street furniture, in that we have manufacturing capabilities across a wide range of materials including concrete, natural stone, cast iron, steel, stainless steel and polyurethane.

The Marshalls Street Furniture portfolio incorporates of a variety of brands, providing a vast selection of seating, litter bins, cycle parking, planters, tree protection, signage, post and rail and protective barriers, with styles available to complement any landscape.

Design and Innovation

Our extensive portfolio of brands enables us to supply products to meet the requirements of any project, be it functionality, versatility, durability or style. Our Portfolio is enhanced by long term partnerships with leading European street furniture manufacturers, enabling us to supply prestigious, design-led ranges.

Design Service for Bespoke Commissions

Where architects and specifiers wish to commission bespoke pieces, we offer a full technical advice and design advice service, helping to take a creative concept through to final production. We have some excellent examples of projects where our engineers have worked alongside architects to create truly unique schemes.

The following section provides a small selection of our seating, litter bin and cycle parking products, highlighting a number of the styles and materials we offer.

Benches
Seats
Q50 220
Q50 225

Street Furniture

Seating

M3 STRAIGHT SEAT



EX STOCK
OLLERTON

M3 STRAIGHT BENCH



EX STOCK
OLLERTON

FESTIVAL STRAIGHT SEAT



EX STOCK
OLLERTON

FESTIVAL STRAIGHT BENCH



EX STOCK
OLLERTON

WATERSIDE SEAT



Ferrocast

WATERSIDE BENCH



Ferrocast

BELLUNO BENCH



SEALANTONE

MENHIR BENCH



SEALANTONE

Litter Bins
Cycle Stands
Q50 240
Q50 210

Street Furniture

Litter bins and Cycle Parking

M3 LITTER BIN



OLLERTON

Shown with side loading lockable lid and flared top

FESTIVAL BIN



OLLERTON

Shown with flared top

CONTEMPORARY ROUND BIN



rineu
graff

DIAMOND POINT ELLIPTICAL BIN



rineu
graff

Shown with rainshield option

ALBION STANDARD 120L BIN



OLLERTON

Shown with ashtray option

ALBION 90L SLIMLINE BIN



OLLERTON

SHEFFIELD CYCLE STAND



OLLERTON

Available in steel, stainless steel and Ferrocast

RED ROUTE CYCLE STAND



Ferrocast

Installation Instructions

Static and lift out Bollards

Standard Root Fixing Bollard Installation

Root depth varies across our range of static bollards from 200mm-500mm depending on model. For details on root depths please refer to individual product pages.

1. Determine where the bollard is to be situated.
2. Check utilities/services drawings and perform a visual inspection to ensure there are none in the area. This may also require scanning the location for live cabling.
3. Excavate a cube in the substrate according to the bollard's specification. For example, a bollard with a 300mm root depth will require a cube to be excavated measuring 300mm x 300mm, fixed on the post centre, by 300mm deep.
4. Locate the bollard centrally into the hole and fill with grade C30 concrete, medium slump, including a rapid hardening agent if required.
5. Ensure the bollard is vertical in all planes.
6. Reinstate any surface finishes disturbed by the bollard. Where necessary, rinse off any concrete residue from the base of the bollard with a soft cloth and water, taking care not to scratch the surface of the bollard.
7. Finish off top surface of in situ concrete to give a tight surface finish. Concrete should be protected by polythene during the first 24-hours following installation. This is particularly important during inclement and/or cold weather. Units should not be used until the concrete has cured.

Anti-Ram Bollard Installation

1. Determine where the bollard is to be situated.
2. Check utilities/services drawings and perform a visual inspection to ensure there are none in the area. This may also require scanning the location for live cabling.
3. Excavate a cube in the substrate according to the bollard's specification. For example, anti-ram bollards require a cube no less than 500mm x 500mm fixed on the post centre, by 600mm deep.
4. Where applicable, ensure the root cross bar is inserted through the core.
5. Locate the bollard centrally into the hole and fill with grade C30 concrete, medium slump, including a rapid hardening agent if required.
6. Ensure the bollard is vertical in all planes.
7. Where applicable, infill bollard with concrete and attach top T cap.*
8. Reinstate any surface finishes disturbed by the bollard. Where necessary, rinse off any concrete residue from the base of the bollard with a soft cloth and water, taking care not to scratch the surface of the bollard.
9. Finish off top surface of in situ concrete to give a tight surface finish. Concrete should be protected by polythene during the first 24-hours following installation. This is particularly important during inclement and/or cold weather. Units should not be used until the concrete has cured.

* Only applicable for Reinforced Steel Bollards.

Lift Out and Lockable Bollard Installation

1. Determine where the bollard is to be situated.
2. Check utilities/services drawings and perform a visual inspection to ensure there are none in the area. This may also require scanning the location for live cabling.
3. Excavate a cube in the substrate according to the bollard's specification. For example, Lift Out and Lockable bollards require a cube no less than 400mm x 400mm, fixed on the post centre, by 400mm deep.
4. Where applicable, ensure the root cross bar is inserted through the core of the socket.
5. Locate the socket centrally in the hole and fill with grade C30 concrete, medium slump, including a rapid hardening agent if required.
6. Ensure the socket is vertical in all planes.
7. Reinstate any surface finishes disturbed by the bollard. Where necessary, rinse off any residue concrete from base of bollard with a soft cloth and water, taking care not to scratch the surface of the bollard.
8. Finish off top surface of in situ concrete to give a tight surface finish. Concrete should be protected by polythene during the first 24-hours following installation. This is particularly important during inclement and/or cold weather. Units should not be used until the concrete has cured.

Base Plate Bollard Installation

Fix the post to a suitable homogeneous substrate using a suitable bolting system used in accordance with the manufacturer's instructions. If the base material is concrete then a chemical or drop in type anchor may be suitable. Anchors such as these are available through the local builder's merchants or direct from the manufacturer. Marshalls Street Furniture would be happy to assist in suitable bolt selection if required.

Installation Instructions

Telescopic Bollards and Hoop Barriers

Rhino Telescopic Bollard Installation

1. Determine where the bollard is to be situated.
2. Check utilities/services drawings and perform a visual inspection to ensure there are none in the area. This may also require scanning the location for live cabling.
3. Excavate a cube in the substrate approximately 300mm x 300mm and 200mm deeper than the ground socket to be installed.
4. Put approximately 200mm of minimum 15mm clean loose stone into the hole for drainage purposes.
5. Lower the ground socket into the hole and check the top of ground socket is approximately 5mm above ground level.
6. Locate the ground socket centrally in the hole and ensure socket is vertical in all planes.
7. Add approximately 200mm of clean loose stone.
8. Back fill the hole, tamping down until approximately 300mm from the surface.
9. Raise telescopic bollard and check for alignment (if more than one post is to be installed).
10. Then fill the hole with grade C30 concrete, including a rapid hardening agent and sulphate resisting cement as required, medium slump and smooth off the area around the lid to allow fall away.
11. Lower the telescopic bollard into the ground socket. Please ensure the bollard and lid are kept clear of debris during installation.
12. Finish off top surface of in situ concrete to give a tight surface finish. Concrete should be protected by polythene during the first 24-hours following installation. This is particularly important during inclement and/or cold weather. Units should not be used until the concrete has cured.

STATIC AND DETACHABLE HOOP BARRIER INSTALLATION

The installation detail for hoop barriers is the same as for telescopic posts above with the exception of the excavation dimensions which should be a 500mm cube.

All excavation details are dependent on ground conditions. Installation information supplied is specified for use with products supplied by Marshalls only and can be considered as current best practice only. If any doubt remains as to a particular suitability of installation due to site conditions additional technical advice should be sought.

Rhino Telescopic Bollard Operating Instructions

To Lock

1. Lift lid, draw up inner post to full extension. Rotate handle clockwise a quarter turn. Press down push button lock.

To Unlock

1. Release push button lock with key.
2. Return key to original position by depressing slightly and remove key. Rotate handle a quarter turn clockwise.
3. Lower the post slowly and in a controlled manner. Do not allow it to free-fall into base.
4. To lock repeat step 1 from 'To Lock' instructions above.

Weekly Maintenance

1. Ensure sliding post is kept clean and free from debris.
2. Clean and lubricate lock using a lubricant similar to WD40.
3. Installations with high water tables or adverse conditions should be checked daily.
4. Always ensure that the cover plate is closed when bollard is not in use.
5. Clear any debris from around hinge and cover plate.

INSTALLATION, SPARES AND REPAIR SERVICE

A full installation, spares and repair service is available throughout mainland Britain for Rhino Perimeter Protection Products. Replacement keys are despatched within 24 hours and spares are normally despatched within 48 hours of receiving your order.

General Maintenance Instructions

1. Maintenance of Marshalls polyester powder coatings on steel or stainless steel

As with any organic coating, in order to retain the aesthetic qualities and the long term durability of the system, it is important that the coating is cleaned regularly.

The frequency of cleaning depends upon the environment in which the polyester coating is in service.

For areas of “normal” urban environment we recommend a maximum period of 18 months between cleaning operations, unless undue soiling is apparent on the coating, in which case cleaning should be more frequent. In areas of high pollution, marine and swimming pool environments cleaning should be carried out every three months.

A polyester coating can be cleaned using a solution of mild detergent in warm water. All surfaces should be cleaned using a soft cloth, sponge or a natural bristle brush. Abrasive materials should be avoided as they will damage the coating. If the polyester coating has become badly soiled and it is difficult to remove the “soiling”, repeated cleaning may be required. In order to assist this problem, several commercially available cleaners have been tested; Ajax Cream, Liquid Gumption, Flash in water, Ajax Liquid in water. While tests show that products of this type may be used successfully in the removal of heavy surface deposits, particular care must be exercised in their use to avoid any scuffing of the powder coating film. It is recommended that in all cases, such products are reserved for heavy soiled coatings only and should be tested on a small area first to assess their efficiency. After application all detergents and cleaners must be thoroughly rinsed away with clean water, ensuring there is no risk of pollution to the surrounding area.

The information contained here has been provided by H B Fuller Company and should be considered as current best practice only. Should you be unsure as to the suitability of any commercially available cleaner always check with the product manufacturers.

2a. Care and maintenance of Marshalls stainless steel street furniture products

Stainless steels are selected in applications where their inherent corrosion resistance, strength and aesthetic appeal are required. However, dependent on the service conditions, stainless steels will stain and discolour due to surface deposits and so cannot be assumed to be completely maintenance free. In order to achieve maximum corrosion resistance and aesthetic appeal, the surface of the stainless steel must be kept clean. Provided the grade of stainless steel and the surface finish are correctly selected, and cleaning schedules carried out on a regular basis, good performance and long service life will result.

2b. Factors affecting maintenance

Surface contamination and the formation of deposits must be prevented. These deposits may be minute particles of iron or rust from other sources used on the building of new premises and not removed until after the stainless steel items have been fixed. Industrial and even naturally occurring atmospheric conditions can produce deposits, which can be equally corrosive, e.g. salt deposits from marine conditions.

Working environments can also provide aggressive conditions such as heat and humidity, in a swimming pool building. Proprietary solutions, when used in accordance with makers’ instructions, should be safe but if used incorrectly (e.g.warm or concentrated), may cause discolouration or corrosion on stainless steels. Strong acid solutions are sometimes used to clean masonry and tiling of buildings.

These acids should never be used where contact with metals, including stainless steel is possible, but if this happens, the acid solution must be removed immediately, followed by dilution and rinsing with clean water.

2c. Maintenance programme

With care taken during fabrication and installation, cleaning before “hand-over” should not present any problems. More attention may be required if the installation period has been prolonged or hand-over delayed.

Where surface contamination is suspected, immediate cleaning after site fixing should avoid problems later. The frequency of cleaning is dependent on the application; a simple rule is; “Clean the metal when it is dirty in order to restore its original appearance”. This may vary from once to twice a year for external applications. Street Furniture products need careful handling, installation and maintenance. Tooling and fixings should be stainless steel.

Products should only be unpacked for the required root/base length with the upper packaging left on until installation complete.

2d. Cleaning methods

Stainless steel is easy to clean. Washing with soap or mild detergent and warm water followed by a clear water rise is usually quite adequate for Street Furniture. For stubborn stains apply a non bleach cream (e.g. Cif®) with a paint brush and rub with a clean cloth or a soft plastic brush (car wash type) then rinse thoroughly with clean cold water. Where stainless steel has become extremely dirty with signs of surface discolouration (perhaps following periods of neglect, or misuse) alternative methods of cleaning will be required. The installation area should be free of any rusty items, particles from which may be deposited on the stainless steel product giving the ‘appearance’ of rusting and can be removed by cleaning using a product such as Resin Neutraliser by Wurth ref 890 71.

The products referenced in this information sheet are understood to be suitable for stainless steels. However, no endorsement of the products or their manufacturers is implied and it is acknowledged that other manufacturing companies may provide products of equal or better quality. The following companies manufacture proprietary cleaners;

**“Cif” (Jif) – Lever Brothers Ltd

**“Shiny Sinks” – Home Products Ltd

**“Ajax” – Colgate Palmolive Ltd

Quality Policy Statement

Please Note

Marshalls is committed to innovative product development and manufacture.

The evolution of new product design is continuous and information is subject to change without notice. Customers should check with the supplier to ensure that they have the latest details. All Marshalls products are manufactured to the appropriate British Standard where applicable. Where products, (or intended usage), lie outside the scope of a British (or intended European) standard or no appropriate standard exists, Marshalls own standard will be employed. All products are supplied subject to Marshalls Standard Conditions of Sale, a copy of which is available on request. Liability in respect of any statements, conditions, warranties and representations made on behalf of the Company is limited in accordance with the terms set out in the Standard Conditions of Sale.

Maintenance

Routine cleaning and maintenance is required to keep the overall appearance of the product.

Application

Should customers be in doubt as to the suitability of any Marshalls product for a given application, guidance from our Technical Team should be sought. The colours shown in this literature are as exact as photographic and printing processes will allow. We strongly recommend that colours are judged and chosen from actual materials rather than photographic representation depicted herein. Although every effort is made to ensure consistency of product colour, variations between production batches can occur. We therefore recommend that products are thoroughly mixed on site by drawing, if possible, from a minimum of three packs.

Marshalls is committed to providing a customer oriented service and would welcome feedback on our products and services.