

01 BOLLARDS



Products in this section are primarily used for traffic control, property protection and ram-raid prevention. Our bollards are available in a wide range of styles and materials to suit most applications. We have a product sure to satisfy your requirements, whether it be surface mounted, in-ground, retractable or removable bollards. Manufactured from heavy wall tube in either mild steel or stainless steel, these products are built to take the knocks.

You may also be interested in pages:



BUMPA-BAR



**SHOCK ABSORBING
GUARD RAILS**



POST & RAIL



FLEXIBLE BOLLARDS

STAINLESS STEEL BOLLARDS

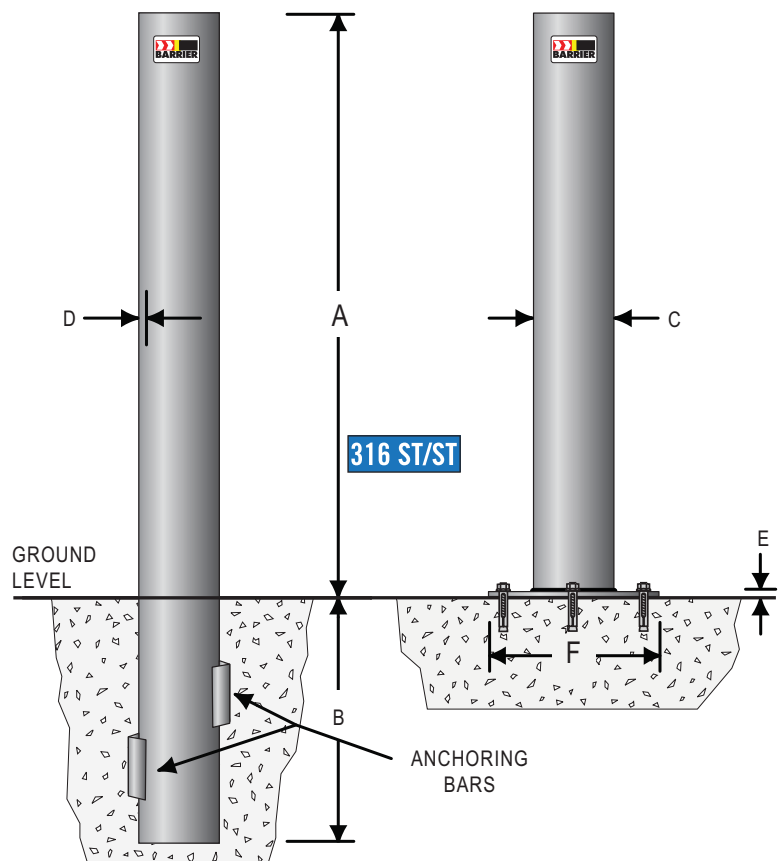
Our round stainless steel bollards are offered in three designs: below ground for installation into a concrete footing, core drilled for installation into a core drilled hole using epoxy adhesive, or surface mount for bolted installations.

Manufactured from marine grade 316 stainless steel these bollards are all finished with No. 4 mechanical finish before being electro-polished. This is recommended for installation near coastal areas to minimise the risk of tea staining and to ensure the bollards maintain a high quality appearance over many years.

All our stainless steel bollards have a fully welded and polished cap. This helps present a high quality appearance required for architectural environments. For the ultimate high quality presentation, polished stainless steel skirts are available as an option to cover the base plates and fixings.

Value features:

- » 316 grade polished stainless steel.
- » Electro-polished for maximum protection.
- » Three methods of installation.
- » 90 or 140mm diameter.
- » Optional cover skirts available.



BELOW GROUND & SURFACE MOUNT MODELS

BELOW GROUND, SURFACE MOUNT & CORE DRILLED SPECIFICATIONS



Welded and polished flat cap.



Optional base cover.

PART NO.	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	Stainless Grade	Weight (kg)	Cap	Surface Finishes	
										L	EP
C90BG-SS	900	300	90	3.05	—	—	316	8kgs	Welded Flat	✓	✓
C90CD-SS	900	200	90	3.05	—	—	316	7.4kgs	Welded Flat	✓	✓
C90SM-SS	900	—	90	3.05	6	225	316	7.4kgs	Welded Flat	✓	✓
COV90-SS	Optional 90mm base cover – stainless steel							0.3kgs	N/A	✓	✓
C140BG-SS	1200	500	140	3.40	—	—	316	25kgs	Welded Flat	✓	✓
C140CD-SS	1200	200	140	3.40	—	—	316	22kgs	Welded Flat	✓	✓
C140SM-SS	1200	—	140	3.40	10	300	316	19kgs	Welded Flat	✓	✓
COV140-SS	Optional 140mm base cover – stainless steel							0.5kg	N/A	✓	✓

Surface Finish: L – No.4 Linished. EP – Electro-polished.



ROUND BOLLARDS

Our fixed round, surface mount and below ground bollards are designed for traffic control situations and asset protection.

The surface mount bollards have fully welded base plates and are suitable for installation onto any concrete surface.

The below ground bollards have fully welded starter bars for installation into new concrete footings. Suitable for installation in asphalt or any soft surface where a concrete footing will be necessary.

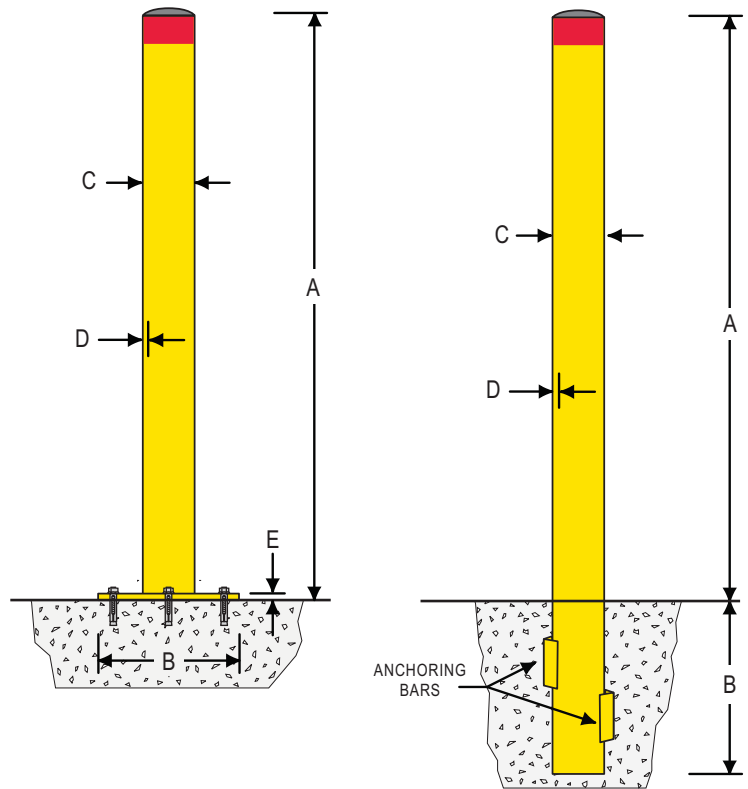
All our bollards are supplied complete with necessary fixings. They are manufactured from heavy wall mild steel and hot dip galvanised as standard with the option of powder coating as a final finish. (Safety yellow is our standard colour. Other colours are available on request).

Optional chain rings are available for connecting chains or ropes. Simply order with chain rings. Chain rings can also be purchased separately for retro fitting to existing bollards by drilling and tapping M10 threads as required.

Value features:

- » Cast aluminium caps provide high quality finish.
- » Standard class 1 reflective band.
- » Fully welded heavy steel base plate.
- » Welded starter bars for fixing into concrete footing.
- » All models hot dip galvanised as standard.

Polyethylene protective sleeves are available to suit round 90 and 140mm bollards. For more information see page 5.



SURFACE MOUNT & BELOW GROUND MODELS



Cast aluminium caps.



Surface mount flange.

SURFACE MOUNT SPECIFICATIONS FOR ROUND BOLLARDS

PART NO.	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	Weight (kg)	No. of Fixings	Size of Fixing (sleeve anchor)	Cap	Surface Finishes	
										G	P
C63SM	900	150	63.5	1.6	6	4	3	10 x 50mm	Push in	✓	✓
C63SM-G	900	150	63.5	1.6	6	4	3	10 x 50mm	Push in	✓	
C90SM	900	225	90	5	6	9	4	12 x 60mm	Fixed	✓	✓
C90SM-G	900	225	90	5	6	9	4	12 x 60mm	Fixed	✓	
C140SM	1200	300	140	5	10	23	4	16 x 65mm	Fixed	✓	✓
C140SM-G	1200	300	140	5	10	23	4	16 x 65mm	Fixed	✓	
C165SM	1300	350	165	5	12	34	4	20 x 75mm	Loose	✓	✓
C165SM-G	1300	350	165	5	12	34	4	20 x 75mm	Loose	✓	
C220SM	1300	400	220	6.4	12	45	4	20 x 105mm	Loose	✓	✓
C220SM-G	1300	400	220	6.4	12	45	4	20 x 105mm	Loose	✓	

Surface Finish: G – Galvanised. P – Powder coated safety yellow unless specified a custom colour.



Welded anchoring bars.



Optional chain rings (FIX1117).

BELOW GROUND SPECIFICATIONS FOR ROUND BOLLARDS

PART NO.	A (mm)	B (mm)	C (mm)	D (mm)	Weight (kg)	Anchoring Bars	Size of Anchoring Bars	Cap	Surface Finishes	
									G	P
C63BG	900	300	63.5	1.6	4	2	30 x 30 x 50mm angle	Push in	✓	✓
C63BG-G	900	300	63.5	1.6	4	2	30 x 30 x 50mm angle	Push in	✓	
C90BG	900	380	90	5	12	2	30 x 30 x 50mm angle	Fixed	✓	✓
C90BG-G	900	380	90	5	12	2	30 x 30 x 100mm angle	Fixed	✓	
C140BG	1200	500	140	5	29	2	30 x 30 x 100mm angle	Fixed	✓	✓
C140BG-G	1200	500	140	5	29	2	30 x 30 x 100mm angle	Fixed	✓	
C165BG	1300	650	165	5	40	2	30 x 30 x 100mm angle	Loose	✓	✓
C165BG-G	1300	650	165	5	40	2	30 x 30 x 100mm angle	Loose	✓	
C220BG	1300	650	220	6.4	53	2	30 x 30 x 100mm angle	Loose	✓	✓
C220BG-G	1300	650	220	6.4	53	2	30 x 30 x 100mm angle	Loose	✓	

Surface Finish: G – Galvanised. P – Powder coated safety yellow unless specified a custom colour.

BOLLARD PROTECTION SLEEVES

Barrier bollard protection sleeves offer a quick, simple and economical way to recondition old rusted, faded or scratched bollards without ever needing to remove, replace or re-paint again.

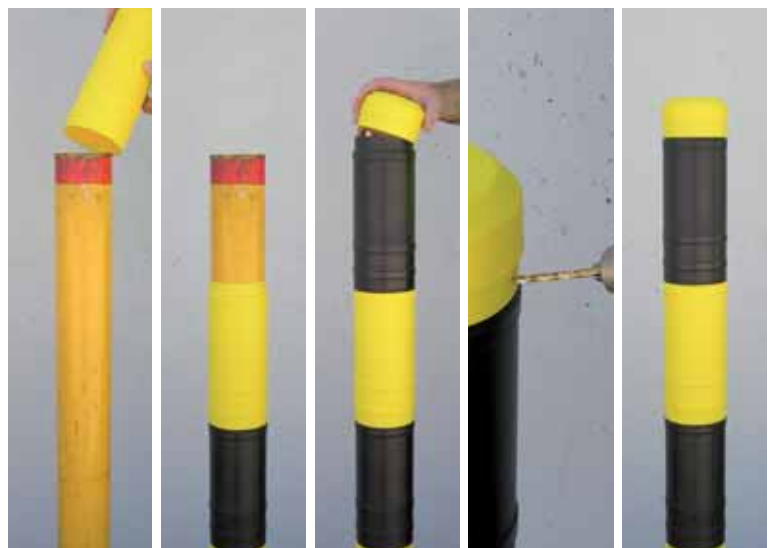
Barrier's modular bollard protection sleeves and caps fit any standard 140mm or 90mm diameter bollards, regardless of whether they are ours or a competitor's.

Ideal for shopping centres, car parks, schools and warehouses. Particularly useful in food processing facilities where chipped or flaking paint and powder coat surfaces are a health hazard.

They can be washed down and are not affected by most chemicals or oils etc.

The 140mm diameter sleeve module is 300mm in length and 225mm for the 90mm diameter model. The modules can be grouped in single colours or alternating colours for additional safety awareness. Eg. Yellow/Black or Red/White. Our bollard sleeves and caps offer economical long term indoor/outdoor protection and always look fresh.

The super tough polyethylene sleeve caps complete the installation of our bollard protection sleeves. The cap is secured in place which in turn prevents the sleeves from being removed.



Available for 90 and 140mm round bollards.

PART No.	DESCRIPTION
PBS90-Y	90mm Yellow sleeve module
PBSC90-Y	90mm Yellow sleeve cap
PBS90-B	90mm Black sleeve module
PBSC90-B	90mm Black sleeve cap
PBS90-R	90mm Red sleeve module
PBSC90-R	90mm Red sleeve cap
PBS90-W	90mm White sleeve module
PBSC90-W	90mm White sleeve cap

PART No.	DESCRIPTION
PBS140-Y	140mm Yellow sleeve module
PBSC140-Y	140mm Yellow sleeve cap
PBS140-B	140mm Black sleeve module
PBSC140-B	140mm Black sleeve cap
PBS140-R	140mm Red sleeve module
PBSC140-R	140mm Red sleeve cap
PBS140-W	140mm White sleeve module
PBSC140-W	140mm White sleeve cap

**You won't ever need to repair
scratched, rusted or faded bollards again!**



SQUARE BOLLARDS

Our fixed, square surface mount and below ground bollards are designed for traffic control situations and asset protection.

The surface mount bollards have fully welded base plates and are suitable for installation onto any concrete surface.

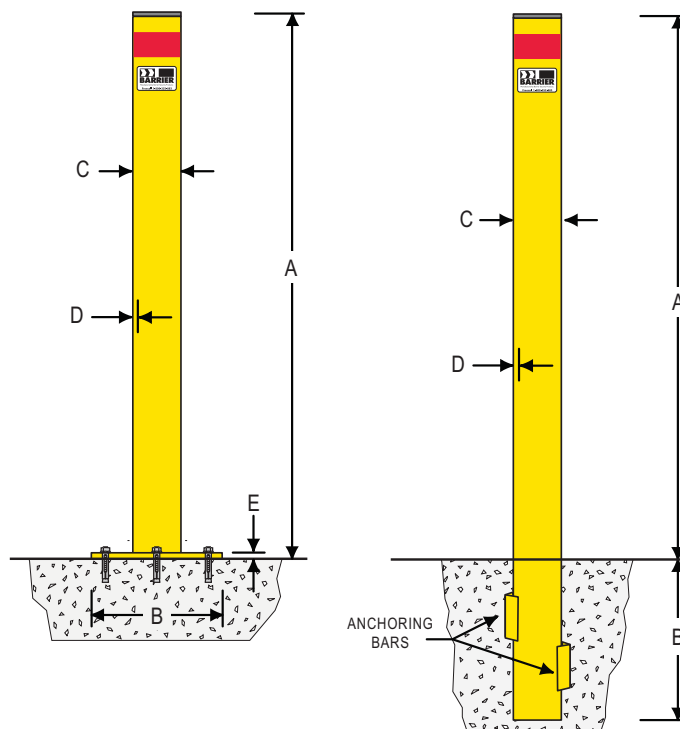
The below ground bollards have fully welded starter bars for installation into new concrete footings. Suitable for installation in asphalt or any soft surface where a concrete footing will be necessary.

All our bollards are supplied complete with necessary fixings. They are manufactured from heavy wall mild steel and hot dip galvanised as standard with the option of powder coating as a final finish. (Safety yellow is our standard colour. Other colours are available on request).

Optional chain rings are available for connecting chains or ropes to our bollards. Simply order with chain rings. Chain rings can also be purchased separately for retro fitting to existing bollards by drilling and tapping M10 threads as required.

Value features:

- » Available in two sizes.
- » Standard class 1 reflective band.
- » Fully welded heavy steel base plate.
- » Welded starter bars for fixing into concrete footing.
- » All models hot dip galvanised as standard.



SURFACE MOUNT & BELOW GROUND MODELS



SURFACE MOUNT SPECIFICATIONS FOR SQUARE BOLLARDS

PART NO.	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	Weight (kg)	No. of Fixings	Size of Fixing (sleeve anchor)	Cap	Surface Finishes	
										G	P
CS90SM	900	200	90	5	6	12.75	4	12 x 60mm	Welded Flat	✓	✓
CS90SM-G	900	200	90	5	6	12.75	4	12 x 60mm	Welded Flat	✓	—
CS150SM	1200	300	150	5	10	32	4	20 x 75mm	Welded Flat	✓	✓
CS150SM-G	1200	300	150	5	10	32	4	20 x 75mm	Welded Flat	✓	—
FIX1117	Metric shoulder gold eye bolt – can be attached to any of the above when requested.										

BELOW GROUND SPECIFICATIONS FOR SQUARE BOLLARDS

PART NO.	A (mm)	B (mm)	C (mm)	D (mm)	Weight (kg)	Anchoring Bars	Size of Anchoring Bars	Cap	Surface Finishes	
									G	P
CS90BG	900	400	90	5	16.5	2	30 x 30 x 50mm angle	Welded Flat	✓	✓
CS90BG-G	900	400	90	5	16.5	2	30 x 30 x 50mm angle	Welded Flat	✓	—
CS150BG	1200	500	150	5	38	2	30 x 30 x 100mm angle	Welded Flat	✓	✓
CS150BG-G	1200	500	150	5	38	2	30 x 30 x 100mm angle	Welded Flat	✓	—
FIX1117	Metric shoulder gold eye bolt – can be attached to any of the above when requested.									

Surface Finish: G – Galvanised. P – Powder coated safety yellow unless specified a custom colour.

SHOCK ABSORBING BOLLARDS

The Shock Absorbing Bollard (SAB) has the ability to shift sideways if hit at or near ground level.

If the impact is higher up the bollard, it can tilt up to 8 degrees, at which point it locks up offering maximum protection. Alternatively if the contact is of a deflection or glancing nature, the SAB is able to rotate through 360 degrees.

Each SAB comes fitted with high impact polyethylene protective sleeves. The sleeves are U.V. stabilised and won't fade, rot, rust or peel. **Never have to paint chipped, scratched or rusted bollards again.** (For more information on protective bollard sleeves see page 5).

SABs are designed to be used anywhere vehicles are manoeuvring at low speeds, such as carparks and warehouses etc. The self centering design means the SABs can take repeated impacts without incurring permanent damage. They simply absorb the impact and return to their original position.

These unique characteristics result from the combination of clever engineering and the use of high tech composite materials. SABs are available in 140mm diameter in either core drilled in-ground or surface mounted models.

Note: Not recommended for high speed traffic environments.

Value features:

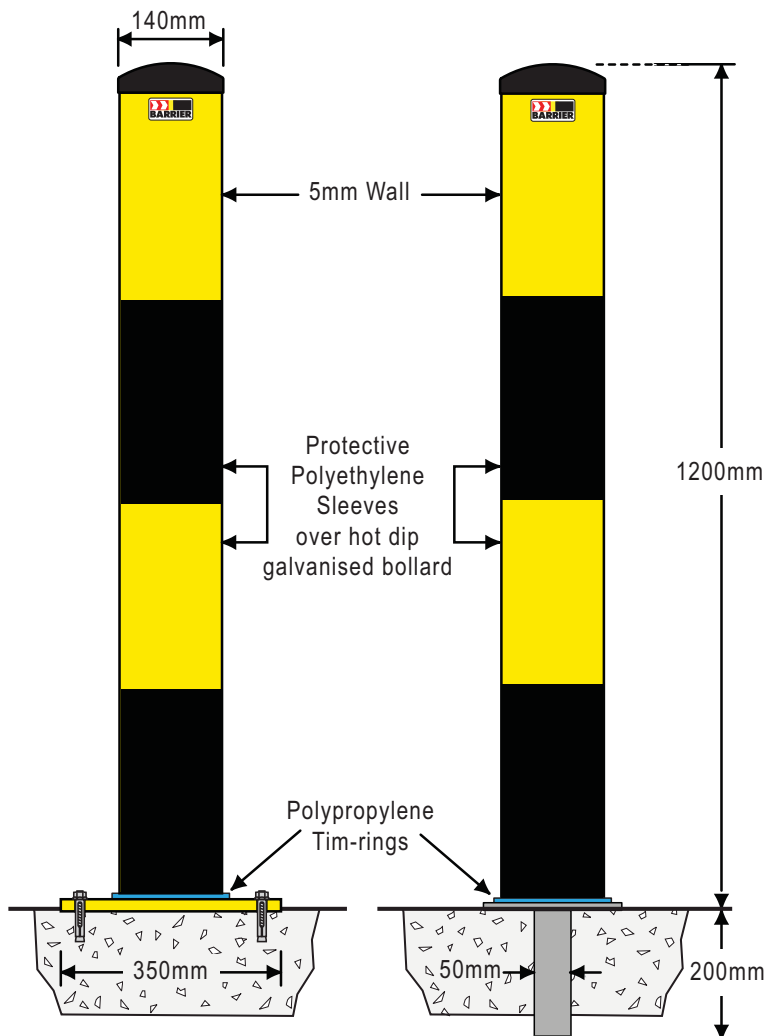
- » Eliminates damage caused by low speed impacts.
- » Moves in 3 directions simultaneously to absorb impact.
- » Suitable for indoor or outdoor use.
- » Ideal for carparks and warehouses etc.
- » Absorbs low speed impacts without sustaining damage.
- » Fitted with Yellow/Black protective polyethylene sleeves.
- » Absorbs the impact and returns to its original position.
- » Available in core drilled or surface mount models.

Specifications:

Description:	Shock Absorbing Bollard (SAB).
Material:	Mild steel and composite core structure.
Finish:	Yellow / Black high impact polyethylene sleeves over galvanised bollard.
Height:	1200mm above ground.
Diameter:	140mm (bollard).
Weight:	Approx. 33kgs.
Installation:	Core drilled – 50mm hole x 200mm deep. Surface mount – 4 x M12 x 102mm structural anchors (supplied).

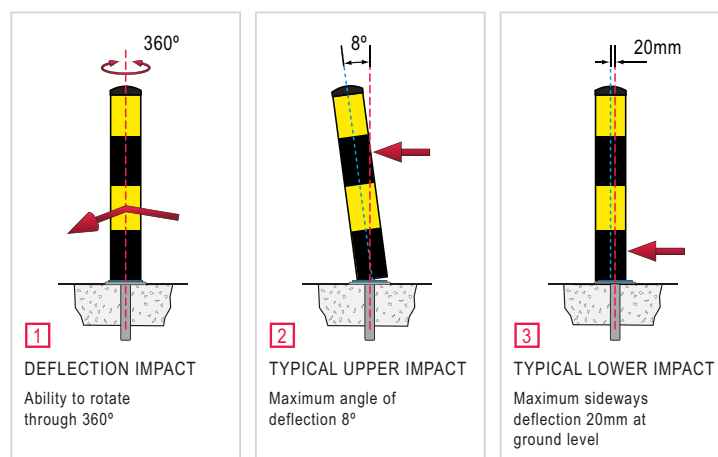


This is what can happen to rigidly fixed bollards with even a low speed impact. SABs simply absorb this kind of impact.



SURFACE MOUNT & BELOW GROUND MODELS

Shock Absorbing Bollard (SAB140-CD shown)



The vast majority of damage caused to assets is by vehicles manoeuvring at low speed. SABs have the ability to completely eliminate this damage.

PART No.	DESCRIPTION
SAB140-CD	Shock Absorbing Bollard – Core drilled 140mm dia.
SAB140-SM	Shock Absorbing Bollard – Surface mount 140mm dia.

FOLD DOWN BOLLARD

Fold Down Bollards have been designed for applications such as vehicle access control.

In the lay flat position the bollard is only 80mm high allowing sufficient vehicle clearance. In the upright position it stands 800mm high with a broad face of 150mm wide. Comes complete with a reflective sign face for greater visibility.

Supplied with a 40mm padlock also available as a key lockable model which includes two keys.

The vehicle bollards are available as a surface mount model or can be used with an in-ground kit (BGK4) for setting into new concrete. For installation into asphalt it is recommended to use a concrete footing for added strength and stability.

It can be supplied in either hot dip galvanised or high visibility safety yellow powder coat. Replacement or additional sign face ordered separately.

Value features:

- » Stands 800mm tall when locked up.
- » Only 80mm high in the lay flat position.
- » Available in surface mount or used with concrete footing kit.
- » Padlock lockable model includes fixings and padlock.
- » Key lockable model includes fixings and two keys.
- » Hot dip galvanised or finished in high visibility safety yellow powder coat.
- » Broad 150mm face includes reflective sign face.

Specifications:

Description:	Fold down access barrier.
Material:	Mild steel.
Finish:	Safety yellow powder coat and galvanised or galvanised only.
Height:	Down 80mm / Up 800mm.
Weight:	Operating 5kgs / Shipping 12kgs.
Fixing:	Surface mount supplied with 4 off 12 x 60mm. Masonry anchors.
Locking:	40mm padlock (supplied) or key lockable.
Sign:	Class 2 reflective sheeting 120 x 500mm (included).



For parking space protection see our Lok-Up on page 70.



The fold down bollard stands 800mm high in the upright position.



Only 80mm high in the lay flat position.

PART No.	DESCRIPTION
FD150	Powder coated fold down bollard – Padlock
FD150-G	Galvanised coated fold down bollard – Padlock
FD150K	Powder coated fold down bollard – Key lockable
FDS1	Reflective sign face with Red & Yellow diagonal stripes
BGK4	In-ground kit for FD150



FD150K – Key lockable.



FD150 – Padlock.

Need Advice?

We can offer technical support over the phone or maybe you simply need a specification sheet.

CALL NOW!



Installation? or just a site inspection...

Some things just can't be conveyed over the phone. In this case a site visit from one of our experienced representatives or installers will help us better understand your requirements, and allow us to recommend an appropriate solution that satisfies your needs.

CALL NOW!

Or...Something Custom Made?

As designers and manufacturers with many years of experience, we can produce a new design or modify an existing product to suit **your** unique requirements.

CALL NOW!



CAM-LOK REMOVABLE BOLLARDS

The Cam-lok range of removable bollards with their heavy steel construction were originally designed to help combat ‘Ram-raids’ on businesses. While they still serve this security role with thousands of them now in the field, we find that our Cam-lok’s are being used more and more in architectural environments for managing vehicle access in restricted areas.

These architectural applications vary from the security role in that there is a greater demand for an aesthetically pleasing design, hence the use of polished stainless steel instead of the more industrial powder coated finishes.

However some things never change, one of these is our insistence on using only the very highest quality ‘Bi-lock’ removable core lock mechanisms with security registered keying.

These are very expensive and make up a substantial part of the cost of the finished bollard, which is why most competitors removable bollards currently on the market use cheap, very poor quality locks that are unreliable and readily breached. While this may reduce the initial investment, it compromises the effectiveness of the bollard and the long term security of your assets.

Another area where our product differs from most is that all our steel bollards (including those with powder coated finishes) are hot dip galvanised during manufacture. Alternatively our stainless steel models are made from marine grade 316.

Cam-lok removable bollards come in two styles. Freestanding for shop front or public open space installations, and roller door models for the protection of factory roller shutter doors.

CAM-LOK SPECIFICATIONS

POST Part No.	POST Description	POST Finish	A (mm)	B1 (mm)	B2 (mm)	C (mm)	Post (kgs)	CORED SLEEVE Part No.	D1 (mm)	CONCRETE SLEEVE Part No.	D2 (mm)
BCL90	90mm freestanding post	Powder coated	90	950	200	5.0	12.3	BCL90S-CD	225	BCL90S-NC	425
BCL90-G	90mm freestanding post	Galvanised	90	950	200	5.0	12.3	BCL90S-CD	225	BCL90S-NC	425
BCL90-SS	90mm freestanding post	316 stainless steel	90	950	200	3.05	9.0	BCL90SS-CD	225	BCL90SS-NC	425
BCL90RD	90mm roller door post with door brackets	Powder coated	90	950	200	5.0	12.5	BCL90S-CD	225	BCL90S-NC	425
BCL90RD-G	90mm roller door post with door brackets	Galvanised	90	950	200	5.0	12.5	BCL90S-CD	225	BCL90S-NC	425
BCL140	140mm freestanding post	Powder coated	140	1050	200	5.0	21	BCL140S-CD	225	BCL140S-NC	425
BCL140-G	140mm freestanding post	Galvanised	140	1050	200	5.0	21	BCL140S-CD	225	BCL140S-NC	425
BCL140-SS	140mm freestanding post	316 stainless steel	140	1050	200	3.40	17	BCL140SS-CD	225	BCL140SS-NC	425

CAM-LOK ACCESSORIES



Surface mounted bollard storage

These robust storage units offer a secure location to place your Cam-lok bollards while they are out of the ground. Because the bollard locks into the holder in the same way it does into the in-ground sleeve they are safe to mount outside, where they are close to where they are being used. They are a welded steel design and plated to resist rusting, available in two sizes to suit both 90 and 140mm bollards.

PART No.	DESCRIPTION
BCL90H	Cam-lok 90mm surface mount storage unit
BCL140H	Cam-lok 140mm surface mount storage unit



Hanging post holders

Hanging post holders are manufactured from anodised aluminium. Because they are not lockable they are best suited for internal storage of idle Cam-lok bollards. Each hanging holder is designed to hold one bollard, and will accept either 90 or 140mm models. They must be fixed into a sturdy wall, alternatively they can be post mounted if required.

PART No.	DESCRIPTION
BHH	Wall mount bollard storage unit

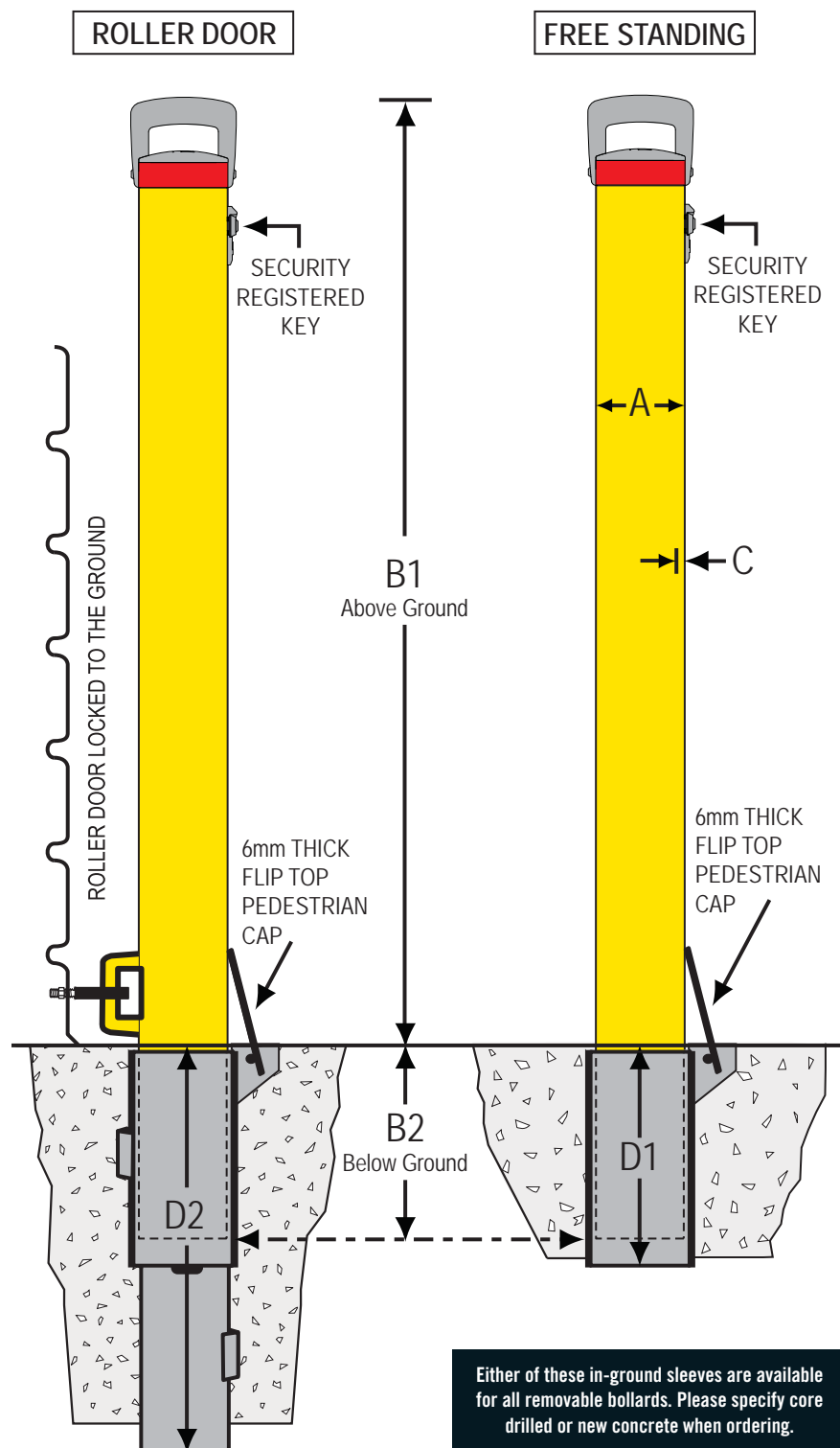


Replacement locks and keys

Our premium ‘Bi-lock’ components have a number of benefits. Because of the removable core design, locks can quickly be re-keyed or damaged cores replaced if necessary without the need to dismantle the bollard to access the lock body. As all keys and locks are registered to the owner keys can not be cut without authorisation.

PART No.	DESCRIPTION
BCLKEY	Cam-lok additional registered key

CAM-LOK FEATURES



New caps & handles

New cast aluminium handles, caps and lock shrouds finished in a silver grey metallic powder coat add a refined architectural look and improved grip to our removable bollards.



Premium locking system

Our Cam-lok bollards are fitted with top quality 'Bi-lock' security locks with quick change cores that can be removed for maintenance or rekeying without disassembling the bollard.



Roller door brackets

These heavy duty roller door brackets interlock with the bollard shackle to lock the door down to the ground thereby offering maximum security against 'ram raiding' or levering up of the door.

NEW CONCRETE SLEEVES

New concrete sleeves are used where there is no existing concrete and a footing needs to be poured. Such applications would include gravel or bitumen surfaces or where the bollards need to be installed into a garden bed or grassed area. The sleeves are open to the bottom to allow for drainage and incorporate a hinged 6mm thick flush cap.

CORE DRILLED SLEEVES

Where sleeves are to be installed into existing concrete a hole 106mm in diameter is core drilled into the slab, the sleeve is then set into the hole using an appropriate epoxy adhesive. The bollard interlocks with the sleeve to form a burst proof connection. When the bollard is removed the hole is covered by a 6mm thick hinged flush cap.

SLEEVE-LOK REMOVABLE BOLLARDS

The Sleeve-lok range of removable bollards with their heavy steel construction are well suited to help combat “Ram-raids” on businesses. They have served this security role now for over 12 years with thousands having been installed in all manner of applications. We find that our Sleeve-lok’s are also very widely used for managing vehicle access in restricted areas. These include industrial sites, parks and gardens and numerous other public space environments.

Sleeve-lok removable bollards are differentiated from the Cam-lok range by their locking method. Where the Cam-lok’s use high security locks with an internal locking mechanism, the Sleeve-lok’s use a simple padlock design whereby the cap on the in-ground sleeve is secured to a high strength steel shackle welded onto the bollard.

Sleeve-lok removable bollards come in two styles. Freestanding for

shop front or public open space installations, and roller door models for the protection of factory roller shutter doors.

In keeping with a greater demand for an aesthetically pleasing design in street furniture and fixtures used in public open spaces, we have undertaken a major re-design of our removable bollard range. This is evident in the smart new cast aluminium caps and handles on the Sleeve-lok bollards.

Another area of improvement and one where our entire bollard range differs from our competitors, is that they are all hot dip galvanised during manufacture. This includes bollards that are have a powder coated finish. This is a significant development as hot dip galvanising has a dramatic impact on reducing corrosion and increasing the service life of the bollard.

SLEEVE-LOK SPECIFICATIONS

POST Part No.	POST Description	POST Finish	A (mm)	B1 (mm)	B2 (mm)	C (mm)	Post (kgs)	CORED SLEEVE Part No.	D1 (mm)	CONCRETE SLEEVE Part No.	D2 (mm)
BSL63	63mm freestanding post	Powder coated	63	900	150	1.6	4.5	BSL63S-CD	150	BSL63S-NC	300
BSL63-G	63mm freestanding post	Galvanised	63	900	150	1.6	4.5	BSL63S-CD	150	BSL63S-NC	300
BSL90	90mm freestanding post	Powder coated	90	950	200	5.0	12	BSL90S-CD	225	BSL90S-NC	425
BSL90-G	90mm freestanding post	Galvanised	90	950	200	5.0	12	BSL90S-CD	225	BSL90S-NC	425
BSL90RD	90mm roller door post with door brackets	Powder coated	90	950	200	5.0	12.2	BSL90S-CD	225	BSL90S-NC	425
BSL90RD-G	90mm roller door post with door brackets	Galvanised	90	950	200	5.0	12.2	BSL90S-CD	225	BSL90S-NC	425
BSL140	140mm freestanding post	Powder coated	140	1050	200	5.0	21	BSL140S-CD	225	BSL140S-NC	425
BSL140-G	140mm freestanding post	Galvanised	140	1050	200	5.0	21	BSL140S-CD	225	BSL140S-NC	425

SLEEVE-LOK ACCESSORIES



Surface mounted bollard storage

These robust storage units offer a secure location to place your Sleeve-lok bollards while they are out of the ground. Because the bollard locks into the holder in the same way it does into the in-ground sleeve the holder is safe to mount outside where it is close to where it is being used. They are a welded steel design and plated to resist rusting, available in three sizes to suit 63, 90 and 140mm bollards.

PART No.	DESCRIPTION
BSL63H	Sleeve-lok 63mm surface mount storage unit
BSL90H	Sleeve-lok 90mm surface mount storage unit
BSL140H	Sleeve-lok 140mm surface mount storage unit



Hanging post holders

Hanging post holders are manufactured from an anodised aluminium extrusion. Because they are not lockable they are best suited for internal storage of idle Sleeve-lok bollards. Each hanging holder is designed to hold one bollard, and will accept either 90 or 140mm bollards (Note: 63mm models are not suited to hanging holders). Hanging holders must be fixed into a sturdy wall or they can be post mounted if required.

PART No.	DESCRIPTION
BHH	Wall mount bollard storage unit

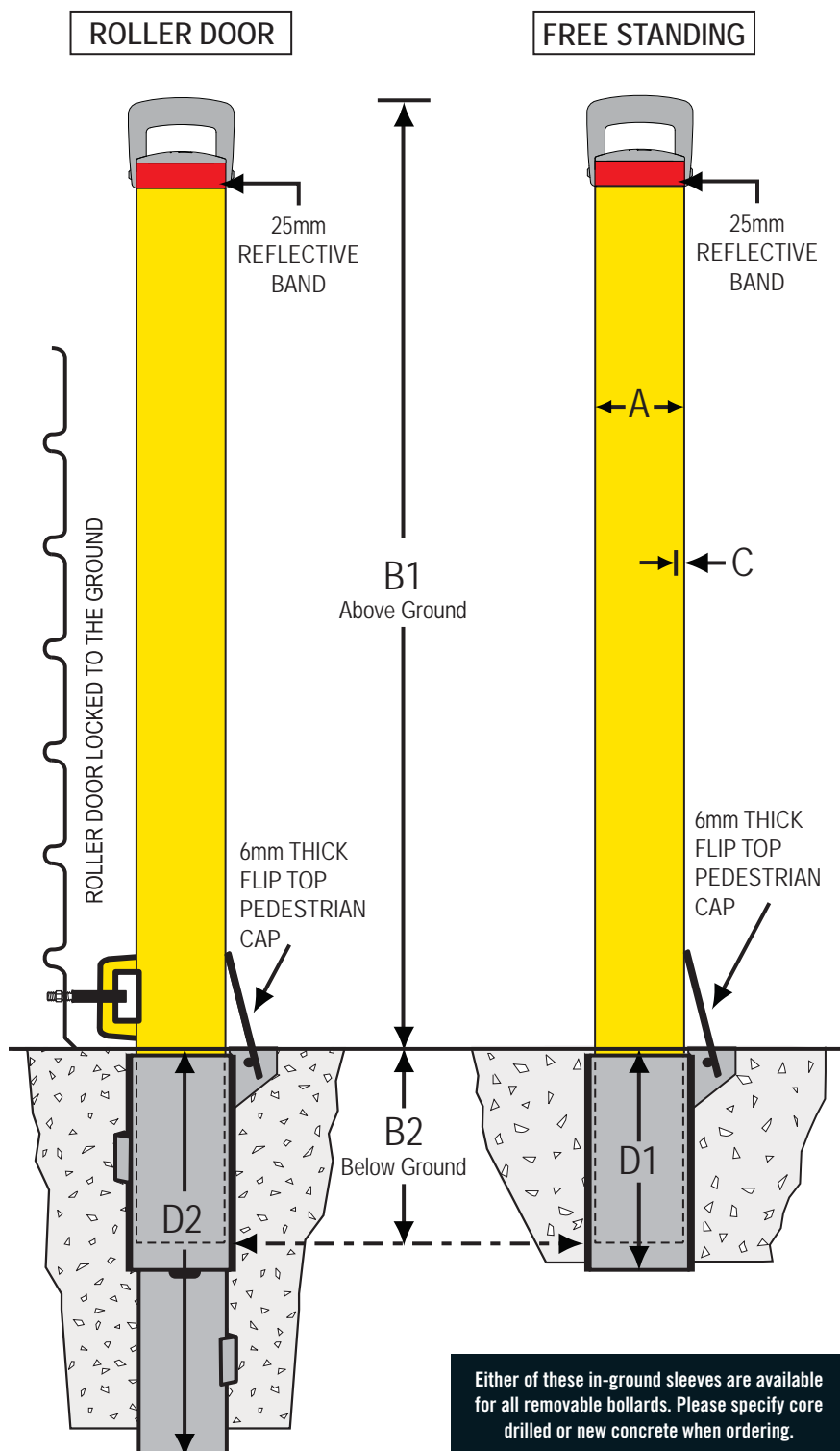


High security padlocks

We sell and recommend the use of a high quality padlock with a shielded shackle to help prevent tampering. The BPL2 is a high strength lock with a 9mm protected shackle. It is chrome plated to resist corrosion and is supplied with 2 keys per lock. Locks can be supplied keyed alike if you have multiple units or keyed differently.

PART No.	DESCRIPTION
BPL2	High security 9mm shielded padlock (2 keys)

SLEEVE-LOK FEATURES



NEW CONCRETE SLEEVES

New concrete sleeves are used where there is no existing concrete and a footing needs to be poured. Such applications would include gravel or bitumen surfaces or where the bollards need to be installed into a garden bed or grassed area. The sleeves are open to the bottom to allow for drainage and incorporate a hinged 6mm thick flush cap.

CORE DRILLED SLEEVES

Where sleeves are to be installed into existing concrete a hole 106mm in diameter is core drilled into the slab, the sleeve is then set into the hole using an appropriate epoxy adhesive. The bollard interlocks with the sleeve to form a burst proof connection. When the bollard is removed the hole is covered by a 6mm thick hinged flush cap.



New caps & handles

New cast aluminium handles and caps finished in a silver grey metallic powder coat add a refined architectural look and improved grip to our removable bollards.



Positive locking

Sleeve-lok bollards are secured into the ground by padlocking the 6mm thick sleeve cap to the 10mm thick welded shackle on the bollard with our BPL2 high security padlock.



Roller door brackets

These heavy duty roller door brackets interlock with the welded bollard shackle to lock the door down to the ground, thereby offering maximum security against 'ram raiding' or levering up of the door.

SURFACE MOUNT REMOVABLE BOLLARDS

Surface mount removable bollards are designed for applications where the floor cannot be core drilled or penetrated. For example, spaces with suspended, prestressed slabs or clean areas such as food preparation or pharmaceutical processing.

They are available in two different models, the **Cam-lok** model and the **Tee-lok** model. Structurally both models are identical but offer different locking systems depending on the level of security required.

Cam-lok model

This heavy duty bollard locks into the surface mounted receiver shoe via an internal locking system which utilises a high security cam lock with registered keys. (2 keys are supplied per order. Additional keys may be purchased if required).

Tee-lok model

The surface mount Tee-lok is exactly the same as the surface mount Cam-lok except that it does not employ high security locking. Instead, the Tee-lok uses our unique 'T' handle key to unlock and remove the bollard from the receiver shoe.

Tee-lok is ideally suited to low or medium security applications, where the aim is to stop vehicles entering unauthorised areas or separating vehicles from pedestrians, especially around work places.

Value features:

- » Strong 90mm post with 5mm thick wall.
- » Heavy steel receiver shoe only 20mm high when post removed.
- » Requires only 4 off 12mm holes, 65mm deep.
- » No core drilling or slab penetration.
- » Internal locking system with either high security cam-locks with registered keys or unique 'T' handle keys.
- » Fixings for receiver shoe are inaccessible when post locked in.
- » Optional colours available on request.

Specifications:

Description:	Surface mount removable bollards.
Material:	Steel post 90mm diameter with 5mm wall.
Finish:	Zinc plated and E-Coated prior to safety yellow powder coat.
Height:	950mm post height. Receiver shoe only 20mm high with post removed.
Weight:	Post 11.9kgs / Receiver shoe 2.9kgs.
Installation:	4 off 12 x 65mm sleeve anchors.

PART No.	DESCRIPTION
SMCL	Cam-lok surface mount bollard
BCLKEY	Additional Cam-lok registered key
SMTL	Tee-lok surface mount bollard
BRKEY	Additional 'T'-handle key for Tee-lok
SMCLH	Receiver shoes for Cam-lok / Tee-lok (Also used as a storage unit for bollards)



Tee-lok model shown.



Bollard installed into shoe.



Bollard to shoe interlock (SMCLH).



Cam-lok model (SMCL).



Tee-lok model (SMTL).

RETRACTABLE BOLLARDS

– Powder Coated or Stainless Steel

Retractable bollards are designed for medium security applications such as traffic and parking control. They offer a simple, trouble free operation proven over many years of installation.

Note: A retractable bollard should not be used where high security locking is required, such as car yards etc. For these applications insurance companies insist on our “Cam-lok” removable bollards.

The retractable bollard is now available with a choice of two different materials. The BR900 has a 5mm thick mild steel bollard that is zinc coated and E-Coated before being powder coated in hi-vis safety yellow with two reflective bands. The BR900-SS has a 3.05mm thick 316 marine grade stainless steel bollard. As this model is designed for more architectural applications it does not include reflective bands.

Value features:

- » Locks in both up and down positions.
- » Strong circular design 90mm diameter x 5mm wall.
- » Black anti-slip surface on top of bollard.
- » Unique low cost ‘T’ handle key.
- » Convenient, no loose posts to store.
- » Galvanised in ground casing.
- » Available with a powder coated finish or 316 grade stainless steel bollards.
- » Trouble free design. Only 2 moving parts.
- » Internal locking system can’t be tampered with or fouled by dirt or water.

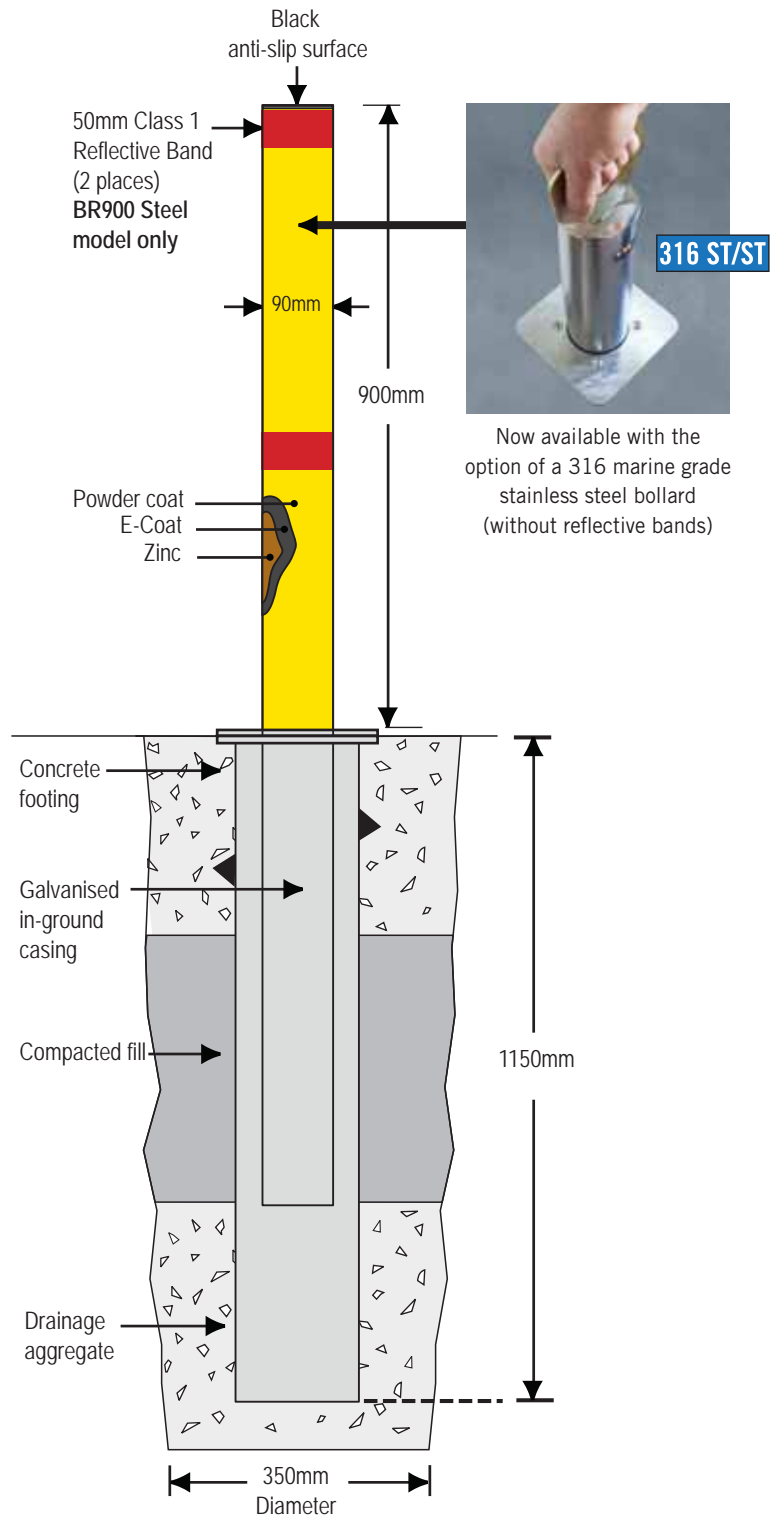
Note: 2 keys supplied per order. Additional keys may be purchased.

Specifications

Description:	Retractable bollard for vehicle access and parking control.
Material:	Bollards 90mm diameter with 5mm mild steel or 3.05mm 316 stainless steel wall. In ground casing 140mm with 5mm wall mild steel.
Finish:	Powder coated models are zinc plated prior to E-Coating and finally powder coated. Stainless steel models are marine grade 316. In-ground casings for all models are hot dip galvanised.
Height:	Above ground 900mm. Below ground 1150mm.
Weight:	BR900 41.5kgs / Operating weight 6kgs. BR900-SS 38kgs / Operating weight 4kgs.
Locking:	Unique internal locking mechanism with ‘T’ handle key.
Installation:	Excavation and concrete footing.

E-COATING is another name for electrocoating, electropainting, or electrophoretic lacquering. It is used to deposit a paint or lacquer coating (rather than metal, as is deposited by electroplating).

PART No.	DESCRIPTION
BR900	Retractable bollard assembly – powder coated
BR900R	Replacement bollard
BR900-SS	Retractable bollard assembly – 316 stainless steel
BR900R-SS	Replacement 316 stainless steel bollard
BRKEY	Additional ‘T’ handle key for retractable bollard



1. Locks in down position.



2. Turn to unlock and lift.



3. Turn to lock in up position.

RETRACTABLE BOLLARDS

Installation Procedure:

1. Set out and bore holes approximately 500mm diameter. Recommended spacing for bollards is 1400mm maximum, centre to centre. Holes should be 100mm deeper than the length of the galvanised ground casing. (PHOTO 1).
2. Place coarse gravel in the bottom of the hole, sit the bollard on this base until the top flange plate is approximately 10mm above the natural ground level. Ensure bollard is plumb then place more gravel around the bollard until the hole is approximately $\frac{1}{3}$ full. (PHOTO 2).
3. Replace some of the excavated soil from the hole and compact until the hole is approximately $\frac{2}{3}$ full. Check the operation of the bollard. (PHOTO 3).
4. When satisfied the bollard is plumb and at the correct height, cover the top with tape to prevent entry of cement into bollard casing. Fill the balance of the hole with 35-50 mpa concrete. Add steel reinforcing if required. (PHOTO 4).
5. Finish off concrete as desired, remove the protective tape and clean around the bollard and top flange. (PHOTO 5).
6. Stand back and admire your beautiful work. Well done! (PHOTO 6).



1.



2.



3.



4.



5.



6.



PLEASE NOTE

- a. When finishing off the concrete, taper the surface slightly away from the surface flange. This will reduce the amount of water that finds its way into the ground casing.
- b. The coarse gravel in the bottom of the hole acts as a drainage sump for water that finds its way into the casing. This is normal and should not be seen as a problem.
- c. Never allow the bollard to free-fall from the raised position. Always lower using the 'T' handle key.

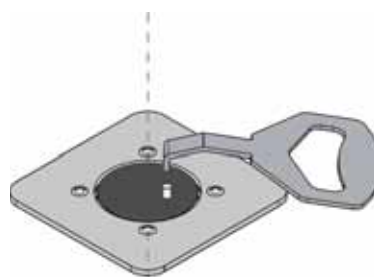
Photos courtesy of R.L. Reed Inc. (Las Vegas).

RETRACTABLE BOLLARDS

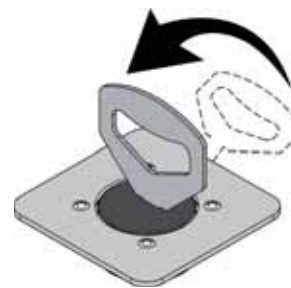
Locking Procedure:

1. Insert the 'fingers only' of the key into the bollard, as shown.
Note: Slot in bollard is off-centre. Insert key so that handle is facing out on 'short' side of the cap.
(DIAGRAM 1).
2. Fully insert key while pivoting upwards into the vertical position.
Note: It is important that the key is fully inserted until it can not go any further.
(DIAGRAM 2).
3. Lift the key until the weight of the bollard is taken.
Rotate anti-clockwise to unlock.
(DIAGRAM 3).
4. Lift bollard until fully extended.
(DIAGRAM 4).
5. While holding bollard in the fully extended position, rotate in anti-clockwise direction until it stops. Remove the key. The bollard should now be locked in the upright position.
(DIAGRAM 5).
6. Now re-insert the 'fingers only' of the key and support the bollards weight, then twist from left to right. If locked **correctly** there will be minimal rotation. If **not** locked, the bollard will fully rotate and retract.
(DIAGRAM 6).

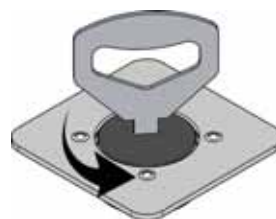
Note: Reverse procedure to unlock and lower bollard.



1. Insert key to short side.



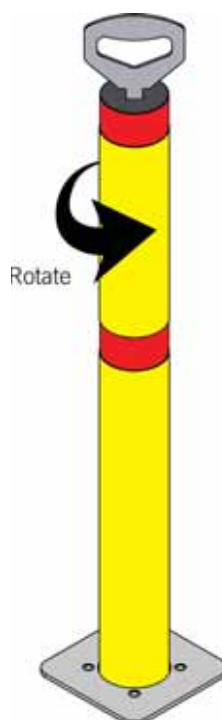
2. Fully insert and pivot key to upright position.



3. Rotate to unlock then lift.



4. Lift until fully extended.



5. Rotate to lock.



6. Confirm bollard is locked.

WARNING

NEVER ALLOW
THE BOLLARD
TO FREE FALL
INTO THE GROUND.
DAMAGE MAY RESULT.

ATTENTION Architects, Specifiers and Buyers!

Recycling. Is it really good for the environment, or just a load of old rubbish?

It has long been my opinion that specifiers and buyers of wheel stops and speed humps manufactured from recycled rubber naively accept without question, that recycling of old tyres and other scrap rubber into new products is good for the environment.

To answer the above question, Barrier Group has engaged Dr Enda Crossin and his team from the Centre for Design at RMIT University in Melbourne, to undertake a comparison Life Cycle Assessment (LCA) study of the cradle to grave environmental impacts including end of life disposal scenarios for our new LLDPE Compliance wheel stops and those made from recycled rubber.

As part of our product development and marketing activities, Barrier Group are interested in investigating the environmental impacts of the Compliance one piece wheel stop system, and how these impacts compare with those of similar wheel stop systems, produced from recycled rubber. This study will provide insights into the comparative environmental properties of the two wheel stop systems which will support Barrier Group in identifying key areas for product improvement and innovation.

Goal & scope

The primary aim of the study is to quantify and compare the life cycle environmental impacts, including those related to manufacture, distribution, use and disposal, of the following wheel stop systems:

1. Compliance one piece wheel stop, produced from injection-moulded linear low-density polyethylene (LLDPE) by Barrier Group Pty. Ltd.
2. Recycled rubber wheel stop, produced from reclaimed tyres and scrap rubber of unknown origins by various manufacturers.

In order to assess the life cycle impacts of the two wheel stop systems six key indicators will be applied to the study, they are described in the table below.

Table 2-1: Impact assessment indicators to be applied

Indicators	Unit	Description
Global Warming	kg CO2 eq	Climate change effects resulting from the emission of carbon dioxide (CO2), methane and other greenhouse gases into the atmosphere. Factors applied to convert emissions of greenhouse gas emissions into carbon dioxide (CO2) equivalents emissions conform to IPCC 2007 factors for a 100 year time horizon.
Water use	kL H2O	Water usage. Total of all water used by the processes considered.
Solid waste	kg	Solid waste generated. Total of all solid waste generated by the processes considered. This indicator has been designed according to the first CML impact assessment method (CML 92 V2.04). Note that the CML 92 is the only European impact assessment method that takes solid waste into account. CML is a research centre based in the Institute of Environmental Sciences of Leiden (Netherlands).
Photo-oxidation formation	C2H4-eq	Photochemical Ozone Creation Potential (POCP) (also known as summer smog) for emission of substances to air is calculated with the UNECE Trajectory model (including fate), and expressed in kg ethylene equivalents/kg emission
Human toxicity	DALY	Total damage caused by non-carcinogenic and carcinogenic emissions measured in disability adjusted life years (DALY), a rate of mortality and disability, which ranks years of life lost with years of disease and disability.
Depletion of minerals & fossil fuels	MJ Surplus	The additional energy required to extract resources (both mineral and fossil) due to depletion of reserves, leaving lower quality reserves behind. The minerals indicator has been designed from an Eco-Indicator impact assessment method (Eco-indicator 1999 (H) V2.05). Eco-Indicator is an impact assessment method developed by Product Ecology Consultants, a Dutch based research and consultancy company. The method has been developed between 1997 and 1999, commissioned by the Dutch Ministry of Urban Planning, Housing and the Environment.

The terms of engagement for this study were outlined with RMIT in November 2011 and the study commenced in April 2012. It is anticipated the study will be completed in August of 2012 at which time the results will be published on our websites and be available for downloading. They will also be distributed on request in hard copy.