



A Guide To **Bollard** **Socket Systems**

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INTRODUCTION

If you've worked in the highway management sector, you'll be well aware of the importance of road safety and efficient carriageway maintenance.

That's particularly important when it comes to road safety bollards, which guide drivers through complex junctions and traffic calming measures, while also acting as hazard markers and delineators. Unfortunately, bollards are often placed in danger spots, requiring frequent maintenance or even replacement by personnel who will be put in a vulnerable position as a result.

According to National Highways, a car parked on the hard shoulder has only **11 minutes on average*** before being hit by another vehicle. Now consider a road worker, performing routine maintenance on a bollard in and around the carriageway. The longer they stay exposed to live traffic, the greater the hazards they will face. Councils and highway management companies must therefore take every precaution they can to keep their employees safe while performing roadworks.

That's where socket systems come in – these products are built into the ground to provide quick installation and removal of bollards, improving the speed, safety, and efficiency of bollard replacement for highway operatives. The added utility of a socket system also provides a greater measure of flexibility for public spaces and those that manage them.

In this guide, we'll explore the following questions:

- How do socket systems work, and what are their key features?
- How can socket systems be utilised to improve safety and lower costs?
- What types of socket systems are available, and which is best for your needs?

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* <https://publications.parliament.uk/pa/cm200304/cmselect/cmtran/105/105we43.htm>



PART 1: A Better Way Of Bollard Fixing

A FIRST LOOK AT SOCKET SYSTEMS

In short, socket systems offer a flexible and robust way to fix bollards in place.

Socket systems are designed in detail to make it quicker and easier to remove, replace, and re-install bollard posts. Unlike other fixing methods, such as bolt down fixing or below-ground extended base, socket systems are not permanently attached to a bollard, meaning any posts can be removed from their position at any time and replaced at any time.

Naturally, this ease-of-use is supremely helpful for a range of different situations and locations. Need to replace a damaged bollard on a busy highway? Simply insert the new post into the socket, without the need for a complicated and lengthy installation process. How about temporarily removing your bollards to allow access for a special event? Simply remove the posts and add back as required.





SOCKET SYSTEMS IN-DEPTH

So, how exactly do socket systems work?

How can they be utilised, and how do they prove so effective?

Well, that all comes down to design.

Looking first at the installation of socket systems, we see that the device is fully built into the ground's foundation (usually quite deep to ensure adequate anchorage), similarly to other fixings. However, the key distinction here is that instead of the fixing being connected to the bollard directly, socket systems feature an aperture allowing the bollard post to be inserted and withdrawn. In this way, the socket section acts almost like a hole in the ground, configured to accept and lock in bollard posts as required.

Once the socket system is installed, it will remain in the ground permanently (unless the decision is made to remove the system). During that time, this system will absorb the impact of most collisions, without damaging any of the nearby surroundings. Should the bollard itself be damaged by a collision, or otherwise need to be replaced, the system can then accept further replacements across the duration of its lifetime.

Above all, socket systems are designed with ease of use in mind, offering quick and effortless utilisation. Inserted bollards and posts can be removed in seconds, using a key, and swiftly switched out for their replacements. Accordingly, socket systems also offer a much longer life span than standard bollard fixings, due to the ability to accept replacements without requiring any expensive, hazardous, or disruptive groundwork.



KEY FEATURES OF SOCKET SYSTEMS

The hallmarks of an exceptional socket system are numerous. As is to be expected, the individual characteristics of each system will play an outsized role in how successfully that product functions. Therefore, it's crucial to invest in quality products to ensure the safest and most robust fixing for your bollards.

The ideal socket system will offer the following features:

Made Of Durable Materials

Given that socket systems absorb much of the impact of a collision, the material that the system is made of is critical. Tough, quality materials will extend the product's life span significantly, and provide a better return on your investment. Cheaper materials tend to break more easily and disfigure the surrounding foundations.



Easy To Operate

There's little point in purchasing a socket system if the removal and replacement process proves too complex. Instead, optimal socket systems will make it as easy as possible to insert and lock in bollard posts, usually taking a matter of seconds with simple tools. This makes them perfect for road worker safety, and ensures minimal disruption to traffic, and ensures reliable performance under pressure.

Easy To Install

The initial installation of a socket system requires the product to be fully built into the ground. Therefore, the best socket systems will offer a simple but well-defined substructure, ensuring they're shaped to be as easy as possible to pave around and install into the concrete. This avoids large-scale excavation or groundwork, saving you valuable time and resources.



Safe & Secure

Safety is paramount, and while socket systems present minimal risk to passers-by, replacing bollards can be a perilous task, especially if working alongside a busy carriageway or at night with limited visibility. Therefore, socket systems are designed to be operated quickly, reducing the risk to highway sector personnel by limiting the time they spend exposed.



UTILISING SOCKET SYSTEMS - HIGHWAYS

Socket systems provide a variety of advantages to highway engineers and road workers looking for simpler and safer bollard maintenance.

Installing bollards without a socket system takes up a substantial amount of time and resources, requiring the ground to be excavated every single time a bollard needs to be fixed or removed. Not only is the groundwork extensive, but if workers will be on-site for some time, traffic management and health and safety equipment will also need to be considered.

Each comes with their own additional costs and logistics, such as renting and transporting temporary traffic lights to manage the flow of traffic. Then there's the time-consuming set-up involved, with workers expending valuable effort laying out cones and propping up signs. With these considerations, the simple task of installing a new bollard could very well bloat into a large and lengthy operation.

Socket systems provide the ideal alternative. With only initial groundwork required, bollards can be easily removed and replaced henceforth, minimising the need for traffic management and saving valuable resources. This makes socket systems a far more economical choice compared to more traditional fixings.



The road types that would particularly benefit from installing socket systems for their bollards include but are not limited to:

- ✓ Traffic Calming and Road Safety Schemes
- ✓ City Centres & High Streets
- ✓ Trunk Roads
- ✓ Urban & Rural Cycle Routes
- ✓ Car Parks, Pavements, & Drive Throughs
- ✓ Bus Lanes & Hard Shoulders

UTILISING SOCKET SYSTEMS - PATHWAYS & OPEN SPACES

When it comes to pedestrian and urban traffic management, socket systems provide the ideal solution for areas that demand that added level of flexibility.

Able to fulfil permanent, semi-permanent, and temporary functions, socket systems excel in adapting to your needs. Whether your public space faces different seasonal requirements, or must adapt to changing circumstances and regulations, socket systems provide the ultimate responsive approach to bollard management.

Perhaps your industrial premises is expecting a delivery of an abnormally wide load and must make extra room in preparation. Maybe your town's farmer market is held every Thursday, and bollards need to be in place on the day to block off the street from vehicle use. Maybe an emergency service vehicle needs access to an otherwise closed-off area. Or, perhaps your bollard is placed to mark a hazard, and therefore is at high risk of impact damage and a high likelihood of future replacement.

In all these cases, socket systems will make the task at hand an effortless one. Their uses are diverse and varied, and will prove themselves a practical addition to just about any sector or premises.

The areas that would particularly benefit from installing socket systems for their bollards include but are not limited to:

- ✓ Parks, Gardens, & Public Footpaths
- ✓ Promenades, Piers, Bridges & Walkways
- ✓ Canalside, Riverside, Reservoirs, & Water Courses
- ✓ Arena Grounds, Concert Venues, & Football Stadiums
- ✓ Warehouses, Logistics & Industrial Premises
- ✓ University Campuses & Hospital Grounds
- ✓ Airports & Transportation Centres



PART 2: Added Safety With Glasdon Socket Systems

At Glasdon, we've pioneered the use of socket systems from the early 1980s, with our first-generation models being introduced with the Admiral™ and Regency™ bollards. From there, we've continued to innovate when it comes to socket systems, developing our products into new and improved renditions.

As part of this, we've developed new in-house materials like Durapol® and Impactapol®, each designed in detail to offer unique properties to their corresponding products. Durapol, as the name implies, is a polymer that can withstand extreme temperatures and impacts, while avoiding the rust and scratches that often plague these types of fixtures. Impactapol®, on the other hand, is designed with extensibility in mind, and will self-right after any impact, ensuring passive safety, while also avoiding maintenance costs and expensive replacements.

Glasdon offers various types of socket systems as fixing options for bollards. See the below for breakdowns of two of our most popular options: Standard and Lockfast™ socket systems.



STANDARD SOCKET SYSTEM

Our standard socket system has been designed in detail and rigorously tested by our QA engineers to ensure durability and best value.

Durable & Dependable

- Twin walled socket moulding for added strength & resistance, ensuring the impact of collisions are absorbed, without damaging nearby surroundings.
- Built-in shelf profile to fully anchor the system underground and prevent uprooting.
- Our standard socket system is also 100% recyclable once the product's long service life comes to an end.

Ease-Of-Use

- Easy to remove and replace, with the full process taking only seconds.
- Ideal for permanent, semi-permanent, and temporary utilisations.
- Simply insert a bollard key into the system and lift the bollard clear of the socket.

Unique Features

- Circular profile for discrete fixing.
- Planted 500mm in the ground for rigid and unmoving placement.
- Fully compatible with our rigid Durapol® material bollards.
- Bollards slot directly into place.



Socket Dimensions:

Height: 500mm

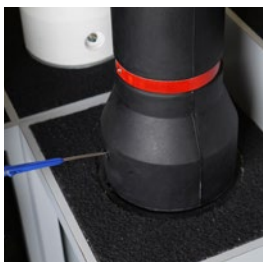
Weight of Socket: 3.8kg

Top diameter: 225mm

Middle diameter: 265mm

Bottom diameter: 250mm

Material: Durapol



1. Insert bollard key



2. Lift upwards



3. Bollard can be removed easily



4. Empty socket is a potential trip hazard



5. Blanking plate removes hazard

SAFETY NOTICE:

If the removal of a bollard creates a safety hazard, we strongly recommend the purchase of socket blanking cap, which features a slip resistant finish.

LOCKFAST™ SOCKET SYSTEM

As our newest and most innovative socket system, Lockfast™ goes the extra mile to provide an added level of endurance and ease of use.

Durable & Dependable

- Twin walled socket moulding for added strength & resistance, ensuring the impact of collisions are absorbed, without damaging nearby surroundings.
- Built-in shelf profile to fully anchor the system underground and prevent uprooting.
- Our Lockfast™ socket system is also 100% recyclable once the product's long service life comes to an end.

Ease-Of-Use

- Easy to remove and replace, with the full process taking only seconds.
- Ideal for permanent, semi-permanent, and temporary utilisations.
- Simply insert a bollard key into the system, rotate the bollard through 90 degrees, and lift the bollard clear of the socket.

Unique Features

- Square profile provides easier installation - simply position the socket and pave around to complete the process.
- Features directional arrows and visual logo aids to avoid confusion and ensure a smoother installation experience.
- Product code moulded into the material itself to assist with quick, easy, and pain-free bollard replacement.
- Planted 350mm in the ground, meaning required groundwork will be easier and less extensive. This feature makes our Lockfast™ system perfect for more shallow foundations compared to other fixing options.
- Bollards can be oriented in the socket in two directions.
- Fully compatible with both our self-righting Impactapol® material bollards and rigid Durapol® material bollards.
- Bollards twist lock into place for added protection

Socket Dimensions:

Height: 350mm

Top: 240x240mm

Material: Durapol

Weight of Socket: 3.7kg

Base: 305x305mm



1. Insert bollard key



2. Rotate Bollard anticlockwise



3. Bollard can be removed easily



4. Empty socket is a potential trip hazard



5. Blanking plate removes hazard

SAFETY NOTICE:

If the removal of a bollard creates a safety hazard, we strongly recommend the purchase of socket blanking cap, which features a slip resistant finish.

SOCKET BLANKING CAPS

A socket blanking cap is a highly recommended addition when purchasing any socket system. This is due to safety reasons, with a potential trip hazard being caused by removing the bollard post from its socket.

Should a post be removed from a socket and not replaced, the resulting gap in the ground will present a dangerous hazard to those walking by. If someone trips, the fall could result in serious harm, not to mention any financial or reputational damage caused by resulting legal claims. Public spaces should therefore invest in socket blanking accessory caps to avoid these pitfalls.

In brief, socket blanking caps are metal inserts used to cover the opening made by the removal of a bollard post. These caps are usually made with metal, and feature a slip-resistant finish, providing full H&S protection to anyone walking across the area.

Glasdon offers two different types of socket blanking caps – a temporary model and a more permanent locking model. Determining which model works best for you will naturally depend on your circumstances and the type of socket system you have installed.

Lockfast™ Socket Blanking Caps

Temporary Blanking Cap

- Available for Lockfast™ socket system.
- A small metal disc that slots into the socket's aperture.
- Intended for short-term socket sealing.



Locking Blanking Cap

- Available for Lockfast™ socket system.
- A sturdier accessory that slots into the socket's aperture and locks for more permanent health and safety protection.
- Intended for longer-term socket sealing.



Standard Socket Blanking Cap

Locking Blanking Cap

- Available for Standard socket systems.
- A sturdy accessory that slots into the socket's aperture and locks for more permanent health and safety protection.
- Intended for longer-term socket sealing.



Due to their variety and versatility, the Glasdon Bollard range is a popular choice for councils throughout the UK.

See below for our products in action in various regions throughout the UK.



Advanced Neopolitan™ 150 Bollards



Neopolitan™ 150 Bollards



Jubilee™ Bollard



Neopolitan™ 20 Bollards



Glasdon Manchester™ Bollard



Victory™ Bollards



Ensign™ Bollards and Neopolitan™ 150 Bollards

Other Socketed Road Safety Products

See below for our products in action in various regions throughout the UK.



Glenwood™ 170 Post



Advanced Flexmaster™ Marker Post



Socketed Rebound Signmaster™ Bollard



Apex™ Chevron Sign



Orbital™ Chevron Sign



Rebound Signmaster™ Ultra 50 Bollard



Neopolitan™ Delineator Post



Chevroflex Ultra™ Sign System

CONCLUSION

When it comes to bollards, the fixing options you choose really matter. Permanent fixings don't offer the same efficiency and flexibility as socket systems, and can create expensive headaches in the event of a road traffic collision. In contrast, socket systems will function just as robustly with their third or fifth bollard as their first, and offer a range of options for permanent, semi-permanent, and temporary fixings.

**THE CHOICE IS CLEAR –
FOR BETTER BOLLARD
FIXING, CHOOSE GLASDON
SOCKET SYSTEMS.**

Glasdon have been designing and manufacturing road safety fixtures for over 65 years. Our products can be seen across many of the UK's highways and streets, ensuring a safer and smoother travel experience for all.

We offer a broad range of products, including directional bollards, illuminated posts, and traffic signage. Whatever your requirements may be, Glasdon's solutions pave the way for a more sustainable and secure future. Underlining this, Glasdon have earned ISO9001:2008 and ISO4001:2004 accreditation, which demonstrate our ceaseless commitment to quality and the environment.

To learn more about what we can provide for your local community, speak to our professional sales team today.



www.glasdon.com

Click here to watch our product demonstration videos on YouTube.



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ALSO AVAILABLE FROM GLASDON...



Lumino City™ LED Downlighter Range



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