Glasdon®
Quality By Design

Retroreflective Self-Righting Bollards:

And the Winner by a 'Neck' is…

The Signmaster™ Ultra Range

www.glasdon.com

INTRODUCTION

"Aren't all retroreflective self-righting bollards the same?" This is a question some Highway and Lighting engineers will ask. But are they really all the same? The answer, plain and simple, is: No, they are not the same. Throughout the decades, illumination regulations have changed to pave the way for the usage of RSRBs on roads and highways. But what makes a self-righting bollard not just good, but exceptional?

Traffic Bollards have become a common sight on roads everywhere. Since first being introduced onto highways, bollards have changed and evolved, becoming slimmer, sturdier, and more innovative. This evolution has given birth to one of the latest innovations in traffic signage and passive safety, the Retroreflective Self-Righting Bollard, or RSRB.

Let us Explore…

- What are Retroreflective Self-Righting Bollards and what makes them better.
- How do they differ from one another.
- Retroreflective Self-Righting Bollards and Customer Success Stories.

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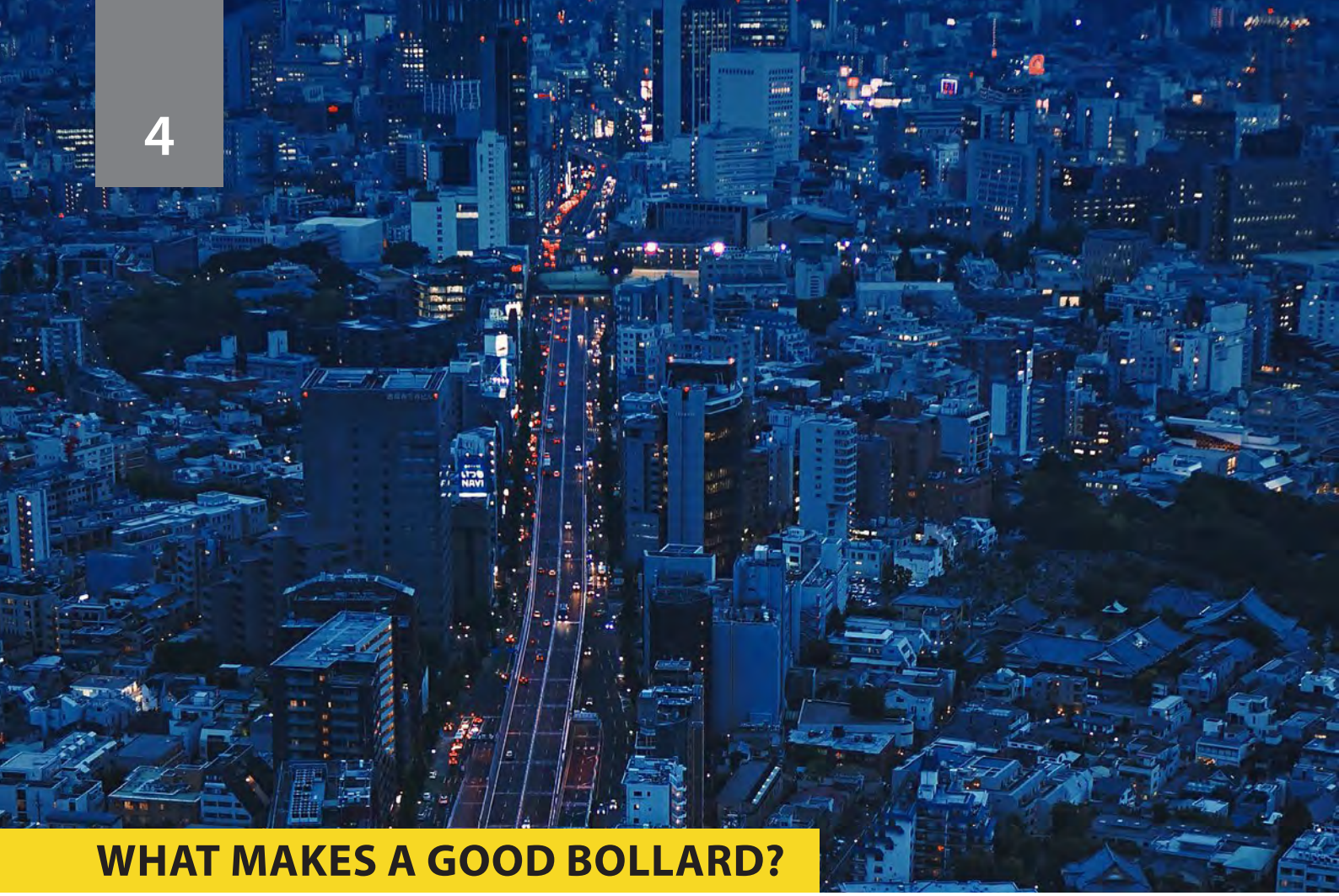
PART 1: Getting it in the Neck

A CLOSER LOOK AT RSRBS

In a nutshell, Retroreflective Self-Righting Bollards are highly visible traffic bollards that return to an upright position when hit or run over by a vehicle. Ideally, they should return to their original position without much or any distortion or warpage.

Most Self-Righting Bollards follow a basic shared design: they have a slim compact body that is either black or white with a sign face and amber reflective markings along the front of their body. Most commonly, self-righting bollards will have a thin flexible neck which gives them their self-righting capabilities. When a bollard with a flexible neck is hit or run over by a car, it will bend rather than break and self-right immediately once the vehicle has passed.



WHAT MAKES A GOOD BOLLARD?

When it comes to Retroreflective Self-Righting Bollards, Passive Safety is a major buzzword and factor that helps separate a good from a great self-righting bollard. The more passively safe a bollard is, the less likely it is to damage a vehicle and, more importantly, its passengers. Where other bollards made from less flexible materials such as wood, metal, and harder plastics are more likely to shatter causing shrapnel that may lead to damage to people and property, self-righting bollards can negate this threat due to a nifty mix of the materials used, their construction, and, of course, their self-righting capabilities. RSRBs are true kings of passive safety. However, not all are guaranteed to deliver on what they promise.

Ideally, a self-righting bollard should return to its original position after impact with minimal damage to its body, base, and markings. While most self-righting bollards promise to stand back up straight, ready to continue to perform their duty, some will remain twisted after one or multiple high-speed vehicle collisions. A twisted bollard may offer reduced visibility at crossings or junctions and may have to be repaired or replaced entirely. A bollard that will need to be repaired or replaced often may not be an optimal option. The best option is a bollard that serves its purpose over and over and does not deteriorate after only a short time. However, what guarantees a self-righting bollard will stand back up again without much or any distortion at all? For that, we will have to look at the neck.

WHAT MAKES FOR A GOOD NECK?

The neck is a critical part of the bollard's design and helps optimise its self-righting performance ensuring it returns to an upright position after being hit. Ideally, the base of the bollard will remain firmly fixed, and only the body will move as the neck flexes.

A narrow neck allows for the bollard to have a point at which to flex on impact. However, this also means, it has to deal with the large surface area of the body which makes it challenging to guarantee sufficient strength and elasticity to compete with the forces experienced during high-speed impacts. At the same time, it has to offer adequate flexibility to ensure effective self-righting performance.

At Glasdon we have found that a good neck isn't just thicker or thinner than other necks, nor is it just made from one specific material, but rather, it is a combination of the materials it is made of as well as how it fits into the overall construction of the bollard that makes it not just good, but great. While other bollards fall short due to a choice of inferior material, less volume of material, smaller insufficient neck sizes, and their design and how the neck connects with the body of the bollard, our bollards offer an even balance of top-of-the-line materials, higher volumes and density of material, and innovative design choices to ensure that these shortfalls are evenly compensated.

Thanks to our high-speed drive-through investment and thorough vandal testing, our bollards also remain hardened against real-life conditions and scenarios.

PASSIVE SAFETY AND VANDAL TESTING

When it comes to traffic bollards passive safety is key. Passively safe bollards and other traffic constructs are designed to minimise the severity of injuries to road users in case of a collision. The criteria by which products are tested for passive safety are determined by BS EN 12767, a European standard specifying the requirements and testing methods for the passive safety of structures and road equipment. BS EN 12767 classifies structures into three categories, from high to low-energy absorption, and categorises them into five occupant safety levels indicating the degree of safety for vehicle occupants. To meet this standard, Glasdon bollards undergo a variety of external tests, including high-speed drive-through tests. Aside from a series of thorough physical impact tests, our products undergo external testing at independent laboratories such as the Transport Research Laboratory (TRL), Transpolis, and MIRA to ensure they meet stringent performance standards.

Transpolis MIRA TRL

Thanks to this thorough testing process, we have been able to guarantee that our Retroreflective Self-Righting Bollards hold high classification, meaning they remain passively safe for collisions up to 100 km/h, are non-energy absorbing, and yield easily when hit, and pose no risk to other traffic participants.

Source – BS EN 12767:
https://artsm.org.uk/media/GUIDANCE-ON-PASSIVELY-SAFE-PRODUCT-REQUIREMENTS-Final-v4-1.pdf

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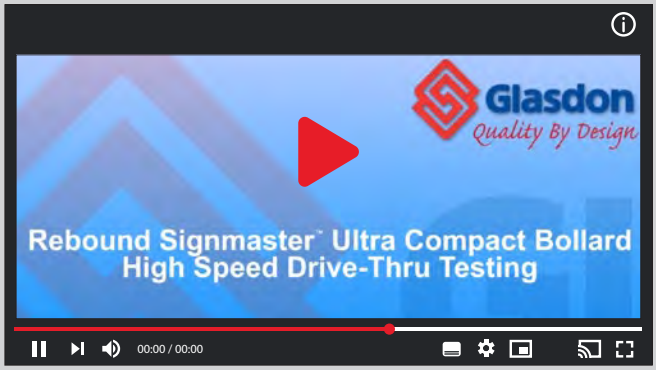
Click to view our drive-thru testing videos



Glasdon bollards are also subjected to thorough abuse and vandal testing. We try hard to destroy and inflict significant damage to our bollards. This way, we ensure they remain tough enough for unsupervised areas where they might be exposed to deliberate vandalism or sudden traffic collisions.

Click to view our abuse and vandal testing video

PART 2:

Better Self-Righting Bollard with Glasdon

THE SIGNMASTER™ RANGE

Enter the Signmaster™ Range. Our range of primarily retroreflective self-righting bollards had its humble beginnings with the Rebound Signmaster™ Bollard, one of our first self-righting traffic bollards.

THE REBOUND SIGNMASTER™

With the Rebound Signmaster™, we opted to make the bollard out of Impactopol™, a flexible, self-coloured, and corrosion-free material that contributes significantly to its self-righting capabilities. We also constructed the bollard out of one single piece and kept the neck somewhat thicker. This helped further guarantee superior self-righting and anti-twist capabilities contributing to a steep increase in passive safety.

It didn't take long for us to expand our range of self-righting bollards with the Socketed Signmaster™ which features a keyed quick-release mechanism for easy bollard replacement. We also added the Solar Signmaster™ which features solar panels that charge during the day to offer night-time illumination, and the Sublite Pod™, a low-power retrofit bollard uplighter.

THE SIGNMASTER™ ULTRA RANGE

THE REBOUND SIGNMASTER™ ULTRA

Next in line for us was the Rebound Signmaster™ Ultra Bollard. Instead of constructing it out of one single piece, we opted to make it a two-piece construction. Once again, we kept the neck somewhat thicker, with more material distribution to guarantee better self-righting and anti-twist capabilities. While the neck remained made from Impactopol™, we began constructing the body out of Durapol™. A sturdy impact-tested polymer designed to resist intense weather and temperatures; Durapol™ has also been proven to cause less cracking of the reflective surfaces upon vehicle impact. The bollard is passively safe, with drive-through performance proven to BS EN 12767:2019 – 100, NE-A. A two-piece construction also means a potential reduction in maintenance costs. If the base and neck are left intact, the body of the bollard can be easily replaced in just under five minutes, reducing replacement costs and the need for significant traffic management.

THE REBOUND SIGNMASTER™ ULTRA 50 / ULTRA COMPACT

Our next step in the evolution of the Signmaster™ range was the Rebound Signmaster™ Ultra Compact and 50. These bollards are performance tested, comply with Passive Safety Standard: BS EN 12767:2019, and have achieved 100-NE-A-NR. Much like with the Signmaster™ Ultra, the Ultra 50 is a two-piece construction, with one key difference: The neck is now thinner and made from TPU. With both the characteristics of plastic and rubber, TPU offered additional durability, flexibility, and tensile strength. Thanks to these properties, we were able to significantly reduce the bollard's neck size without having to sacrifice any of its self-righting and anti-twist capabilities. While the Compact's bolt-down design allows for easy installation, the Ultra 50 has an adaptive spacer that can be fixed onto a new or existing 50x50 retention socket.

THE REBOUND SIGNMASTER™ ULTRALOW

The Rebound Signmaster™ Ultralow comes with all the self-righting retroreflective capabilities of the Signmaster™ Ultra, but with the added feat of being illuminated. Being both illuminated and retroreflective, it offers heightened visibility in low-light settings and conditions. It can be easily connected to the mains power and its control circuit is housed inside an IP68 rated casing. Best of all, the Ultralow costs merely £0.40 per year to run. With its cost to run under a pound and with an energy consumption of only 0.45 watts, the Ultralow Bollard represents an extremely economical alternative to regular lit-up traffic bollards, especially when outfitting roads where it is deemed illumination is still necessary to maintain safety standards.

Source – TPU:
https://omnexus.specialchem.com/selection-guide/thermoplastic-polyurethanes-tpu#:~:text=Thermoplastic%20polyurethane%20is%20often%20abbreviated,needs%20of%20many%20demanding%20applications.

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

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

Rebound Signmaster™ Ultra Compact
Manchester

Rebound Signmaster™ Ultra
Bedford

Rebound Signmaster™ Ultra
Cornwall

Rebound Signmaster™ Ultralow
Nottingham

Rebound Signmaster™ Ultra 50
Gloucestershire

Rebound Signmaster™ Ultra
Vale of Glamorgan

Rebound Signmaster™ Ultra 50
Bolton

Rebound Signmaster™ Ultra
East Sussex

Rebound Signmaster™ Ultra 50
North Somerset

CONCLUSION

When it comes to road safety and passive safety guaranteeing products, Retroreflective Self-Righting Bollards are certainly better and more innovative than other non-self-righting bollards. But, as we have garnered, not all RSRBs are surefire winners. With road and passive safety paramount, one must weigh the factors that contribute to both: material, construction, and design. For all that and more, you can look to Glasdon and our Signmaster™ range.

CHOOSE OPTIMAL ROAD SAFETY, CHOOSE GLASDON

We have been designing and manufacturing road safety bollards & equipment for more than 65 years. Our versatile solutions are used all over the highways and byways of the United Kingdom, and within our range, there is equipment for every installation.

For road safety, we offer a selection of sign-carrying & directional bollards. These rigid and rebound bollards are perfect for highlighting paths and shared routes on motorways and inner-city junctions and crossings.

The road to safer streets and junctions begins with the right choice of materials, and Glasdon's solutions pave the way for a sustainable and secure future.

For more assistance and information, please contact us today and talk to our team of dedicated experts.

Glasdon® Quality By Design

www.glasdon.com

Click here to watch our product demonstration videos on YouTube.

GOLD 2023 ecovadis Sustainability Rating

ANNIVERSARY 1959-2024 65 YEARS

ALSO AVAILABLE FROM GLASDON...

Lumino City™ LED Downlighter Range

Glasdon Gateway

Cyclemaster™ Bollard