

TSP

Defence & Security

Permeable Hostile Vehicle Mitigation (HVM) Measures



Permeable Hostile Vehicle Mitigation

(HVM) measures

Bollard systems

Introduction

The threat from terrorism and criminal attack remains real and serious. Enhanced protection to deter attack and reduce consequential loss, particularly from vehicle borne improvised explosive devices (VBIEDs), is increasingly specified for many vulnerable site perimeters and crowded places. However, a trade off often exists between the requirements for increased stand-off protection and the practicalities of installing additional security measures.

To address this issue, TSP Projects provides a range of independently tested and rated hostile vehicle mitigation (HVM) bollard systems that protect against a variety of threats and minimise disruption during installation.

Benefits

- **Proven PAS 68 rated protection** - against unauthorised vehicle access, criminal and VBIED attack.
- **Security that blends with the streetscape.**
- **Modular offsite construction** - enables rapid onsite installation.
- **Project programme and budget savings** - reduced depth foundations minimise unnecessary excavation and mitigate expensive re-routing of services.
- **Zero penetration of the bollard line** - both our standard and shallow foundation bollard systems provide superior protection against VBIED attack.

Bollard system - ultra shallow

With a **structural depth of only 75mm**, this is one of the shallowest bollard foundation systems that has been PAS 68 tested available anywhere in the world. It has been designed to avoid re-routing underground utilities which may need to be disturbed if deeper foundations are required. Rapid installation, up to 20 bollards per hour (dependent on ground conditions) makes the system highly cost effective. The unique design means that the system can be installed in locations where ground conditions are uneven - the connectors enable the base plates to adapt to different contours to ensure that the bollards are easily installed and aligned correctly. The system incorporates integrated bollards, with several styles available to suit client requirements.

Bollard system - shallow

This PAS 68 rated system provides **zero penetration of the bollard line with a reduced structural foundation depth of 216mm**, which can minimise the requirement to re-route underground utilities, saving installation time and cost. Crash rated Manganese bollards can be supplied by TSP.

Bollard system - standard

This PAS 68 rated system delivers **zero penetration of the bollard line**, providing superior protection against VBIED attack. This high performance system made of our patented Bi-Steel material, has a **structural foundation depth of 500mm** and is ideal for use at sites that may be considered very high risk or where little or no stand-off distance is available between the protected building and the bollard line. Crash rated Manganese bollards can be supplied.



System description

TSP bollard systems are designed as standard modules that deliver a straight line of bollards positioned at regular intervals. However, variants are available to include curved foundation units for use at road entrances, junctions and irregular road layouts. A variety of bespoke units can be supplied to meet specific streetscape requirements.

Removable bollards can be installed within the shallow and standard bollard systems to enable easy authorised vehicle access whilst maintaining the integrity of the perimeter.

The bollard systems can also be used in conjunction with TSP wall systems offering a wide range of blast protective streetscape solutions.

Applications

TSP bollard systems are permanent security solutions. They are ideal for providing high level perimeter protection for busy inner city sites where minimising disruption to the local community (visitors, workers and commuters) is a key consideration. Our perimeter protection systems are currently in use in major city centres and other crowded places protecting life, property and operational continuity. At each location TSP Projects is providing an effective and highly reliable solution to the customer's individual needs.

Sustainability

The modular nature of the bollard system units means that in the event of an attack, re-instatement of the security boundary can be readily re-established.

The re-usable and relocatable capabilities of both the ultra-shallow and shallow bollard systems enable us to extend their usefulness. When recycled at the end of their service life their carbon footprint has been fully optimised.

Service offering

TSP delivers peace of mind to our customers by offering a complete turnkey project service, including:

- Security review - identifying the threat and alternatives for mitigation.
- Survey and planning.
- Advanced engineering and solution design.
- Sourcing of security products and integration within overall security solution design.
- Installation and full project management.
- Associated civils works.
- Security audit and handover.
- Maintenance and full after-sales service.

Where our customers have preferred installation contractors we will provide all necessary support for a seamless project interface. Our team is available to assist at all stages of a project.

Availability

TSP projects global experience enables us to respond to customers' needs, including project installation, wherever they are located throughout the world.

About Bi-Steel

A British Steel proprietary construction material, Bi-Steel comprises two steel plates that are connected together to form panels by an array of transverse bars. The panels are filled with ready mixed concrete and the resulting composite offers unrivalled protection against explosive blast.

Delivering value to customers

With innovation and continuous improvement at the heart of our business performance, we aim to create value by offering a differentiated product range supported by unrivalled customer service.

*PAS 68 - specification for vehicle security barriers

This Publicly Available Specification (PAS) has been prepared to address the needs of organisations who wish to have assurance that vehicle security barriers will provide the level of impact resistance that they seek. The full PAS classification covers the mass, speed, angle and resulting penetration and dispersion values of an impact test relating to the specified product. See individual product data sheets for detailed PAS classifications of the full range of TSP Hostile Vehicle Mitigation measures.

