

HOSTILE VEHICLE MITIGATION BROCHURE



PROTECTING & SECURING PERIMETERS WORLDWIDE SINCE 1987

INTRODUCING COVA SECURITY GATES CRASH RATED PAS 68 PRODUCT RANGE

Cova Security Gates Ltd celebrate more than 30 years of specialist design, manufacture & installation of high quality bi-folding & sliding cantilevered gates, rising road blockers, rising & static bollards, boom barriers, pedestrian gates & turnstiles from our UK manufacturing facility.

This brochure highlights our range of PAS 68: 2010 compliant 'crash rated' products. Our PAS 68 products have been specifically developed and tested to prevent vehicles used as a weapon (VAW).

Hostile Vehicle Mitigation (HVM) is a phrase used to describe measures to counter the threat of terrorist vehicle bombs when considering the resilience against an attack **of** people

or buildings and important infrastructure sites such as airports, shopping centres, railways stations, public areas etc.

These products protect critical national infrastructure and high-profile sites and businesses globally from vehicle impact at speeds of K4, K8 & K12 with penetration ratings of P1 & P2.

Awarded 'Manufacturing Business of the Year 2017' by Gatwick Diamond Business, our products are designed for applications where a high level of quality perimeter security is essential, there is demand for long term continual use and where aesthetics are still important.

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DESIGN

Cova's design capability comprises a team of dedicated professional mechanical and electrical engineers.

Working within established BS/EN standards, our designers have the expertise and confidence to deliver appropriate design solutions whether a 'stand alone' product or a full 'turnkey' solution.

Our engineers play a major role in the development of the UK/EN PAS standard by developing new products for crash testing and also by formal involvement in the CPNI 'Working Party'.

Cova's bespoke design approach ranges from client specific installation and foundation drawings to full design integration of ground, site services, building structure or perimeter fence.

Electrical control design embraces the required operating system and the electronic interface with other security systems such as access control. Safety consideration is important, thus our designers ensure the client/site requirement is fully understood before designing an appropriate 'safe' electrical control system.

MANUFACTURE

Operating within ISO 9001:2015, the production team, led by highly experienced management, manufacture all Cova designed products and systems in our own factory.

Using motivated and highly skilled people, Cova has a long tradition of providing employment opportunities to young people via apprenticeship schemes.

The combination of experienced and trainee staff guarantees continuity of expertise, thus ensuring all manufactured products meet the high quality standard our clients expect.

Before our product is shipped to the client, every product we design and manufacture undergoes a factory test in accordance to the approved operational philosophy established between Cova Security Gates and the client.

MAINTENANCE & SERVICE

As all our products are required to operate in a security environment, they are designed for a long, reliable service life. However, in order to keep them in optimum condition, routine maintenance and inspection is necessary.

Our in-house team of dedicated service engineers is able to undertake maintenance and resolve unexpected breakdowns, providing the client with the knowledge that the protection level is always as secure as possible.

We are also able to fully service and maintain other manufacturers' equipment, enabling clients to have a one stop shop for managing their physical security.

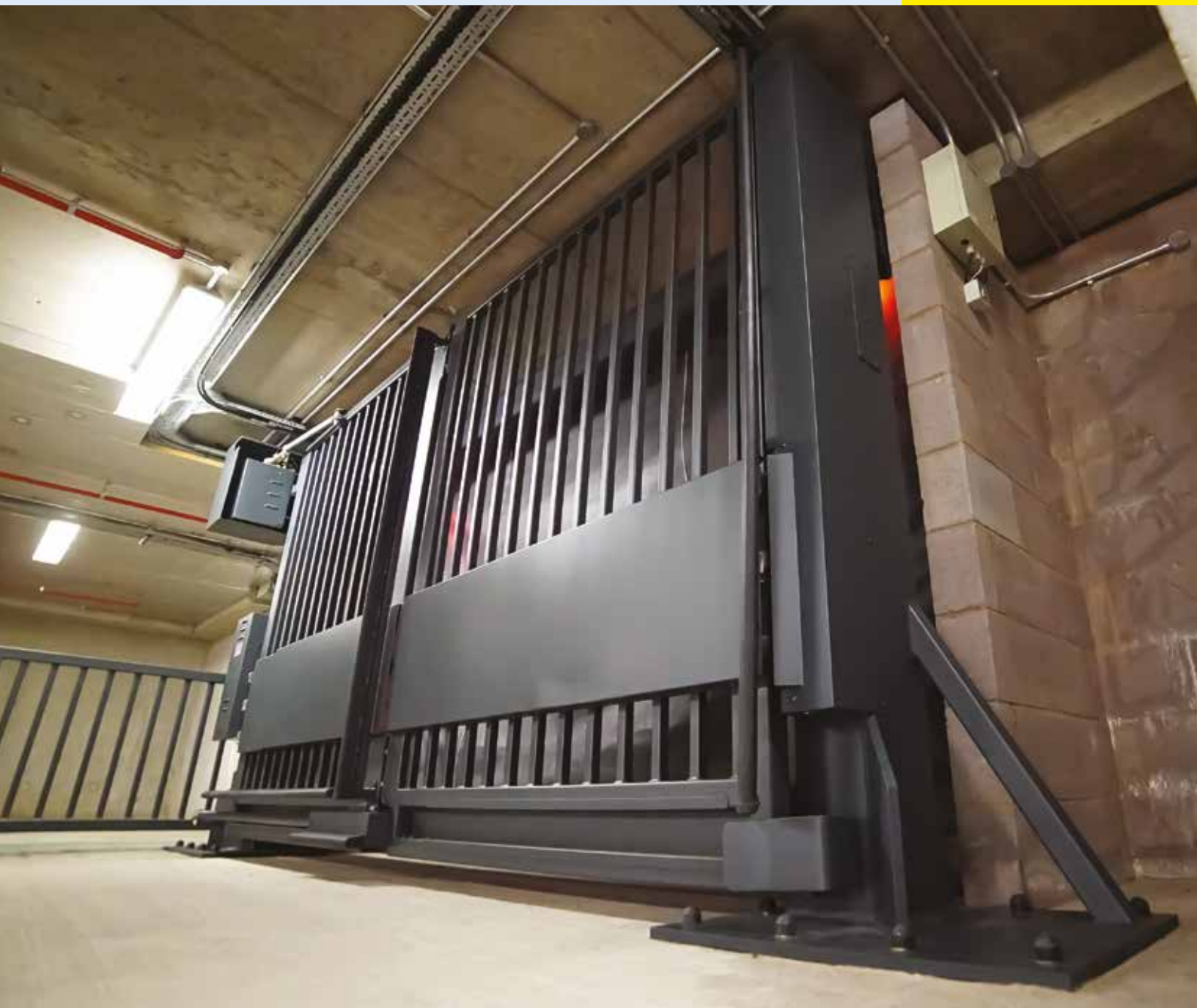


CSG 10630

CRASH RATED SURFACE FIXED TRACKLESS BI-FOLDING GATE

30 mph / 48 km/h

NEW FOR 2018





Cova Security Gates have worked with world leading HVM Security Specialists to design and deliver our first Engineered Solution Crash Rated 'Surface Fixed' 30mph (48km/h) Bi-Folding Gate - CSG 10630.

This product has been engineered to suit your specific site requirements for preventing vehicle impact at 30mph (48km/h) by a car or light van Class N1 weighing 3500kg (7700lb).

This surface fixed crash rated bi-folding gate has been designed to overcome situations where it is impossible or impractical to excavate an existing slab such as in underground car parks, or sites where the slab depth is limited.

A standard profile base plate is 'surface fixed' to the road or car park using a minimal number of concrete anchors. The thickness of the base slab material for the gates to be fixed in place is minimum 250mm, so eliminating the need for foundation excavation.

With the increased threat around the world for vehicles being used as a weapon, this is the latest product on the market to provide an alternative solution for a crash rated bi-folding gate to offer high level security to underground car parks and buildings that otherwise would remain unprotected.

CRASH TESTING

- Model CSG 10630 crash rated engineered solution
- 3,500kg (3.5 Tonne) Vehicle Class N1 travelling at 30mph (48km/h)
- Test rating based on: PAS 68:2010

Vehicle Test Weight:	3500kg
Vehicle Class:	N1
Vehicle Speed MPH:	30
Vehicle Speed KMH:	48
Vehicle Angle:	90
Energy:	274kJ

This product has been engineered to suit your specific site requirements for preventing vehicle impact at 30mph (48km/h) by a car or light van Class N1 weighing 3500kg (7700lb).

CONSTRUCTION

Drive: Hydraulic driving through a 270 degree system (European Patent No 1595050)

Hinges: 25mm dia stainless steel pins, DU self-lubricating plain bearings, and ball thrust bearings with stainless steel covers.

Leaf Folding: Rack and pinion system.

Gate structure is manufactured from proprietary mild steel.

CONTROLS

- PLC based gate control system.
- Locking: Hydraulically operated locking pin secures gate leaf.
- Manual override.

Subject to site conditions it operates a 9 second unlock and open time, 11 second close and fully lock time and deliver a continuous operation – 100% duty cycle.

FINISH

- Shot blast to SA 2.5.
- Primed: Either galvanised or zinc primer @60µm.
- Topcoat: Polyester top coat @60µm to a specific RAL No.

FEATURES AND BENEFITS

- This product is the solution when it's impossible to excavate.
- Suitable for underground or multi-story car parks.
- Surface fixed for ease of installation.
- Surface fixed for speed of installation.
- Bespoke engineered solution report included, site specific.



CRASH RATED TRACKLESS BI-FOLDING GATE

40 mph / 50 mph - 64 kmh / 80 kmh

The CSG 10640 and 10650 are the world's first crash tested bi-folding gates. These have been designed to prevent vehicle borne terrorist threats, capable of blending seamlessly with any building or site perimeter line, enabling discreet hostile vehicle mitigation with a field proven drive system. They offer 9 second unlock and open time, 11 second close and fully lock time and deliver a continuous operation – 100% duty cycle.

CSG 10640 and 10650 Bi-folding Gates require minimal foundation depth of 280mm are ideally suited to shallow and/or utility congested substructure. This product has allowance for 100mm topping, 380mm embedment depth and finished surface and the gate structure is manufactured from proprietary mild steel sections.

These products are able to accept most enhancements over and above its standard construction; it lends itself to the continuation of any high security fencing specification, powered fence or security toppings across the normally vulnerable vehicular entrance to site.

CRASH TESTING

- Model 10640 crash tested to 7,500kg (7.5 Tonne) @ 64 km/h (40mph). Test rating: PAS 68:2010
- Model 10650 crash tested to 7,500kg (7.5 Tonne) @ 80 km/h (50mph). Test rating: PAS 68:2010

CONSTRUCTION

- Drive:** Hydraulic driving through a 270 degree system (European Patent No 1595050)
- Hinges:** 25mm dia stainless steel pins, DU self-lubricating plain bearings, and ball thrust bearings with stainless steel covers.
- Leaf Folding:** Rack and pinion system.

FINISH

- Shot blast to SA 2.5.
- **Primed:** Either galvanised or zinc primer @60µm.
- **Topcoat:** Polyester top coat @60µm to a specific RAL No.

Gate structure is manufactured from propriety mild steel.

FEATURES AND BENEFITS

- Minimal foundation depth of 280mm.
- Leading edges of the leaves are fitted with electrical rubber safe edges, which if in contact with an obstruction will stop the operation of the gate.

CONTROLS

- PLC based gate control system.
- Locking: Hydraulically operated locking pin secures gate leaf.
- Manual override.

Subject to site conditions it operates a 9 second unlock and open time, 11 second close and fully lock time and deliver a continuous operation – 100% duty cycle.

	40mph	50mph
Vehicle Test Weight:	7500kg	7500kg
Vehicle Class:	N2	N3
Vehicle Speed MPH:	40	50
Vehicle Speed KMH:	64	80
Vehicle Angle:	90	90
Vehicle Penetration:	2.2	6.8
Dispersion Distance:	0.0	9.1





CRASH RATED SLIDING CANTILEVERED GATE

(European Patent No 2369126) 40mph / 64km/h

This Crash Tested Sliding Cantilevered Gate CSG 10640 is designed to prevent a 7.5 tonne vehicle-borne terrorist/ram-raid threat at 40mph (64kmh). It's ideal for locations where there is a runback area along the fence line to allow the gate to retract when opening.

Constructed from regular steel section, rather than large and unsightly heavy weight materials. This gate design can be aesthetically blended into the building or perimeter line, enabling hostile vehicle mitigation. The standard material reduces production costs, offering an effective crash tested solution at a comparatively low cost when evaluated against other available products.

The CSG 10140 Sliding Cantilevered Gate requires a foundation depth of only 400mm, ideally suited to shallow and/or utility congested substructure.

The product is able to accept most architectural enhancement over and above its standard construction; therefore it lends itself to the continuation of any high security fencing specification, powered fence, or security toppings across the normally vulnerable vehicular entrance to site.

CONSTRUCTION

- Gate structure is manufactured from mild steel sections and proprietary folded track.
- Infill - typically vertical bar, other options are available.
- Receptor and motor posts constructed from proprietary steel sections.
- Nominal opening - available up to a maximum of 8000mm.
- Standard height - 1800mm to 3000mm – greater heights possible on application.

CONTROLS

Gate can be controlled manually or automatically by a variety of interfaces.

FINISH

Leaf lengths up to 7.5m

Polyester powder coated to a specific RAL No. Galvanised or galvanised and polyester powder coated to a specific RAL No.

Leaf lengths exceeding 7.5m

Painted finish to a specific RAL No. Galvanised or galvanised and painted to a specific RAL No finish.

Other finishing options available.

FEATURES AND BENEFITS

- Nominal opening – available up to a maximum of 8000mm.
- Two drive options available, dependent on site requirements.
- Infill typically vertical bar utilising 30mm RHS, a range of other options are available including palisade, bar configuration and mesh.
- Ideal for locations with large runback area.
- Minimal foundation depth of 280mm



CRASH TESTING

Model 10140 crash tested to 7,500kg (7.5 Tonne) @ 64km/h (40mph).

3m wide: PAS 68: 2010

Vehicle Test Weight:	7500kg
Vehicle Class:	N2
Vehicle Speed MPH:	40
Vehicle Speed KMH:	64
Vehicle Angle:	90
Vehicle Penetration:	1.7
Dispersion Distance:	0.0

5m wide: PAS 68: 2010

Vehicle Test Weight:	7500kg
Vehicle Class:	N2
Vehicle Speed MPH:	40
Vehicle Speed KMH:	64
Vehicle Angle:	90
Vehicle Penetration:	2.0
Dispersion Distance:	0.0

8m wide: PAS 68: 2010

Vehicle Test Weight:	7500kg
Vehicle Class:	N2
Vehicle Speed MPH:	40
Vehicle Speed KMH:	64
Vehicle Angle:	90
Vehicle Penetration:	3.0
Dispersion Distance:	0.0

CRASH RATED SHALLOW DEPTH ROAD BLOCKER

50mph / 80km/h

The CSG 10506 Shallow Depth Road Blocker has been designed and developed to overcome site conditions where it is difficult to excavate deep foundations due to underground services, pipes or other restrictions.

With a base frame height of just 215mm it is popular in city centres all over the world where there is a need for high level security protection, but yet only needs a shallow depth foundation. Many of our clients position these behind gates, and barriers as an added layer of perimeter security.

Additional protection can be provided using photo beam systems tailored to the particular application and we recommend that the blocker is installed with vehicle detection loop systems. This shallow depth road blocker is installed in many high profile locations globally as specifiers and end users alike are choosing it enabling minimal on site excavation, fast arming times and because it's 100% duty rated. This makes it ideal for the busiest traffic conditions, whilst still maintaining the very highest levels of security against a vehicle borne attack. It's available in a number of widths from 2000mm to 4000mm, in 500mm increments.





CRASH TESTING

The CSG model 10506 Shallow Depth Blocker has been tested at the Motor Industry Research Association (MIRA), Nuneaton, Warwickshire. The test was carried out using an Iveco (Ford) Cargo rigid truck ballasted to a test weight of 7,755kg and impacted the blocker at 80.8 km/hr. Under requirements contained within British Standards for vehicle security barriers, the test achieved a classification of Retractable blocker.

Test rating: PAS 68: 2010

Vehicle Test Weight:	7500kg
Vehicle Class:	N2
Vehicle Speed MPH:	50
Vehicle Speed KMH:	80
Vehicle Angle:	90
Vehicle Penetration:	0.0
Dispersion Distance:	25

CONSTRUCTION

- Tread plates of 10mm thick (over plain) durbar tread plate.
- One piece 3mm thick sheet steel skirt.
- Riser frames are of heavy gauge RHS sections fully welded.
- Base frames are of heavy duty RHS sections designed to withstand axle weights of 15 tonne.

CONTROLS

Controls are Programmable Logic Controller (PLC) based and therefore are very flexible and can be configured to suit customers' requirements. Powered by hydraulic power unit. Accumulators can be incorporated to provide emergency fast operation (EFO).

FINISH

- Zinc rich powder prime (60 microns).
- Polyester powder coat to required colour (60 microns).
- Other finishing options available.

FEATURES AND BENEFITS

- High visibility deterrent.
- Shallow foundations, only 215mm to accommodate the height of the base frame.
- Two methods of installation can be adapted: in newly constructed building slabs, ramps and roadways a pocket can be incorporated during construction, or, for installation into existing roadways a pit can be excavated and the blocker is lifted into place.
- Available in width from 2000mm to 4000mm with rise heights from 750mm to 900mm.
- The unique folding skirt provided the same degree of protection as the solid skirted model, but with significantly less foundations required.

CRASH RATED FULL DEPTH ROAD BLOCKER

50mph / 80km/h

Full Depth Road Blockers are ideal if ground excavation is not hindered by underground services or cables.

Road Blockers can offer independent protection from vehicle impact or can be positioned behind a gate or barrier to offer a secondary level of protection and the CSG 10503 has been tested PAS68: 2010 to 50mph (80km/h).

There are many optional extras to our Shallow Depth and Full Depth Road Blockers such as signage stating 'STOP' or 'NO ENTRY' in addition to traffic lights, lights within the blocker face and emergency fast operation (EFO).

It's available in a number of widths from 2000mm to 4000mm, in 500mm increments. For larger areas requiring protection we recommend installing multiple blockers adjacent to each other.



CONSTRUCTION

- Tread plates of 10mm thick (over plain) durbar tread plate.
- One piece 3mm thick sheet steel skirt.
- Optional trimmer frames are 70x70 or 80x80 hot dip galvanised angle sections – fully spragged around periphery for maximum holding.
- Riser frames are of heavy gauge RHS sections fully welded.
- Base frames are of heavy duty RHS sections designed to withstand axle weights of 15 tonne.

CONTROLS

Controls are Programmable Logic Controller (PLC) based and therefore are very flexible and can be configured to suit customers' requirements. Optional extras such as traffic lights and emergency fast operation (EFO) can be added.

FINISH

- Zinc rich powder prime (60 microns).
- Polyester powder coat to required colour (60 microns).
- Other finishing options available.

FEATURES AND BENEFITS

- High visibility deterrent.
- Two methods of installation can be adapted: installed into a concrete pit or supplied with an integral steel tank which is easily lowered into an excavated hole.
- Accumulators can be incorporated to provide emergency fast operation (EFO).
- Conventional one piece full depth skirt affords sustainable pedestrian safety.
- Only road blocker to have been used against a terrorist attack – Istanbul 2003.



CRASH TESTING

Test rating: PAS 68: 2010

Vehicle Test Weight:	7500kg
Vehicle Class:	N2
Vehicle Speed MPH:	50
Vehicle Speed KMH:	80
Vehicle Angle:	90
Vehicle Penetration:	0.0
Dispersion Distance:	25

The CSG 10503 (625mm high x 3000mm wide) full depth blocker has been tested at the Motor Industry Research Association (MIRA), Nuneaton, Warwickshire.

The test was carried out using an Iveco (Ford) Cargo rigid truck ballasted to a test weight of 7,600kg and impacted the blocker at 82.1km/hr.

CRASH RATED STATIC BOLLARD

40mph / 50mph 64km/h 80km/h

The CSG 10840 and 10850 Bollards have been designed specifically to protect critical national infrastructure from vehicle borne improvised explosive devices, whilst maintaining the most stringent aesthetic requirements and capable of being installed into utility rich, undulating shallow substructure.

Current shallow depth bollard systems are restricted to straight line arrays on level sites - any directional or level changes necessitate bases and linkages to be specially engineered to suit the particular site conditions.

With this in mind, Cova have devised and tested the unique Articulated Linkage which not only allows for each bollard unit to accommodate gradients up to 3.6° (1:16), but allows for convex and concave arrays.

This unique feature eliminates the necessity to survey and individually design and manufacture special units, allowing complete on-site freedom to adjust for height and position before tightening up the connector plates to form a strong rigid link.



CRASH TESTING

The system has been fully tested at the Transport Research Laboratories, Wokingham, Berkshire, including full testing of the end units in arrays of three bollards.

Model 10840 crash tested to 7,500kg (7.5 Tonne) @ 64km/h (40mph).

	40mph	50mph
Vehicle Test Weight:	7500kg	7500kg
Vehicle Class:	N2	N2
Vehicle Speed MPH:	40	50
Vehicle Speed KMH:	64	80
Vehicle Angle:	90	90
Vehicle Penetration:	0.0	2.8
Dispersion Distance:	17.9	9.8



CONSTRUCTION

- Core diameter 254mm.
- Mild steel circular hollow section.
- Nominal height topping 1050mm.
- Foot of bollard is embedded in 210mm concrete foundation.
- Unique articulated arm system allows the bollards to be installed on gradients, curved arrays and 90 degree angles achievable.
- Each bollard can be individually levelled via four jacking screws.
- Stainless steel sleeve diameter 279mm, other sizes available on request.
- Left and right-hand end units fully tested to PAS 68:2010.

FINISH

- Hot zinc spray, can be sleeved or painted to a specific RAL No.
- A range of DDA banding is available on request.

FEATURES AND BENEFITS

- Minimal foundation depth of 210mm.
- **CSG 10840 shallow depth bollard achieved ZERO penetration during the PAS 68:2010 crash test.**
- Unique articulated arm system allows the bollards to be installed on gradients, curved arrays and 90 degree angles achievable.
- Each bollard can be individually levelled.



CRASH RATED FULL DEPTH RISING BOLLARD

Following the success of our Static Bollard we designed and developed the CSG 11840 Full Depth Rising Bollard which was the first crash tested, hydraulically operated bollard.

Available as standard in a number of durable finishes to any standard RAL No. or with an optional selection of sleeves to suit the immediate environment.

A unique safety feature available is the pressure sensor facility. This will detect any obstruction on the rise cycle to stop and reverse the bollard on contact.

All sub-surface bollard components are easily accessed from above so that installation or routine maintenance can be safely carried out on the road surface.

The bollard has been crash tested with an allowance for 100mm of topping below finished level which is a unique feature and provides a neat finish to the final surface.

Cova Crash Rated Rising Bollards are suitable for commercial applications, where vehicle control needs to be fluid, allowing specific access control when required for access to commercial and government buildings, private roads and parking management schemes.

When considering rising bollards as your solution, we recommend that priority is given to the overall safety of both vehicle detection and pedestrian safety during rising and lowering. Cova Security Gates can provide a variety of safety options for clients consideration.

CRASH TESTING

Model 11840 crash tested to 7,500kg (7.5 Tonne) @ 64km/h (40mph).

PAS68: 2010 AND CWA 16221:2010

Vehicle Test Weight:	7500kg
Vehicle Class:	N2
Vehicle Speed MPH:	40
Vehicle Speed KMH:	64
Vehicle Angle:	90
Vehicle Penetration:	1.0
Dispersion Distance:	19.4

CONTROL

- Controlled by a programmable logic controller (PLC).
- Powered by hydraulic power unit.
- All controls are housed within a lockable steel cabinet rated to IP65.

FINISH

- Ground socket: Hot dip galvanized.
- Bollard: Hot dip galvanized and powder coated to a specified RAL No.
- A range of DDA banding is available on request.

FEATURES AND BENEFITS

- Standard rise time of 6 seconds
- Accumulators can be incorporated to provide emergency fast operation (EFO)
- On power failure the standard HPU can be manually hand pumped to raise the bollard and gravity lowered by release valve.





CRASH RATED MANUAL MITI-GATE®

(European Patent No 2369126)

The CSG 10900 Series Miti-Gate® has been developed and designed as an alternative, economical PAS 68 crash rated manual barrier for locations that have infrequent vehicular throughput, yet still require protection from a vehicle borne threat, ie; emergency vehicle access.

This product requires minimal civil work due to hinge and receptor posts only requiring 215mm foundation depth. With clear width availability of up to 10 metres utilising a double leaf format, the Miti-Gate® is a cost effective, simple manual PAS 68 compliant solution.

This range will continue to evolve as further applications require an innovative, low visual impact, competitively priced crash tested barrier.

The Miti-Gate® lends itself to any site location where a vehicle borne threat exists, infrequent vehicular access is required and pedestrian permeability is to be maintained.

This product is a versatile manual barrier that can be hinged, bi-parting or removable, which offers the client a variety of options.

CONSTRUCTION

- Comprises our patented arrestor system (European Patent No 2369126) within an aluminium enclosure.
- The barrier can be hinged or completely removable.
- Designed to be mounted between Cova’s standard range of crash tested bollards, adapted with hinge and locking pins.
- With just a shallow foundation depth of 215mm.

FINISH

Finished in a client specified RAL No. However, given the flexibility of the design, we can discuss other methods of finish. The large plain areas on both faces of the barrier lend themselves to suitable signage or any aesthetic brief to blend with the installed environment.

FEATURES AND BENEFITS

- Manual HVM product.
- Low cost HVM solution for sites of infrequent use.
- Easily secured in the closed position with a specific padlock which is applied to the hinge pin and locking pin.
- The barrier can be hinged or completely removable.
- Shallow foundations of 215mm or full depth options available.
- The leaf can be customised with signage stating STOP etc or can be branded with a Company logo or message.
- Dependant on site conditions the Miti-Gate® can be installed in one continuous site visit to reduce any disruption to vehicle access.



CRASH TESTING

Model 10930 crash tested to 7,500kg (7.5 Tonne) @ 48km/h (30mph)

Model 10940 crash tested to 7,500kg (7.5 Tonne) @ 64km/h (40mph)

Vehicle Test Weight:	7500kg
Vehicle Class:	N2
Vehicle Speed MPH:	30
Vehicle Speed KMH:	48
Vehicle Angle:	90
Vehicle Penetration:	2.5
Dispersion Distance:	0.0

Vehicle Test Weight:	7500kg
Vehicle Class:	N2
Vehicle Speed MPH:	40
Vehicle Speed KMH:	64
Vehicle Angle:	90
Vehicle Penetration:	3.0
Dispersion Distance:	0.0

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