



## Terra Bollards (IWA 14 and PAS 68)

Generated on 09.01.2018

### Detailed description

A range of automatic rising/ retractable and static/passive bollards in various finish and safety system options. They are part of the Anti Terra range of counter terrorist equipment and have been successfully impact tested in accordance with the International IWA 14 and British BSi PAS 68 specifications. They part of the Anti Terra range of counter terrorist equipment and have been successfully impact tested to stop a range of energies, including a 7.2t vehicle travelling at 80kph (50 mph). Size and safety system options are available. Contact Manufacturer for IWA14 & PAS 68 Classification Codes. They are compliant to BS EN 13849, Secured by Design, PSSA Verified and are listed on the CPNI List of VSB products.

#### IWA 14 Automatic Rising Terra Universal Bollard:

- Lift Height of 1000 mm. The hydraulically driven Automatic Rising/ Retractable Terra Universal Bollard has been successfully impact tested as a single unit to the International IWA 14 specification, stopping a 7.5t vehicle at 50 mph. The fully automatic, easy glide hydraulically driven rising bollard provides outstanding 360° protection from the threat of VBIED's. The Terra Universal Bollard has been designed to complement the Static Bollard diameters from the HVM Planet Range. This unique characteristic allows interchangeable diameter sleeves to be fitted to the rising bollards inner core, creating a versatile and stylish perimeter protection solution. The hydraulically operated rising bollard has a HPU (Hydraulic Power Unit) that is recommended to be installed within 10 m of the Bollard unit.
- IWA 14 Classification Code: V/7500[N2A]/80/90:6.3.

#### PAS 68 Automatic Terra Quantum Side Folding Bollard:

- Lift height 925 mm. The World's first Automatic BSi PAS 68 side folding bollard; the ULTIMATE BREAKTHROUGH INNOVATION for Hostile Vehicle Mitigation.
- The Terra Quantum Bollard is a Shallow Depth Side Folding Retractable HVM Terra Bollard which has been successfully PAS 68 impact tested stopping a 7.5 t vehicle travelling at 30 mph (48 kph) resulting in ZERO PENETRATION. The Retractable Bollard can be hydraulically or manually operated, and is twinned with a static/removable unit.
- PAS 68 Classification Code: V/7500[N2]/48/90:0.0/1.5.

#### PAS 68 Static Terra Jupiter Bollard:

- Height above ground 1050 mm. Diameter 273 mm. Successfully BSi PAS 68 impact tested stopping 7500 kg at 50 mph.
- PAS 68 Classification Code: V/7500[N3]/80/90:10.5/11.1.

#### PAS 68 Shallow Depth Static Terra Mars Bollard:

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Height above ground to tip of bollard sheath 1100 mm. Static bollard manufactured with special shallow mount technology, enabling a foundation of just 120 mm. It is ideal for sites with restrictions on available foundation depths. The base plates are locked together in a triangular jigsaw formation. PAS 68 impact tested with 7.5 t at 30 mph and 40 mph.

- PAS 68 Classification Code: V/7500[N2]/48/90:1.71.

#### PAS 68 Static Terra Mars Bollard:

- Height above ground 1000 mm. Diameter 219 mm. Successfully BSi PAS 68 impact tested stopping 7.5 t at 40 mph.
- PAS 68 Classification Code: V/7500[N2]/64/90:4.0/16.7.

#### PAS 68 Static Standalone Shallow Mount Terra Neptune Bollard:

- Shallow Mount Depth of only 230 mm. Height above ground 1000 mm. Diameter 273 mm. Successfully BSi PAS 68 impact tested stopping 7.5 t at 40 mph resulting in zero penetration.
- PAS 68 Classification Code: V/7500[N2]/64/90:0.0/0.0.

#### PAS 68 Static Terra Neptune Bollard:

- Height above ground 1000 mm. Diameter 273 mm. Successfully BSi PAS 68 impact tested stopping 7.5 t at 40 mph.
- PAS 68 Classification Code: V/7500[N2]/64/90:3.3/0.0.

#### PAS 68 Shallow Depth Static Terra Venus Bollard:

- Height above ground 1000 mm. Diameter 219 mm. Successfully BSi PAS 68 impact tested stopping 7.5 t at 30 mph. 300 mm embedment.
- PAS 68 Classification Code: V/7500[N2]/48/90:3.3/0.0.

#### PAS 68 Static Terra Venus Bollard:

- Height above ground 1000 mm. Diameter 219 mm. Successfully BSi PAS 68 impact tested stopping 7.5 t at 30 mph.
- PAS 68 Classification Code: V/7500[N2]/64/90:0.0/0.0.

### Product guidance - As Standard

#### Distance between uprights (maximum):

For the International IWA 14-1 and British BSi PAS 68 Impact tested bollards to be installed in accordance with IWA 14-2 & BSi PAS 69, bollards should be installed with 1200 mm between upright bollard faces.

#### Lifted height/ height above ground:

- IWA 14 Automatic Rising Terra Universal Bollard: 1000 mm.
- PAS 68 Rising Terra Quantum Bollard: 925 mm.
- PAS 68 Static Terra Jupiter Bollard: 1050 mm.
- PAS 68 Shallow Mount Static Terra Mars Bollard: 1100 mm.
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PAS 68 Static Terra Mars Bollard: 1000 mm.

- PAS 68 Standalone Shallow Mount Static Terra Neptune Bollard: 273 mm.
- PAS 68 Static Terra Neptune Bollard: 1000 mm.
- PAS 68 Static Terra Venus Bollard: 1000 mm.

#### Diameter:

- IWA 14 Automatic Rising Terra Universal Bollard: 245 mm (inner core).
- PAS 68 Terra Quantum Bollard: 219 mm.
- PAS 68 Static Terra Jupiter Bollard: 273 mm.
- PAS 68 Shallow Mount Static Terra Mars Bollard: 245 mm.
- PAS 68 Static Terra Mars Bollard: 219 mm.
- PAS 68 Standalone Shallow Mount Static Terra Neptune Bollard: 273 mm.
- PAS 68 Static Terra Neptune Bollard: 273 mm.
- PAS 68 Shallow Depth Static Terra Venus Bollard: 219 mm.
- PAS 68 Static Terra Venus Bollard: 219 mm.

#### Foundation requirements:

- IWA 14 Automatic Rising Terra Universal Bollard: embedment 1491.
- PAS 68 Terra Quantum Bollard: 300 mm.
- PAS 68 Static Terra Jupiter Bollard: Contact manufacturer for details.
- PAS 68 Shallow Mount Static Terra Mars Bollard: Base plate depth: Contact manufacturer for details.
- PAS 68 Static Terra Mars Bollard: Contact manufacturer for details.
- PAS 68 Standalone Shallow Mount Static Terra Neptune Bollard: Contact manufacturer for details.
- PAS 68 Static Terra Neptune Bollard: Contact manufacturer for details.
- PAS 68 Shallow Depth Static Terra Venus Bollard: Contact manufacturer for details.
- PAS 68 Static Terra Venus Bollard: Contact manufacturer for details.

#### Options

##### Finish:

##### - Automatically Rising Terra Universal Bollards:

- Polyester powder coated - Insert RAL colour requirement. Shotblasted, hot zinc sprayed, primed polyester powder coated to RAL number. This process provides a 20-year corrosion protection system for exterior, industrial polluted inland sites to BS 5493.
- Sleeve - Painted/ stainless steel to match Static Terra Bollards. Insert RAL colour requirement.

##### - Rising Terra Quantum Bollards:



- Painted - Insert RAL colour requirement. Shotblasted, hot zinc sprayed, primed and finished with a final coat of polyurethane paint to RAL number. This process provides a 20-year corrosion protection system for exterior, industrial polluted inland sites to BS 5493.
- Stainless steel clad.

#### - Static Terra Bollards:

- Polyester powder coated - Insert RAL colour requirement. Shotblasted, hot zinc sprayed, primed and polyester powder coated to RAL number. This process provides a 20-year corrosion protection system for exterior, industrial polluted inland sites to BS 5493.
- Sleeve - Painted/ stainless steel to match Rising Terra Universal Bollard. Insert RAL colour requirement.

## Product specification

### Manufacturer

- Name: Frontier Pitts Ltd
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### Product reference

IWA 14 Automatic Rising Terra  
Universal Bollard  
PAS 68 Automatic Terra Quantum  
Side Folding Bollard  
PAS 68 Static Terra Saturn Bollard  
PAS 68 Static Terra Jupiter Bollard  
PAS 68 Shallow Mount Static Terra  
Mars Bollard  
PAS 68 Static Terra Mars Bollard  
PAS 68 Standalone Shallow Mount  
Static Terra Neptune Bollard  
PAS 68 Static Terra Neptune  
Bollard  
PAS 68 Shallow Depth Static Terra  
Venus Bollard  
PAS 68 Static Terra Venus Bollard

### Material/ Finish

Painted - Insert RAL colour  
requirement; for Static Terra  
Bollard, Terra Universal Bollard and  
Terra Quantum Bollard only.  
Sleeve - Insert RAL colour  
requirement; for Static Terra Bollard  
(Jupiter, Neptune, Mars, Venus)  
and Terra Universal Bollard.



Stainless steel - See 'Options' for other bollards.

**Actuation/ Safety systems**

Not applicable - For Static bollards.  
Not required  
Audible alarms  
Flashing beacons  
Induction loop/ Vehicle detector loop system  
Light curtain  
Pedestrian guard rail  
Photocell  
Safety edges  
Signage  
Ultra sonic sensors

**Accessories**

[None]  
[100 mm diameter red/ green LED traffic light head with monitored safety circuit]  
[200 mm diameter red/ green LED traffic light head with monitored safety circuit]  
[Manual hand pump]