Anti Terra Range

PAS 68 Hostile Vehicle Mitigation

www.frontierpitts.com
Product Brochures

FP2
Security Sliding Gates

Also available:
Corporate Brochure
Your Guide to PAS 68

FP2.1
Barricade Beams

FP3
Hinged/Swing Security Gates

FP4
Automatic Drop/Rising Arm Barriers

FP5
Road Blockers & Rising Kerbs

FP5.1
Rising & Static Bollards

FP6
Manual Perimeter Security

FP7
Pedestrian Gates & Turnstiles

Contents for the Anti Terra Range Product Guide

Why Use Frontier Pitts Ltd?
Your Guide to PAS 68

Terra Sliding Gates
Including the Terra Sliding, Cantilevered Gate, Terra Gate (tracked) & Terra Beam

Terra Swing Gates
Including the Terra Swing Gate, Terra Hinged Gate, Terra V Gate

Terra Drop Arm Barriers
Compact Terra Barrier, Original Terra Barrier, Terra Ultimate Barrier & Terra Manual Barrier

Terra Blockers
Surface, Shallow, Terra Blockers

Rising & Static Terra Bollards
Rising Terra Bollards, Static Terra Saturn Bollards, Static Terra Pyramid Bollards, Static Terra Jupiter Bollards, Static Terra Venus Bollards, Static Terra Mars Bollards, Static Terra Neptune Bollards

Terra Diamond Turnstile
LPS 1175 Security Rating 3 & 4

In accordance with Frontier Pitts policy of continual development, we reserve the right to make changes, improvements or amendments to any product at any time without prior notice. All items are offered subject to availability.
Why Use Frontier Pitts?

From our UK HQ in Crawley, West Sussex

Frontier Pitts is more than just a Manufacturer:
90 years experience & accredited to BSI ISO 9001
National & International. Installations in over 90 countries
95 directly employed personnel, including multi-lingual staff & personnel that have been Frontier Pitts for 30+ years
Technical Consultants based at regional offices will visit any site within the British Isles, without charge or obligation, offering technical advice on the most appropriate & effective perimeter security solutions. Including BSi PAS 68 & CEN CWA 16221 standards.

Directly employed sales & support staff
Large product portfolio to suit all budgets & requirements
Standard product specifications are complimented by our bespoke design service. Previous accomplishments include a sliding gate system which secures a 70 metre aperture
Full 3D CAD Design. Site specific drawings issued to clients
British Engineering - Designed & built to last
Mechanical & Electrical Engineering Research & Development Programs
Comprehensive Training Program; ensures the client always receives the very best of our technical expertise
Dedicated Project Manager for each project. All work is executed under the strict control of our specially trained PMs
Fleet of vehicles including HGV’s to ensure the equipment is safely delivered to site, with full ID tracking for security

Accreditations

Highly skilled, dedicated Mechanical & Electrical Field Engineers
Installation, Commissioning, Service & Maintenance
24hr / 7days a week manned UK Call Centre & Nationwide Breakdown Service
A range of Maintenance Contracts available to suit individual site requirements
Maintenance Contracts with response times in as little as 4 hours
Comprehensive Customer Service
Highly skilled, directly employed engineers located nationally. Frontier Pitts do not use Sub-Contractors
Full Installation & Commissioning Service
Civil, Electrical & Ground Works Team
BSi ISO 9001 Accredited and LPCB approved to LPS 1175
Verified and Founder member of the PSSA - Perimeter Security Suppliers Association - with the aim to raise the standards of the industry.
In house resources & skills - IT, Engineering, Fabricating, Maintenance & Installation - to overcome any possible obstacle
Spares Department, holding on average £200K of stock
Frontier Pitts is highly recommended by our existing & previous customers
Extra Fast Repair & Refurbishment for existing customers
Total customer care for your peace of mind
In house secure IT servers, latest software and hardware
Experience of ‘List X’ regulations and data security.
The Anti Terra range includes equipment successfully impact tested to the BSi PAS 68 specification. The different category ratings are all designed to illustrate how the perimeter security equipment will arrest an energy created by various masses and speeds, as illustrated below:

Vehicle & Vehicle Mass

<table>
<thead>
<tr>
<th></th>
<th>M1</th>
<th>N1</th>
<th>N2</th>
<th>N3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1500kg</td>
<td>3500kg</td>
<td>7500kg laden</td>
<td>7500kg empty 18000kg</td>
<td></td>
</tr>
</tbody>
</table>

Speeds

|   | 30mph / 48kph | 40mph / 64kph | 50mph / 80kph |

Vehicle Energy & Speed

The test criteria (vehicle weight and impact speed combinations) shall be selected from one of the combinations specified from Vehicle & Vehicle Mass and Speeds.

Note: Under PAS68:2010 only an N3 vehicle may be used to test a product at 50mph (80kph).

Energy in Kilojoules (approximate values)

<table>
<thead>
<tr>
<th>Vehicle Speed km/hour</th>
<th>Vehicle Weight kg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1500</td>
</tr>
<tr>
<td>16</td>
<td>15</td>
</tr>
<tr>
<td>32</td>
<td>59</td>
</tr>
<tr>
<td>48</td>
<td>133</td>
</tr>
<tr>
<td>64</td>
<td>237</td>
</tr>
<tr>
<td>80</td>
<td>370</td>
</tr>
</tbody>
</table>

When specifying your PAS 68 equipment, first establish what speed the different types of vehicles could reach on site before approaching the barrier & therefore how much energy the barrier may need to stop.

For further information please see Frontier Pitts “Your Guide to PAS 68” or contact the PAS 68 Specialist Technical Consultant on 01293 422800.

BSi PAS 68 Specification

Which category rating do you require?
Many projects are now specifying BSi PAS 68 equipment, not only for the counter terrorist benefits but also for the heavy duty properties of the equipment. However, there are many different test criteria of BSi PAS 68, depending on the kinetic energy values as described on page 3.

It is very important to know which level of BSi PAS 68 is required as there could potentially be a cost difference of thousands of pounds between each category. Equipment that has been successfully impact tested in accordance with BSi PAS 68 is given a 5-7 part classification code to help identify the products performance, depending on test date.

Classification Code - Vehicle Impact Test

<table>
<thead>
<tr>
<th>BSi PAS 68</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007 edition</td>
<td>V</td>
<td>Terra Blocker</td>
<td>7500 N2</td>
<td>80</td>
<td>n/a</td>
<td>0</td>
<td>5.2</td>
</tr>
<tr>
<td>2010 edition</td>
<td>V</td>
<td>Terra Blocker</td>
<td>7500 N2</td>
<td>80</td>
<td>90</td>
<td>0</td>
<td>5.2</td>
</tr>
</tbody>
</table>

7 Part Description:
1. Classification of Test: Depending on the year of the test the following will be used:
   - V = Impact Test – Actual vehicle impact tested to repeatable scientific condition
   - F = Computer simulation FEA or Design method (check validation body)
   - P = Pendulum testing weight used for bollards instead of vehicles (this test method has been removed from BSi PAS 68:2010).
2. A retractable road blocker;
3. Capable of withstanding an impact by a 7500kg rigid vehicle at 50mph (80kph).
   Note: Under PAS68:2010 only an N3 vehicle may be used to test a product at 50mph (80kph).
4. Impact speed at 50mph (80kph);
5. BSi PAS 68: 2010 – Angle of test impact.
   The majority of impacts are head on, i.e. 90 degrees. Other approach impact angles may have been tested i.e. Fencing at 45 degrees: N/A to BSi PAS 68:2007
6. Where the vehicle penetrated 0.0m beyond the original position of the rear face of the blocker. i.e. How far into site the test vehicle would stop. Note: With surface mounted products, check how far the arresting equipment travelled on impact.
7. Where major debris landed beyond the original position the rear face of the blocker. Major debris is classed as 25kg or more. This is important when trying to maintain a “stand off” from building.

In many specifications only parts 2, 3 and 4 are detailed, but the other parts are just as important and need to be clarified.

NOTE: When specifying BSi PAS 68 products the short hand or long hand information must be given.
Frontier Pitts high security HVM Anti Terra Range has been successfully impact tested in accordance to BSI PAS 68, stopping & immobilising a vehicle at various energies (typically 7500kg travelling at 50mph which equates to 1852kJ)

<table>
<thead>
<tr>
<th>Vehicle Test Weight (kg)</th>
<th>Vehicle Class</th>
<th>Vehicle Speed (kph)</th>
<th>Vehicle Angle</th>
<th>Vehicle Penetration</th>
<th>Dispersion</th>
</tr>
</thead>
<tbody>
<tr>
<td>7500kg</td>
<td>N3</td>
<td>80</td>
<td>90</td>
<td>1.5</td>
<td>0.0</td>
</tr>
</tbody>
</table>

**Terra Sliding Cantilevered Gate**

The Terra Gate Mk II Impact tested to BSI PAS 68 & CEN CWA 16221

| 7500kg                  | N3           | 80                  | 90            | 0.0                 | 0.0        |

**Terra Gate - Tracked**

Sliding Gate successfully PAS 68 impact tested in the fully closed & half open positions. Fully functional after impact

| 7500kg                  | N3           | 80                  | 90            | 0.0                 | 0.0        |

**Terra Blocker - Surface, Shallow & Original**

successfully impact tested to PAS 68 & K12

| 7500kg                  | N3           | 80                  | 90            | 0.0                 | 7.6        |

**Terra Bollards, Rising & Static**

successfully impact tested to PAS 68 & K12

- Terra Pyramids Bollards
- Terra Alloy Bollards
- Terra Jupiter Bollards
- Terra Mars Bollards
- Terra Neptune Bollards
- Terra Venus Bollards

| 7500kg                  | N2           | 80                  | 90            | 5.0                 | 9.2        |

**Terra Barriers**

includes the Terra Ultimate Barrier, Compact Terra Barrier & Terra Manual Barrier

| 7500kg                  | N3           | 80                  | 90            | 5.3                 | 2.0        |
| 7500kg                  | N3           | 64                  | 90            | 0.0                 | 25.0       |
| 7500kg                  | N1           | 48                  | 90            | 1.5                 | 0.0        |
| 7500kg                  | N2           | 48                  | 90            | 0.0                 | 0.0        |

**Terra Swing Gate, Terra Hinged Gate & Terra V Gate**

| 7500kg                  | N3           | 80                  | 90            | 0.0                 | 25.0       |

Frontier Pitts Anti Terra Range has been successfully impact tested in accordance to BSI PAS 68, stopping & immobilising a vehicle at various energies (typically 7500kg travelling at 50mph which equates to 1852kJ)
The PAS 68 Sliding Cantilevered Gate from Frontier Pitts successfully PAS 68 impact tested with a 7500kg vehicle travelling at 50mph.

**PAS 68 Terra Sliding Cantilevered Gate**
Also known as the Terra Gate MkII

V Sliding Gate 7500(N3)/80/90/1.5/0.0
Tested dimensions: width 4500mm, height 3000mm
Maximum width 6000mm

Tested successfully to PAS 68 impact tested with 7500kg N3 vehicle travelling at 50mph which equates to 1852kJ

Maximum crash beam length 6000mm

Power is supplied from a three phase and neutral supply.

Designed for easy installation and maintenance.

The Terra Sliding Cantilevered Gate can be interfaced to any access control systems.

**BENEFITS & FEATURES**
- Minimal site penetration
- Variable heights available (standard 2400mm) up to 5000mm
- Shallow foundation depths of only 500mm required
- Gate leaf with Heavy Duty Crash Impact Beam.
- Heavy duty posts support the gate leaf
- Cantilevered Gate, no track or support across the roadway is required, therefore no roadway excavation required
- The balance is provided by a unique enclosed "runback" which enables the gate to be fully projected across the roadway without tipping
- Electronic control motor drive unit
- Manual operation under power fail conditions
- Retro fit possible to existing gate on site.
- Successfully impact tested to the lastest BS PAS 68:2010 specification stopping a 7500kg N3 vehicle travelling at 50mph (80kph) which equates to 1852kJ

**Applications:** Sites that require equipment that meets a high level of the PAS 68 specification
- High Security | Anti Terrorist | Government | Military |
- Embassies | Banks | Utilities | Airports

**Option of an UPS (Uninterrupted Power Supply) is available if the gate is required to be re-opened during power failure.**

**DUTY CYCLE – 100%**

**OPERATING SPEED**
Typical operating speed of 250-500mm/second*, depending on configuration.

**OPTIONAL ACCESSORIES**
UPS (Uninterrupted Power Supply)
EFO (Extra Fast Operation)
Disingaging box - manual override
100/200mm Traffic Light System
High Security Cabinet

**SAFETY** – Option of vehicle detector loops and safety photocell beams, flashing beacon, audible alarm, safety edge, etc.

**CIVIL REQUIREMENTS**
Gate Base Foundation
L:2800mm x W:1500mm x D:500mm
(Note: Power and control wiring ducts to be incorporated into foundations)

Receptor Post Foundation
L:2800mm x W:1500mm x D:500mm

**ELECTRICAL REQUIREMENTS POWER**
Three Phase Supply and Neutral

*This is subject to a risk assessment to ensure the automatic equipment complies to BS EN 12453*
The only PAS 68 Sliding Gate in the world to be impact tested in the fully closed & half open positions, and remain fully functional after impact.

**PAS 68 Terra Gate (Tracked)**

Impact tested in the fully closed position & half open positions.

V Sliding Gate 7500[N3]/80/90/0.0/0.0

Tested dimensions: width 3000mm, height 3000mm

Maximum width: 6000mm

Successfully impact tested in accordance with BSi PAS 68 specification stopping a 7500kg vehicle travelling at 50mph (80kph) which equates to 1852kJ.

Maximum crash beam length 6000mm

Power is supplied from a three phase and neutral supply.

Designed for easy installation and maintenance.

The Terra Gate can be interfaced to any access control systems.

**BENEFITS & FEATURES**

- Zero site penetration
- Fully functional after impact, even after crash test in the half open position
- Variable heights available up to 5000mm (std 2400mm)
- Shallow foundation depths of only 300mm required
- Gate leaf with Heavy Duty Crash Impact Beam
- Heavy duty posts support the gate leaf
- Electronic control motor drive unit
- Manual operation under power fail conditions

**APPLICATIONS**

- High Security
- Anti Terrorist
- Government
- Military
- Embassies
- Banks
- Utilities
- Airports

Option of an UPS (Uninterrupted Power Supply) is available if the gate is required to be re-opened during power failure.

**DUTY CYCLE – 100%**

**OPERATING SPEED**

Typical operating speeds of 250-2000mm/second depending on configuration

**OPTIONAL ACCESSORIES**

- UPS (Uninterrupted Power Supply)
- EFO (Extra Fast Operation)
- Disengaging box - manual override
- 100/200mm Traffic Light System
- High Security Cabinet

**SAFETY** - Option of vehicle detector loops and safety photocell beams, flashing beacon, audible alarm, safety edge, etc

**CIVIL REQUIREMENTS**

- Gate Base Foundation

L:4000mm x W:2000mm x D:280mm

(Note: Power and control wiring ducts to be incorporated into foundations)

- Receptor Post Foundation

L:4000mm x W:2000mm x D:280mm

**ELECTRICAL REQUIREMENTS POWER**

Three Phase Supply and Neutral

* This is subject to a risk assessment to ensure the automatic equipment complies to BS EN 12453
The Terra Beam is based on the design of the PAS 68 Terra Sliding Cantilevered Gate.

**Terra Beam**

Based on the PAS 68 Terra Sliding Cantilevered Gate

V Sliding Gate 7500[N3]/80/90:0.0/0.0

Tested dimensions: width 3000mm

Maximum width: 6000mm

The Terra Beam is based on the design of the PAS 68 Terra Sliding Cantilevered Gate which has been successfully impact tested to the latest BSI PAS 68:2010 specification stopping a 7500kg vehicle travelling at 50mph (80kph) which equates to 1852kJ.

Maximum crash beam length 6000mm.

Power is supplied from a three phase and neutral supply.

Designed for easy installation and maintenance.

The Terra Beam can be interfaced to any access control systems.

**Benefits & Features**

- Based on the PAS 68 impact tested Terra Sliding Cantilevered Gate which has been successfully impact tested to the latest BSI PAS 68:2010 specification stopping a 7500kg N3 vehicle travelling at 50mph (80kph) which equates to 1852kJ
- Zero site penetration
- Shallow foundation depths of only 300mm required
- Heavy Duty Crash Impact Beam
- Heavy duty posts support the beam
- Electronic control motor drive unit
- Manual operation under power fail conditions

**Applications:**

- Sites that require a high level of PAS 68 security
- High Security
- Anti Terrorist
- Government
- Military
- Embassies
- Banks
- Utilities
- Airports

Option of an UPS (Uninterrupted Power Supply) is available if the gate is required to be re-opened during power failure.

**DUTY CYCLE – 100%**

**OPERATING SPEED**

Typical operating speeds of 250-500mm/seconds*, depending on length and configuration.

**OPTIONAL ACCESSORIES**

- UPS (Uninterrupted Power Supply)
- EFO (Extra Fast Operation)
- Disengaging box - manual override
- 100/200mm Traffic Light System
- High Security Cabinet

**SAFETY** - Option of vehicle detector loops and safety photocell beams, flashing beacon, audible alarm, safety edge, etc

**CIVIL REQUIREMENTS**

- Beam Base Foundation
  
  L:2500mm x W:3500mm x D:500mm
  
  (Note: Power and control wiring ducts to be incorporated into foundations)

- Receptor Post Foundation
  
  L:2500mm x W:3500mm x D:500mm

**ELECTRICAL REQUIREMENTS POWER**

- Three Phase Supply

* This is subject to a risk assessment to ensure the automatic equipment complies to BS EN 12453
PAS 68 Terra Swing Gate
(previously known as the Terra Road Closer)

V Swing Barrier 7500[N3]80/90/0.0/25.0
Tested dimensions: width 3500mm
Maximum width: 6000mm
Crash beam height: 720mm

The PAS 68 manual swing arm gate from Frontier Pitts
Successfully impact tested in accordance to BSi PAS 68 specification stopping a 7500kg vehicle travelling at 50mph (80kph) which equates to 1852kJ.

Maximum crash beam length 6000mm

The Terra Swing Gate is a manual swing barrier, with integrated crash beam. Designed for ease of installation and maintenance.

BENEFITS & FEATURES
- Shallow foundation depths of only 350mm required
- Heavy Duty Crash Impact Beam with Heavy duty post supports.
- Manual operation.
  Ideal for remote locations on sites where there is no power supply available.

Applications:
High Security | Anti Terrorist | Government | Military | Airports | Industrial

CIVIL REQUIREMENTS
Posts Foundation
L:4000mm x W:1750mm x D:350mm
The Terra Hinged Gate is the enhanced version of the Terra Swing Gate which has been successfully impact tested in accordance to the BSi PAS 68 specification stopping a 7500kg N3 vehicle travelling at 50mph (80kph), at a width of 3500mm. Maximum crash beam length 6000mm.

The Terra Hinged Gate is a manual swing gate, with integrated crash beam and weldmesh infill, which can be automated. Please contact the Technical Sales Department on 01293 422800 for more information.

Designed for easy installation and maintenance.

BENEFITS & FEATURES
• Shallow foundation depths of only 350mm required
• Heavy Duty Crash Impact Beam with Heavy duty post supports and high security infill.
• Range of security infills available.
• Manual operation as standard. Ideal for remote locations on sites where there is no power supply available.
• Can easily be automated using a wide range of Actuators. Please see page 22

Applications: High Security sites which require PAS 68 equipment at a location with no power supply, height restriction or lack of runback area for sliding gate.

High Security | Anti-Terrorist | Government | Military | Airports | Industrial

CIVIL REQUIREMENTS
Posts Foundation
L:4000mm x W:1800mm x D:500mm

Similarly to the Terra Swing Gate, the Terra Hinged Gate can be automated.

Please contact the Technical Sales Department on 01293 422800 for more information.
The PAS 68 Terra V Gate is a pair of bi-parting hinged gate leaves that secure in a shallow ‘V’ shape.

**PAS 68 Terra V Gate**
(previously known as Terra Lock Gate)

V Bi-parting Hinged Gate 7500[N3]/80/90:0.0/0.0
Tested dimensions : width 4000mm, height 3000mm
Maximum width 9000mm

Successfully impact tested in accordance to the BSi PAS 68 specification stopping a 7500kg N3 vehicle travelling at 50mph (80kph) which equates to 1852kJ

Maximum width 9000mm

The Terra V Gate is a manual swing gate, with integrated crash beam, which can be automated. Please contact the Technical Sales Department on 01293 422800 for more information. Designed for easy installation and maintenance.

**BENEFITS & FEATURES**
- Zero site penetration
- Fully functional after impact
- Variable heights available (standard 3000mm)
- Shallow foundation depths of only 340mm required
- Bi-parting pair of hinged gate leaves with Heavy Duty Crash Impact Beam.
- Heavy duty posts support the gate leaf
- Secured at a shallow angle of only 135 degrees

**Applications:** Sites that require a high level of PAS 68 security
- High Security
- Anti-Terrorist
- Government
- Military
- Embassies
- Banks
- Utilities
- Airports

**CIVIL REQUIREMENTS**

Each post foundation
L:4500mm x W:2500mm x D:340mm

Locking Pin securing gate leaves into closed position

Pre PAS 68 impact test

Fully functional post PAS 68 impact test
Actuators

A range of powerful motive units to automate Terra Hinged Gates & Terra V Gates

GATE BACK ACTUATORS

A small but powerful motive unit, which provides a low cost solution for powering small hinged gates (maximum gate aperture 5 metres). Designed for continuous operation, it has a standard operating speed of 10-18 seconds*. Supplied with Frontier Pitts hinged gates or alternatively retro-fitted to existing gates.

The actuator is a powerful hydraulic ram which is mounted between the gate-leaf and the gate hinge-post. A hinge-post mounting bracket is bolted to the gate post and offsets the rear of the ram to produce the correct operating geometry. The forces generated act directly upon the rear of the gate-leaf and produce the required rotation. The small outline of the actuator creates the minimum visual impact for decorative gate installations.

*This is subject to a risk assessment to ensure the automatic equipment complies to BS EN 12453

Applications: Automation of Terra Hinged Gates & Terra V Gates

TROJAN ACTUATORS

A range of powerful motive units for large, heavy gates. Originally designed by Frontier Pitts to automate large prison gates.

100% duty cycle designed for continuous operation with standard operating speeds of 9-13 seconds*. A 5 ton leaf can have an operating speed of just 3 seconds*.

Underground and surface mounted models available of the Trojan actuator. The Trojan underground actuator is completely contained below the surface directly under the gate leaf hinge-point creating minimal visual impact.

It provides a powerful motive unit for the operation of a large, hinged gate-leaf. The actuator is housed within an underground cavity formed in the gatepost foundation immediately underneath the pivot point of the gate-leaf. A sturdy 10mm steel cover plate is fitted which protects the actuator from the elements and allows service access. The actuator cav CIVIL REQUIREMENTS
dependent on Automation - please contact the Technical Sales Department on 01293 422800

CIVIL REQUIREMENTS

Dependent on Automation - please contact the Technical Sales Department on 01293 422800

ELECTRICAL REQUIREMENTS

Single phase or three phase options available.

*This is subject to a risk assessment to ensure the automatic equipment complies to BS EN 12453
Looks can be deceiving!
The BSi PAS 68:2010 impact tested Drop Arm Barrier that looks like a standard car park barrier, hydraulically powered for reliability & strength.

**PAS 68 Compact Terra Barrier**

V Drop Arm Gate 3500[N1]/48/90:1.5/0.0
Tested dimensions: width 4000mm, Maximum width: 6000mm

Successfully impact tested to the latest BSi PAS 68:2010 specification stopping a 3500kg vehicle travelling at 30mph (48kph) which equates to 311kJ

Maximum crash beam length 6000mm

The Compact Terra Barrier bridges the gap between the Heavy Duty HB Barrier & the PAS 68 Terra Barrier (see page 26).

Hydraulically driven barrier: Designed for ease of installation and maintenance. The Compact Terra Barrier can be interfaced to any access control systems.

**BENEFITS & FEATURES**
- Looks like a standard car park barrier
- Hydraulically operated, single or three phase
- Aluminium boom with the latest PST (Perimeter Security Technology)
- 100% duty rating
- Instantly reversible
- Boom length up to 6 metres
- Impact tested to the latest BSi PAS 68:2010 specification
- Lower folding skirt as standard

In event of Power Failure
- Fail safe (remain in raised position)
- Fail secure (remain in lowered position)

Option of a hand pump is available if the barrier is to be re-raised during power failure.

**DUTY CYCLE – 100%**

**OPERATING SPEED**
Typical operating speeds of 5-12 seconds, depending on boom length & configuration.*

**OPTIONAL ACCESSORIES**
- EFO (Extra Fast Operation)
- 100/200mm Traffic Lights
- Manual Hand pump
- High Security Cabinet

**SAFETY** - Option of vehicle detector loops and safety photocell beams.

Barrier Cabinet size
L:522mm x W:472mm x H:1145mm

**CIVIL REQUIREMENTS**
Barrier Base Foundation
L:1500mm x W:1000mm x D:500mm
(Note: Power and control wiring ducts to be incorporated into foundations)

End Rest Foundation
L:1200mm x W:800mm x D:500mm

**ELECTRICAL REQUIREMENTS**
- 6 amp, 5 wire, three phase and neutral or 10 amp, 3 wire single phase
- This is subject to a risk assessment to ensure the automatic equipment complies to BS EN 12453
PAS 68 Terra Barrier

V Drop Arm Gate  7500[N2]/64/0.0/0.0
Tested dimensions: width 3500mm, crash beam height 1050mm
Maximum width: 4500mm

The original PAS 68 impact tested Drop Arm Barrier, hydraulically powered for reliability & strength.

Successfully impact tested to the BSi PAS 68 specification stopping a 7500kg N2 vehicle travelling at 40mph (64kph) which equates to 1185kJ

Maximum aperture 4500mm
Hydraulically driven barrier. Designed for ease of installation and maintenance.

The Terra Barrier can be interfaced to any access control systems.

**BENEFITS & FEATURES**
- No penetration into site.
- Hydraulically operated, three phase supply
- 100% duty rating
- Instantly reversible
- Impact tested to BSi PAS 68
- A wide range of Accessories are available, including lower

Applications: Sites that require equipment that meets a higher level of the PAS 68 specification.

- High Security | Anti-Terrorist | Government | Military | Airports | Industrial | Commercial

In event of Power Failure
- Fail safe (remain in raised position)
- Fail secure (remain in lowered position)

Option of a hand pump is available if the barrier is to be re-raised during power failure.

**DUTY CYCLE – 100%**

**OPERATING SPEED**

Typical operating speeds of 5-14 seconds, depending on boom length & configuration.*

**OPTIONAL ACCESSORIES**
- EFO (Extra Fast Operation)
- 100/200mm Traffic Lights
- Manual Hand pump
- High Security Cabinet

**SAFETY** - Option of vehicle detector loops, safety photocell beams & safety edges.

Barrier Cabinet size
L:1320mm x W:1800mm x H:1540mm

CIVIL REQUIREMENTS

Barrier Base Foundation
L:4000mm x W:2000mm x D:460mm
(Note: Power and control wiring ducts to be incorporated into foundations)

End Rest Foundation
L:4000mm x W:1600mm x D:460mm

ELECTRICAL REQUIREMENTS
10 amp, 5 wire, 400V, 50Hz, Three phase and neutral supply

* This is subject to a risk assessment to ensure the automatic equipment complies to BS EN 12453

Terra Barrier post impact test

Terra Barrier with counterbalance & fully height swivel skirt

Secured by Design
Official Police Security Initiative

Frontier Pitts
The ULTIMATE PAS 68 drop arm barrier from Frontier Pitts. Successfully impact tested to the latest BSi PAS 68:2010 specification against a range of different energies. The Ultimate Solution.

**PAS 68 Terra Ultimate Barrier**

**V/7500[N3]/80/90:5.3/2.0**  
Tested dimensions: width 4500mm, crash beam height 1050mm  
Maximum width: 4500mm

Successfully impact tested to the latest BSi PAS 68:2010 specification stopping a 7500kg vehicle travelling at 50mph (80kph) which equates to 1852kJ.

Maximum aperture 4500mm

Hydraulically driven barrier. Designed for ease of installation and maintenance.

The Terra Ultimate Barrier can be interfaced to any access control systems.

**BENEFITS & FEATURES**

- Hydraulically operated, three phase supply
- 100% duty rating, reversible
- Impact tested to the latest BSi PAS 68:2010 specification
- The beam was retested for with underrun skirt to test arresting capability on other vehicles such as saloon car vehicles
- The Terra ULTIMATE Barrier will stop low & high energy vehicles from entering site
- A wide range of Accessories are available, including lower folding skirts and full height swivel skirt options.

**Applications:**  
Sites that require equipment that meets an even higher level of the PAS 68 specification.

- High Security
- Anti-Terrorist
- Government
- Military
- Airports
- Industrial
- Commercial

**In event of Power Failure**

- Fail safe (remain in raised position)
- Fail secure (remain in lowered position)

Option of a hand pump is available if the barrier is to be re-raised during power failure.

**DUTY CYCLE – 100%**

**OPERATING SPEED**

Typical operating speeds of 8-14 seconds to raise, depending on boom length & configuration.*

**OPTIONAL ACCESSORIES**

- EFO (Extra Fast Operation)
- 100/200mm Traffic Lights
- Manual Hand pump
- High Security Cabinet
- Remote Hydraulic Power Unit

**SAFETY** – Option of vehicle detector loops and safety photocell beams.

**Barrier Cabinet size**

L:980mm x W:1400mm x H:1055mm

**CIVIL REQUIREMENTS**

Barrier Base Foundation

L:2800mm x W:2040mm x D:400mm deep

(Note: Power and control wiring ducts to be incorporated into foundations)

End Rest Foundation

L:2800mm x W:1540mm x D:400mm

**ELECTRICAL REQUIREMENTS**

10 amp, 5 wire, 400V, 50Hz, Three phase and neutral supply

* This is subject to a risk assessment to ensure the automatic equipment complies to BS EN 12453
The PAS 68 Manual Drop Arm Barrier
British Government design & PAS 68 impact tested as the ‘MRAG’ - Manual Rising Arm Gate

PAS 68 Terra Manual Barrier

V Drop Arm Gate -
- 7500[N2]/48/90:0/0
- 3500[N1]/80/90:4.0/0
- 3500[N1]/80/90:2.23/0

Tested dimensions:
- width: 3000mm & 4500mm
- crash beam height: 900mm

Maximum crash beam length 4500mm

The Terra Manual Barrier is a PAS 68 counter balanced barrier ideal for remote locations where no power is available.

BENEFITS & FEATURES
- Design of her Majesty’s Government manufactured by Frontier Pitts.
- Non powered rising/drop arm barrier
- Boom length up to 4500mm
- Impact tested to BSI PAS 68:2010
The Award Winning PAS 68 Road Blocker from Frontier Pitts.

The ONLY surface mounted blocker to be successfully impact tested to the BSI PAS 68 standard with zero penetration AND remain bolted in its original position during and after impact.

PAS 68 Terra Surface Mount Blocker

V Road Blocker 7500[N3]/80/900.0/7.6
Tested dimensions : width 2500mm,
    lift height 1100mm
    maximum width 4000mm

The unit is mounted on the road surface, therefore no foundations are required. The special pre formed ramps allow safe passage by all vehicles. The tarmac covering provides an anti slip surface for cyclists. Flush mount installation also available. Hydraulically driven. Designed for ease of installation and maintenance. The Terra Surface Mount Blocker can be interfaced to any access control systems.

BENEFITS & FEATURES
Impact tested to BSI PAS 68:2010 - resulting in zero penetration
Road surface blocker - no foundations required. Ideal for inner city sites
Can also be installed flush with ground - foundation depths of only 220mm required
Hydraulically operated 400V
100% duty rating
Instantly reversible
Width up to 4 metres (securing apertures of 5.8m)
Concertina safety skirt to prevent potential trapping areas
Wide range of Accessories available
Control cabinet recommended to be installed within 10 metres of unit
Further bespoke systems available

Successfully impact tested to the latest PAS 68:2010 specification stopping a 7500kg vehicle travelling at 50mph (80kph) which equates to 1852kJ. Maximum width 4000mm. Surface Mounted.

Applications: Inner city locations with limited foundation depths that require equipment with a higher level of PAS 68 rating
High Security | Anti Terrorist | Government Institutions | Military Bases | Airports

In event of Power Failure
Fail safe (remain in raised position)
Fail secure (remain in lowered position)

Option of an automatic Accumulator or manual hand pump is available if the blocker is to be re-raised during power failure.

DUTY CYCLE – 100%

OPERATING SPEED
Typical speeds of 4-6 seconds* depending on configuration. EFO (extra fast operation) in up to 1 second.

OPTIONAL ACCESSORIES - Please see page 36
Accumulator – allows a number of operations in power failure mode
EFO (Extra Fast Operation)
100/200mm Traffic Light System
Manual Hand pump
High Security Cabinet

SAFETY - Option of vehicle detector loops and safety photocell beams

CIVIL REQUIREMENTS
Minimum depth of 150mm
(Note: Power and control wiring ducts may be required).

Control Cabinet Foundation
L:600mm x W:900mm x D:300mm

ELECTRICAL REQUIREMENTS POWER
Three Phase Supply

* This is subject to a risk assessment to ensure the automatic...
PAS 68 Terra Shallow Blocker

V Road Blocker 7500[N3]/80/90:0.0/25
Tested dimensions: width 2500mm,
lift height 1100mm
maximum width: 4000mm

Successfully impact tested to the latest BSI PAS 68:2010 specification stopping a 7500kg vehicle travelling at 50mph (80kph) which equates to 1852kJ. Maximum width 4000mm, maximum foundation depth required 400mm.

To the amazement of the Security Consultants & Civil Engineers that witnessed the successful PAS 68 impact test, the unit had been installed just 52 hours before impact.

Hydraulically driven. Designed for ease of installation and maintenance. The Terra Shallow Blocker can be interfaced to any access control systems. The top plate’s anti skid resistant coating allows safe passage for cyclists.

**BENEFITS & FEATURES**
- Shallow foundation depths of only 400mm required.
- Hydraulically operated, 400V
- 100% duty rating
- Instantly reversible
- Width up to 4 metres (securing 5.8m apertures)
- Impact tested to BSI PAS 68:2010
- Concertina Skirt to prevent potential trapping areas.
- Wide range of Accessories available.
- Control cabinet recommended to be installed within 10 metres of blocker.
- Top plate is coated in anti skid resistant treatment.

**APPLICATIONS:** Inner city locations with limited foundation depths that require equipment with a higher level of PAS 68 rating
- High Security | Anti Terrorist | Government Institutions | Military Bases | Airports

**In event of Power Failure**
- Fail safe (opens to the lowered position)
- Fail secure (remains in the raised position)
- Option of an automatic Accumulator or manual hand pump is available if the blocker is to be re-raised during power failure.

**DUTY CYCLE – 100%**

**OPERATING SPEED**
Typical speeds of 4-6 seconds* depending on configuration, EFO (extra fast operation) in up to 1 second.

**OPTIONAL ACCESSORIES**
- Please see page 36
- Accumulator – allows a number of operations in power failure mode
- EFO (Extra Fast Operation)
- 100/200mm Traffic Light Systems
- Manual Hand pump
- High Security Cabinet

**SAFETY** - Option of vehicle detector loops and safety photocell beams.

**CIVIL REQUIREMENTS**
- Based on a 2500mm width blocker L:4600mm x W:3540mm x D:400mm
- Control Cabinet Foundation L:600mm x W:900mm x D:300mm

**ELECTRICAL REQUIREMENTS POWER** - Three Phase Supply
- *This is subject to a risk assessment to ensure the automatic equipment complies to BS EN 12453*
The History of the Terra Blocker: The original Terra Blocker, first tested in 2004 with a 6800kg American truck travelling at 80kph (50mph), then tested in accordance with PAS 68 in 2007, & re tested in 2009 to test the latest technology breakthrough from our on going R&D program.

PAS 68 & K12 L3 Terra Blocker
PAS 68 Terra Blocker MkII 7500kg @ 50mph
V Road Blocker 7500[N3]/80/90:0.0/25.0
Tested dimensions: width 3000mm, lift height 950mm
K12 L3 Terra Blocker: 6800kg American Truck at 80kph (50mph). Zero Penetration
Tested dimensions: width 2500mm, lift height 810mm

Successfully impact tested to the latest BSI PAS 68:2010 specification stopping a 7500kg vehicle travelling at 50mph (80kph) which equates to 1852kJ. Maximum width 5000mm.

Hydraulically driven. Designed for ease of installation and maintenance. The Terra Blocker can be interfaced to any access control systems.

BENEFITS & FEATURES.
Hydraulically operated, 400V
100% duty rating
Instantly reversible
Width up to 5 metres (securing 7.4m apertures)
Impact tested to BSI PAS 68:2010 with a range of energies.
Original Terra Blocker impact tested with an 6800kg American vehicle travelling at 80kph, and remained fully functional after impact.
Wide range of Accessories available
Control cabinet recommended to be installed within 10 metres of blocker

The Road Blocker’s Top Plate is fully coated with an anti skid resistant treatment which has been fully tested under laboratory conditions for at least 12 months.

Applications: Sites that require high security PAS 68 barricades
High Security | Anti-Terrorist | Government Institutions | Military Bases | Airports

In event of Power Failure
Fail safe (opens to the lowered position)
Fail secure (remains in the raised position)

Option of an automatic Accumulator or a manual hand pump is available if the blocker is to be re-raised during power failure.

DUTY CYCLE – 100%

OPERATING SPEED
Typical speeds of 4-6 seconds* depending on configuration. EFO (extra fast operation) In up to 1 second.

OPTIONAL ACCESSORIES - Please see page 36
Accumulator – allows a number of operations in power failure mode
EFO (Extra Fast Operation)
100/200mm Traffic Light Systems
Manual Hand pump
High Security Cabinet

SAFETY - Option of vehicle detector loops and safety photocell beams.

CIVIL REQUIREMENTS
Based on a 3000mm width blocker
L:2200mm x W:4000mm x D:935mm
(Note: Power and control wiring ducts required).

Control Cabinet Foundation
L:600mm x W:900mm x D:300mm

ELECTRICAL REQUIREMENTS POWER
Three Phase Supply
*This is subject to a risk assessment to ensure the automatic equipment complies to BS EN 12453

Hydraulic control cabinets for Terra Blockers and Active Terra Bollards are recommended to be installed within 10 metres of the unit, within site in a secure location.

Terra Blocker & Active Terra Bollards
Optional Accessories - housed within control cabinet:

- Options of an automatic Accumulator or manual hand pump are available if the Blocker or Bollard is to be re-raised during power failure.
- EFO - Extra Fast Operating Speeds.

Vandal resistant traffic light cages

Left: Hydraulic Control Cabinet installed next to Terra Blocker within the site perimeter.
Above: Terra Bollards Hydraulic Control Cabinet installed securely within building.
The PAS 68 Rising/Active Terra Bollards from Frontier Pitts is a counter terrorist bollard, hydraulically driven for reliability & strength.

**PAS 68 Rising Terra Blocker**

V Bollards 7500[N2]/80/90:5.0/9.2

Tested dimensions: lift height 900mm

Successfully impact tested to BSI PAS 68 specification stopping a 7500kg N2 vehicle travelling at 50mph (80kph) which equates to 1852kJ.

Lift height 900mm. BSI PAS 68 Bollards are required to be installed at 1200mm between upright bollard faces to meet BSI PAS 69:2006 guidelines.

Stainless steel finish as standard.

Painted powder coating optional.

Matching Static Terra Saturn Bollards are available.

Hydraulically driven. Designed for ease of installation and maintenance.

**BENEFITS & FEATURES**

- Fully functional after impact test.
- Hydraulically operated 400V
- 100% duty rating, instantly reversible
- Impact tested to BSI PAS 68
- Wide range of Accessories available.
- Control cabinet recommended to be installed within 10 metres of bollard. Further bespoke systems available.

**APPLICATIONS**

Sites that require a PAS 68 restriction on vehicle access whilst allowing free passage by pedestrians

High Security | Anti-Terrorist | Government Institutions

Military Bases | Embassies | Airports

In event of Power Failure

Fail safe (opens to the lowered position)

Fail secure (remains in the raised position)

Option of an automatic Accumulator or a manual hand pump is available if the bollard is to be re-raised during power failure.

**DUTY CYCLE – 100%**

**OPERATING SPEED**

Typical speeds of 4-10 seconds* depending on configuration. EFO (extra fast operation) in up to 3 second.

**OPTIONAL ACCESSORIES** – Please see page 36

- Accumulator – allows a number of operations in power failure mode
- EFO (Extra Fast Operation)
- 100/200mm Traffic Light System
- Manual Hand pump
- High Security Cabinet

**SAFETY** - Option of vehicle detector loops and safety photocell beams.

**CIVIL REQUIREMENTS**

L:2080mm x W:2100mm x D:1450mm

(Note: Power and control wiring ducts required).

Control Cabinet Foundation
L:600mm x W:900mm x D:300mm

**ELECTRICAL REQUIREMENTS POWER**

Three Phase Supply

* This is subject to a risk assessment to ensure the automatic equipment complies to BS EN 12453
Planets Range of PAS 68 Static Terra Bollards
Shallow & Removable options available

A portfolio of Static/Fixed Bollards successfully impact tested to the latest BSi PAS 68:2010 specification stopping various energies.

Terra Jupiter Bollards - 7500kg @ 50mph (1852kJ)

Classification Codes:
V/7500[N2]/80/90:1.0/21.2
V/7500[N3]/80/90:10.5/11.1

Embedment - 500mm
Height above ground - 1050mm
Diameter - 273mmø
Finish - Painted Powder Coating
Optional - Stainless Steel Finish

Removable Terra Jupiter Bollards - 7500kg @ 50mph (1852kJ)

Classification Codes:
V/7500[N3]/80/90:10.5/11.1

Embedment - 500mm
Height above ground - 1050mm
Diameter - 273mmø
Finish - Painted Powder Coating
Optional - Stainless Steel Finish

Terra Venus Bollards - 7500kg @ 30mph (667kJ)

Classification Codes:
V/7500[N2]/48/90:0.0/0.0

Shallow Depth Terra Venus Bollards - 7500kg @ 30mph (667kJ)

Classification Codes:
V/7500[N2]/48/90:0.0/0.0

Embedment - 500mm
Height above ground - 1000mm
Diameter - 219mmø
Finish - Painted Powder Coating
Optional - Stainless Steel Finish

Removable Terra Venus Bollards - 7500kg @ 30mph (667kJ)

Classification Codes:
V/7500[N2]/48/90:0.0/0.0

Embedment - 500mm
Height above ground - 1050mm
Diameter - 273mmø
Finish - Painted Powder Coating
Optional - Stainless Steel Finish

Applications: Sites that require a PAS 68 restriction on vehicle access whilst allowing free passage by pedestrians

High Security | Anti Terrorist | Government Institutions
Military Bases | Embassies | Airports |
The Static Terra Saturn Bollard is designed to match the PAS 68 Rising Terra Bollards.
Height above ground: 900mm

The Static Terra Saturn Bollard matches the Rising Terra Bollards and create a perimeter protection line.

Installation in accordance with the latest BSI PAS 69:2006 specification; bollards should be spaced at 1200mm between upright bollard faces.

Painted powder coating finish as standard. Stainless steel finish available on request.

CIVIL REQUIREMENTS
W: 900mm x D: 900mm x L: 900mm

Height above ground: 1050mm
Terra Pyramid Bollards impact tested to the latest BSI PAS 68:2010 specification.
Bollards are required to be installed at a distance of 1200mm between upright bollard faces to meet the latest BSI PAS 69:2006 guidelines.

Designed for easy installation
Stainless steel finish as standard

BENEFITS & FEATURES
Shallow Mount Technology.
Foundation depths of only 120mm required.
Impact tested to BSI PAS 68 with a range of energies.
The Terra Diamond Turnstiles successfully resisted an intensive attack test programme in accordance with LPS 1175: Issue 6.1. These involved a series of attack tests each lasting at least 10 minutes using a wide array of hand tools and battery powered tools. The Terra Diamond Turnstiles are the only turnstiles currently on the market that are approved to LPS 1175 Security Ratings 3 and 4.

Correct at time of print

LPS 1175 Terra Diamond Turnstile
LPS 1175: Issue 6.1 Security Rating 3 & 4

Applications: High Security Pedestrian Control Access
Security Rating 3 - Certificate Number 1059a/01
Security Rating 4 - Certificate Number 1059a/02

On receipt of a signal from a push-button, card reader etc., the turnstile will release the rotor, then closes and rebolts. The park assembly has a positive action lock which prevents the arm rotating in reverse after 60°.

Standard internal height: 2020mm
Standard gateleaf width: 500mm
Colour: Any colour in the RAL range

CONSTRUCTION
Cage - Fully welded steel cage backed with high security sheet steel forms a short walkway. Columns are used to mount card readers etc.
Canopy - Metal canopy with anti-drip guttering, with reinforced high security lid which lifts off for access
Rotor - 90° High-strength sheet steel blades. (Grade 4 has additional reinforcing for increased resistance to attack)

CIVIL REQUIREMENTS
L: 1260mm x W: 1600mm x D: 300mm
(Note: Power and control wiring ducts to be incorporated into foundations)

ELECTRICAL REQUIREMENTS POWER
10 Amp, 3 wire, 240v 50hz - Single phase supply
* This is subject to a risk assessment to ensure the automatic equipment complies to BS EN 12453

Frontier Pitts Ltd has become the first company to achieve LPS 1175 Issue 6 for the full height Terra Diamond Turnstile Grade 3 and Grade 4.