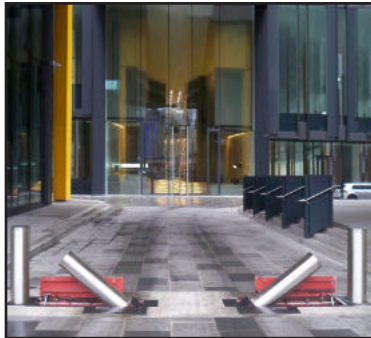




PLANET RANGE OF TERRA BOLLARDS

Frontier Pitts manufacture a portfolio of IWA 14 & PAS 68 bollards, each proven to stop the different energy ratings of the HVM (Hostile Vehicle Mitigation) specification.

MODEL		SPEED			FOUNDATION		
Bollard diameter		30mph (48kph)	40mph (64kph)	50mph (80kph)	Ultra Shallow <200mm	Shallow Biscuit <450mm	Standard <600mm
Terra Universal 245mm	IWA14 Automatic Rising (to compliment Venus & Jupiter)			•			•
Terra Quantum 219mm	PAS68 Rising (side folding) with shallow static bollard	•				•	
Terra Galaxy 219mm	IWA14 Automatic Rising (to complement Venus Bollard)						
Terra Venus 219mm	PAS68 Shallow Static	•				•	
	PAS68 Static	•					•
	PAS68 Removable Static	•					•
Terra Mars 219-245mm	PAS68 Shallow Mount Static	•	•		•		
	PAS68 Static	•	•				•
	PAS68 Removable Static		•				•
Terra Jupiter 273mm	IWA14 Shallow Mount Static			•	•		
	PAS68 Static			•			•
	PAS68 Removable Static			•			•
Terra Neptune 273mm	PAS68 Shallow Mount Static (standalone)		•		•		
	PAS68 Static		•				•
	PAS68 Removable Static		•				•
Terra Comet 219mm	IWA14 Static 3.5t vehicle to complement the Compact Terra Barrier	•				•	
Terra Lunar Bridge 219mm	IWA14 Static (designed for installation on bridges)	•			•		
Terra Lunar 180 Swing Beam	Expansion Joint (designed for installation on bridges)	•			•		

All IWA14 testing performed with 7.2t vehicle All PAS68 testing performed with 7.5t vehicle US Rating: K12 / K8 / K4 L3

RISING HVM BOLLARDS

Rising & Retractable Bollards



Universal Bollards : Hydraulically Driven Automation or Manually Retractable



Galaxy Bollards

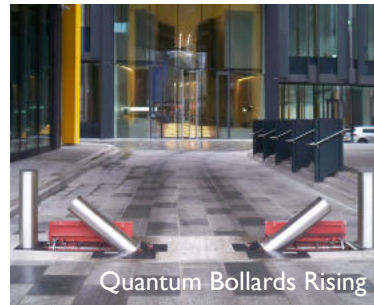
- **IWA 14 Retractable/Rising Terra Universal Bollards**
7.2t @50mph
For Sleeve Accessories please see the Options page
- **IWA 14 Retractable/Rising Terra Galaxy Bollards**
7.2t@30mph
- **PAS 68 Retractable/Rising Terra Quantum Bollards**
7.5t@30mph – Side Folding, Shallow Depth



Universal Bollards



Quantum Bollards



Quantum Bollards Rising

STATIC HVM BOLLARDS

Static & Fixed Bollards



Venus Bollards

- PAS 68 Static Terra Jupiter Bollards 7.5t @50mph
- PAS 68 Static Terra Neptune Bollards 7.5t @ 40mph
- PAS 68 Static Terra Mars Bollards 7.5t @ 40mph
- PAS 68 Static Terra Venus Bollards 7.5t @ 30mph



REBAR (short for reinforcing bar)

Standard Static HVM Bollards require rebar within their installation.

Rebar is also known as reinforcing steel. The rebar is installed as a mesh to reinforce the concrete and provide a tension device to position the bollards.



Crash Testing



Jupiter Bollards



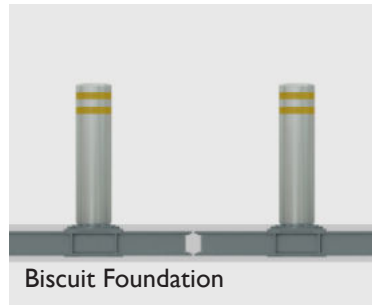
Polyester Powder Coating

Standard Finish Polyester Powder Coated as standard to client's choice of RAL

Optional Finish Polyester Powder Coated and Stainless Steel Sleeves

SHALLOW BOLLARDS

Shallow and Removable Static HVM Bollards



SHALLOW STATIC HVM BOLLARDS

- IWA 14 Static Terra Jupiter Bollards* 7.2t @ 50mph
- PAS 68 Static Terra Neptune Bollards* 7.5t @ 40mph
- PAS 68 Static Terra Mars Bollards* 7.5t @ 40mph
- PAS 68 Static Terra Venus Bollards 7.5t @ 30mph
- IWA 14 Static Terra Comet Bollards 3.5t @ 30mph
- IWA 14 Ultra Shallow Static Terra Lunar* 7.5t @ 30mph
- IWA 14 Ultra Shallow Terra Lunar 180 Swing Beam for Bridge Expansion Joints* 7.2t @ 30mph

REMOVABLE STATIC HVM BOLLARDS

- PAS 68 Static Terra Jupiter Bollards 7.5t @ 50mph
- PAS 68 Static Terra Neptune Bollards 7.5t @ 40mph
- PAS 68 Static Terra Mars Bollards 7.5t @ 40mph
- PAS 68 Static Terra Venus Bollards 7.5t @ 30mph

* BISCUIT FOUNDATION

Two plates of steel form a 'biscuit' foundation to provide shallow mount static bollards with reinforcement within the concrete.

OPTIONS

Range of Options for all PAS 68 Bollards



Standard
Painted Finish



Optional
Stainless Steel Sleeves



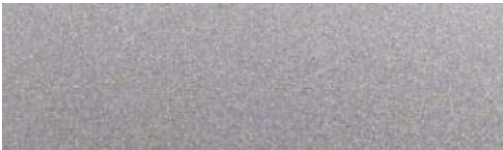
Optional
Polyester Powder
Coated Sleeves



Optional
Planters

STAINLESS STEEL SLEEVE OPTIONS

1 Steel Finish:



Satin-polished

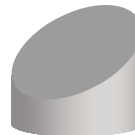


Bead-blasted

2 Bollard Topping:



Flat

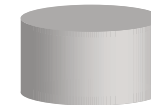


Mitre



Semi-domed

3 Top Bandings:



None



Single



Double



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