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**US ARMY CORPS OF ENGINEERS**  
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## DoD ANTI-RAM VEHICLE BARRIER LIST

List Date: July 2018

The Department of Defense's physical security concept is to create a layered or "tiered" defensive system which consists of both active and passive perimeter barriers to delay intruders. The Department employs an ASTM International performance standard and testing procedure for both active entrance barriers and passive perimeter barriers designated as "vehicle-impact rated barriers," or "anti-ram barriers." The current standard is ASTM F2656-07, Standard Test Method for Vehicle Crash Testing of Perimeter Barriers.

The ASTM F2656-07 test standard rates barriers in twelve impact categories, with three predetermined impact velocities for each category and four potential penetration ratings for each impact rating. These penetration ratings are: P1 - < 3.3 ft; P2 - 3.31 to 23.0 ft; P3 - 23.1 to 98.4 ft; and P4 - > 98 ft. Of the four penetration ratings, barriers with a penetration rating of P4 will not be included in the DoD Anti-Ram Vehicle Barriers list.

The following list of barriers includes active barriers for use at entrances, and passive or fixed barriers for other perimeter applications. This list will be updated quarterly in January, April, July and October. A request must be received one month prior to the list being published to be included on the next quarterly list.

Note: This list supersedes all previous copies. Please refer to the date above to ensure you have the most up to date list. This list does not represent an overall endorsement of any product or design or address its operational suitability or maintainability. The list merely verifies that particular vehicle barriers have been certified in accordance with the performance standards in ASTM F2656-07, or previously tested to the U.S. Department of State SD-STD-02.01 standard, and that the appropriate test reports have been submitted to, and validated by, the Protective Design Center. Each vehicle barrier system has its own distinct characteristics that must be considered and weighed against the needs and conditions of the individual installation. Some barrier characteristics are associated with vulnerabilities. These vulnerabilities may not be readily apparent to the end users. Careful consideration should be given to clearances and geometric characteristics when utilizing barrier systems of varying widths. The PDC is available to discuss barrier characteristics, and any other barrier issues or questions. A few characteristics to consider are listed below:

- **Impact speed at barrier (low speed impact):** The use of some vehicle barriers presented in this list exhibit vulnerabilities when impacted at speeds other than those associated with the ASTM and DOS test impact velocities.
- **Design Basis Threat (DBT) vehicle, other vehicle weights and speeds:** The barriers presented in this list have been subjected to impacts under the specific conditions prescribed by the test designation. If the Installation's DBT includes vehicles significantly different than the test vehicle, performance of the system may differ from what may be expected.
- **Deployment mechanisms:** The mechanisms used to deploy vehicle barriers vary (pneumatic, hydraulic, electro-mechanical, manual). The various mechanisms should be investigated and the choice should be based on the best fit for the Installation.
- **Environmental condition at barrier:** Environmental conditions can vary greatly from location to location. Conditions such as rain, snow, ice, sand, gravel, hot, and cold need to be considered when selecting a barrier for a specific location.
- **Operations and Maintenance (O&M) requirements:** Each barrier comes with its own operational and maintenance requirements. The O&M requirements vary in the amount and intensity from barrier to barrier. O&M needs to be figured into the overall life cycle cost of the barrier.
- **After impact barrier gaps:** Post impact gaps may be an inherent characteristic of the barrier system. The barrier system's post-impact condition should be carefully evaluated for its capabilities in relation to defeat of the Installation's Design Basis Threat (DBT).

Questions regarding the certification standard, barrier characteristics or this list can be sent to the Protective Design Center or email at: [pdemail@usace.army.mil](mailto:pdemail@usace.army.mil).

**Barrier Type: Active Bollard**

<i>Barrier n</i>	<i>Penetratio</i>	<i>Barrier Model/Description</i>	<i>Manufacturer/Designer/Distributor</i>	<i>Remarks</i>
<i>Rating</i>	<i>Rating</i>			
M30	P1	J355 HA-M30 (KH) Bollard	FAAC International, Inc. <a href="http://www.faacusa.com/">http://www.faacusa.com/</a>	Single bollard
M30	P1	Elkosta M30 (K4)	Perimeter Protection Germany GmbH <a href="http://www.perimeterprotection.net/">http://www.perimeterprotection.net/</a>	Single bollard
K4	L2	SP Defender	ATG Access, Inc. <a href="http://www.atgaccessinc.com/">http://www.atgaccessinc.com/</a>	3-bollard array
K4	L2	DSC 800 Bollard Type Barricade	Delta Scientific Corporation <a href="http://deltascientific.com/">http://deltascientific.com/</a>	3-bollard array
K8	L3	XT-1208-RB, Xact Series Retractable Bollards - (fka-Eagle Series Bollards, K8)	Ross Security Systems LLC <a href="http://www.rosssecuritysolutions.com/">http://www.rosssecuritysolutions.com/</a>	3-bollard array, hydraulic bollards
K8	L2	DSC 701 Crash Certified Bollard Type Barricade	Delta Scientific Corporation <a href="http://deltascientific.com/">http://deltascientific.com/</a>	3-bollard array
K8	L1	ARMR B-30 Bollard Assembly	B&B ARMOR <a href="http://www.bb-armr.com/">http://www.bb-armr.com/</a>	3-bollard array, hydraulic bollards
M50	P1	SP1000 Rising Bollard	ATG Access, Inc. <a href="http://www.atgaccessin0.com/">http://www.atgaccessin0.com/</a>	single hydraulic bollard
M50	P1	DSC720 1M	Delta Scientific Corporation <a href="http://www.deltascientific.com/">http://www.deltascientific.com</a>	3-bollard array, pneumatic bollards
M50	P1	HT1 Raptor	Heald Ltd <a href="http://www.heald.uk.com/">http://www.heald.uk.com/</a>	Single bollard
M50	P1	HRB-Protector Crash Tested Rising Bollard	Optima Engineering <a href="http://www.optima-engineering.com/">http://www.optima-engineering.com/</a>	Single bollard
K12	L3	SP Titan	ATG Access, Inc. <a href="http://www.atgaccessinc.com/">http://www.atgaccessinc.com/</a>	3-bollard array
M50	P2	TITAN MKII Hydraulic Bollard	ATG Access, Inc. <a href="http://www.atgaccessinc.com/">http://www.atgaccessinc.com/</a>	3-bollard array, hydraulic bollards

M50	P2	BLG-05 Foundations Protection System	EL-GO TEAM Parking and Security Systems <a href="http://www.elgoteam.com/">http://www.elgoteam.com/</a>	Single Pneumatic/ Hydraulic/ Electric Bollard
M50	P2	Retractable Bollard M50	Gunnebo Competence Centre Outdoor Perimeter Security <a href="http://www.perimeterprotection.net/">http://www.perimeterprotection.net/</a>	Single Hydraulic Bollard
M50	P2	RSS4003	RSSI <a href="http://www.rssi.com/">http://www.rssi.com/</a>	3-bollard array
K12	L2	Gunnebo Bollard	Gunnebo Competence Centre Outdoor Perimeter Security <a href="http://www.perimeterprotection.net/">http://www.perimeterprotection.net/</a>	single hydraulic bollard
K12	L2	NBI Hydraulic Bollard Barrier	Nasatka Barrier, Inc. <a href="http://www.nasatka.com/">http://www.nasatka.com/</a>	3-bollard array
K12	L2	XT-1200-RB, Xact Series Retractable Bollards - (fka-Eagle Series Bollards, K12)	Ross Security Systems LLC <a href="http://www.rosssecuritysolutions.com/">http://www.rosssecuritysolutions.com/</a>	3-bollard array, hydraulic bollards
M50	P3	SW1700 (EM)	FutureNet Security Solutions (fka Smith & Wesson Security Solutions) <a href="https://www.futurenetsecurity.com/">https://www.futurenetsecurity.com/</a>	3-bollard array, electromechanical
M50	P3	PASS PM 275/M50-1200A	Pilomat Srl <a href="http://www.pilomat.com">http://www.pilomat.com</a>	Single hydraulic bollard
K12	L1	B40 Retractable Bollard	B&B ARMR <a href="http://www.bb-armr.com/">http://www.bb-armr.com/</a>	3-bollard array, hydraulic bollards

**Barrier Type: Active Drop-Arm Beam**

<i>Barrier n</i>	<i>Rating</i>	<i>Barrier Model/Description</i>	<i>Manufacturer/Designer/Distributor</i>	<i>Remarks</i>
M30	P1	M530 12-foot Drop Arm Assembly	Apex Fabrication & Design, Inc. <a href="http://www.apexfab.com/">http://www.apexfab.com/</a>	12 foot clear opening
M30	P1	M-30 VP-SF	Autogate, Inc <a href="http://www.autogate.com/">http://www.autogate.com/</a>	15 foot clear opening
M30	P1	StrongArm M30	HySecurity Gate, Inc. <a href="http://www.hysecurity.com/">http://www.hysecurity.com/</a>	12 foot clear opening

## DoD Anti-Ram Vehicle Barriers

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M30	P1	Sono Tube Barrier Arm	Logical Decisions, Inc. <a href="http://ldi.com/ldi-crash-gate.html">http://ldi.com/ldi-crash-gate.html</a>	20 foot clear opening
M30	P1	RSS-3000 Drop Beam System	RSSI Barriers <a href="http://www.rssi.com/">http://www.rssi.com/</a>	11.5 foot clear opening
M30	P1	Drop Arm Barrier	Tymetal Corporation <a href="http://www.tymetal.com/">http://www.tymetal.com/</a>	14 foot clear opening
K4	L3	CRB-240 Drop Gate	Weathers Manufacturing, Inc. <a href="http://www.weathersmfg.com/">http://www.weathersmfg.com/</a>	11.5 foot clear opening
K4	L3	Bosik Bar VBS Shallow Foundation Barrier (SP VBB) K4	ATG Access, Inc. <a href="http://www.atgaccessinc.com/">http://www.atgaccessinc.com/</a>	14 foot clear opening
K4	L3	ARMR Model 730 Crash Gate	B&B ARMR <a href="http://www.bb-armr.com/">http://www.bb-armr.com/</a>	
M30	P2	Model 773 Drop Arm	B&B ARMR <a href="http://www.bb-armr.com/">http://www.bb-armr.com/</a>	24 foot clear opening
M30	P2	G-2300S Surface Mount Vehicle Barrier	Gibraltar Cable Barrier Systems, L.P. <a href="http://www.gibraltarmaterials.com/">http://www.gibraltarmaterials.com/</a>	12 foot clear opening
M30	P2	Barrier Arm Crash Gate	Logical Decisions <a href="http://ldi.com/ldi-crash-gate.html">http://ldi.com/ldi-crash-gate.html</a>	Approx 12.5 foot clear opening
K4	L2	IP500 Transportable Beam for Quick Deployment	Delta Scientific Corporation <a href="http://deltascientific.com/">http://deltascientific.com/</a>	12 foot clear opening, surface mounted
K4	L2	TT212EC Drop Arm Beam Barrier System	Delta Scientific Corporation <a href="http://deltascientific.com/">http://deltascientific.com/</a>	12 foot clear opening
M30	P3	G-2300P Portable Vehicle Barrier	Gibraltar Cable Barrier Systems, L.P. <a href="http://www.gibraltarmaterials.com/">http://www.gibraltarmaterials.com/</a>	12 foot clear opening
M30	P3	G-4033P Portable Drop Arm	Gibraltar Cable Barrier Systems, L.P. <a href="http://www.gibraltarmaterials.com/">http://www.gibraltarmaterials.com/</a>	12 foot clear opening
K8	L3	VPL-CB-24	Autogate, Inc <a href="http://www.autogate.com/">http://www.autogate.com/</a>	14.5 foot clear opening
M50	P1	CRB-360 Drop Arm Gate Barrier	Weathers Manufacturing, Inc. <a href="http://www.weathersmfg.com/">http://www.weathersmfg.com/</a>	12.9 foot clear opening
K12	L3	Bosik Bar VBS Deep Foundation Barrier (SP VBB) K12	ATG Access, Inc. <a href="http://www.atgaccessinc.com/">http://www.atgaccessinc.com/</a>	14.25 foot clear opening

K12	L3	VPL-CB-24	Autogate, Inc <a href="http://www.autogate.com/">http://www.autogate.com/</a>	14.5 foot clear opening
K12	L3	DSC 7000 Barrier	Delta Scientific Corporation <a href="http://deltascientific.com/">http://deltascientific.com/</a>	12 foot clear opening
K12	L3	NMSB XII Crash Beam Barrier - 12 ft	Nasatka Barrier, Inc. <a href="http://www.nasatka.com/">http://www.nasatka.com/</a>	12 foot clear opening
K12	L3	NMSB XII Crash Beam Barrier - 18 ft	Nasatka Barrier, Inc. <a href="http://www.nasatka.com/">http://www.nasatka.com/</a>	18 foot clear opening
M50	P2	24-ft Patriot Rising Beam Barrier	Ameristar Perimeter Security Systems <a href="http://ameristarsecurity.com/">http://ameristarsecurity.com/</a>	24 foot clear opening
M50	P2	Active Horizontal Crash Beam or Horizontal Cable Barrier (HCB)	Barrier1 Systems, Inc. <a href="http://www.barrier1.us/">http://www.barrier1.us/</a>	15'-10" span - interpolation with 40'-10" span barrier is acceptable
M50	P2	Active Horizontal Crash Beam or Horizontal Cable Barrier (HCB)	Barrier1 Systems, Inc. <a href="http://www.barrier1.us/">http://www.barrier1.us/</a>	40'-10" foot net width - interpolation with 15'-10" barrier is acceptable
M50	P2	StrongArm M50	HySecurity Gate, Inc. <a href="http://www.hysecurity.com/">http://www.hysecurity.com/</a>	12 foot clear opening
M50	P3	Drop Arm Vehicle Barrier - KBVB	Barrier1 Systems, Inc. <a href="http://www.barrier1.us/">http://www.barrier1.us/</a>	
M50	P3	Active Drop Arm Swing Gate, Surface Set Mobile Crash Beam Barrier	Barrier1 Systems, Inc. <a href="http://www.barrier1.us/">http://www.barrier1.us/</a>	14 foot clear opening, interoperable with 34 foot barrier is acceptable
M50	P3	Active Drop Arm Swing Gate, Surface Set Mobile Crash Beam Barrier	Barrier1 Systems, Inc. <a href="http://www.barrier1.us/">http://www.barrier1.us/</a>	34 foot clear opening, interoperable with 14 foot barrier is acceptable

**Barrier Type: Active Gate**

<i>Barrier n</i>	<i>Rating</i>	<i>Barrier Model/Description</i>	<i>Manufacturer/Designer/Distributor</i>	<i>Remarks</i>
M30	P1	K4 Shield Crash Gate	AutoGate <a href="http://www.autogate.com/">http://www.autogate.com</a>	15'-8" clear opening
M30	P1	AR-266 - 12 ft	Heavy Duty Gate, Inc. (fka Morrison Equipment) <a href="http://heavydutygates.com/">http://heavydutygates.com/</a>	12 foot clear opening
M30	P1	TCG4 Sliding Gate Barrier	Tymetal Corporation <a href="http://www.tymetal.com/">http://www.tymetal.com/</a>	14 foot clear opening

K4	L2	ARMR Model 400 Sliding Gate	B&B ARMR <a href="http://www.bb-armr.com/">http://www.bb-armr.com/</a>	12 foot clear opening
M50	P1	Terrablock Crash Gate	Betafence <a href="http://www.betafenceusa.com/">http://www.betafenceusa.com/</a>	16.4 foot clear opening, must be installed with Terrablock M50 passive barriers in configuration
M50	P1	DSC 288	Delta Scientific Corporation <a href="http://deltascientific.com/">http://deltascientific.com/</a>	20 foot clear opening
M50	P1	LSST 1000	Gunnebo Competence Centre Outdoor Perimeter Security <a href="http://www.perimeterprotection.net/">http://www.perimeterprotection.net/</a>	7.2 meter clear opening
M50	P1	SR 466 Anti-Ram Vehicle Barrier	Heavy Duty Gates, Inc. (fka Morrison Equipment) <a href="http://www.heavydutygates.com/">http://www.heavydutygates.com/</a>	12.75 foot clear opening
M50	P1	AR 466 Anti-Ram Vehicle Barrier - 16.5 ft	Heavy Duty Gates, Inc. (fka Morrison Equipment) <a href="http://www.heavydutygates.com/">http://www.heavydutygates.com/</a>	16.5 foot clear opening
M50	P1	K12 Cable Restraint Barrier - 24 ft	NEU Security Systems <a href="http://www.neusecurity.com/">http://www.neusecurity.com/</a>	24 foot clear opening
M50	P1	Terrablock Vehicle Access Gate	Praesidiad NV <a href="http://www.praesidiad.com/">http://www.praesidiad.com/</a>	16.4 foot clear opening, must be installed with Terrablock XV passive barriers in configuration
K12	L3	CG12 Gate	American Anti Ram	12 foot clear opening
K12	L3	DSC 7500 Barrier	Delta Scientific Corporation <a href="http://deltascientific.com/">http://deltascientific.com/</a>	12 foot clear opening
K12	L3	K12 Cable Crash Gate	Cable Gibraltar Barrier Systems, L.P. <a href="http://www.gibraltarmaterials.com/">http://www.gibraltarmaterials.com/</a>	24 foot clear opening
K12	L3	AR 446 Anti-Ram Vehicle Barrier - 40 ft	Heavy Duty Gates, Inc. (fka Morrison Equipment) <a href="http://www.heavydutygates.com/">http://www.heavydutygates.com/</a>	40 foot clear opening
K12	L3	Modified Interlocking Finger Gate	Logical Decisions <a href="http://ldi.com/ldi-crash-gate.html">http://ldi.com/ldi-crash-gate.html</a>	V shape, 13 foot clear opening
M50	P2	G-5550 Anti-Ram Sliding Gate	Gibraltar Cable Barrier Systems, L.P. <a href="http://www.gibraltarmaterials.com/">http://www.gibraltarmaterials.com/</a>	24 foot clear opening

M50	P2	G-5550 Anti-Ram Sliding Gate	Gibraltar Cable Barrier Systems, L.P. <a href="http://www.gibraltarmaterials.com/">http://www.gibraltarmaterials.com/</a>	28 foot clear opening
M50	P2	K12 Cable Restraint Barrier - 50 ft	Gibraltar Cable Barrier Systems, L.P. <a href="http://www.gibraltarmaterials.com/">http://www.gibraltarmaterials.com/</a>	50 foot clear opening
M50	P2	Crash Gate System Barrier	Logical Decisions, Inc. <a href="http://ldi.com/ldi-crash-gate.html">http://ldi.com/ldi-crash-gate.html</a> Jamieson Manufacturing Co. <a href="https://jamiesonfence.com/">https://jamiesonfence.com/</a>	24 foot clear opening
M50	P2	K12 Cable Restraint Barrier - 50 ft	NEU Security Systems <a href="http://www.neusecurity.com/">http://www.neusecurity.com/</a>	50 foot clear opening
M50	P2	TCGR-12 Box Frame Cantilever Slide Gate with Crash Beam	Tymetal Corporation <a href="http://www.tymetal.com/">http://www.tymetal.com/</a>	16 foot clear opening
K12	L1	ARMR Model 450 Anti-Climb High Security Vehicle Access Control Cantilever Gate System	B&B ARMR <a href="http://www.bb-armr.com/">http://www.bb-armr.com/</a>	12 foot clear opening

**Barrier Type: Active Net**

		<i>Penetratio</i>			
<i>Barrier n</i>	<i>Rating</i>	<i>Rating</i>	<i>Barrier Model/Description</i>	<i>Manufacturer/Designer/Distributor</i>	<i>Remarks</i>
M40	P1		GRAB-400 - 12 ft	FutureNet Security Solutions (fka Smith & Wesson Security Solutions, fka Universal Safety Response) <a href="https://www.futurenetsecurity.com/">https://www.futurenetsecurity.com/</a>	12 foot clear opening - interpolation with 60 foot barrier is acceptable with a P2 penetration
M40	P2		GRAB-400 - 60 ft	FutureNet Security Solutions (fka Smith & Wesson Security Solutions, fka Universal Safety Response) <a href="https://www.futurenetsecurity.com/">https://www.futurenetsecurity.com/</a>	60 foot clear opening - interpolation with 12 foot barrier is acceptable
M50	P1		Swing Gate Access Control Barrier	Barrier1 Systems, Inc. <a href="http://www.barrier1.us/">http://www.barrier1.us/</a>	18' 3" clear opening
M50	P2		30' Retractable Net Vehicle Barrier System	Barrier1 Systems, Inc. <a href="http://www.barrier1.us/">http://www.barrier1.us/</a>	30 foot clear between stanchions - interpolation with 90 foot barrier is acceptable with P3 rating
M50	P2		80' Retractable Cable Net Vehicle Barrier System	Barrier1 Systems, Inc. <a href="http://www.barrier1.us/">http://www.barrier1.us/</a>	80' clear opening between stanchions - interpolation between 19' 9.5" and 80' is acceptable



M50 P2	Retractable Cable Net Vehicle Barrier System - 20 ft	Barrier1 Systems, Inc. <a href="http://www.barrier1.us/">http://www.barrier1.us/</a>	19' 9.5" clear opening between stanchions - interpolation between 19' 9.5" and 80' is acceptable
M50 P2	Retractable Cable Net Vehicle Barrier System - 52.5 ft	Barrier1 Systems, Inc. <a href="http://www.barrier1.us/">http://www.barrier1.us/</a>	52' 5" clear opening between stanchions - interpolation between 19' 9.5" and 80' is acceptable
M50 P2	Vehicle Arrestor 2.0 Net Based Active Vehicle Barrier – 80'	Barrier1 Systems, Inc. <a href="http://www.barrier1.us/">http://www.barrier1.us/</a>	80' clear opening between stanchions - interpolation between 23' 3" and 80' is acceptable
M50 P2	Vehicle Arrestor 2.0 Net Based Active Vehicle Barrier – 29' 3"	Barrier1 Systems, Inc. <a href="http://www.barrier1.us/">http://www.barrier1.us/</a>	80' clear opening between stanchions - interpolation between 23' 3" and 80' is acceptable
M50 P2	GRAB-300 - 14 ft	FutureNet Security Solutions (fka Smith & Wesson Security Solutions, fka Universal Safety Response) <a href="https://www.futurenetsecurity.com/">https://www.futurenetsecurity.com/</a>	14 foot net width - interpolation with 62 foot barrier is acceptable
M50 P2	GRAB-300 - 62 ft	FutureNet Security Solutions (fka Smith & Wesson Security Solutions, fka Universal Safety Response) <a href="https://www.futurenetsecurity.com/">https://www.futurenetsecurity.com/</a>	62 foot net width - interpolation with 14 foot barrier is acceptable
M50 P3	90' Retractable Net Vehicle Barrier System	Barrier1 Systems, Inc. <a href="http://www.barrier1.us/">http://www.barrier1.us/</a>	90 foot clear between stanchions - interpolation with 30 foot barrier is acceptable
M50 P3	Modified Vehicle Arresting System (VAS)	Engineered Arresting Systems Corporation <a href="http://www.esco.zodiacaerospace.com/">http://www.esco.zodiacaerospace.com/</a>	24 foot tested width



**Barrier Type: Active Post and Beam**

		<i>Penetration</i>			
<i>Barrier n</i>	<i>Rating</i>	<i>Barrier Model/Description</i>	<i>Manufacturer/Designer/Distributor</i>	<i>Remarks</i>	
K4	L3	BLS 0.1 Barrier Lift System	Gunnebo Competence Centre Outdoor Perimeter Security (fka Elkosta Security Systems) <a href="http://www.perimeterprotection.net/">http://www.perimeterprotection.net/</a>	9 m (29.5 foot) clear opening	
M50	P1	XT-4200-HB Post & Beam Gate	Ross Technology Co. <a href="http://www.rosstechnology.com/">http://www.rosstechnology.com/</a>	24 foot clear opening	
K12	L2	Barrier Lift System - K12	Gunnebo Competence Centre Outdoor Perimeter Security <a href="http://www.perimeterprotection.net/">http://www.perimeterprotection.net/</a>	10 m width	
K12	L3	SP Patriot	ATG Access, Inc. <a href="http://www.atgaccessinc.com/">http://www.atgaccessinc.com/</a>	12 foot clear opening	
K12	L3	Barrier Lift System	Gunnebo Wego GmbH (fka Elkosta Security Systems) <a href="http://www.perimeterprotection.net/">http://www.perimeterprotection.net/</a>	6 m clear opening	

**Barrier Type: Active Wedge**

		<i>Penetration</i>			
<i>Barrier n</i>	<i>Rating</i>	<i>Barrier Model/Description</i>	<i>Manufacturer/Designer/Distributor</i>	<i>Remarks</i>	
PU4 0	P3	DSC 1000 Barrier	Delta Scientific Corporation <a href="http://deltascientific.com/">http://deltascientific.com/</a>	12 foot clear opening, portable wedge	
M30	P1	HD200	Delta Scientific Corporation <a href="http://deltascientific.com/">http://deltascientific.com/</a>	9 foot clear opening	
M30	P3	MNSB XV Mobile Barrier	Nasatka Barrier, Inc. <a href="http://www.nasatka.com/">http://www.nasatka.com/</a>	12 foot clear opening, mobile wedge	
K4	L3	DSC 1200 Barrier	Delta Scientific Corporation <a href="http://deltascientific.com/">http://deltascientific.com/</a>	12 foot clear opening	
K4	L2	DSC 1100 Quick Beam Deployment Barrier System	Delta Scientific Corporation <a href="http://deltascientific.com/">http://deltascientific.com/</a>	12 foot clear opening, surface mounted	
K4	L2	XS-2000-PW, Xpress Series Portable Wedge Barrier - (fka-Osprey Series Portable Wedge)	Ross Security Systems LLC <a href="http://www.rosssecuritysolutions.com/">http://www.rosssecuritysolutions.com/</a>	12 foot clear opening, portable wedge	

K4	L1	ARMR Model 850 Portable/Towable Barrier	B&B ARMR <a href="http://www.bb-armr.com/">http://www.bb-armr.com/</a>	Portable wedge
K4	L1	MP5000 Mobile Barrier	Delta Scientific Corporation <a href="http://deltascientific.com/">http://deltascientific.com/</a>	12 foot clear opening, portable wedge
M40	P1	SHS3110-8	Secure USA, Inc. <a href="http://www.secureusa.net/">http://www.secureusa.net/</a>	10 foot tested width
M40	P3	MP5000 Mobile Barrier - 16 feet	Delta Scientific Corporation <a href="http://deltascientific.com/">http://deltascientific.com/</a>	16 foot clear opening, mobile wedge
M40	P3	MP5000 Mobile Barrier - 20 feet	Delta Scientific Corporation <a href="http://deltascientific.com/">http://deltascientific.com/</a>	20 foot clear opening, mobile wedge
M40	P3	MNSB XVI Mobile Barrier	Nasatka Barrier, Inc. <a href="http://www.nasatka.com/">http://www.nasatka.com/</a>	16 foot clear opening, mobile wedge
M40	P3	NMSB XVX 20 ft Clear Opening Barrier	Nasatka Barrier, Inc. <a href="http://www.nasatka.com/">http://www.nasatka.com/</a>	20 foot clear opening, mobile wedge
K8	L1	DSC 1100 Quick Beam Deployment Barrier System	Delta Scientific Corporation <a href="http://deltascientific.com/">http://deltascientific.com/</a>	12 foot clear opening, surface mounted
M50	P1	Electric Wedge Barrier	Barrier1 Systems, Inc. <a href="http://www.barrier1.us/">http://www.barrier1.us/</a>	10 foot tested width
M50	P1	Model 828 Wedge Barrier	B&B ARMR <a href="http://www.bb-armr.com/">http://www.bb-armr.com/</a>	10 foot tested width
M50	P1	DSC 207S	Delta Scientific Corporation <a href="http://deltascientific.com/">http://deltascientific.com/</a>	9 foot wide plate
M50	P1	HD2055	Delta Scientific Corporation <a href="http://deltascientific.com/">http://deltascientific.com/</a>	12 foot tested width
M50	P1	HD 300	Delta Scientific Corporation <a href="http://deltascientific.com/">http://deltascientific.com/</a>	9' 1" tested width
M50	P1	Road Block DS-3000S	Digital and Security Technology Co. <a href="http://www.dnst.co.kr">http://www.dnst.co.kr</a>	12.5 foot tested width
M50	P1	A-120-C/A-260 Optimus	EL-GO TEAM Parking and Security Systems <a href="http://www.elgoteam.com/">http://www.elgoteam.com/</a>	8.1 foot tested width

M50 P1	9 ft Wedge Barrier	FutureNet Security Solutions (fka Smith & Wesson Security Solutions) <a href="https://www.futurenetsecurity.com/">https://www.futurenetsecurity.com/</a>	9 foot tested width; interpolation with 16 foot width acceptable
M50 P1	16-ft Wedge System	FutureNet Security Solutions (fka Smith & Wesson Security Solutions) <a href="https://www.futurenetsecurity.com/">https://www.futurenetsecurity.com/</a>	16 foot tested width; interpolation with 9 foot width acceptable
M50 P1	M50-P1 8ft. Wedge Barrier	Gibraltar Cable Barrier Systems, L.P. <a href="http://www.gibraltarmaterials.com/">http://www.gibraltarmaterials.com/</a>	8 foot clear opening; interpolation with 14.5 foot width acceptable
M50 P1	M50-P1 14'6" Wedge Barrier	Gibraltar Cable Barrier Systems, L.P. <a href="http://www.gibraltarmaterials.com/">http://www.gibraltarmaterials.com/</a>	14.5 foot clear opening; interpolation with 8 foot width acceptable
M50 P1	Road Blocker Model GBRH50 Wedge Barrier	Guardian Industries Co. <a href="http://www.guardianind.com/">http://www.guardianind.com/</a>	10' 1" tested width
M50 P1	Viper RBSM 1000	Heald Ltd. <a href="http://www.heald.uk.com/">http://www.heald.uk.com/</a>	9.83' plate
M50 P1	HydraWedge SM50	HySecurity <a href="http://www.hysecurity.com/">http://www.hysecurity.com/</a>	6.5 foot tested width
M50 P1	NSMB-IIID-E - 8 ft	Nasatka Barrier, Inc. <a href="http://www.nasatka.com/">http://www.nasatka.com/</a>	8 foot plate
M50 P1	Model III D-E 10' Barrier System	Nasatka Barrier, Inc. <a href="http://www.nasatka.com/">http://www.nasatka.com/</a>	10 foot tested width
M50 P1	Model III D-E 11' Barrier System	Nasatka Barrier, Inc. <a href="http://www.nasatka.com/">http://www.nasatka.com/</a>	11 foot tested width
M50 P1	Model 3 D-E 12' Barrier System	Nasatka Barrier, Inc. <a href="http://www.nasatka.com/">http://www.nasatka.com/</a>	12 foot tested width
M50 P1	Model III D-E 14' Barrier System	Nasatka Barrier, Inc. <a href="http://www.nasatka.com/">http://www.nasatka.com/</a>	14 foot tested width
M50 P1	elkosta Wedge II	Perimeter Protection Germany <a href="http://www.perimeterprotection.net">www.perimeterprotection.net</a>	6.5 foot tested width
M50 P1	RSS-2000VI	RSSI <a href="http://www.rssi.com/">http://www.rssi.com/</a>	6 post configuration - interpolation with 4 post configuration is acceptable, 5 post configuration acceptable

M50	P1	SHF3610-12	SecureUSA, Inc. <a href="http://secureusa.net/">http://secureusa.net/</a>	10 foot wide plate
M50	P1	SHF3614S	SecureUSA, Inc. <a href="http://secureusa.net/">http://secureusa.net/</a>	14 foot wide plate
K12	L3	Shallow Mount Wedge Model SW12	American Anti Ram	8 foot plate
K12	L3	SP Sentinel	ATG Access, Inc. <a href="http://www.atgaccessinc.com/">http://www.atgaccessinc.com/</a>	8 foot plate
K12	L3	ARMR Shallow Mount Plate Barrier Model 820	B&B ARMR <a href="http://www.bb-armr.com/">http://www.bb-armr.com/</a>	9 foot tested width
K12	L3	DSC 2000 Barrier	Delta Scientific Corporation <a href="http://deltascientific.com/">http://deltascientific.com/</a>	3 - 2 foot wedges with 18 inch spacing
K12	L3	Model DSC501 - Phalanx Type Barricade	Delta Scientific Corporation <a href="http://deltascientific.com/">http://deltascientific.com/</a>	9 foot wide plate
K12	L3	DSP K12	Gunnebo Competence Centre Outdoor Perimeter Security <a href="http://www.perimeterprotection.net/">http://www.perimeterprotection.net/</a>	4.6 meter tested width
K12	L3	MSB II Barrier	Nasatka Barrier, Inc. <a href="http://www.nasatka.com/">http://www.nasatka.com/</a>	12 foot clear opening
K12	L3	Wedge K12	Perimeter Protection Germany GmbH <a href="http://www.perimeterprotection.net/">http://www.perimeterprotection.net/</a>	4 meter tested width
K12	L3	XT-1000-W, Xact Series Wedge Barrier - (fka-Eagle Series Wedge Barrier)	Ross Security Systems LLC <a href="http://www.rosssecuritysolutions.com/">http://www.rosssecuritysolutions.com/</a>	9 foot wide plate
K12	L3	RSS-2000	RSSI <a href="http://www.rssi.com/">http://www.rssi.com/</a>	4 post configuration - interpolation with 6 post configuration is acceptable, 5 post configuration acceptable

**Barrier Type: Active Cable**

<i>Penetration</i>				
<i>Barrier n</i>	<i>Rating</i>	<i>Barrier Model/Description</i>	<i>Manufacturer/Designer/Distributor</i>	<i>Remarks</i>
M40	P2	RSSI Cable Trap System	RSSI <a href="http://www.rssi.com/">http://www.rssi.com/</a>	4 - 1" diameter cables, 100' tested total length

**Barrier Type: Passive Bollard**

<i>Penetration</i>				
<i>Barrier n</i>	<i>Rating</i>	<i>Barrier Model/Description</i>	<i>Manufacturer/Designer/Distributor</i>	<i>Remarks</i>
PU50	P2	DSC 650 Shallow Foundation Bollard Array	Delta Scientific Corporation <a href="http://deltascientific.com/">http://deltascientific.com/</a>	2-bollard array
M30	P1	M30 Shallow Foundation Modular Bollard System	Barrier1 Systems, Inc. <a href="http://www.barrier1.us/">http://www.barrier1.us/</a>	3-bollard array
M30	P1	Set and Pour Bollard	Barrier1 Systems, Inc. <a href="http://www.barrier1.us/">http://www.barrier1.us/</a>	Single bollard
M30	P1	Shallow Foundation Modular Bollard System	Barrier1 Systems, Inc. <a href="http://www.barrier1.us/">http://www.barrier1.us/</a>	Single modular bollard
M30	P1	Removable Bollard Model RB151	BP (Systems) Engineering Pte Ltd <a href="http://bpsystems.com.sg/">http://bpsystems.com.sg/</a>	3-bollard array
M30	P1	Fixed Bollard Model FB151	BP (Systems) Engineering Pte Ltd <a href="http://bpsystems.com.sg/">http://bpsystems.com.sg/</a>	3-bollard array
K4	L3	Shallow Bollard System Barrier	Atlas Security Products, Inc. <a href="http://www.atlassecurityproducts.co.uk/">http://www.atlassecurityproducts.co.uk/</a>	5-bollard array
K4	L3	RB80 Bollard	Weathers Manufacturing, Inc. <a href="http://www.weathersmfg.com/">http://www.weathersmfg.com/</a>	48" OC, 3-bollard array
K4	L3	SP1000 Static Shallow Mount Barrier	ATG Access, Inc. <a href="http://www.atgaccessinc.com/">http://www.atgaccessinc.com/</a>	3-bollard array
K4	L3	Shallow Bollard System	SecureUSA, Inc. <a href="http://secureusa.net/">http://secureusa.net/</a>	5-bollard array
M30	P2	8" SM Removable K4 Shallow Mount Bollard	Calpipe Security Bollards <a href="http://www.calpipebollards.com/">http://www.calpipebollards.com/</a>	3-bollard array

M40 P1	M40 Shallow Foundation Modular Bollard System	Barrier1 Systems, Inc. <a href="http://www.barrier1.us/">http://www.barrier1.us/</a>	3-bollard array
M50 P1	G-1350	Gibraltar Cable Barrier Systems, L.P. <a href="http://www.gibraltarmaterials.com/">http://www.gibraltarmaterials.com/</a>	3-bollard array
M50 P1	M50 Shallow Foundation Bollard	Gibraltar Cable Barrier Systems, L.P. <a href="http://www.gibraltarmaterials.com/">http://www.gibraltarmaterials.com/</a>	3-bollard array
M50 P1	Fixed Bollard M50	Perimeter Protection Germany GmbH <a href="http://www.perimeterprotection.net/">http://www.perimeterprotection.net/</a>	3-bollard array
K12 L3	DSC 600 Shallow Frame Bollard Array	Delta Scientific Corporation <a href="http://deltascientific.com/">http://deltascientific.com/</a>	2-bollard array
K12 L3	Model 6 Bollards - 4-bank	Nasatka Barrier, Inc. <a href="http://www.nasatka.com/">http://www.nasatka.com/</a>	4-bollard array, shallow mount
K12 L3	Shallow Mount Bollards	Sandia National Laboratories <a href="http://www.sandia.gov/">http://www.sandia.gov/</a>	3-bollard array, shallow mount
M50 P2	Single Bollard Vehicle Barrier System	Barrier1 Systems, Inc. <a href="http://www.barrier1.us/">http://www.barrier1.us/</a>	single bollard
M50 P2	K12 Shallow Mount Bollard	Calpipe Security Bollards <a href="http://www.calpipebollards.com/">http://www.calpipebollards.com/</a>	3-bollard array
M50 P3	FB-K12 Fixed Bollard System	Weathers Manufacturing, Inc. <a href="http://www.weathersmfg.com/">http://www.weathersmfg.com/</a>	
M50 P3	M50 Shallow Foundation Bollard - 40	Gibraltar Cable Barrier Systems, L.P. <a href="http://www.gibraltarmaterials.com/">http://www.gibraltarmaterials.com/</a>	3-bollard array

**Barrier Type: Passive Cable**

<i>Barrier n</i>	<i>Penetration Rating</i>	<i>Barrier Model/Description</i>	<i>Manufacturer/Designer/Distributor</i>	<i>Remarks</i>
M30 P1		M30 High Performance Post, Rail, and Structural Stand System - 73 ft (1" cable)	Ameristar Perimeter Security Systems <a href="http://www.ameristarfence.com/">http://www.ameristarfence.com/</a>	3 - 1" diameter cables, 72' tested length (post to post)
M40 P2		M40/P2 High Performance Post, Rail, and Structural Stand System - 73 ft (1.25" cable)	Ameristar Perimeter Security Systems <a href="http://www.ameristarfence.com/">http://www.ameristarfence.com/</a>	3 - 1.25" diameter cables, 72' tested length (post to post)

M40 P2	Cable Trap System	RSSI <a href="http://www.rssi.com/">http://www.rssi.com/</a>	4 - 1" diameter cables, 96' tested length (end post to end post)
M50 P1	Ameristar High Performance Post, Rail, and Structural Strand System (1.5" cables)	Ameristar Perimeter Security Systems <a href="http://www.ameristarfence.com/">http://www.ameristarfence.com/</a>	40 foot tested length end post to end post; 3 - 1.5" cables
M50 P1	M50/P1 Cable Barrier System	Ameristar Perimeter Security Systems <a href="http://www.ameristarfence.com/">http://www.ameristarfence.com/</a>	3 - 1.5" diameter cables, 40' tested length (post to post)
M50 P1	M50 Wire Rope, Post, and Channel Rail Anti-Ram Fence	Ameristar Perimeter Security Systems <a href="http://www.ameristarfence.com/">http://www.ameristarfence.com/</a>	16' post spacing, 2 cables
M50 P1	M50 P1 28ft. Cable Crash Fence	Gibraltar Cable Barrier Systems, L.P. <a href="http://www.gibraltarmaterials.com/">http://www.gibraltarmaterials.com/</a>	3 strand cable barrier
M50 P2	High Performance Post, Rail, and Structural Stand System (1.5" cable)	Ameristar Perimeter Security Systems <a href="http://www.ameristarfence.com/">http://www.ameristarfence.com/</a>	3 - 1.5" diameter cables, 56' tested length (post to post)
M50 P2	M50 Post and Cable System - 50 ft	FutureNet Security Solutions (fka Smith & Wesson Security Solutions, fka Universal Safety Response) <a href="https://www.futurenetsecurity.com/">https://www.futurenetsecurity.com/</a>	tested length - 50 foot, center of end post to center of end post, interpolation with 200ft barrier is acceptable
M50 P2	M50 Post and Cable System - 200 ft	FutureNet Security Solutions (fka Smith & Wesson Security Solutions) <a href="https://www.futurenetsecurity.com/">https://www.futurenetsecurity.com/</a>	tested length - 200 foot, center of end post to center of end post, interpolation with 50ft barrier is acceptable
M50 P2	M50 P2 Cable Crash Fence	Gibraltar Cable Barrier Systems, L.P. <a href="http://www.gibraltarmaterials.com/">http://www.gibraltarmaterials.com/</a>	tested length - 600 foot, end post to end post
M50 P2	M50 P2 Cable Crash Fence	NEU Security Systems <a href="http://www.neusecurity.com/">http://www.neusecurity.com/</a>	3 strand cable barrier, 600' between terminal posts, 200' between line posts
M50 P3	High Performance Post, Rail, and Structural Stand System - 41 ft (1.25" cable)	Ameristar Perimeter Security Systems <a href="http://www.ameristarfence.com/">http://www.ameristarfence.com/</a>	3 - 1.25" diameter cables, 40' tested length (post to post)

**Barrier Type: Passive Portable**

<i>Barrier n</i>	<i>Penetration Rating</i>	<i>Barrier Model/Description</i>	<i>Manufacturer/Designer/Distributor</i>	<i>Remarks</i>
M30 P2		G-6532 M30 P2 20ft Modular Vehicle Barrier	Gibraltar Cable Barrier Systems, L.P. <a href="http://www.gibraltarmaterials.com/">http://www.gibraltarmaterials.com/</a>	Tested length 20'



M30 P3 TB 100 Five Bollard Array [Delta Scientific Corporation](http://deltascientific.com/) Five Bollard Array

**Barrier Type: Passive Post and Beam**

<i>Penetration</i>				
<i>Barrier n</i>	<i>Rating</i>	<i>Barrier Model/Description</i>	<i>Manufacturer/Designer/Distributor</i>	<i>Remarks</i>
FS30	P1	Non-Proprietary M30 P1 Barrier	Surface Deployment and Distribution Command Traffic Engineering Agency <a href="https://www.sddc.army.mil/sites/TEA/Pages/default.aspx">https://www.sddc.army.mil/sites/TEA/Pages/default.aspx</a>	Tested length 177' guard rail
M30	P1	G-Force M30 Post and Beam	Gibraltar Cable Barrier Systems, L.P. <a href="http://www.gibraltarmaterials.com/">http://www.gibraltarmaterials.com/</a>	Tested length 140' 9" end post to end post
M30	P1	Non-Proprietary M30 P1 Barrier	Surface Deployment and Distribution Command Traffic Engineering Agency <a href="https://www.sddc.army.mil/sites/TEA/Pages/default.aspx">https://www.sddc.army.mil/sites/TEA/Pages/default.aspx</a>	Tested length 177' guard rail
M40	P2	G-Force M40 Post and Beam	Gibraltar Cable Barrier Systems, L.P. <a href="http://www.gibraltarmaterials.com/">http://www.gibraltarmaterials.com/</a>	Tested length 492' end post to end post
M50	P1	G-Force M50 Post and Beam	Gibraltar Cable Barrier Systems, L.P. <a href="http://www.gibraltarmaterials.com/">http://www.gibraltarmaterials.com/</a>	Tested length 140' 9" end post to end post
M50	P1	G-Force Combination Fence 90 Meter Run	Gibraltar Cable Barrier Systems, L.P. <a href="http://www.gibraltarmaterials.com/">http://www.gibraltarmaterials.com/</a>	Tested length 90 m, 3 m post spacing
M50	P1	ARFS 466	Morrison Equipment <a href="http://heavydutygates.com/">http://heavydutygates.com/</a>	Tested length 30.9 m, 10.3 m post spacing

**Barrier Type: Passive Fence**

<i>Penetration</i>				
<i>Barrier n</i>	<i>Rating</i>	<i>Barrier Model/Description</i>	<i>Manufacturer/Designer/Distributor</i>	<i>Remarks</i>
K8	L1	Perimeter Security Fence with One-Inch Cable and Diagonal	Ameristar Perimeter Security Systems <a href="http://www.ameristarfence.com/">http://www.ameristarfence.com/</a>	
K8	L2	Impasse Perimeter Security Fence	Ameristar Perimeter Security Systems <a href="http://www.ameristarfence.com/">http://www.ameristarfence.com/</a>	2 - 1" diameter cables, 162 foot tested length

K8	L2	Perimeter Security Fence with 1 in Cable and Bollard Anchorage	Ameristar Perimeter Security Systems <a href="http://www.ameristarfence.com/">http://www.ameristarfence.com/</a>	2 -1” diameter cables; 32.67’ between posts
K8	L2	Perimeter Security Fence with One-Inch Cable and Bollard Anchorage	Ameristar Perimeter Security Systems <a href="http://www.ameristarfence.com/">http://www.ameristarfence.com/</a>	2 - 1" diameter cables, 162 foot tested length
M50	P1	RSS-F501D Tube Beam Fence	Ross Security Systems LLC <a href="http://www.rosssecuritysolutions.com/">http://www.rosssecuritysolutions.com/</a>	Tube beam sections, 30 ft post spacing
M50	P2	M50 P2 Gibraltar Cable Crash Fence	Gibraltar Cable Barrier Systems, L.P. <a href="http://www.gibraltarmaterials.com/">http://www.gibraltarmaterials.com/</a>	200 foot span main post to main post
K12	L3	Impasse Security Fencing	Ameristar Perimeter Security Systems <a href="http://www.ameristarfence.com/">http://www.ameristarfence.com/</a>	2 – 1” diameter cables; 32.67 ft between posts
K12	L3	Gibraltar Cable Crash Fence	Gibraltar Cable Barrier Systems, L.P. <a href="http://www.gibraltarmaterials.com/">http://www.gibraltarmaterials.com/</a>	test length - 60 foot span, main post to main post

**Barrier Type: Passive Inertial**

<i>Penetration</i>				
<i>Barrier n</i>	<i>Rating</i>	<i>Barrier Model/Description</i>	<i>Manufacturer/Designer/Distributor</i>	<i>Remarks</i>
M50	P1	Terrablock M50	Betafence <a href="http://www.betafenceusa.com/">http://www.betafenceusa.com/</a>	Sand filled barrier with fence
M50	P1	Terrablock XV	Praesidiad NV <a href="http://www.praesidiad.com/">http://www.praesidiad.com/</a>	Sand filled barrier with fence
K12	L3	Expeditionary Earth Filled Barrier	DefenCell <a href="http://www.defencell.com/">http://www.defencell.com/</a>	Earth filled barrier
K12	L3	RDFW Mk. 4	Geocell Systems Inc. <a href="http://www.geocellsystems.com/">http://www.geocellsystems.com/</a>	Earth filled barrier
K12	L3	HESCO SL 3636 (fka-C-3315 Flood Barrier)	HESCO Bastion Ltd. <a href="http://www.hesco.com/">http://www.hesco.com/</a>	Earth filled barrier