



# Barriers

Crash Rated Barriers, Gates, Fences and Bollards

## “Inverted Curb” Fixed Vehicle Surface Barrier F10™

### Description

The “Inverted Curb” Fixed Vehicle Surface Barrier (VSB) F10™ is a hydraulically-operated, compact, low-profile, high-energy absorbing vehicle security barrier. The physical “footprint” is relatively small and, when installed in high traffic locations, the low profile provides a solid, unobtrusive driving surface. No vehicle barrier on the market today provides more stopping power than the “Inverted Curb” VSB F10™.

- All steel construction, welded and inspected to AWS D1.1
- 2-inch thick, one-piece steel plate wedge
- Wedge height is 39 inches - higher than others for added vehicle capture
- Twenty-seven 4-inch wide solid steel load bearing hinges
- 2-inch diameter load-bearing hinge pin fabricated from high strength steel
- Seven 2-inch thick solid steel load-bearing struts arranged in a progressive energy-absorbing system
- Forty 1½-inch diameter high-strength anchor bolts
- 144-inch wide x 96-inch long footprint
- Weight - approximately 12,500 pounds
- Minimum excavation
- All parts below ground to provide flat surface
- Hydraulic and electrical systems are highest quality and reliability

### Certification

- 15,000-lb. vehicle @ 50 mph (by DOS crash test) - vehicle stopped and destroyed - impact absorbed by primary struts only, secondary struts not engaged - no structural damage - barrier fully operational after impact - received highest DOS crash rating K12/L3.
- 60,000-lb. vehicle @ 50 mph (by analysis) - vehicle would be stopped and destroyed - impact absorbed by primary struts - no significant structural damage - possibly replace primary struts and return to operation.
- 80,000-lb. vehicle @ 50 mph (by analysis) - vehicle would be stopped and destroyed - impact absorbed by primary and secondary struts - minor structural damage to replaceable struts.

### Applications

The “Inverted Curb” VSB F10™ is especially suited for high security locations where below ground, low profile barriers can be installed. Because only minimal excavation is required for installation, high water table, bedrock, or under ground cables and pipes generally are not a problem. The “Inverted Curb” VSB F10™ will support normal traffic loadings up to 50,000 lbs. axle weight.

### Installation

Because of its unique design, the “Inverted Curb” VSB F10™ can be quickly and easily installed or moved to a new location if a secured roadway is abandoned or redesigned. Installation of the “Inverted Curb” VSB F10™ requires only minor excavation. Because the hydraulic and electrical components are self-contained, it can be installed on practically any surface and does not require expensive site preparation.



### Operation

Accepts all optional vehicle detection and warning equipment. Basic or enhanced control system. Normal up in 8 seconds or less; emergency up in 2 seconds or less. Improved performance is available when required with normal up in 5 seconds or less and emergency up in 1 second or less.

### Environmental Considerations

Biodegradable hydraulic fluids are available for use in sensitive environments such as high-water table and porous soil.

### Maintenance

- Maintenance and repair costs are reduced through the use of highest quality parts and construction
- Off-the-shelf parts for reliable quick repairs
- Available painted or powder coated in over 300 colors, or galvanized

### Product Documentation

- Detailed installation, electrical and hydraulic drawings and instructions specific to each customer product
- Crash certification, warranty, and technical specification
- O & M manual
- Spare parts list
- Most parts are off-the-shelf

### Ongoing Product Support

- Timely response to customer inquiries
- On-site installation oversight
- On-site maintenance and troubleshooting assistance
- Highly qualified support personnel who hold government security clearances
- Training of customer security and maintenance personnel

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