

GIBRALTAR
G-5500 Anti-Ram Sliding Crash Gate
Section 34 71 13.19
Active Vehicle Barriers

PART 1 – GENERAL

1.01 WORK INCLUDED

The contractor shall provide all labor, materials and appurtenances necessary for installation of the active vehicle barrier system defined herein at (*Insert Site Location Here.*)

1.02 SYSTEM DESCRIPTION

A. The manufacturer shall supply a total active vehicle barrier system of the Gibraltar G-5500 Anti-Ram Sliding Crash Gate design. The system shall include all components (i.e., frames, supports, posts, and hardware) required. The barrier shall comply with Gibraltar’s System Drawing Number (*Insert Drawing Number Here.*)

B. The main blocking member of the Gibraltar G-5500 Anti-Ram Sliding Crash Gate shall be 6-inches wide at a height of 35 inches from the roadway and shall be welded to the gate frame(s).

C. The clear opening width shall be 240 inches.

1.03 QUALITY ASSURANCE

The contractor shall provide laborers and supervisors who are thoroughly familiar with the type of construction involved and materials and techniques specified.

1.04 REFERENCES

- ASTM A123 - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
- ASTM D7803- Standard Practice for Preparation of Zinc (Hot-Dip Galvanized) Coated Iron and Steel Product and Hardware Surfaces for Powder Coating
- ASTM B117 - Practice for Operating Salt-Spray (Fog) Apparatus.
- ASTM D523 - Test Method for Specular Gloss.
- ASTM D714 - Test Method for Evaluating Degree of Blistering in Paint.
- ASTM G155 - Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials
- ASTM D1654 - Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments.
- ASTM D2244 - Test Method for Calculation of Color Differences from Instrumentally Measured Color Coordinates.
- ASTM D2794 - Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
- ASTM D3359 - Test Method for Measuring Adhesion by Tape Test.
- ASTM F2656 - Standard Test Method for Vehicle Crash Testing of Perimeter Barriers
- AWS D1.1/D1.1M - Structural Welding Code - Steel (2010)

1.05 SUBMITTAL

The manufacturer’s literature shall be submitted prior to installation.

1.06 PRODUCT HANDLING AND STORAGE

A. All Gibraltar products shall be packaged to protect the materials from damage during shipment.

B. Upon receipt at the job site, all materials shall be checked to ensure that no damage occurs during shipping or handling.

C. For material handling, Gibraltar recommends the following:

- (1) For palletized materials, a 5,000lb (2,250 kg) capacity forklift shall be used. No palletized product shall exceed 3,500lb (1,600 kg).

(2) For non-palletized materials, a 10,000lb (4,500 Kg) minimum load capacity telehandler with proper rated rigging shall be used to ensure proper handling of products during storage or installation. Ignoring these recommendations may cause damage to material coatings or compromise the structural integrity of the product.

D. All Gibraltar barrier products are coated to protect materials from the effects of exposure to all outdoor elements; however, when site storage is required Gibraltar recommends the following guidelines:

- (1) Short term storage (0-12 months): Store in such a manner to ensure proper ventilation and drainage. The storage location shall protect against damage, vandalism and theft.
- (2) Long term storage (more than 12 months): In addition to the recommendations for short term storage, Gibraltar products shall also be covered to prevent exposure to the elements prior to installation. The purpose of this recommendation is to preserve the aesthetic appearance of the coating finish. Long term exposure to the elements naturally degrade coating appearances; therefore, proper storage is essential for ensuring preservation of the material.

E. If provided by Gibraltar, upon delivery of gate operators, the crate or pallets containing any electrical components shall be marked as such and stored in a covered location that ensures proper ventilation and drainage. The storage location shall protect against damage, vandalism and theft. Control cabinets may not be rated for outdoor exposure; therefore, higher storage measures should be taken.

PART 2 – MATERIALS

2.01 MANUFACTURER

A. The active vehicle barrier system shall conform to the G-5500 Anti-Ram Sliding Crash Gate design manufactured by Gibraltar Material Distribution, L.P. in Marble Falls, Texas. This system shall be certified by an independent testing laboratory to meet ASTM F2656-07, Impact Condition Designation M50, Penetration Rating P2, with capability of stopping a 15,000 lb vehicle traveling at speeds up to 50mph.

B. The entire active vehicle barrier system, and all associated accessories, fittings, and fasteners shall be obtained from Gibraltar, not including the gate operator and controls.

C. The G-5500 Slide Gate is listed on the DOD List and was certified as a 24’ unit to ASTM F2656-07 M50 P2.

2.02 MATERIAL

A. Steel material shall conform to the ASTM requirements shown in Table 1.

B. Gibraltar will provide material certifications with each order upon request.

Table 1 – Steel Material Requirements	
<u>Material</u>	<u>Specification</u>
Welded joints	Performed by welders certified to AWS D1.1
Steel tubing	ASTM A500
Solid round bars	ASTM A36/A529 GR50 Dual Grade
W-Beams	ASTM A992
Steel Plates	ASTM A36

2.03 FABRICATION

A. Fabrication of the members shall be in accordance to manufacturer’s instructions, the plan details, and this specification.

B. Shop drawings will be provided for site specific locations of each barrier.

C. The G-5500 Anti-Ram Sliding Gate coating system shall protect against the effects of long term corrosion. The standard coating is Hot Dip Galvanized to ASTM A123.

PART 3 - EXECUTION

3.01 PREPARATION

- A. The purchaser shall indicate the location of active vehicle barrier line with suitable stakes.
- B. The purchaser shall indicate all underground utility locations, USC&G benchmarks, property monuments, and other underground structures.
- C. Before installing the G-5500 Anti-Ram Sliding Crash Gate, all necessary site clearing and grading shall be performed by the purchaser. An adequate clearance on both sides of the active vehicle barrier line is required.
- D. Soil strength shall be equivalent to soil strength recorded during the ASTM F2656-07 certification test or the footer size and depth must be adjusted accordingly based on professional engineering analysis.

3.02 INSTALLATION

- A. The barrier shall be installed per Gibraltar's System Drawing Number (*Insert Drawing Number Here*). Construct concrete foundations to the dimensions specified by the plans. Excavate a properly sized area for post foundations and install reinforcing steel in accordance with the plans. Place the concrete, install the posts and plumb. Refer to the G-5500 Anti-Ram Sliding Crash Gate owner's manual for more details on the system installation.
- B. Gibraltar active barrier products are warranted against defects in material and workmanship on mechanical components for three years when installed by a factory-trained installer. Gibraltar will pass on the original manufacturer's warranty of all electrical, electronic, and hydraulic components to the purchaser of any active barrier.

3.03 MAINTENANCE

General maintenance of the G-5500 Anti-Ram Sliding Crash Gate shall consist of removing foreign materials from gate tracks and from any portion of the gate frame as debris may cause damage to the gate and may cause safety concerns. Refer to the G-5500 Anti-Ram Sliding Crash Gate owner's manual for more details on the system maintenance.

3.04 CLEANING

The contractor shall clean the jobsite thoroughly to ensure it is left neat and free of any debris caused by the installation of the active vehicle barrier system.