

**TECHNICAL SPECIFICATIONS for Model: HR-7050**  
**SECTION 34 71 13**  
**ACTIVE VEHICLE BARRIERS**

**PART 1 – GENERAL**

**1.1 SUMMARY**

- A. Section Includes:
  - 1. Vehicle rising beam barrier
  - 2. [ ]

**1.2 RELATED SECTIONS**

- A. Section 03 30 00 – Cast-in-Place Concrete
- B. Section 09 90 00 – Painting & Coatings
- C. Section 28 13 00 – Security Systems
- D. [ ]

**1.3 REFERENCES**

- A. ASTM International (ASTM):
  - 1. ASTM A36 - Standard Specification for Carbon Structural Steel
  - 2. ASTM A500 Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
  - 3. ASTM A123 - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
  - 4. ASTM D7803- Standard Practice for Preparation of Zinc (Hot-Dip Galvanized) Coated Iron and Steel Product and Hardware Surfaces for Powder Coating
  - 5. ASTM B117 - Practice for Operating Salt-Spray (Fog) Apparatus
  - 6. ASTM D523 - Test Method for Specular Gloss.
  - 7. ASTM D714 - Test Method for Evaluating Degree of Blistering in Paint.
  - 8. ASTM G155 - Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials
  - 9. ASTM D1654 - Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments.
  - 10. ASTM D2244 - Test Method for Calculation of Color Differences from Instrumentally Measured Color Coordinates.
  - 11. ASTM D2794 - Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
  - 12. ASTM D3359 - Test Method for Measuring Adhesion by Tape Test.
  - 13. ASTM F2656 - Standard Test Method for Vehicle Crash Testing of Perimeter Barriers
  - 14. ASTM A529 – Standard Specification for High-Strength Carbon-Manganese Steel of Structural Quality
- B. American Welding Society (AWS)

1. AWS D1.1/D1.1M - Structural Welding Code – Steel (2010)

#### 1.4 SUBMITTALS

- A. Product Data:
1. Comply with Section [01 33 00 – Submittal Procedures.] [\_\_\_\_\_].
  2. Product Data: Provide for each type of barrier, component, finish, and accessory specified.
  3. Maintenance Data: Submit manufacturer's field touch-up, cleaning, and maintenance instructions.
  4. Warranty Documentation: Submit sample of manufacturer's warranty.

#### 1.5 QUALITY ASSURANCE

- A. COMPLY WITH SECTION [01 43 00 – QUALITY ASSURANCE.] [\_\_\_\_\_].
- B. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with a minimum five years documented experience.
- C. Installer Qualifications:
1. Engage an experienced installer who has minimum five years documented experience with projects of similar scope and complexity.
  2. Installer is an authorized representative of the vehicle barrier manufacturer for both installation and maintenance of the type of units required for this Project. Installer Qualifications:
- D. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.
- E. Each Sloan Hydraulic Rising Beam M50/P1 is cycled in-house prior to shipment to ensure proper working order and calibration of limit switches.
- F. The contractor shall provide laborers and supervisors who are thoroughly familiar with the type of construction involved and materials and techniques specified.
- G. Nameplates: The vehicle barrier shall have the manufacturer's names, contact for service, and catalog or serial number permanently affixed to a plate securely attached to the equipment in a suitable location.

#### 1.6 DELIVERY, STORAGE AND HANDLING

- A. Comply with Section [01 66 00 – Product Storage and Handling Requirements.] [\_\_\_\_\_].
- B. The Sloan Hydraulic Rising Beam M50/P1 shall be packaged to protect the materials from damage during shipment.
- C. While Sloan Security Group does not assume responsibility for injury to persons or property during loading, unloading, transporting or installation, verbal guidance and additional written instructions are available upon request.

- D. Sloan Security Group does not assume responsibility for insuring that the rigging and lifting gear is properly sized and attached when lifting heavy components. Equipment used shall be capable of handling product in an overhang position.
- E. Sloan Hydraulic Rising Beam M50/P1 is coated to protect materials from the effects of exposure to all outdoor elements; however, when site storage is required Sloan Security Group 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, the Sloan Hydraulic Rising Beam M50/P1 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 degrades coating appearances; therefore, proper storage is essential for ensuring preservation of the material.
- F. Upon delivery of Sloan Hydraulic Rising Beam M50/P1 control systems, 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.
- G. Upon receipt at the job site, all materials shall be checked to ensure that no damage occurred during shipping or handling. Materials shall be stored in such a manner to ensure proper ventilation and drainage, and to protect against damage, weather, vandalism, and theft.

## 1.7 WARRANTY

- A. Sloan's active vehicle barrier products carry a standard warranty against defects in material and workmanship on fabricated components for one year when installed by a Sloan authorized installer. Warranty begins at the ship date of product.

## PART 2 – PRODUCTS

### 2.1 MANUFACTURERES

- A. Acceptable Manufacturer: Sloan Security Group, Phone: (888) 382-8370, Website: [www.sloansg.com](http://www.sloansg.com), Email: [info@sloansg.com](mailto:info@sloansg.com)
- B. Substitutions: Not Permitted.

### 2.2 VEHICLE BARRIERS

- A. Basis of Design: Sloan Hydraulic Rising Beam M50/P1 System, Model: HR-7050, as manufactured by Sloan Security Group
  - 1. This system shall be tested and certified to meet ASTM F2656-07, Impact Condition Designation M50, Penetration Rating P1, with the capability of stopping a 15,000lb vehicle traveling at speeds up to 50mph and less than 1 meter of dynamic penetration.
  - 2. The manufacturer shall supply a total active vehicle barrier system of the Sloan Hydraulic Rising Beam M50/P1 design. The vehicle barrier system shall include an operable barrier with controls, cabling, and obstruction detection devices. The barrier shall comply with Sloan's System Drawings.
  - 3. The Sloan Hydraulic Rising Beam M50/P1 System was tested to the pass requirements in accordance with ASTM F2656-07 and achieved a rating of M50 P1. The barrier was tested

- to 24ft (7.3m) blocking widths. The test reports were approved by the USACE PDC and is on the DOD list of approved barriers.
4. The Sloan Hydraulic Rising Beam M50/P1 System was tested by an ISO 17025 accredited testing facility.
  5. The Sloan Hydraulic Rising Beam M50 P1 System is designed to operate in a wide range of environmental conditions. These include the following:
    - a. Ambient temperature ranges without heating or cooling systems: 32° F (0 ° C) to 150 ° F (65 ° C). Heating and cooling options to be used when necessary
    - b. Ambient relative humidity range: 5% to 100%
    - c. High dust environments
  6. The Sloan Hydraulic Rising Beam M50/P1 has a raised height of 39in (990mm) to the center of the blocking member. The entire blocking member sits flush to the roadway when in the retracted position. When in the retracted position, the barrier shall be capable of supporting a 32,000-pound (14,515 kg) axle load.
  7. The Sloan Hydraulic Rising Beam M50/P1 deployment speeds are adjustable to match customer specifications. The barrier shall be capable of less than 2 second deployment to secured position during emergency operation and between 3 to 8 second deployment for normal operation. Retracting speed shall be adjustable per customer specification.
  8. In the event of hydraulic failure, the Sloan Hydraulic Rising Beam M50/P1 is designed to hold the last commanded position, including the raised position.
  9. The Sloan Control system options include battery back-up and manual operating capability for use in event of power failure. Back-up operating equipment capable of a minimum three complete cycles (open and close) without use of manual system available upon request. Manual operating capability included as standard issue. Manual operation of barrier shall be simple and without need of special tools or knowledge.
  10. Traffic light type indicators/lighting can be provided per the customer requirements
  11. Each Sloan Hydraulic Rising Beam M50/P1 System shall be provided with one HPU. Up to two barriers can be powered by a single HPU. Customer to specify HPU configuration at the time of ordering. Each HPU shall be provided with 50ft (15M) of hydraulic lines per barrier. 50ft (15M) of pre-terminated low voltage power and feedback cables shall be provided with each barrier. If needed, additional hydraulic line or cable length shall be specified at the time of order.
  12. Control panels are provided per customer specification. Basic Open/Close and EFO controls are provided as a standard, unless specified otherwise. All control cables to be used between HPU and any control panels shall not be provided by Sloan, unless specified.
  13. All HPU's and Control Panels are customizable per customer specification
  14. Site work materials to include HPU footings, footing rebar, or conduit not provided by Sloan.

### **2.3 MATERIAL**

- A. Steel tubing material shall conform to the ASTM A500
- B. Solid round bars shall conform to ASTM A36/A529 GR50 Dual Grade
- C. Steel plates shall conform to ASTM A36
- D. Welding: Performed by welders certified to AWS D1.1
- E. Sloan will provide material certifications with each order upon request.

### **2.4 FABRICATION**

- A. Fabrication of the members shall be in accordance with manufacturer's instructions, the plan details, and this specification.

- B. The Sloan Hydraulic Rising Beam M50/P1 coating system shall protect against the effects of long-term corrosion. Sloan has the capability to provide systems in galvanized, powder coated, or wet painted finishes. The standard coating design shall be a powder coated or wet paint solid color finish. The buyer will specify any custom color or design to the manufacturer at the time of ordering. Sloan does not recommend hot dip galvanizing the blocking beam as some of the materials should not be subjected to exposure to high heat after curing. If complex color design is required, the manufacturer may use a combination of powder coat and wet paint processes to achieve the final design. If the buyer specifies a powder coated finish on top of galvanizing, the powder coating will be applied in accordance with ASTM D7803. The standard galvanized coating is Hot Dip Galvanized to ASTM A123.
- C.
- D. Shop drawings can be provided for site specific locations of each barrier upon request.
- E. All Sloan products are coated to the customer specification.

### **PART 3 – EXECUTION**

#### **3.1 SITE EXAMINATION**

- A. The purchaser shall indicate the location of all products with suitable means.
- B. The purchaser shall indicate all underground utility locations, USC&G benchmarks, property monuments, and other underground structures that interfere with installation.
- C. Before installing the Sloan Hydraulic Rising Beam M50/P1, all necessary site clearing and grading shall be performed by the purchaser. An adequate clearance on both sides of the vehicle barrier line is required.
- D. Soil strength shall be equivalent to soil strength recorded during the ASTM F2656-07 certification test of the footer size and depth must be adjusted accordingly based on professional engineering analysis.
- E. Power Lines: Where power and hydraulic lines are required and are below grade, they must be protected with rigid electrical conduit. Where temperatures will exceed 100° F (38° C) for extended periods of time provide a cooling unit for the hydraulic fluid.

#### **3.2 PREPARATION**

- A. Examine and verify foundation suitability for product installation.
- B. Clean surfaces thoroughly prior to installation
- C. Prepare surfaces using the methods recommended by the manufacturer for achieving the best results for substrate under the project conditions.

#### **3.3 INSTALLATION**

- A. The active vehicle barrier shall be installed per Sloan's System Drawing. Construct concrete foundations to the dimensions specified by the plans. Excavate a properly sized area for barrier foundations and install reinforcing steel in accordance with the plans. Place the concrete, install the barrier, and plumb. Refer to contract or submittal plans for more installation details.
- B. Sloan's vehicle barriers are warranted against defects in material and workmanship on structural components for one year from ship date, when installed by a Sloan authorized installer.

- C. Engage an experienced installer who has minimum five years documented experience with projects of similar scope and complexity.
- D. Suggested Installer: Sloan Security Group Phone: (888) 382-8370, Website: [www.sloangsg.com](http://www.sloangsg.com), Email: [info@sloangsg.com](mailto:info@sloangsg.com)

### 3.4 CLEANING

- A. Clean active vehicle barriers in accordance with the manufacture's recommendations to remove dust, dirt, adhesives, and other foreign materials.
- B. Touch-up, repair or replace damaged products before Substantial Completion.
- C. 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.

### 3.5 CONTINUED SERVICE AND DOCUMENTATION

- A. General maintenance of the Sloan Hydraulic Rising Beam M50/P1 System shall consist of removing foreign materials from frame or sub-grade frame as debris may cause damage to the barrier and may cause safety concerns. Refer to the owner's manual for more details on the system maintenance.
- B. Sloan will supply an operator manual that contains recommended maintenance intervals, procedures, and replacement parts lists.
- C. Maintenance instructions shall include routine maintenance procedures, possible breakdowns, and repairs, and troubleshooting guide. The instructions shall include piping layout, equipment layout and simplified wiring, and control diagrams of the systems as installed.
- D. Suggested Maintenance Contractor: Sloan Security Group, Phone: (888) 382-8370, Website: [www.sloangsg.com](http://www.sloangsg.com), email: [info@sloangsg.com](mailto:info@sloangsg.com)

**NOTE:** Sloan Security Group reserves the right to change these specifications at any time. Call (888) 382-8370 to ensure that you have the latest edition.

**CAUTION:** Barriers manufactured by Sloan Security Group are intended for use in controlling vehicular traffic and are not intended to be used by pedestrians or to control pedestrian traffic. **Always install a separate pedestrian entry.**