

## **SPECIAL SPECIFICATION**

### **SECTION 08394S**

#### **BLAST RESISTANT DOORS**

##### **PART 1 - GENERAL**

###### **1.01 SECTION INCLUDES**

- A. Section includes Blast Resistant rolled steel doors and frames.

###### **1.02 REFERENCES**

- A. ASTM A 123 - Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- B. ASTM A 653 - Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- C. ASTM C 236 - Test Method for Steady-State Thermal Performance of Building Assemblies by Means of a Guarded Hot-Box.
- D. ASTM E 152 - Methods of Fire Tests of Door Assemblies.
- E. DHI - Door Hardware Institute: The Installation of Commercial Steel Doors and Steel Frames, Insulated Steel Doors in Wood Frames and Builder's Hardware.
- F. NFPA 252, Fire Tests of Door Assemblies.
- G. SDI-100 - Standard Steel Doors and Frames.
- H. SDI-105 - Recommended Erection Instructions for Steel Frames.
- I. SDI-107 - Hardware for Steel Doors (Reinforcement - Application).
- J. UL 10B - Fire Tests of Door Assemblies.

###### **1.03 QUALITY ASSURANCE**

- A. Conform to requirements of SDI-100.

- B. Installed frame and door assembly to conform to UL 10B for fire rated class indicated or scheduled.
- C. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.

#### 1.04 REGULATORY REQUIREMENTS

- A. Conform to applicable local building codes for fire rated requirements of metal door/metal frame.
- B. Fire Rated Door Construction: Conform to ASTM E 152, NFPA 252, UL 10B.
- C. Fire Rated Door Construction: Rate of rise of 250 degrees F across door thickness.

#### 1.05 SUBMITTALS

- A. Shop Drawings: indicate frame configuration, anchor types and spacings, location of cutouts for hardware, reinforcement, and finish.  
Indicate door elevations, internal reinforcement, closure method.
- B. Manufacturer's Installation Instructions: Indicate special installation instructions.
- C. Manufacturer's Certificate: Certify that Products meet or exceed specified requirements.

#### 1.06 DELIVERY, STORAGE AND PROTECTION

- A. Protect doors and frames with resilient packaging.
- B. Accept doors on site in manufacturer's packaging. Inspect for damage.
- C. Break seal on-site to permit ventilation.

#### 1.07 FIELD MEASUREMENTS

- A. Verify that field measurements are as indicated on shop drawings

#### 1.08 COORDINATION

- A. Coordinate the work with door opening construction, door frame and door hardware installation.

## PART 2 - PRODUCTS

### 2.01 MANUFACTURERS

#### A. Blast Resistant Doors and Welded Unit Frames:

1. Overly Door Company, Greensburg, PA 15601-0070 or approved equal.

### 2.02 BLAST RESISTANT DOORS

- A. Design Basis and Type: Blast resistant pre-engineered door system designs shall be based on the VLRB series as manufactured by the Overly Door Company, Greensburg, PA 15601-0070 or approved equivalent
- B. Design Criteria: The door, frame and restraining hardware shall be designed to withstand pressures up to 250 psf seating the door into the frame and 250 psf unseating the door from the frame (rebound). The door system shall be fully operable after application of the specified loads.
- C. Product Description: Doors and frames shall be constructed of 14 gauge low carbon steel. Doors shall be a nominal 1 3/4" thick, full flush, constructed and reinforced to resist the blast forces specified. Design door hardware and reinforcements to transfer all applicable loadings to frame. Design frame anchors to transfer all loadings to walls or structural sub-frame embeds. Frames shall be hollow metal formed steel with formed stops, three sided, single or double rabbet, factory reinforced and tapped for hardware. Frame anchorage shall be concrete expansion anchors.
- D. Fire rating: Those openings scheduled as fire rated shall have been tested by and bear the labels of Underwriters Laboratories marked for 3 hour, A label for flush doors.
- E. Lockset: Refer to section 08710 – Finish Hardware, for Lockset.
- F. Door Closer: Refer to section 08710 – Finish Hardware, for Door Closer.
- G. Exit Device: Refer to section 08710 – Finish Hardware
- H. Weather stripping: Provide solid elastomer seals.
- I. Hinges: Hinge shall be heavy duty ball bearing butts of sufficient size and quantity to withstand blast loadings and door weight. Hinges shall conform to ANSI Standard A156.1. Refer to section 08710 – Finish Hardware, for Hinges.

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## 2.03 FABRICATION

- A. General: Assemble work using all welded construction conforming to the applicable requirements of AWS D1.1 and D1.3.
- B. Materials: Construct from formed sheet conforming to ASTM A366 or ASTM A569. Steel plate and shapes for reinforcing and/or framing members shall conform to ASTM A36 and bars shall conform to ASTM A108 Grade 1018. Hardware shall be corrosion resistant steel of the appropriate design for the function intended.
- C. Painting and Cleaning: After fabrication, remove all tool marks and surface imperfections, and dress all welded joints smooth and coat with a rust-inhibitive primer.

## 2.04 FINISH

- A. Steel Sheet: Galvanized to ASTM A 653, G60
- B. Exterior Units: over 2.0 ounces per square foot galvanizing, in accordance with ASTM A 123.

## PART 3 - EXECUTION

### 3.01 EXAMINATION

- A. Verify that opening sizes and tolerances are acceptable.
- B. Verify surfaces and conditions are ready to receive work of this section. Notify Architect of any existing conditions which will adversely affect execution. Beginning of execution will constitute acceptance of existing conditions.
- C. Installation: Install work in strict accordance with approved shop drawings and recommended installation instructions of the manufacturer. Any required field welding must be performed by certified welders in accordance with AWS D1.1 and D1.3.

### 3.02 INSTALLATION

- A. Install frames in accordance with SDI-105.
- B. Install doors in accordance with DHI.

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- C. Install roll formed steel reinforcement channels between two abutting frames. Anchor to structure and floor.
- D. Set frames plumb, level, and true alignment, securely fastened to the floor and adjoining walls.
- E. Install doors accurately in frames, maintaining specified clearances.

3.03 TOLERANCES

- A. Maximum Diagonal Distortion: 1/8-inch measured with straight edge, corner to corner.

3.04 ADJUSTING AND CLEANING

- A. Adjust hardware and door movement for smooth, quiet and balanced door movement.

END OF SECTION