



## BLAST DOORS

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### **1. Scope**

This specification defines the materials and design criteria of a complete bottom rolling blast door system as manufactured by WELL BILT INDUSTRIES of Williston, Florida

### **2. Materials**

All materials used for the construction of rolling door system components shall be new and free from any defects or imperfections which could affect serviceability.

- **2.1** Hot rolled structural steel shapes shall conform to ASTM A36 with a minimum yield strength of 36,000 psi. Tensile strength is 58,000 to 80,000 psi.
- **2.2** Cold formed structural steel shapes such as cee's, zee's and channels shall conform to ASTM A570 grade 55 with a minimum yield strength of 57,000 psi.
- **2.3** Welded mechanical tubing shall conform to ASTM A-500 grade B with a minimum yield strength of 46,000 psi. Typical tensile strength is 58,000 psi.
- **2.4** Mechanical fasteners critical to the assembly or function of a rolling door system shall be ASTM A-325 or SAE grade 5 with ASTM A 563 Heavy Hex Nuts and ASTM F 436 washers. Bottom track support anchor bolts or threaded rod may be ASTM A-307 or equivalent with ASTM A 844 washers and SAE grade 5 hex head nuts.
- **2.5** Elastomeric sealing elements to seal the sides and bottoms of the door systems shall be fabricated using EPDM type 40 elastomer. EPDM is for outdoor and high temperature applications. It resists ozone, steam, water, oxygenated solvents plus animal and vegetable oils.

### **3. Framing**

The basic outer frame shall be constructed of hot rolled or cold formed structural steel shapes or welded mechanical tubing a minimum of 10" wide.

- **3.1** Vertical structural members, referred to as stiles or jambs shall be one piece for the height of the door. They shall be designed for a maximum vertical plane deflection not to exceed the door height in inches divided by 180 (L/180) at specified code and wind load conditions. Where wind load is not specified, a standard wind load of 90 MPH shall be used.
- **3.2** Door Horizontal members
  - **3.2.1** Bottom beam or sill shall be structurally capable of supporting the total weight of the finished door and transmitting that weight plus the lateral forces through the bottom rollers to the bottom track system. A minimum of 2" of the bottom of the frame will be recessed into the finished floor to reinforce the lateral loading of the door in case of wheel failure.
  - **3.2.2** Top beam or header shall be structurally capable of transmitting wind load and lateral forces into the top guide system. The top guide system will be a minimum of 10" X 35 lbs. I-Beam supported every 2'-0" on center.
  - **3.2.3** Intermediate horizontal members or girts are normally fabricated from hot rolled structural shapes unless weight is a consideration then cold formed shapes may be substituted. Members are typically spaced so as to provide proper vertical spacing for attaching the customers exterior sheeting.
  - **3.2.4** Intermediate vertical members shall be 10" X 35 lbs. I-Beam through the full height of the door panel.

**Well Bilt Industries**  
**#1 Well Bilt Drive, PO Box 100**  
**Williston, FL 32696**  
**(800) 940-BILT ~ (352) 528-5566 ~ Fax: (352) 528-5614**



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- 3.2.5 Diagonal bracing shall be of cold formed structural shapes or welded mechanical tubing.
- 3.2.6 Exterior covering will be hot rolled steel plate with a minimum thickness of ½” and an average width of 15”. Exterior plates will be welded to intermediate vertical and horizontal members on the inside of the blast door frame work. Welds will be 36” continuous from the top and bottom beams, then 3” on every 6” for the remaining height of the system. All welds will be preformed by AWS certified welders.
- 3.2.7 Interior covering will be hot rolled steel plate with a minimum thickness of 3/8” and an average width of 15”. Interior plates will be welded to intermediate vertical and horizontal members on the outside of the blast door frame work. Welds will be 36” continuous from the top and bottom beams, then 3” on every 6” for the remaining height of the system. All welds will be preformed by AWS certified welders.
- 3.2.8 Construction – Door sections will be shipped in one piece fully assembled. Lock systems will be installed.

### **4. Bottom Roller And Track System**

Bottom rollers will have a minimum tread diameter of 15”; size may increase according to door size and weight. Bottom Rollers will have a minimum vertical load of 27,000 lbs. each, and a minimum thrust load of 11,000 lbs. each. Rollers will be accessible by means of a bolt on removable cover sized according to the inside covering of the panel to maintain the structural integrity of the door system. All rollers will be vertically adjustable and removable. All bottom rollers used by WELL BILT INDUSTRIES are equipped with re-lubeable anti-friction bearings. The system will utilize tapered roller bearings designed to be used with ASCE rail track systems. All bottom roller systems are serviceable without removing the door section from the track.

### **5. Top Guide System**

The fixed top guide system can accommodate a maximum total vertical deflection of three inches. The system utilizes sealed ball bearings for guide and carrier rollers. The fixed top guide bearings engage a 10” X 35 lbs. I-beam top guide furnished by WELL BILT INDUSTRIES and installed by others. Lateral supports for the top guide beams are to be supplied by others and are to be spaced 2'-0” apart.

### **6. Pick Up Bars**

WELL BILT INDUSTRIES provides pick-up bars to be welded or bolted to the leading and trailing edges of the door sections of a power operated door system with multiple panels. These bars permit multiple sections to be opened or closed by one operator. Pick-up bars are only utilized in systems containing multiple sections and/or panels.

### **7. Weather Seals**

WELL BILT INDUSTRIES shall provide 2 ply cloth inserted EPDM style 40 black rubber and galvanized retainer strips for the top, bottom, and each side of each blast door section. Some systems may utilize a continuous brush style weather seal either by design or request.

### **8. Protective Finish**

Standard finish on WELL BILT INDUSTRIES doors is a low voc gray oxide primer. This provides short term protection of the metal surfaces until the door is installed and can be painted with a finish coat of paint. Red primer can be provided by request.

An optional charcoal gray metallic industrial enamel finish paint is available.

### **9. Rolling Door Operators**

WELL BILT INDUSTRIES offers a patented door operator. Most WELL BILT INDUSTRIES blast door systems can be furnished with operators. Blast door systems purchased with operators will integrate the operator into the design of the system. The operator will be enclosed within the door panel with water tight connections at the top of the system supplying power to the unit. Electrical lockouts will prevent attempted door operation while the system is locked. Access to the operator will be by means of a bolt on removable cover sized according to the inside covering of the

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panel to maintain the structural integrity of the door system. Door operators will be controlled by a wall mounted control panel. The control panel will include open and close "dead man" switches as well as a keyed lockout.

### **10. Lock System**

All WELL BILT INDUSTRIES bottom rolling blast door systems will be equipped with a four pin lock system. The lock system will utilize two handles on the exterior of the panel which operate a lock mechanism built inside the panel. This lock mechanism will extend two 2" diameter CRS 1018 lock pins 4" out of the panel, one pin out of the top beam and one pin out of the bottom beam, per lock handle. The four total pins (this number may increase based on door size or required specifications) will engage steel sleeved holes in the foundation and the structure to a minimum depth of 3". The handles of the lock system will be equipped with a hasp style assembly permitting the use of a padlock on each handle. Access to the internal lock mechanism will be by means of a bolt on removable cover sized according to the inside covering of the panel to maintain the structural integrity of the door system.

### **11. Information And Documentation**

WELL BILT INDUSTRIES provides drawings, cut sheets and instructions adequate for the preparation of the job site and the assembly and installation of the bottom rolling blast door system.

### **12. Compliance**

WELL BILT INDUSTRIES doors are constructed to comply with all codes and specifications provided at the time an order is initiated. Wind load compliance certification by a professional engineer licensed to practice in the state of Florida is available if required. WELL BILT INDUSTRIES is a Miami-Dade County Approved Hangar Door Manufacturer and has been issued a Certificate of Competency.

### **13. Warranty**

WELL BILT INDUSTRIES bottom rolling blast door systems are warranted for one year from the date of purchase against defects in material and workmanship. Refer to WELL BILT INDUSTRIES for specific details.

### **14. Owner's Manual**

WELL BILT INDUSTRIES will provide each customer with an "Owner's Manual" which details the specifics pertaining to their custom door system.