



Specifications

Air/Gas Pressure Resistant Swinging/Sliding Doors/Windows

Part 1 – General

1.1 Description

- a) **Work Included:** Provide [air] [gas] pressure-resistant [swinging door] [sliding door] [fixed window] systems where shown on drawings and specified herein.
- b) **Related Work:** Documents affecting work of this Section include, but are not necessarily limited to. General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1.2 Quality Assurance

- a) **Experience:** Provide work of this Section designed and furnished by one manufacturer, factory-assembled, completely operable, and shipped as a unit. Use a manufacturer who has been engaged in the manufacture of pressure-resistant [door] [window] systems for at least five years immediately prior to the start of this work, and who has a history of successful production acceptable to the Architect.

1.3 Submittals

- a) **Shop Drawings:** Submit a schedule of items to be provided under this section along with shop drawings in sufficient detail to show fabrication, installation, anchorage and interface of the work of this section with the work of adjacent trades.
- b) **Calculations:** Provide calculations showing conformance with the specified pressure loading requirements and affixing the signature and verification of the engineer on all design data submitted. In lieu of design calculations, certified test reports from an independent laboratory may be provided to verify the [door] [window] systems ability to resist the specified pressure loads.
- c) **Secondary Requirements:** If fire resistance is required certify that assemblies have been tested in accordance with ASTM E152-81A (UL-10b) for labeled fire doors and frames, and meets the requirements of NFPA 80. If seismic stability is required, submit calculations showing ability of [door] [window] systems to withstand pertinent seismic forces.
- d) **Installation Instructions:** Provide recommended installation procedures which, upon approval by the architect, will become the basis for acceptance or rejection of the actual procedures used for installation.
- e) **Operation and Maintenance Manual:** Provide operation and maintenance instructions compiled in accordance with the provisions of Section 01730 of these Specifications.
- f) **Warranty:** upon completion of the work of this section, provide the architect with two (2) copies of the manufacturer's standard written one-year warranty.

Part 2 – Products

2.1 Design

- a) **Design Basis:** [Air] [gas] pressure-resistant [door system] [fixed window] designs are based on those manufactured by Overly Manufacturing Company, Greensburg, PA 15601-0070. Provide products as specified or approved equal.
- b) **Specific Type:** Pressure-resistant [door] [fixed window] systems to be Overly Model No. () of the dimensions and arrangements shown on the drawings. [Swinging doors to be complete with frame, hinges, locking devices and gaskets.] [Sliding doors to be complete with track, hangers and shroud, seismic restraint devices, gaskets, adjustable sill roller guides and head devices, interlocking edge binders, and all other hardware as required to assure proper operation.] [Fixed window frames to be complete with glazing and gaskets. Glazing to be field installed].

2.2 Design Criteria

- a) **Analysis:** perform a static analysis for a [[positive] [negative]] [[air] [gas]] pressure of—[PSI] [PSF] [in. water gauge] [head of water] acting to [seat] [unseat] door. Maximum deflection of all components to be limited to a maximum of [L/240] [L/120] [L/60].
- b) **Leak Testing:** On each assembly, perform factory [[soap bubble leak test. There shall be no visible leakage at —[PSI] [PSF] [in. water gauge] for —minutes]] [[Leak test per ASTM A283. Maximum leak rate shall not exceed —CFM at —[PSI] [PSF] [in. water gauge]].

2.3 Fabrication

- a) **General:** Assemble work using all welded construction conforming to applicable requirements of AWS D1.1.
- b) **Materials:** Pressure-resistant [doors and door frames] [fixed window frames] to be constructed from formed sheet or plate shapes, or structural bars and shapes. Sheet steel shall be commercial quality, level, cold rolled steel conforming to ASTM A1008 or hot rolled, pickled and oiled steel conforming to ASTM A1011. Steel plate and shapes shall comply with ASTM A36 and bars with ASTM A108, Grade 1018. Exterior units shall be fabricated from galvanized steel conforming to ASTM A526 (A60 or G60) with a coating weight of not less than 0.60 ounces per square foot.
- c) **Door Design:** Pressure-resistant door shall be of welded, construction with no visible seams on vertical edges.
- d) **Frame Design:** Pressure-resistant [door] [fixed window] frames shall be welded units with integral trim. Knocked-down frames are not acceptable. After installation, field splices required because of shipping limitations must be field welded by certified welders per manufacturer's instructions and in accordance with requirements of AWS D1.1.
- e) **Doors to be equipped** with hardware and reinforcements designed to transfer all applicable pressure loadings to frame. Frames to be equipped with anchors designed to transfer all pressure loadings to walls or to embed structural sub-frames.
- f) **Provide** [solid] [closed cell sponge] [inflatable] elastomer seals.
- g) **Painting and Cleaning:** after fabrication, all tool marks and surface imperfections shall be removed and exposed faces of all welded joints dressed smooth. Chemically treat all surfaces to insure maximum paint adhesion and coat with a rust-inhibitive primer.

Part 3 – Execution

3.1 Site Storage and Protection of Materials

- a) **Store all material** on planks or dunnage in a dry location in a vertical position, spaced by blocking to permit air circulation between units. Cover all material or store in a controlled area to protect from damage.

3.2 Installation

- a) **Secure the services** of a qualified representative of the manufacturer to visit the job site and instruct the contractor's personnel in proper installation and adjustment of the [doors] [fixed windows].
- b) **Install work of this section** in strict accordance with approved shop drawings and recommended installation instructions of the manufacturer. Where installation requires field welding, all work must be performed by certified welders in accordance with AWS D1.1.