

**JAMISON SOUND DOOR SPECIFICATIONS
VERTICAL SLIDING SOUND REDUCTION DOOR - STC 51
POWERED OPERATION**

PART 1 - GENERAL

1.1 **APPLICABLE PUBLICATIONS:** The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

1.1.1 FEDERAL SPECIFICATION: QQ-Z-325 Plating, Zinc (Electrodeposited), Type I, Class 3.

1.1.2 American Society for Testing and Materials (ASTM), 1916 Race Street, Philadelphia, PA 19103

A36 Structural Steel

A325 High Strength Carbon Steel Bolts for Structural Joints, Including Suitable Nuts and Plain Hardened Washers

E90-85 Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions

E413 Determination of Sound Transmission Class

1.2 **SUBMITTALS:**

1.2.1 **APPROVAL DRAWINGS:** It is intended that approval drawings will not be required for these items and that the manufacturers details, along with this specification, will provide all needed information. If it is determined that more specific details are required, six copies of an approval drawing can be furnished upon request.

1.2.2 **SHOP DRAWINGS:** Shop drawings may be specified when required. If provided, drawings shall be submitted prior to delivery of materials to the jobsite. Drawings shall include detail assembly drawings showing the complete installation, a listing of all materials, surface finishes, fabricating assembly and installation tolerances.

1.2.3 **TEST REPORTS:** Acoustical Test Reports from Riverbank Acoustical Laboratories, Geneva, Illinois, or a laboratory accredited by Department of Commerce, National Voluntary Laboratory Accreditation Program, in accordance with ASTM E90, shall be submitted to assure

acoustical performance has previously been attained.

1.3 **GENERAL REQUIREMENTS**

1.3.1 **GENERAL:** Sound reduction doors shall be provided complete with frames, gaskets, fasteners, anchors, hardware, sealing systems, and all other equipment and accessories as indicated, specified and necessary for a complete installation to meet the acoustical performance and operational requirements specified herein.

1.3.2 **QUALIFICATIONS OF MANUFACTURER:** The manufacture of the sound reduction doors shall be performed by a manufacturer who has at least fifteen (15) years of proven successful experience in the design and fabrication of similar acoustical doors. The organization shall be regularly engaged in this type of work and shall have complete facilities, equipment, and technical personnel for the design and fabrication of the complete system.

1.3.3 **PROVISIONS FOR INSTALLATION:** The contractor will employ an organization other than the manufacturer to install the sound reduction doors in the field provided the following requirements are complied with.

- a. The organization shall have trained and skilled mechanics with previous experience in the installation of similar precision fabricated assemblies.
- b. The door manufacturer may have a trained engineer or mechanic at the jobsite supervising the unloading, erection, final adjustments and final check out of the doors, frames, hardware, and accessories if requested by the contractor.

1.3.4 **ACOUSTICAL PERFORMANCE:** Sound reduction doors shall have a Sound Transmission Class (STC) rating, as indicated and specified herein, conforming to tests performed in accordance with ASTM E90 and classified in accordance with ASTM E413.

1.3.4.1 **DOOR STC RATINGS:** These doors shall have minimum transmission loss values for the STC rating of 51 at each frequency given by the following table:

TRANSMISSION LOSS TABLE

FREQ.	100	125	160	200	250	315	400	500	630	800
TL	38	41	37	44	46	44	46	49	49	50

FREQ.	1000	1250	1600	2000	2500	3150	4000	5000
TL	52	53	53	52	53	56	54	50

PART 2 - PRODUCT

2.1 **GENERAL:** Materials and equipment specified hereinafter will establish the minimum requirements for quality and performance.

2.1.1 **DOOR PANELS AND FRAMES:** Door panels shall be fabricated from cold rolled steel and hot rolled pickled and oiled steel. Steel shall not be less than 16 gauge (.060"). Steel shall be straight and free of twist.

2.1.1.1 Door panels shall have an inner core of non-resonating, fire resistant, inorganic, and acoustically damping material. Face sheets shall be stiffened by steel stiffeners with welds not more than six inches (6") apart. Door panels shall have internal reinforcing for external hardware to adequately stiffen and provide sufficient thickness for tapping to achieve four (4) full thread engagement of bolts. Doors shall be a minimal four inches (4") thick.

2.1.1.2 The vertical sliding door panel shall be guided by a 3" formed steel track, no less than 12 gage galvanized steel. The track shall be supported full height by a steel angle which, in turn, is bracketed to a channel casing. The guides and track must be adjustable to obtain the proper door seal.

a. The 3" guide track is to be joggled to force the door inwardly for gasket compression. This inward motion shall occur within the last 3" of door closure.

2.1.2 **BOLTED AND SCREWED CONNECTIONS:** Bolts shall conform to ASTM A325 or have a minimum strength of 105,000 psi. Bolt holes shall be drilled or punched and at right angles to member. When assembled, all joint surfaces, including those adjacent to bolt heads, nuts or washers, shall be free of burrs, dirt and other foreign material that would prevent solid seating of the parts.

2.1.2.1 All fasteners shall be finished per QQ-Z-325.

2.1.3 **SEALS:** Door seals shall be provided as indicated herein to achieve the required sound attenuation. Sides and head shall be sealed with a single seal providing a gasketed overlap of door against frame. These gasket assemblies shall be adjustable to provide the proper compression of the seals.

2.1.4 **HARDWARE:** Door hardware shall be provided as required to accommodate the design loads and acoustical performance as follows:

- a. Door panels shall be guided by a minimum of 4 heavy duty steel rollers. The rollers shall be comprised of a ball or roller bearing to minimize resistance to opening/closing the door, and a hardened steel tire.
- b. The door shall be fully counterweighted with a welded steel or an M1010 steel billet equal to the weight of the door panel. Cast iron, steel shot, or concrete counterweights are not permitted.
 1. The counterweight shall be attached to the door panel with a minimum of two zinc coated aircraft type cables. There shall be a safety factor of no less than 5.0 in each cable lifting the total door weight. Use of roller chain to attach the door to the counterweight is not permitted.
- c. The cable sheaves shall be machined of cold rolled steel and have a groove finish of not more than 63 RMS. The sheave shall rotate on a fixed spindle using needle or roller bearings.

2.1.5 **POWER OPERATION:** Power operation of the sliding door shall be provided by an electromechanical device consisting of a motor, gear reducer, and chain drive.

- a. The motor shall be rated for 1/2 hp minimum, TEFC, NEMA Class B, 480 VAC, 3 phase, 60 HZ. The motor shall have thermal overload protection.
- b. The gear reducer shall be encased in a cast iron housing and conform to AGMA standards.
- c. The operator shall drive the door at an opening and closing speed not to exceed 10 inches per second.
- d. The power operator shall be electrically connected using 600 VAC rated connectors. The opening/closing relay shall be operated at 24 VAC. The electrical switch gear are to be mounted in a NEMA IV rated enclosure.
- e. Three button NEMA IV rated push button stations are to be furnished. Station shall have "Open," "Close," and "Stop" buttons.

PART 3 - EXECUTION

3.1 INSTALLATION:

3.1.1 **GENERAL:** The installation shall be carefully performed by skilled mechanics. Special

care must be exercised to follow the manufacturer's printed instructions including recommended tolerances to achieve required acoustical seal.

3.1.2 Store doors and frames at the building site under cover. Place units well above the ground to prevent rust and damage and to provide room for air circulation. Avoid the use of non-vented plastic or canvas shelters which create humidity chambers.

3.1.3 Install frames plumb, rigid, in true alignment, and fasten them to retain their position and clearance during wall construction. Fill frames in masonry walls with mortar as the wall is laid up.

3.1.4 Install doors plumb and in true alignment. Operate doors and verify that doors open and close smoothly with no binding. Inspect fit of all door seals. Inspect final erection and fit of all assemblies and components.