

SECTION 08385 – SOUND CONTROL DOOR ASSEMBLIES**PART 1 - GENERAL****1.1 GENERAL REQUIREMENTS**

- A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

1.2 WORK INCLUDED

- A. Work of this Section includes all labor, materials, equipment, and services necessary to complete the furnishing and installation of Sound Control Door Assemblies as shown on the drawings and specified herein.

1.3 RELATED WORK

- A. Consult all other Sections to determine the extent of work specified elsewhere but related to this Section. This work shall be properly coordinated to produce an installation satisfactory to the Owner.

1.4 SUBMITTALS

- A. Submit certified copies of 1/3 Octave Band Transmission Loss test data and STC rating as issued by an accredited independent acoustical laboratory.
- B. Submit Shop Drawings for fabrication and installation of door panels, door frames, hardware, and acoustical seals. Shop drawings shall include detail assembly drawings, showing the complete installation, a listing of materials, surface finishes, fabricating assembly and installation tolerances. No Shop Drawing shall be submitted which shows details or components that deviate from those shown or described on Construction Documents. A request for deviations must be submitted in writing to Architect for review and approval.
- C. Provide a Schedule of door assemblies using the same reference numbers for details and openings as those shown on Construction Documents.
- D. Submit with proposal a Schedule indicating a comparison of the Acoustical Performance and hardware requirements of these Specifications with the Acoustical Performance and hardware offered in the proposal.
- E. Samples: For factory-finished wood veneered doors, provide 12"x12" sample indicating matching stain color, sheen and wood species of architect's sample or of prefinished wood doors specified in Section 081416 "Flush Wood Doors".

1.5 PRODUCT HANDLING

- A. Deliver hollow metal work crated to provide protection during job storage. Use all means necessary to protect the material of this Section before, during and after installation and to protect the installed work and materials of all other trades. Inspect for damage prior to installation. Minor damage may be repaired on jobsite on approval; otherwise, replace damaged item.

1.6 QUALITY ASSURANCE:

- A. The manufacturer of Sound Control Door Assemblies shall have a minimum 5 years experience in the fabrication and installation of acoustically-rated door assemblies similar to those of this Section.
- B. Laboratory Certification: Acoustical testing of submitted door assemblies shall be conducted in an accredited independent acoustical laboratory. Sound transmission loss values shall be determined in accordance with ASTM E90-90. Sound Transmission Class (STC) shall be determined in accordance with ASTM E413-87.
- C. Certification of acoustical tests must be submitted by Contractor for approval prior to installation.
- D. The Contractor shall employ an organization and personnel who are trained and skilled mechanics with previous experience in the installation of similar precision fabricated assemblies.
- E. Fabrication shall not proceed until written approval of Submittal has been issued.

- F. The force in pounds required to open and operate each door panel shall be in accordance with the requirements of the Americans with Disabilities Act.

1.7 FIELD CERTIFICATION

- A. Contractor shall guarantee acoustical performance in the field of the Sound Control Door Assemblies. The acoustical performance rating in the field shall not be less than a Noise Isolation Class (NIC) 0 dB lower than the laboratory STC rating of the door assembly when tested in the field in accordance with the noise reduction test procedure ASTM 336-75.
- B. The field test will be conducted by the Architect's acoustical consultant. The manufacturer's representatives should be present to observe testing procedures and conditions. Approval of test data to be given by Architect or representative of Architect.
- C. The requirement that the Contractor, at the time of bidding, submit certification of STC rating as obtained in an accredited acoustical laboratory, is mandatory. The guarantee of the achievement of acoustical performance of the NIC rating in the field will not be accepted as a substitute for the laboratory test certification. Complete compliance with the acoustical performance specifications, both laboratory and field, is required of the Contractor to be eligible as a bidder on the furnishing and installation of the Sound Control Door Assemblies.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. Basis of Design Door Assembly: As a basis of design provide units fabricated by Industrial Acoustics Company, Model "Noise Lock 51" or equivalent models by one of the other manufacturers listed below.
 - 1. Noise Barriers, LLC Libertyville, IL 847-843-0500
 - 2. Overly Manufacturing Company Greensburg, PA 724-834-7300
 - 3. Krieger Steel Products Company Pico Rivera, CA 310-695-0645

2.2 GENERAL

- A. Fabricate units to be rigid, neat in appearance and free from defects, warp or buckle. Accurately form metal to required sizes and profiles. Wherever practical, fit and assemble units in the manufacturer's plant. Identify work that is not permanently factory-assembled before shipment to ensure proper assembly at the Project site. Weld exposed joints continuously: grind, fill dress and make smooth flush and invisible.
- B. Cold rolled sheet steel: Per ASTM A366 and ASTM A568.
- C. Supports and anchors: Fabricate not less than 14-gauge sheet metal of shapes and sizes required to secure frames to partitions and concrete floor. Provide jamb anchors as determined by wall construction. Anchors are to be spaced at 12" on center (max) and are to be of a corrosion resistant material.
- D. Frames: Frames shall be slip-in configuration, continuously reinforced, fabricated from 14 gauge cold rolled, galvanized steel with an A60 coating weight and furnished "split" in two (2) pieces, inside and outside, that are mitered and welded together allowing for easy installation into either existing or new construction openings.
- E. Shop applied paint: For all steel surfaces use rust-inhibitive type primer paint suitable for finish coat of paint applied in the field.
- F. Fire Rating: As specified below or as shown on Drawings.
- G. Fabrication: Steel units to be rigid and free of defects, warp or buckle.

2.3 HARDWARE

- A. Hinges: Cam-lift, butt-type, hinges, by door manufacturer. Hinge manufacturer to furnish laboratory test data on request certifying that hinges of identical design have been cycled a minimum of 125,000 times while supporting a door leaf weighing a minimum of 350 lbs.
 - 1. Quantity of hinges as follows:

- a. For door leaf thickness less than or equal to 2 1/2":
 - 1) Two (2) hinges required per leaf for openings up to and including 96" high.
 - 2) Three (3) hinges required per leaf for openings up to and including 120" high
- 2. Closers: "LCN" or "Norton"
- 3. Pull Handles: 1" diameter x 9" overall length, 3" projection.
- 4. Push Plates: 4" wide x 16" high x .050" thick.
- 5. Latchsets/Locksets: Provided by door supplier. Refer to finish hardware schedule for details
- 6. Thresholds: Thresholds shall be ungrooved solid metal or wood. Thickness shall match finish floor height. Finish to be selected by architect.
- 7. Hardware Finish: Match door hardware finish specified in Section 087100.
- B. Finish hardware preparation: Prepare hollow metal units to receive mortised and concealed finish hardware, including cutouts, reinforcing plates, and drilling and tapping as required. Provide reinforcing plates for surface mounted items. Weight of door panels to be considered.

2.4 PRE-HUNG

- A. Assembly and adjustment of door leaf, frame, acoustic seals, hinges and associated finish hardware shall take place at the factory to insure ease of installation, reliable operation and acoustic performance. The entire manufactured assembly shall be shipped to the job site ready to install and operate.

2.5 REINFORCEMENT

- A. Reinforce door panels for required hardware as follows:
- B. Hinges: 3/8" steel plate x 6" longer than hinge. Secure with not less than 6 spot-welds.
- C. Mortised Latchsets with Lever Handles: 14-gauge steel sheet with not less than 2 spot-welds.
- D. Surface Mounted Closers: 12-gauge steel sheet secured with not less than 6 spot-welds.

2.6 TYPE STC-51 SOUND CONTROL DOOR ASSEMBLY:

- A. Acoustical Performance: The acoustical performance requirements are that the door assembly (door frame, panel and acoustical seals) shall have not less than an STC 55 and include expanded specifications concerning sound transmission loss (TL) values in dB for each 1/3-octave band from 100 Hz to 5000 Hz, including TL at the 125 Hz 1/3-octave band which shall be a minimum 25 dB.
- B. Fabrication: The steel frame shall be 14-gauge cold rolled steel, reinforced continuously at jambs and head. The frame shall be of a "slip-in" configuration, and abut and terminate to specific partition construction as shown on Drawings. The sound insulating door panel shall be 2-1/2" thick, having cold rolled 14-gauge steel panel facings and continuously welded edges. The door shall be provided with a mortised astragal where scheduled on the drawings. The weight of door panel shall not exceed 11 psf. Vision ports to be installed in door panels where shown on Drawings and in Schedule. Provide integral double magnetic acoustical seals equal to those installed for certification tests.
- C. Door Finish: Provide metal doors with applied wood veneers, in species and finish to match prefinished wood doors specified in Section 081416 "Flush Wood Doors".
- D. Laminated Acoustical Glass (where applicable):
 - 1. Glass shall meet minimum requirements as specified in ASTM C1036-85.
 - 2. Interlayer shall be clear Saflex by Monsanto.
 - 3. Acoustical Performance: Laminated acoustical glass shall have not less than the STC values shown below, and include expanded specifications concerning sound transmission loss (TL) values in dB for each 1/3 octave band from 100 Hz to 5000 Hz, including TL at the 125 Hz 1/3 octave band which shall be no less than the values indicated below:

Glazing Thickness	STC	TL at 125 Hz
1/4"	36	27
1/2"	38	29

3/4"

41

30

4. Provide double glazed vision panels where required to meet or exceed the STC rating of the door.
- E. Glazing in Doors shall consist of the number of lites of glass type, thickness and treatment as required to achieve the specified acoustical performance of the door assembly, but shall in no case consist of fewer than two lites, each 1/4" thick laminated acoustical glass.
- F. Glazing channel shall be closed cell sponge EPDM glazing channel. Extruded U-channels by Atlantic India Rubber (219-534-1531), or approved equal.
- G. Non-Fire Rated Doors: Provide factory-installed, aluminum extruded stops and moldings with true mitered corners for double, glazed assemblies. Size of vision lite is to be determined from the door schedule. Safety glass or fire-resistive glazing product meeting doors' sound control and labeling requirements is acceptable.

PART 3 - EXECUTION

3.1 GENERAL

- A. Prior to all work of this Section, carefully inspect the installed work of all other trades and verify that all is complete to the point where this installation may properly commence. Verify that Door Assemblies may be installed in complete accordance with the original design and the approved Shop Drawings. In the event of discrepancy, immediately notify the Architect immediately in writing.
- B. Shop prefabricate all doors and frames into complete units, verifying all measurements at the site prior to fabrication. Knock-down frames shall not be approved.
- C. Fabricate in strict accordance with approved Shop Drawings. Accurately miter and fit all members to hairline joints. Weld or mechanically fasten along entire line of contact on the unexposed side.
- D. Install units in accordance with manufacturer's recommendations. The manufacturer shall provide a factory-trained engineer or mechanic at the jobsite to supervise the unloading, erection, final adjustments, and final check out of the Door Assemblies, including door panels, frames, hardware, and accessories.
- E. Back of steel frame shall be packed solid with minimum 6 pcf mineral wool batt insulation prior to installation when installed in drywall partition, or filled with grout prior to installation when installed in block partition.
- F. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set.
- G. Tightly caulk openings between steel frame and adjoining partition with clear silicone sealant.
- H. Door frames shall be delivered to jobsite with a steel spreader connecting the bottom legs of the frame to ensure non-racking. Spreader does not determine the opening width.
- I. Fit doors accurately in frames with clearances recommended by the manufacturer.
- J. Apply clear silicone sealant to all jamb and head seals prior to application of seals to frame.
- K. Check and readjust the operating finish hardware items just prior to final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including doors or frames that are warped, bowed or otherwise unacceptable.

END OF SECTION 083850