

SECTION 08 34 73 / 08 34 73.13

STC 54 METAL SOUND CONTROL DOORS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of the Contract, including general and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY:

- A. Furnish and install Sound Control Doors specified herein and per the locations and orientations shown on the Contract Documents. Verify all dimensions and requirements and coordinate with other trades as necessary
 - 1. Swing Sound Control Doors, Frame and Seals
 - 2. Glazing of Sound Control Doors (Where Applicable)
 - 3. Supply and Installation of hardware for Sound Control Doors.

1.3 RELATED SECTIONS:

- A. Specified elsewhere:
 - 1. Section _____: Administrative Provisions
 - 2. Section _____: Furnishing of Hardware
 - 3. Section _____: Finish painting of doors

1.4 SUBMITTALS:

- A. Submit shop drawings, manufacturer's data, and product performance certification in accordance with General Conditions.
- B. Shop drawings:
 - a. Provide full size details of frames and sound gasket components.
 - b. Provide installation details applicable to the construction in which the Sound Control Doors and frames will be installed.
 - c. Indicate construction, sizes, thicknesses, reinforcing, anchoring, and finishes of all materials.
 - d. Where applicable, doors requiring veneering or special finishes should note type, species, and finish on the drawings.
- C. Manufacturer's data:
 - a. Provide illustrations and descriptions of all seals and hardware items which will be exposed on doors and frames for design review by Architect and project Acoustics Consultant.

- b. Provide complete installation and adjustment information
- D. Certification:
- a. Provide certified laboratory test reports from an independent NVLAP certified acoustics laboratory showing that a fully operating installation of the specific Sound Control Door/Frame assembly proposed for installation has been measured in accordance with ASTM E 90-09 and has met or exceeded the scheduled STC ratings. The test results shall be representative of the performance of the proposed Sound Control Door/Frame assembly.
 - b. Provide written evidence of at least two acoustic field tests showing that comparable installations have been measured in excess of a Noise Isolation Class (NIC) which is not more than six (6) points below the specified STC rating following the procedures set forth in ASTM E 336-90.

1.4 QUALITY ASSURANCE:

- A. Regulatory Requirements:
- 1. Acoustical performance: STC (Sound Transmission Class) of 51.
 - 2. Reference Standards:
 - a. ASTM E90-99 or ASTM E90-09 and E413-87 Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions.
 - 3. All laboratory testing shall be performed within the last five (5) years to assure product integrity.

1.5 DELIVERY, STORAGE AND HANDLING:

- A. Upon award of contract and before commencement of building construction, submit to the Architect any special requirements (scheduling, flatness of floor, etc.) which are necessary to assure successful installation.
- B. Protect door systems during transit, handling and storage to prevent damage, soiling, and deterioration.
- C. Deliver frames to General Contractor with complete installation drawings and instructions for installation by the General Contractor.
- D. Deliver doors to project site only after the building has been closed in. Store doors in the building in a dry location and stack in accordance with manufacturer's instructions.
- E. Protect door assemblies, especially sound gaskets, from damage before, during and after their installation.
- F. Note any special conditions for unloading the doors.
- G. Swing doors shall be stored off the ground in an upright position and shall be protected from weather and damage.

- H. Wood veneered doors need to be stored in a clean, dry area that is temperature (60 to 90 degrees F) and humidity (50% maximum) controlled. If doors are purchased unsealed they must be sealed as soon as possible after receipt on the jobsite but no more than 4 days. Only the use of water based-based stains and finishes are acceptable. They will not degrade the adhesive used to bond the veneer to the metal door face. **Note:** Failure to follow these storage and finishing procedures will void the warranty.

1.6 WARRANTY:

- A. Provide a sound control door manufacturer's warranty covering failures of materials (excluding wear and tear on sound seals) and workmanship for a period of five (5) years from installation.
- B. Finish warranty: Furnish sound control door manufacturer's written warranty covering failure of the factory-applied finish on metal panels within the warranty period. This warranty shall be in addition to and not a limitation of other rights the Owner may have against the Contractor under the Contract Documents.

**Warranty Period: 5 years on door/frame assembly
2 years on hardware
1 year on wood veneer**

1.7 ACOUSTICAL PERFORMANCE

- A. All tests for validation of swing door performance for compliance with these specifications shall be conducted by an independent NVLAP certified testing laboratory, National Institute of Standards (NIST) accredited to the most current standard of testing. At a minimum the testing results must conform and be tested to ASTM E90-09 and ASTM E413-87.

Sound Transmission Loss, db

Octave Band Center Frequency, Hz

Door Type	125	250	500	1K	2K	4K	STC
QS-54	37	47	52	54	55	60	54

- B. The complete door/frame assembly, if tested in the field, shall meet the FSTC ASTM E336-97 within 6 dB of the specified STC rating.

1.8 EXPERIENCE:

- A. Swinging Sound Control Door supplier must provide a list of ten (10) similar successful installations supplied within the last five years.
- B. Materials requiring testing shall be manufactured in the same location, with the same equipment for at least five (5) years and have 3rd party, independent testing results no more than five (5) years old.

PART 2- PRODUCTS

2.1 APPROVED MANUFACTURER:

- A. The Sound Control door/frame assemblies shall be a 3 ½" thick, "QuietSwing" QS-54 doors as manufactured by **Noise Barriers, LLC.**, Libertyville, IL.

Manufacturer:

Noise Barriers, LLC
2001 Kelley Ct.
Libertyville, IL 60048

Phone: (847) 843-0500

www.noisebarriers.com

Contact:

John Finnegan
Email: info@noisebarriers.com

Phone: (315) 682-3821

- B. Source Limitations: Obtain pre-hung, pre-swung steel sound control door assemblies, including doors, frames, sound control seals, hinges, thresholds, and other items essential for sound control, from single source from single manufacturer.

2.2 MATERIALS of CONSTRUCTION

- C. Door leaf shall be fabricated from one skin a minimum of 12 gauge steel. Door shall be filled with sound-absorbing and dampening elements.
- D. Door frame shall be fabricated from minimum 14 gauge steel. Provide frames with anchors and attachments as necessary to transfer loads to surrounding wall construction. Split-door frames are designed to be installed after the walls are constructed.
- E. Acoustic seals: Side and head of door and frame shall be provided with two (2) sets of factory installed self-aligning magnetic-compression seals to hold door in closed position by the magnetic force of perimeter seals. Corners must be mitered and sealed.
- F. Door Bottom: Bottom of door shall be provided with a factory installed continuous, adjustable, Teflon coated, neoprene compression seal mortised into the door bottom and designed to compress against floor as door is closed. Automatic door bottom seals will not be accepted.
- G. Vision Lights: Factory installed double-glazed windows in dimensions per the door schedule. All glazing shall be installed by skilled workmen at the manufacturer's facility.
1. Where noted on drawings provide a 12"x 12", 4"x 30", 24"x 36" or 22"x 60" double glazed window with glazing thicknesses required to maintain the specified acoustical performance of the doors. Glazing is factory installed.
- H. Hardware:
1. Provide minimum two (2) factory installed cam-lift type hinges for each door. Finish of hinges shall be US26D.
 2. Locks, pull handles, push plates, and other door hardware as specified in the hardware schedule will be furnished and factory installed by the sound door

supplier. Door leaf and frame for each unit shall be prepared to receive security locks as specified in the hardware schedule.

3. Other Hardware: Comply with requirements in [Section 087100 "Door Hardware."] [Section 087111 "Door Hardware (Descriptive Specification)."]

2.3 FABRICATION:

- A. Assemble doors using all welded construction conforming to pertinent requirements of AWS D1-1. Assembly and adjustment of door, frame, acoustic seals and hinges shall be performed at the factory. Each entire unit shall be shipped to the job site ready for installation and subsequent operation. No field assembly of doors or frames shall be permitted.
- B. Reinforce as required to withstand operating loads.
- C. Using templates furnished by finish hardware.
- D. Painting and cleaning:
 1. On surfaces which are inaccessible after assembly, apply protective coating of the manufacturer's standard rust-inhibitive primer.
 2. After assembly, and prior to inspection, thoroughly clean all surfaces.
 3. After inspection, and completion of repairs and revisions required by the inspection, apply a shop coat of rust inhibitive primer to exposed surfaces.

PART 3 - EXECUTION

3.1 INSPECTION:

- A. Assure that all door openings conform to all dimensions and tolerances shown on architectural plans and sound control door manufacturer's approved shop drawings. Check that surfaces in contact with sliding doors are free of debris and that wall openings and adjoining air and vapor seal materials are ready to receive work of this section. All work must be plumb, flat, and square to accept the door system.
 - a. Installation shall not proceed until unsatisfactory conditions are corrected.
 - b. Beginning of installation means acceptance of existing conditions.

3.2 INSTALLATION

- A. Installation of door frames, doors perimeter seals, and final adjustments for door operation and for the design attenuation shall be performed by factory trained personnel under the supervision of the manufacturer.
- B. Comply with manufacturer's instructions and approved shop drawings.
- C. Install items plumb (or as indicated on the contract documents), straight, square, level, and in their proper elevation, plane and location.
- D. At fire-rated openings, install frames according to NFPA 80.

- E. At openings requiring smoke and draft control, install frames according to NFPA 105.
- F. Adjust bottom seal per manufacturer's instructions.
- G. After installation, adjust doors and hardware for smooth and easy operation.
- H. Once the facility is deemed complete all work shall be completed in every detail including the final adjustment of the bottom seal and the finished work shall be clean for Architect prior to final acceptance.

3.3 ADJUST AND CLEAN

- A. Check and readjust operation finish hardware in work just prior to final inspection. Leave work in complete and proper operating condition. Remove and replace defective work.
- B. Immediately after erection, sand smooth all rusted or damaged areas of prime coat and apply touch-up of compatible air-drying primer.

3.4 NOTIFICATION OF WORK COMPLETION:

- A. After installation and prior to acceptance testing, provide a letter to the Architect and the project Acoustics Consultant, co-signed by the General Contractor's project representative, indicating that all Sound Control Doors assemblies have been installed and gaskets have been adjusted to form an airtight seal around the full perimeter of each door panel.

3.5 ACCEPTANCE TESTING

- A. At the discretion of the Owner, Architect, or project Acoustical Consultant acoustic performance testing of the installation may be performed. The cost of such testing is not the responsibility of the door manufacturer.
- B. The installation shall be deemed acceptable if the Sound Control Door assemblies meet or exceed a Noise Isolation Class (NIC) which is not more than six (6) points below the specified STC rating.

END OF SECTION