

SECTION 08 34 73

Motor Operated Horizontal Sliding Sound Control Door

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. Single Sliding or Bi-Parting custom fabricated, steel constructed acoustical sliding door assembly with drop and lock bottom seal with a minimum thickness of 5". Refer to drawings for door type and size.
- B. If possible sliding doors shall be fully pre-assembled in the factory with separate frame and sliding drop and lock in system supplied complete. Larger doors shall be shipped to the site in multiple sections that are factory fit and match marked for field assembly.

1.3 SUBMITTALS:

- A. Shop drawings showing sections of typical members and details of accessories shall be submitted for approval prior to fabrication.
- B. Structural steel, support frame, and mounting channels if required, to be included by door manufacturer. Refer to drawings.
- C. Submit certified test reports made by an independent testing laboratory verifying that the specified acoustical performance of sliding doors of this type is met.

1.4 QUALITY ASSURANCE:

- A. Regulatory Requirements:
 - 1. ASTM E90-02- Airborne Sound Transmission Loss, 1/3 Octave Band Data.
 - 2. ASTM A36 – Medium Carbon Steel.
 - 3. ASTM E283 - Rate of Air Leakage Through Exterior Sliding doors, Curtain Walls, and Doors.
 - 4. ASTM E336-97 – Field Testing of Rated Assemblies.
 - 5. ASTM E413 - 87 Classifications for Rating Sound Insulation.
 - 6. ASTM E1425 - Determining the Acoustical Performance of Exterior Sliding Doors.

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. Sliding doors shall be stored off the ground in an upright position and shall be protected from weather and damage.

1.6 WARRANTY:

- A. Provide manufacturer's warranty covering failures of materials and workmanship for a period of two (2) years from installation. Acts of nature, misuse, or abuse are not covered.

1.7 ACOUSTICAL PERFORMANCE:

- A. All tests for validation of sliding 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 E90-02 and ASTM E413-87.
- B. Sliding doors must meet or exceed the minimum requirements of STC 51 when tested per ASTM E90-02 and evaluated by E413.

Sound Transmission Loss, db

Octave Band Center Frequency, Hz

Door Type	125	250	500	1K	2K	4K	STC
Sliding	34	44	47	53	52	60	51

- C. When tested the air infiltration at a test pressure of 6.24 psf (50 mph) shall not exceed 0.37 cfm per sq. foot as measured in accordance with ASTM E283.
- D. The complete sliding door assembly (framing members, glass, and integral components) shall meet or exceed the value listed (STC 51) when measured in accordance to ASTM E90 and E413. The sound transmission loss shall meet the following allowable deviations:

- 1) Three non-continuous 1/3 Octave band values may deviate below the specified values as much as three decibels.
 - 2) The summation of deviation of decibels from the specified values must not exceed six decibels.
- E. The complete sliding door 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. Motor Operated Horizontal Sliding Sound Control Door supplier must provide a list of ten (10) similar successful installations of Motor Operated Horizontal Sliding Sound Control Door 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 MATERIALS:

- A. The sliding stage doors shall be “**QuietSlide**” Series LTD-SL51 sliding 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

2.2 MATERIALS of CONSTRUCTION:

- A. Door panels shall be filled completely with sound deadening and absorbing fill for the full thickness of the panel assembly for a total minimum thickness of 5 inches. Heavy-duty hardware shall be utilized to guide door smoothly open and closed.
- B. Door assembly shall incorporate a design, that, will allow the installation, and, if required, the re-adjustment of the seal system by means of a 6 way adjustable design. Removal of the door to adjust the seals will not be allowed.
- C. Minimum thickness of the door skins shall be 12 GA for the interior and 14 GA for the exterior. Skins shall be seam welded.
- D. Sliding door shall be level sliding.

- E. Acoustic head and jamb seal system shall be supplied by the door manufacturer and be independent of the rough opening construction. A Teflon covered, internally mounted and automatically activated drop down bottom compression seal shall be supplied as an integral part of the door shall seal to the host building floor or threshold. The bottom seal must be accessible for maintenance or replacement without the necessity of removing the door.
- F. A pneumatic sealing system may be added to the door system (refer to drawings). This system will include the pneumatic seals, mounting clips, and compact compressor system.

2.3 FABRICATED COMPONENTS:

- B. Sliding door components shall be designed and assembled so as to provide pressure equalization and a continuous compressed seal on head, jamb and sill conditions.
- C. Finished members shall be free from twists, bends and open joints. Connection of members shall be proportioned to size of the members and develop strength and stiffness of the connected member.
- D. Fabricate frames allowing for minimum clearances and spacing around perimeter to allow for adjustment to plumb, level, true to line installation.
- E. Sliding doors shall incorporate Linear Guide Rails and Guide Block System, Urethane Power Transmission Belt and gear drive system and come equipped with an acoustical shroud over the guide and belt system.

2.4 GLASS AND GLAZING MATERIALS:

- A. If windows in the sliding door are required (refer to drawings) windows shall be glazed utilizing an air space as required and glazing thickness for the specified sound transmission loss in decibels.
- B. All windows must be factory glazed using one layer of ½" thick and one layer of 3/8" thick tempered safety glass separated by an air space and sealed in acoustically tight foam rubber seals. Refer to room elevations for location and size of windows.

2.5 ELECTRIC OPERATION:

- A. The TEFC electric gear-motor operator will be sized for the kinetic energy equivalent of the door at its maximum movement velocity. Doors shall accelerate smoothly in either the open or close state to a max velocity of six to eight inches per second and decelerate smoothly to a stop at the completion of an operation. Full open and close operation shall be adjustable with dual sliding limit switch assemblies.

- B. Motor is to be sized based on the following door sizes:
 - a. Door weight up to 550 lbs. = ½ HP, Corresponds to ~32 sq./ft. door
 - b. Door weight up to 1,200 lbs. = ¾HP, Corresponds to ~68 sq./ft. door
 - c. Door weight up to 2,000 lbs. = 1 HP, Corresponds to ~115 sq./ft. door
 - d. Door weight up to 2,800 lbs. = 1.5 HP, Corresponds to ~155 sq./ft. door
 - e. Door weight up to 3,600 lbs. = 2 HP, Corresponds to ~200 sq./ft. door
 - f. Door weight up to 5,200 lbs. = 3 HP, Corresponds to ~300 sq./ft. door
 - g. Door weight up to 8,800 lbs. = 5 HP, Corresponds to ~480 sq./ft. door
- C. All motorized doors shall be furnished with minimum two (2) /motion (one interior and one exterior) activated active infrared motion safety sensors. The infrared detection safety envelope will be field adjustable based on the requirements of each individual door installation.
- D. All motorized doors shall be furnished with two (2) (one Interior and one exterior) three button operation interfaces. (Please note if any required lockout or keyed interruption is required.)

2.6 DOOR CONTROL SYSTEM:

- A. System shall be in a NEMA 12 enclosure with a fusible disconnects, 230v 1 Phase or 230/460v 3 Phase operation. Electrical service is dependent on site conditions and motor requirements.
- B. Door operation shall be Open-Close-Stop. Operation can be:
 - a. Hold the button the entire time the door opens or closes.
 - b. Push the desire button to Open or Close, the door completes the operation automatically.
- C. Door safety operation
 - a. Objects or personnel that interrupt the path of the door will cause the door to stop, door operation can only be restarted after the obstruction is removed and the Open or Close button is pushed.
 - b. An Emergency-Stop or remote deactivation of the system is available as an added option.
 - c. Battery back-up system may be required (refer to drawings).
- D. Door shall be designed to open/close at 4-8 seconds per 6" of travel. Higher speeds are available as an option.

2.7 FINISHES:

- A. Doors and track assembly shall be prime painted for final field coat to be applied in the field by others.

PART 3 - EXECUTION

A.1 INSPECTION:

- A. Assure that all sliding door openings conform to all dimensions and tolerances shown on architectural plans and sliding 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. Comply with manufacturer's instructions and approved shop drawings.
- B. Tracks, frames, counter weight towers, covers, and guards shall be installed plumb, level and true to line unless noted in the plan documents.
- C. Tracks shall be anchored solidly to surrounding construction, adjusting as required to prevent distortion or misalignment.
- E. Where door assemblies are fabricated in sections due to shipping or handling limitations, field splice at approved locations by fastening the face joint with approved fasteners, and fill materials.
- F. Frames and shrouds shall be sealed to surrounding construction in accordance with manufacturers shop drawings, with a sealant appropriate to the finish and the surrounding construction.

3.3 DEMONSTRATION

Test and operate doors and demonstrate the operation of same to the satisfaction of OWNER at time of acceptance of completed work.

At the discretion of the Owner, Architect, or project Acoustics Consultant acoustic performance testing of the installation may be performed. The cost of such testing is not the responsibility of the door manufacturer.

The installations 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