# PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 and 01 Specification Sections, apply to this Section.

## 1.2 REFERENCES

A. ASTM E 90 Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions.

B. ASTM E 1408 Standard Test Method for Laboratory Measurement of the Sound Transmission Loss of Door Panels and Door Systems.

C. ASTM E413 Classification for Rating Sound Insulation.

D. ASTM E 336 Standard Test Method for Measurement of Airborne Sound Insulation in Buildings.

## 1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: Include the following:
1. Elevations of each door type.
2. Details of doors, including vertical- and horizontal-edge details and metal thicknesses.
3. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
4. Locations of reinforcement and preparations for hardware.
5. Details of each different wall opening condition.
6. Details of anchorages, joints, field splices, and connections.
7. Details of accessories.
8. Details of moldings, removable stops, and glazing.
9. Details of conduit and preparations for power, signal, and control systems.

C. Samples for Verification:
1. For each type of exposed finish required, prepared on Samples of not less than 3 by 5 inches.

D. Schedule: Provide a schedule of sound control door assemblies prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings. Coordinate with final Door Hardware Schedule.

## 1.4 INFORMATIONAL SUBMITTALS

A. Product Test Reports: For each type of door and frame assembly, for tests performed by a qualified testing agency.

1.5 QUALITY ASSURANCE

A. Unless noted otherwise, all materials specified (i.e., door, doorframe, and all necessary hardware including thresholds and seals) in this section shall be furnished from a single door manufacturer, who has been engaged in the manufacture of sound rated doors for at least 5 years.

B. Doors shall have been laboratory tested for acoustical performance. The acoustical test and report shall be as follows.
   1. Acoustical tests shall be performed in accordance with the latest version of ASTM Standard E 90 and ASTM Standard E 1408.
   2. Sound Transmission Class ratings (STC) shall be determined according to the latest version of ASTM E 413.
   3. Acoustical test shall be conducted for the entire door assembly including doorframe and gaskets/ seals.
   4. Acoustical reports shall be prepared by an engineer/technician qualified in the work of this nature. The reports shall provide the laboratory name, date of test, test report number, STC rating, and sound transmission loss (dB) values in 1/3 octave band frequencies from 100 to 5000 Hz.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products from one of the following:
   1. Overly Manufacturing Company, 574 West Otterman Street, Greensburg, PA 15601, www.overly.com.
   2. Krieger Specialty Products – 4880 Gregg Road, Pico Rivera, CA 90660, www.kriegerproducts.com.
   3. Jamison Door Company – P.O. Box 70, Hagerstown, MD 21740, www.jamisondoors.com.
   4. Or Equal.

2.2 PERFORMANCE REQUIREMENTS

A. Acoustical door assemblies shall provide laboratory measured acoustic performance as follows:

| Sound Transmission Class Rating | Minimum Sound Transmission Loss (dB re 20 µPa) at Octave Band Center Frequency[1], Hz | | | | | |
|---|---|---|---|---|---|---|
| | 125 | 250 | 500 | 1000 | 2000 | 4000 |
| STC 50 | 27 | 39 | 46 | 49 | 50 | 55 |
| Note: 1. Energy average over the 1/3 octave band center frequencies following ASTM E90-96 . | | | | | | |

B. Acoustical door assemblies shall provide field measured acoustic performance FSTC after installation as follows:

| Sound Transmission Class Rating | Minimum Field Sound Transmission Loss (dB re 20 µPa) at Octave Band Center Frequency[1], Hz | | | | | |
|---|---|---|---|---|---|---|
| | 125 | 250 | 500 | 1000 | 2000 | 4000 |
| FSTC 45 | 24 | 35 | 41 | 44 | 45 | 49 |
| Note: 1. Energy average over the 1/3 octave band center frequencies following ASTM E336-97 . | | | | | | |

2.3 FABRICATION

A. Materials: Frames for sound rated doors to be constructed from formed sheet steel or structural shapes and bars. Sheet steel shall be commercial quality level, cold rolled steel conforming to ASTM A366 or hot rolled, pickled and oiled steel conforming to ASTM A1011. Steel shapes shall comply with ASTM A36 and steel bars with ASTM A108, Grade 1018.

B. Door Design: Doors shall be a 1-3/4” thickness construction with sizes as indicated on Architect approved shop drawings. No visible seams shall be permitted on door faces. Face gauges, internal sound retardant core and perimeter door edge construction to be manufacturer’s standard for the specified model. No lead or asbestos shall be permitted in door construction to achieve STC performance. Face veneer species, if required by the project door schedule, cut and color to be as selected from manufacturer’s full range of available colors and patterns. No lead or asbestos shall be permitted in door construction to achieve performance requirements.

C. Seals: As supplied by door manufacturer to meet the door assembly performance requirements specified. Seals to be adjustable so as to account for building movement.

D. Door Finishing: Coordinate with the Project Architectural requirements.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrate and conditions under which steel doors and frames are to be installed and notify the Architect, in writing, of any conditions detrimental to proper and timely completion of the work.

B. Examine and verify opening sizes prior to delivering doors to site.

C. Do not proceed with the work until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Sound Rated Doors shall be installed in accordance with the recommended installation instructions of the manufacturer. Install with the manufacturer’s recommended tolerances for the specified STC ratings.

B. For doors with STC 50 or higher ratings, fully grout hollow metal frames with gypsum plaster or concrete grout. For doors with STC45 to STC49 ratings, pack door frames with glass fiber. Seal airtight between frame and wall on both sides.

C. Door seals to be installed and adjusted according to door manufacturer’s instructions.

D. Adjust seals to achieve continuous positive sealing. Seals to be evenly compressed with adequate pressure to provide acoustic seal, without over compression or seal distortion.

E. Qualified manufacturer's representative to inspect door installations and confirm that doors have been installed according to the manufacturer's recommendations.

END OF SECTION