

# Suggested Specifications

## Price Acoustic Louvers

### Division 23 – Heating, Ventilating, and Air Conditioning

#### Section 23 33 19 – Duct Silencers

The following specification is for a defined application. Price would be pleased to assist in developing a specification for your specific need.

#### PART 1 – GENERAL

##### 1.01 Section Includes

- A. Acoustic louvers.

##### 1.02 Related Sections

- A. Section 01 30 00 - Administrative Requirements.
- B. Section 01 40 00 - Quality Requirements
- C. Section 01 7419 - Construction Waste Management and Disposal
- D. Section 01 78 00 - Closeout Submittals.
- E. Section 01 79 00 - Demonstration and Training
- F. Section 23 05 48 - Vibration and Seismic Controls for HVAC Piping and Equipment.
- G. Section 23 31 00 - HVAC Ducts and Casings: Connections to silencers.
- H. Section 23 33 00 - Air Duct Accessories: Flexible duct connections.

##### 1.03 Reference Standards

- A. All referenced standards and recommended practices in this section pertain to the most recent publication thereof, including all addenda and errata.
- B. ANSI/AMCA 500 – Standard Laboratory Methods of Testing Louvers for Rating
- C. AMCA 511 – Certified Ratings Program Product Rating Manual for Air Control Devices
- D. ASHRAE Applications Handbook, Chapter 48 “Noise and Vibration Control”
- E. ASHRAE 62.1 – Ventilation For Acceptable Indoor Air Quality
- F. ASTM A653/A653M – Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-dip Process
- G. ASTM E84 – Standard Test Method for Surface Burning Characteristics of Building Materials
- H. ASTM E90 – Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements
- I. ASTM E413 – Classification for Rating Sound Insulation
- J. NFPA 90A – Standard for the Installation of Air-Conditioning and Ventilating Systems
- K. NFPA 90B – Standard for the Installation of Warm Air Heating and Air-Conditioning Systems
- L. NFPA 255 – Standard Method of Test of Surface Burning Characteristics of Building Materials
- M. SMACNA 006-2006 – HVAC Duct Construction Standards – Metal and Flexible
- N. UL 723 – Standard for Test for Surface Burning Characteristics of Building Materials

##### 1.04 Submittals

- A. See Section 01 30 00 – Administrative Requirements for submittal procedures.
- B. Product Data:
  - 1. Acoustic louver manufacturer to provide submittal drawings detailing all duct acoustic louver data specified in the mechanical drawing or schedule.
  - 2. Acoustic louver manufacturer shall submit certified laboratory performance obtained in accordance with ASTM E90 and ACMA 500, including transmission loss and/or free field noise and pressure drop.
  - 3. Data for each acoustic louver shall be provided with the size, configuration, and air volume as it appears on the drawing or schedule.

##### 1.05 Quality Assurance

- A. Acoustic louvers shall be installed in accordance with NFPA 90A and with NFPA 90B.
- B. Acoustic louver performance must have been substantiated in a NVLAP test facility in accordance with ASTM E90. The test facility must provide airflow in both directions through the test acoustic louver. The test set-up shall eliminate effects due to flanking, directivity, end reflection, standing waves and reverberation room absorption. The aero-acoustic laboratory must be currently NVLAP accredited for ASTM E90. Test facilities and reports shall be open to inspection from project engineer.
- C. Acoustic louver manufacturer must have a minimum ten (10) years of industry experience.
- D. Acoustic louver manufacturer shall provide a copy of their laboratory NVLAP accreditation certificate for the ASTM E90 test standard with the submittals. Data from non-NVLAP accredited test facilities is not acceptable.
- E. The acoustic louver manufacturer shall test acoustic louver(s) as indicated in the acoustic louver schedule if required and at owner's expense. Project engineer shall be notified of the test date in advance and tests shall comply with the project criteria.

##### 1.06 Warranty

- A. Provide 12 month manufacturer warranty from date of shipment for duct acoustic louvers.
- B. See Section 01 78 00 – Closeout Submittals for additional warranty requirements.

# Suggested Specifications

## PART 2 – PRODUCTS

### 2.01 Duct Acoustic louvers

- A. Basis of Design: Price Industries
  - 1. Acoustic Blade Louver: Model QA
  - 2. Acoustic Airfoil Louver: Model QAL
- B. Alternate Manufacturers:
  - 1. Alternate manufacturers must obtain written approval by the project engineer to bid.
  - 2. As a condition of pre-approval, alternate manufacturers must submit to the project engineer HVAC acoustic louver test reports for an acoustic louver tested in accordance with ASTM E90 in a test facility that is NVLAP-accredited for ASTM E90.
  - 3. A copy of the laboratory's current NVLAP accreditation certificate must be included with submitted reports and any changes to the specifications must be submitted and approved in writing by the project engineer prior to the bid due-date.
- C. General:
  - 1. Furnish and install Price acoustic louvers of the size, configuration, and acoustic performance as described on the plans and schedules.
  - 2. Acoustic louvers shall bear the AMCA 511 seal as the certified rating program applies to water penetration, air performance, and sound ratings.
- D. Performance:
  - 1. Acoustic louver transmission loss performance shall be attained through testing in accordance with ASTM Standard E90.
  - 2. Air performance data shall be certified by AMCA Standard 500.
  - 3. Sound transmission class (STC) rating shall be obtained in accordance with ASTM E413.
- E. Construction:
  - 1. Acoustic louvers shall be constructed in accordance with ASHRAE and SMACNA Standards for the pressure and velocity classification specified for the air distribution system in which it is installed.
  - 2. Acoustic louvers shall be constructed of:
    - a. 12 gauge aluminum
    - b. 20 gauge perforated aluminum liner
    - c. Absorptive acoustic fiberglass.
  - 3. Acoustic louver blades and frames shall be 0.080 inch wall thickness with 45 degree stationary acoustic profile blades.
  - 4. Acoustic media:
    - a. Acoustic media shall be shot-free inorganic glass fiber with long, resilient fibers, bonded with thermosetting resin.
  - 5. Glass fiber shall be packed with a minimum of ten percent compression to eliminate voids and settling.
  - 6. Fire-Performance Characteristics:
    - a. Acoustic louver assemblies, including acoustic media fill, sealants, and acoustical spacers shall have combustion rating equal to or less than shown below when tested according to ASTM E84, NFPA 255 or UL 723:
      - 1. Flame-spread index not exceeding 25
      - 2. Smoke-developed index not exceeding 50

## PART 3 – EXECUTION

### 3.01 Installation

- A. Install acoustic louver according to manufacturer's written installation instructions.
- B. Support duct acoustic louvers independently from ductwork.
- C. Ensure duct acoustic louvers are installed with airflow arrows in direction of airflow.

### 3.02 Field Quality Control

- A. See Section 01 40 00 - Quality Requirements for additional requirements.

### 3.03 Cleaning

- A. See Section 01 74 19 – Construction Waste Management and Disposal for additional requirements.

### 3.04 Closeout Activities

- A. See Section 01 78 00 - Closeout Submittals for closeout submittals.
- B. See Section 01 79 00 - Demonstration and Training for additional requirements.

## END OF SECTION 23 33 19