SECTION 10200

LOUVERS AND VENTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. This Section includes fixed metal wall louvers.

B. Air intake louvers for HVAC terminal units are specified with units in Division 15.

C. Related Sections: The following sections contain requirements that relate to this section.

1. Division 7 Section "Joint Sealants" for sealants installed in perimeter joints between louver frames and adjoining construction.

2. Division 9 Section "Painting" for field-painting of louvers.

3. Division 8 Section "Steel Doors and Frames" for louvers in hollow metal doors and frames.

4. Division 8 Section "Flush Wood Doors" for metal door louvers.

5. Division 15 Section "Metal Ductwork" for ductwork connected to metal wall louvers.

1.03 DEFINITIONS

A. Louver Terminology: Refer to AMCA Publication 501-85 for definitions of terms for metal louvers not otherwise defined in this section or referenced standards.
1.04 SYSTEM PERFORMANCE REQUIREMENTS

A. Structural Performance: Design, engineer, fabricate, and install exterior metal wall louvers to withstand the effects of loads and stresses from wind and normal thermal movement, without evidencing permanent deformation of louver components including blades, frames, and supports; noise or metal fatigue caused by louver blade rattle or flutter; and permanent damage to fasteners and anchors:

1. Wind Load: Uniform pressures (velocity pressures) indicated on structural drawings, acting inwards or outwards. Comply with applicable portions of governing building codes.

2. Normal thermal movement is defined as that resulting from the following maximum change (range) in ambient temperature. Base design calculations on actual surface temperatures of metals due to both solar heat gain and night time sky heat loss.

   a. Temperature Change (Range): 100 deg F (55.5 deg C).

B. Air Performance, Water Penetration, and Air Leakage Ratings: Provide louvers complying with performance requirements indicated as demonstrated by testing manufacturers stock units, of height and width indicated, according to Air Movement and Control Association (AMCA) Standard 500.

1.05 SUBMITTALS

A. Product data for each product indicated.

B. Shop drawings of louver units and accessories. Include plans, elevations, sections, and details showing profiles, angles, spacing of louver blades; unit dimensions related to wall openings and construction; free areas for each size indicated; and profiles of frames at jambs, heads and sills.

C. Where installed products are indicated to comply with certain structural design loadings, include structural computations, material properties, and other information needed for structural analysis which has been prepared by, or under the supervision of, a qualified professional engineer.

D. Product test reports evidencing compliance of units with performance requirements indicated.
E. **Product certificates** signed by louver manufacturers certifying that their products which comply with Project requirements are licensed to bear AMCA Seal based on tests made in accordance with AMCA Standard 500 and complying with AMCA Certified Ratings Program.

1.06 **QUALITY ASSURANCE**

A. **Single Source Responsibility**: Obtain louvers and vents from a single source where alike in one or more respects with regard to type, design, and finish.

B. **Qualify welding processes and welding operators** in accordance with D1.2 "Structural Welding Code - Aluminum" and D1.3 "Structural Welding Code - Sheet Steel."

C. Certify that each welder employed in unit of Work of this section has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.

D. Testing for recertification is Contractor's responsibility.

E. **Engineer Qualifications**: Professional structural engineer licensed to practice in jurisdiction where project is located and experienced in providing engineering services of the kind indicated which has resulted in the successful installation of louvers similar in material, design, and extent to that indicated for this Project.


1.07 **PROJECT CONDITIONS**

A. **Field Measurements**: Check actual louver openings by accurate field measurements before fabrication; show recorded measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delay of the Work.

**PART 2 - PRODUCTS**

2.01 **MANUFACTURERS**

A. **Manufacturers**: Subject to compliance with requirements, provide products by one of the following:
1. Louvers and Metal Wall Vents:

Airline Products Co. Div., Danzer Metal Works Co.
Airolite Co.
Airstream Products Div., Penn Ventilator Co., Inc.
Arrow United Industries.
Construction Specialties, Inc.
Industrial Louvers, Inc.
Reliable Metal Products.

2.02 MATERIALS

A. Galvanized Steel Sheet: ASTM A 526 or A 527, G90 zinc coating, mill phosphatized.

B. Fasteners: Of same basic metal and alloy as fastened metal, unless otherwise indicated. Do not use metals which are corrosive or incompatible with materials joined.

1. Use types, gages, and lengths to suit unit installation conditions.
2. Use Phillips flat-head machine screws for exposed fasteners, unless otherwise indicated.

C. Anchors and Inserts: Of type, size, and material required for type of loading and installation indicated. Use nonferrous metal or hot-dip galvanized anchors and inserts for exterior installations and elsewhere as required for corrosion resistance. Use toothed steel or expansion bolt devices for drilled-in-place anchors.

D. Bituminous Paint: SSPC-Paint 12 (cold-applied asphalt mastic).

E. Galvanizing Repair Paint: High zinc dust content paint for regalvanizing welds in galvanized steel, complying with SSPC-Paint-20.

2.03 FABRICATION, GENERAL

A. General: Fabricate louvers and vents to comply with requirements indicated for design, dimensions, materials, joinery, and performance.

B. Preassemble louvers in shop to minimize field splicing and assembly. Disassemble units as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.
C. Maintain equal louver blade spacing, including separation between blades and frames at head and sill, to produce uniform appearance.

D. Fabricate frames, including integral sills, to fit in openings of size indicated with allowances made for fabrication and installation tolerances of louvers, adjoining construction, and perimeter sealant joints.

E. Include supports, anchorages, and accessories required for complete assembly.

F. Provide vertical mullions of type and at spacings indicated but not further apart than recommended by manufacturer, or 72 inches o.c., whichever is less. At horizontal joints between louver units provide horizontal mullions except where continuous vertical assemblies are indicated.

G. Provide sill extensions and loose sills made of same material as louvers, where indicated, or required for drainage to exterior and to prevent water penetrating to interior.

H. Join frame members to one another and to fixed louver blades as follows, unless otherwise indicated, or size of louver assembly makes bolted connections between frame members necessary:

1. With fillet welds, concealed from view; or mechanical fasteners; or a combination of these methods; as standard with louver manufacturer.

2.04 FIXED FORMED SHEET METAL WALL LOUVERS

A. Horizontal Nondrainable Fixed Blade Louvers: Frames and louver blades fabricated from metal of kind and in form indicated below; complying with the product specified in Louver Data Sheet at end of this Section.

1. AMCA Seal: Mark units with AMCA Certified Ratings Seal.

2.05 LOUVER SCREENS

A. General: Provide each exterior louver with bird screens complying with the following requirements:

1. Screen Location for Fixed Louvers: Interior face, unless otherwise indicated.
B. **Secure screens** to louver frames with stainless steel machine screws, spaced at each corner and at 12 inch o.c. between.

C. **Louver Screen Frames**: Fabricate screen frames with mitered corners to louver sizes indicated and to comply with the following requirements:

1. **Metal**: Same kind and form of metal as indicated for louver frames to which screens are attached.

2. **Finish**: Same finish as louver frames to which louver screens are attached.

3. **Type**: Rewireable frames with a driven spline or insert for securing screen mesh.

D. **Louver Screening for Galvanized Steel Louvers**: Fit galvanized steel louver screen frames with 1/4 inch square mesh bird screening formed with 0.028 inch diameter galvanized steel wire.

2.06 **FINISHES, GENERAL**

A. Comply with NAAMM "Metal Finishes Manual" for recommendations relative to application and designations of finishes.

B. Finish louvers after assembly.

2.07 **GALVANIZED STEEL SHEET FINISHES**

A. **Surface Preparation**: Clean surfaces of dirt, grease, and other contaminants followed by a conversion coating of type suited to organic coating applied over it. Clean welds, mechanical connections, and abraded areas followed by application of galvanizing repair paint to comply with ASTM A 780.

B. **Factory-Priming for Field Painting**: Where field painting after installation is indicated, apply air-dried primer immediately following cleaning and pretreatment.
PART 3 - EXECUTION

3.01 PREPARATION

A. Coordinate setting drawings, diagrams, templates, instructions and
directions for installation of anchorages which are to be embedded in
concrete or masonry construction. Coordinate delivery of such items to
project site.

3.02 INSTALLATION

A. Locate and place louver units plumb, level, and in proper alignment with
adjacent work.

B. Use concealed anchorages where possible. Provide brass or lead washers
fitted to screws where required to protect metal surfaces and to make a
weathertight connection.

C. Form closely fitted joints with exposed connections accurately located and
secured.

D. Provide perimeter reveals and openings of uniform width for sealants and
joint fillers, as indicated.

E. Repair finishes damaged by cutting, welding, soldering, and grinding
operations require for fitting and jointing. Restore finishes so there is no
evidence of corrective work. Return items which cannot be refinished in
field to shop, make required alterations and refinish entire unit, or provide
new units.

F. Protect galvanized and nonferrous metal surfaces from corrosion or
galvanic action by application of a heavy coating of bituminous paint on
surfaces which will be in contact with concrete, masonry, or dissimilar
metals.

G. Install concealed gaskets, flashings, joint fillers, and insulation, as louver
installation progresses where required to make louver joints weathertight.
Comply with Division 7 Section "Joint Sealants" for sealants applied
during installation of louver.

3.03 ADJUSTING AND PROTECTION

A. Protect louver and vents from damage of any kind during construction
period including use of temporary protective coverings where needed and
approved by louver manufacturer. Remove protective covering at time of
Substantial Completion.
B. **Restore louvers** and vents damaged during installation and construction period, so that no evidence remains of correction work. If results of restoration are unsuccessful, as judged by Architect, remove damaged units and replace with new units.

3.04 **CLEANING**

A. Periodically clean exposed surfaces of louvers and vents, which are not protected by temporary covering, to remove fingerprints and soil during construction period; do not let soil accumulate until final cleaning.

B. Before final inspection, clean exposed surfaces with water and with a mild soap or detergent not harmful to finishes. Rinse thoroughly and dry surface.

3.05 **LOUVER DATA SHEETS**

A. **Fixed Formed Metal Wall Louvers:**

   - **Blade Style:** Weather-resistant, non-drainable
   - **Louver Depth:** 4"
   - **Frame Type:** Exterior flange.
   - **Frame and Blade Thickness:** 16-gauge
   - **Louver Blade Angle:** 45 degrees

   **Performance Requirements:** As follows, determined by testing units 48 inches wide high per AMCA Standard 500:

   - **Louver Nominal Area:** 50%.
   - **Static Pressure Loss:** Not more than 0.15 inch water gage at an airflow of 1000 fpm free area intake velocity.
   - **Water Penetration:** Not more than 0.02 oz. per sq. ft. of free area at an airflow of 1000 fpm free area velocity when tested for 15 minutes.

   **Products:** Ruskin Mfgr., Louver Model L345.

** END OF SECTION **