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**LOUVERS AND WALL VENTS**

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**1. GENERAL**

**1.1 General Requirements**

- .1 This section specifies fixed wall louvers for all mechanical rooms.

**1.2 Related Work**

- .1 Louver support framing in Section 05550 - Pre-Engineered Structure Frames.
- .2 Section 07900 - Joint Sealant.
- .3 Section 05530 - Aluminum Fabrications.

**1.3 Submittals**

- .1 Submit in accordance with Section 01300 - Submittals.
- .2 Shop Drawings shall show each louver type; showing material, finish, coating system, colour, size and arrangement of members, method of assembly, optional components, and installation and anchorage details.
- .3 Manufacturer's Literature and Data:
  - .1 Maintenance and operating literature for each type of louver.

**1.4 References**

- .1 The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.
- .2 American Society for Testing and Materials (ASTM):
  - .1 A167-99(R2004) Stainless and Heat-Resisting Chromium - Nickel Steel Plate, Sheet, and Strip
  - .2 A1008-05 Steel, Sheet, Carbon, Cold Rolled, Structural, and High Strength Low-Alloy with Improved Formability
  - .3 B209/B209M-04 Aluminum and Aluminum Alloy, Sheet and Plate
  - .4 B221/B221M-05 Aluminum and Aluminum Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes
- .3 D. National Association of Architectural Metal Manufacturers (NAAMM):
  - .1 Metal Finishes Manual (1988 Edition)
  - .2 AMP 500 Metal Finishes Manual

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- .4 National Fire Protection Association (NFPA):
  - .1 90A-02 Installation of Air Conditioning and Ventilating Systems
- .5 American Architectural Manufacturers Association (AAMA):
  - .1 605-98 High Performance Organic Coatings on Architectural Extrusions and Panels
- .6 Air Movement and Control Association, Inc. (AMCA):
  - .1 500-L-99 Testing Louvers

**1.5 System Description**

- .1 Design Requirements: Design louver members for applicable loads established for the locality. Deflection: Maximum 1/175 of span of this loading. Pressure and suction of wind as calculated in accordance with hourly wind pressure one in 30. Gust effect factor: Minimum 2.5.
- .2 Design for expansion and contraction of materials as required.
- .3 Performance Requirements: AMCA 511 certified rating for water penetration and air performance, tested with mill finish and using 0.28 millilitre as the point of beginning water penetration.

**1.6 Warranty**

- .1 Submit a five-year warranty for the work of this Section against defects in materials and workmanship. Warrant that louver & vent work is structurally sound and free from distortion; that aluminum finishes will not develop excessive fading or non-uniformity of colour, and will not crack, peel or otherwise corrode.

**2. PRODUCTS**

**2.1 Acceptable Manufacturers**

- .1 Airolite
- .2 Penn
- .3 Airstream
- .4 West Vent
- .5 Nailor,
- .6 Ruskin

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- .7 Ventex
- .8 E.H. Price Ltd.
- .9 McGill Architectural Products.

**2.2 MATERIALS**

- .1 Aluminum: Extruded shapes of Alcan 6063 aluminum alloy T5. Sheet aluminum: Alloy 1100-H14 anodizing quality.
- .2 Steel: CAN/CSA G40.21 hot-dip galvanized in accordance with CSA G164. Thread dimensions to be such that nuts will thread over bolts without re-threading or chasing galvanized threads.
- .3 Steel Sheet: ASTM A525-M galvanized not less than 381 g/m<sup>2</sup> (1.25 oz/sq.ft.) of zinc coating, 0.70 mm.
- .4 Bituminous Paint: CAN/CGSB-1.108-M.
- .5 Butyl Tape: Tremco 440 tape by Tremco Mfg. Co., Weatherban Ribbon Sealer by 3M Inc.
- .6 Bird Screen: 13 mm mesh consisting of 1.6 mm core thickness diameter galvanized steel wire in galvanized steel frame; screening replaceable within frame.
- .7 Insect Screen for Intake: Aluminum framed 14/18 aluminum mesh.
- .8 Fastenings: Stainless steel.
- .9 Flashing and Close-off Panels: 1.2 mm thick, aluminum.
- .10 Galvanizing: CSA G164 or ASTM A446, minimum Z275. Follow recommended precautions to avoid embrittlement of base metal by overpickling, overheating or during galvanizing.
- .11 Sealant: CAN/CGSB-19.24-M Dymeric 240 by Tremco Ltd.
- .12 Joint Backing: Closed cell foam polyethylene or chemically compatible rod stock or butyl or neoprene; diameter 25 percent greater than joint width.
- .13 Primers: As recommended by sealant manufacturer to various job conditions.
- .14 Cleaning Material: Xylol, Methyl-ethyl-ketone, Toluol or as recommended by sealant manufacturer.

**2.3 Fabrication**

- .1 Fabricate louvers of extruded alloy aluminum, complete with necessary accessories, reinforcement, flashings, fixing devices and integral wind-driven-rain baffle on blades.

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- .2 Fabricate extruded aluminum angles, channels and reinforcement as required to frame and support the louver elements.
- .3 Fabricate louvers with no intermediate mullions and reinforcement visible on the building exterior; finished appearance of continuous blades housed in a rectangular frame.
- .4 Fabricate frames with weep holes at maximum 600 mm o.c. and positioned to direct water to building exterior.
- .5 Fabricate frames with allowance for expansion at jambs and at maximum 6000 mm o.c.
- .6 Louvers: Mullion Type by Aerolite model K609 106 mm deep, 3 mm thick frame and storm blade with reinforcing bosses and expandable interlocked mullions where required. Provide sill and continuous closure angles around perimeter. Free area minimum 46 percent.
- .7 Brick/Block Vents: Extruded aluminum modular of size indicated, with insect screen mechanically secured on interior face of vent.
- .8 Sill Extension for Louvers Mounted in Face Brick: 2.06 mm thick aluminum, extruded to profile indicated and designed for two-point anchorage installation (at front and back of sill).
- .9 Blank-off Panel: 38 mm thick glass fibre insulation 48 kg/m<sup>3</sup>, laminated on both sides with 1.0 mm thick aluminum sheet. Finish exterior and interior sheet: To match louver finish. Wrap panel edges with face sheet.
- .10 Finish for Louver Assembly(ies): High performance fluoropolymer finish: AA-C12C40R1x, chemical finish: cleaned with inhibited chemicals; chemical finish: conversion coatings; organic coating:
  - .1 Manufacturer's standard three coat, thermocured system consisting of specially formulated inhibitive primer, fluoropolymer color coat, and clear fluoropolymer topcoat, with both color coat and clear topcoat containing not less than 70% polyvinylidene fluoride resin by weight. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with AAMA 2605 and with coating and resin manufacturers' written instructions. Colour: colour to match UC50958XL Silver Gray Metallic by PPG

**2.4 Louver Schedule**

Tag No.	Drawing Ref.	Location	Width (mm)	Height (mm)	Remarks
L-01	WA-H0131	Mechanical Room No. 4	4200	2200	AHU-H071 and combustion air
L-02	WC-H0111	Receiving	600	300	EF-H044
L-03	WC-H0111	Garbage Recycling	400	400	
L-04	WC-H0111	Waste Storage	400	400	

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L-05	WC-H0131	Mechanical Room No. 3	6867	3350	MUA-H031/032/033
L-06	WC-H0131	Mechanical Room No. 3	3952	3350	
L-07	WC-H0131	Mechanical Room No. 3	1431	3350	combustion air
L-08	WI-H0111	Fire Pump Room	1200	1200	
L-09	WI-H0111	Fire Pump Room	800	1200	
L-10	WI-H0131	Mechanical Room No. 1	5800	3600	AHU-H061
L-11	WI-H0131	Mechanical Room No. 1	400	400	EF-H064
L-12	WR-H0121	Residuals Handling	1000	1000	ERH-H016
L-13	WR-H0131	Mechanical Room No. 2	8200	2000	MUA-H0001/021/011/022
L-14	WR-H0131	Mechanical Room No. 2	7250	3150	MUA-H0001/021
L-15	WR-H0131	Mechanical Room No. 2	12483	3150	MUA-H011/022
L-16	WR-H0131	Mechanical Room No. 2	2980	3150	combustion air
L-17	WR-H0131	Mechanical Room No. 2	9770	3150	MUA-H012/051

**2.5 Closure Angles and Closure Plates**

- .1 Fabricate from 2 mm thick stainless steel or aluminum.
- .2 Provide continuous closure angles and closure plates on inside head, jambs and sill of all exterior wall louvers.
- .3 Secure angles and plates to louver frames with screws, and to masonry or concrete with appropriate fasteners.

**2.6 Protection**

- .1 Provide protection for aluminum against galvanic action wherever dissimilar materials are in contact, by painting the contact surfaces of the dissimilar material with a heavy coat of bituminous paint (complete coverage), or by separating the contact surfaces with a performed synthetic rubber tape having pressure sensitive adhesive coating on one side.
- .2 Isolate the aluminum from plaster, concrete and masonry by coating aluminum with zinc-chromate primer.
- .3 Protect finished surfaces from damage during fabrication, erection, and after completion of the work. Strippable plastic coating on high performance finish.

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**3. EXECUTION**

**3.1 Installation**

- .1 Set work accurately, in alignment and where shown. Items shall be plumb, level, free of rack and twist, and set parallel or perpendicular as required to line and plane of surface. General contractor shall field confirm openings and elevations prior to fabrication.
- .2 Furnish setting drawings and instructions for installation of anchors and for the positioning of items having anchors to be built into masonry and concrete construction. Provide temporary bracing for such items until masonry/concrete is set.
- .3 Provide anchoring devices and fasteners as shown and as necessary for securing louvers to building construction as specified. Power actuated drive pins may be used, except for removal items and where members would be deformed or substrate damaged by their use.
- .4 Generally, set wall louvers in masonry and concrete walls during progress of the work. If wall louvers are not delivered to job in time for installation in prepared openings, make provision for later installation. Set in cast-in-place concrete in prepared openings.

**3.2 Cleaning and Adjusting**

- .1 After installation, all exposed prefinished and plated items and all items fabricated from stainless steel and aluminum shall be cleaned as recommended by the manufacturer and protected from damage until completion of the project.
- .2 All movable parts, including hardware, shall be cleaned and adjusted to operate as designed without binding or deformation of the members, so as to be centered in the opening of frame, and where applicable, to have all contact surfaces fit tight and even without forcing or warping the components

**END OF SECTION**