SECTION 08 90 00

LOUVER MODEL: SA-440-HP2

Wall Louvers

08 90 00 (10200)

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Fixed, extruded-aluminum sand trap combination louver.

1.2 RELATED SECTIONS

A. Section 05120 - Structural Steel: Supports for penthouses.

B. Section 07900 - Joint Sealers: Sealing around perimeter of louvers.

C. Section 09900 - Paints and Coatings: Field painting.

D. Section 15810 - Ducts: Ductwork attachment to louvers, and blank-off panels.

E. Section 15820 - Duct Accessories: Fire/smoke dampers associated with exterior wall louvers.

F. Section 15924 - Analog Control Equipment: Actuators for operable louvers.

G. Section 15926 - Digital Control Equipment: Actuators for operable louvers.

H. Section 15928 - Instruments and Control Equipment: Actuators for operable louvers.

1.3 REFERENCES

A. EN13181:2001 - Performance testing of louvres subject to simulated sand.

B. HEVAC General Specification and Product Directory for Air Distribution and Related Equipment.

C. Air Movement and Control Association International, Inc.

D. AMCA Standard 500-L-99 Laboratory Methods of Testing Louvers for Rating

E. AMCA Publication 501 Application Manual for Louvers

F. The Aluminum Association Incorporated

G. Aluminum Standards and Data

H. Specifications and Guidelines for Aluminum Structures

I. American Society of Civil Engineers

a. Minimum Design Loads for Buildings and Other Structures

J. American Society for Testing and Materials

a. ASTM B209
b. ASTM B211
c. ASTM B221
d. ASTM E90-90

K. Architectural Aluminum Manufacturers Association

L. AAMA 800 Voluntary Specifications and Test Methods for Sealants

M. AAMA 605.2 Voluntary Specifications for High Performance Organic Coatings on Aluminum Extrusions and Panels.

a. AAMA TIR Metal Curtain Wall Fasteners
b. AAMA 2605-98 Superior Performing Organic Coatings on Aluminum Extrusions Panel

N. Canadian Standards Association

a. CAN3-S157-M83 Strength Design in Aluminum

b. S136 94 Cold Formed Steel Structural Members

1.4 SUBMITTALS

Product Data:

a. For each type of product indicated, provide data describing design characteristics, Maximum recommended air velocity, design free area, materials and finishes, and manufacturer's data sheets on each product to be used, including:
Preparation instructions and recommendations.
Storage and handling requirements and recommendations.
Installation methods

b. For louvers specified to bear AMCA seal, include printed catalog pages showing specified models with appropriate AMCA Certified Ratings Seals.

Shop Drawings:

a. For louvers and accessories: Include plans, elevations, sections, specific details, and connections for all component parts. Show frame and blade profiles, angles, and spacing.

Samples: For each type of metal finish required.
Submittal: For louvers indicated to comply with structural performance requirements and design criteria indicated.
Product Test Reports: Based on tests performed according to AMCA 500-L

1.5 DELIVERY, STORAGE AND HANDLING

Delivery: Materials should be delivered to site in manufacturer’s original, closed containers sealed packaging, with labels clearly indicating the name of the manufacturer and the type of the material.

Storage: Materials should be stored indoors in a dry place to be protected against any means of damage. If it was stored outside for any reason, the material must be covered with a weather proof flame resistant sheeting or tarpaulin.

Handling: Materials should be handled over as recommended by the manufacturer to prevent them from being damaged. Lifting the louver by the heads, sills and blades will result in its damage. The louver sections should only be lifted and carried by the jambs.

1.6 QUALITY ASSURANCE

Source Limitations: Obtain louvers and vents from a single manufacturer where indicated to be of same type, design, or factory-applied color finish.

Structural requirements: Design louvers, including comprehensive engineering analysis by a qualified engineer, using structural performance requirements and design criteria indicated. Provided louvers shall withstand the effects of gravity loads and the specified loads and stresses within limits and under conditions indicated without permanent deformation of louver components, noise or metal fatigue caused by louver blade rattle or flutter, or permanent damage to fasteners and anchors.

Performance requirements: Provide louvers complying with requirements specified, as demonstrated by testing manufacturer's stock units identical to those provided, except for length and width according to AMCA 500-L.

Warranty: Provide written warranty to the client ensuring that all products will be free of defective materials or workmanship for a period of two years from the date of delivery. Upon notification of such defects, within the warranty period, necessary repairs to be done at the convenience of the Employer.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Supplied by Ontario Specialty Architectural Products LLC,
PO Box 392567, Dubai, UAE; T: +97142776760 F: +97142776736
E-mail: sales@ontariosa.com Web: www.ontariosa.com
Under License of **McGill Architectural Products**, 1050 Squires Beach Road, Pickering, Ontario, CA L1W 3N8. Tel. 905-420-0485 / 1-888-624-4557 Fax. 905-420-4564 / 1-888-624-4558 Website: www.mcgillarchitectural.com E-mail: sales@mcgillarchitectural.com

2.2 MATERIALS

Aluminum Extrusions: ASTM B 221M, Alloy 6063-T5, 6063-T6 or 6061-T6.
Aluminum Sheet: ASTM B3209M, Alloy 1100, 3003 or 5005 with temper as required for forming.
Fasteners: Use types and sizes to suit unit installation conditions.
For fastening aluminum, use aluminum or 300 series stainless-steel fasteners.

2.3 FABRICATION

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

Use stainless steel or aluminum mechanical fasteners for assembling louvers.

Join frame members to each other and to fixed louver blades with threaded fasteners or concealed fillet welds as per the manufacturer's standards unless otherwise indicated.

Provide louvers along with screens and any other accessories as indicated in the drawings which should include the items required for complete assembly such as structural supports, anchorage, etc.

2.4 LOUVER MODEL DESCRIPTION

Louvers – General SPECS: Factory fabricated and assembled; AMCA tested under AMCA 500-L.
Wind Load Resistance: Design to resist positive and negative wind load of ___ psf (___kPa) without damage or permanent deformation.
Blades: One piece extrusions with reinforcing bosses, supported and lined up with heavy-gage extruded aluminum blade braces, positively interlocked to each blade and mechanically secured to structure by aluminum and stainless steel fastenings.
Mullions: Coordinated to match louvers.
Screens: Provide insect screens/bird screens at intake louvers and bird screens at exhaust louvers.

Where louver exceeds manufacturer's recommended unsupported width or height, concealed, provide back-of-louver structural supports consisting of minimum 2 inch by 2 inch by 1/4 inch (50 mm by 50 mm by 6.4 mm) aluminum angles, designed to resist specified wind loads; location of angles coordinated to suit penetrations of mechanical air systems.
Exposed edges and ends of metal dressed smooth, free from sharp edges.
Exposed connections and joints constructed to exclude water.
For horizontal louver blades butt jointed with expansion allowance, provide concealed method of aligning blades of adjacent panels so that blades appear to be continuous without any face frame.
For louvers immediately adjacent to existing louvers, match style of louver blades and line up blades with existing blades.

Louvers – Detailed SPECS: Fixed Extruded Aluminum Sand Trap Combination Louver

“OSA Sand Trap Combination series; 151.6mm deep extruded aluminum construction; frame with channel profile; corner joints mitered and mechanically fastened, with continuous recessed caulking channel each side; intermediate mullions matching frames; gutters rated for water penetration maintained effectiveness rate tested in accordance with AMCA 500-L. The sand trap louver capable of span across the elevation with fully continuous vertical blade span, tested for sand rejection as per EN 13181:2001 standards and air performance as per AMCA-500L99. Horizontal louver is tested for air flow and water penetration as per AMCA-500L standards. Horizontal braces to be fully integrated in the louver assembly. No horizontal joints.”

SA-440-HP comprises 101.6 mm sand trap louver core with 50 mm deep continuous horizontal fascia blades all in extruded aluminum frames. A galvanized steel option is also available.

Basis-of-Design Product: OSA louvers; **Model SA-440-HP2**

a. Total Louver Depth: 6 inches (151.6 mm)
b. Blade Profile: Horizontal fixed blade in the front and vertical sand trap blade at the back
c. Frame and Blade Nominal Thickness: Frame 2 mm; Horizontal Front blades 1.98 mm; Vertical Rear Blades: 1.60 mm and 2 mm options are available.

d. Louver Sand Rejection tested in accordance with EN 13181:2001 standards

SAND GRADE	SAND REJECTION EFFICIENCY %			
	0.5 m/s	1.0 m/s	1.3 m/s	2.0 m/s
76 - 699 microns (Standard)	88.1%	63.0%	36.6%	5.4%
355 - 425 microns (Coarse)	96.3%	89.5%	78.7%	20.1%

e. Free Area: 28.6 percent, minimum. Based on test sample of 48 inch (1220 mm) x 48 inch (1220mm).

f. Static Pressure Loss: Not more than (18 Pa) @ (2.6 m/s) Free Area Velocity.

2.5 LOUVER FINISHES

General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products for recommendations for applying and designating finishes. Pre-treat aluminum and apply primer and finish coats to exposed metal surfaces in strict accordance with the manufacturer's written instructions. Remove visible scratches and blemishes from exposed surfaces upon completing the finishing process.

Powder Coating: 1.5 to 3 mil. thick full strength 100% resin Fluoropolymer coating with zero VOC's emission into the facility of application. This coating meets the requirements of AAMA 2605 specification "Voluntary Specification for High Performance Organic Coatings on Architectural extrusions and Panels". The super durable powder coating is covered by 20 years limited warranty against failure or excessive fading of the Fluoropolymer Powder Coat finish from the date of material shipment.

High-Performance Organic Finish: Two-coat fluoropolymer finish system complying with AAMA 2604 and containing not less than 70 percent PVDF resin by weight in color coat. A minimum of 1.4 mil (0.035mm) thickness of the resin has to be applied on the louver. The aluminum surface shall be cleaned, etched and given a chromate conversion pre-treatment before applying the coat in a continuous operation in the manufacturer's plant. The Kynar coating is covered by 20 years limited warranty against failure or excessive fading of the applied finish from the date of material shipment.

High-Performance Organic Finish: Three-coat fluoropolymer finish system complying with AAMA 2604 and containing not less than 70 percent PVDF resin by weight in color coat. A minimum of 1.0 mil (0.025mm) thickness of the resin has to be applied on the louver. The aluminum surface shall be cleaned, etched and given a chromate conversion pre-treatment before applying the coat in a continuous operation in the manufacturer's plant. The Kynar

coating is covered by 20 years limited warranty against failure or excessive fading of the applied finish from the date of material shipment.

Anodize Finish (Clear or Bronze)

Architectural Class I anodic coating has to be applied on the louver and tested in accordance with ASTM B244-68 standard.

a. Class I Clear Anodized Finish (.0007”)
b. Class II Clear Anodized Finish (.0004”)
c. Clear Anodized Finish – Two Stage Bronze Color- Light, Medium, Dark, Champagne.

Primer: Zinc chromate, alkyd type; dry film thickness of 25 micrometers; field welds spot primed after roughness and irregularities removed by grinding and cleaning with wire brush.

Color and Gloss: As selected by Architect from manufacturer’s full range.

2.6 LOUVER ACCESSORIES

Bird Screens: Unless otherwise specified, louvers’ exteriors to be furnished with (18mm x 36mm) diamond cell flattened and expanded aluminum mesh secured by 1.4 mm thick extruded aluminum frame with mitered corners and corner locks. The screen frame has to be of same kind and form of metal as indicated for louver to which screens are attached. Screens to be provided with reinforced corners; removable, screw attached; installed on inside face of louver frame.

Insect Screens: Unless otherwise specified, louvers’ exteriors to be furnished with stainless steel insect mesh having (1.4mm x 1.4mm) square cells of 0.23 mm thickness secured by 1.4 mm thick extruded aluminum frame with mitered corners and corner locks. The screen frame has to be of same kind and form of metal as indicated for louver to which screens are attached. Screens to be provided with reinforced corners; removable, screw attached; installed on inside face of louver frame.

Blank off panels:

2 inch (51 mm) thick insulated sandwich panel; 0.06 inch (1.5 mm) thick aluminum sheets with core of 4.0 pound per cu ft (64.0 kg per cubic m) density mineral fiber rigid insulation; provide in all non-active areas of louvers.

a. Provide channel shaped aluminum closures to conceal core materials at cut-outs.
b. Finish: To match louver.
c. Panel perimeter to be mitered at the corners, and finished to match the louver.

Blank-Off Sheets: Same material as louver, non-insulated sheets.

Sills: To be minimum 0.06 inch (1.27 mm) thick aluminum.

Formed back edge turned up at underside of louver sill sections.
Louvers with Jambs Designed to Drain Water: Extend sill under entire frame section.
Other Louvers: Locate turned up back edge under bottom frame member.

Fasteners and Anchors:

For Aluminum: Series 300 or 400 stainless steel.
For Steel Exposed to Weather: Series 300 stainless steel.
For Steel Not Exposed to Weather: Hot-dipped galvanized or cadmium plated.
Flashings: Same material as louver frame, formed to required shape, single length in one piece per location.
Sealant: As specified in Section 07900.

PART 3 EXECUTION

3.1 EXAMINATION

Examine openings to receive the louvers. Notify the client of conditions that would adversely affect the installation or subsequent utilization of the louvers. Do not proceed with installation until any unsatisfactory conditions are corrected.

3.2 INSTALLATION AND PROTECTION:

Comply with manufacturer’s written instructions.

Install louvers level and plumb, true to dimensions, and free from distortion or defects detrimental to appearance and performance; plumb louvers within a tolerance of 1:175.

Install flashings and align louver assembly to ensure moisture shed from flashings and diversion of moisture to exterior.

Secure louver frames in openings with concealed fasteners.

Provide adequate reinforcing and anchorage to ensure a rigid installation.

Install perimeter sealant and backing rod in accordance with Section 07900; where sills are integral, set in two continuous beads of sealant.
Do not install damaged components.
Verify dimensions of supporting structure by taking accurate field measurements at the site so that the work will be accurately designed, fabricated and fitted to the structure.
Erection Tolerances: Follow the manufacturer's installation guide and architectural drawings before anchoring louvers to the substructure.
Use anchorage fasteners where possible. Provide brass or lead washers fitted to screws where required to protect metal surfaces and to make a weather-tight connection.
Provide perimeter reveals and openings of uniform width for sealants and joint fillers, as indicated.

Cut and trim component parts during erection only after getting the manufacturer's approval.
Do not erect deformed or damaged members. Instead, repair any damaged finishes so no evidence remains of corrective work. Return items that cannot be refinished in the field to the factory and refinish entire unit or provide new units.
Protect galvanized and nonferrous-metal surfaces that will be in contact with concrete, masonry, or dissimilar metals from corrosion and galvanic action by applying a protection tape as specified or by installing nonconductive spacers as recommended by the manufacturer.

3.3 ADJUSTING AND CLEANING:

Strip protective finish coverings.

Fingerprints, trademarks, labels and dirt accumulated on the exposed surface of the louver during installation to be removed immediately with water and a mild soap and detergent that is not harmful to the material finish. Thoroughly, rinse surfaces then dry them.
Repair and restore minor damaged surfaces as directed by the manufacturer so no evidence remains of corrective work.
Install louver assembly in accordance with manufacturer's instructions.

Install louvers level and plumb, true to dimensions, and free from distortion or defects detrimental to appearance and performance; plumb louvers within a tolerance of 1:175.

Install flashings and align louver assembly to ensure moisture shed from flashings and diversion of moisture to exterior.

Secure louver frames in openings with concealed fasteners.

Provide adequate reinforcing and anchorage to ensure a rigid installation.

Install perimeter sealant and backing rod in accordance with Section 07900; where sills are integral, set in two continuous beads of sealant.

Coat all aluminum surfaces in contact with cement, concrete, masonry, or dissimilar metals with heavy coat of non-staining alkali resistant bituminous paint.

END OF SECTION