SECTION 08 91 00

HURRICANE LOUVERS

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\*\* NOTE TO SPECIFIER \*\* The Airolite Co, hurricane louvers.
This section is based on the products of The Airolite Co., which is located at:
P.O. Box 410
Schofield, WI 54476
Phone: 715-841-8759
Fax: 715-841-8773
Email: info@airolite.com
Web Site: http://www.airolite.com
[Click Here] for additional information.
While the Airolite name has been synonymous with high quality architectural louvers since 1920, today architects, builders and building owners also associate Airolite with custom grilles, sunscreens and sun controls. In fact, many of the nation's most prominent commercial buildings coast-to-coast feature Airolite's all-welded louvers and other innovative architectural products.

1. GENERAL
	1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Stationary Hurricane Louvers, Miami-Dade County Approved.
		2. Stationary Hurricane Louvers, Florida State Building Code Approved.
	1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 05 50 00 - Metal Fabrications.
		2. Section 07 91 23 - Backer Rods.
		3. Section 09 91 23 - Interior Painting.
		4. Section 08 91 13 - Motorized Wall Louvers.
	1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. Air Movement and Control Association International (AMCA):
			1. AMCA 501 - Application Manual for Air Louvers.
			2. AMCA 511 - Certified Ratings Program - Product Rating Manual for Air Control Devices.
			3. AMCA 512 - Certified Ratings Program - AMCA Listing Label Program.
			4. AMCA 540 - Test Method for Louvers Impacted by Windborne Debris.
			5. AMCA 550 - Test Method for High Velocity Wind Driven Rain Resistant Louvers.
		2. American Architectural Manufacturer's Association (AAMA).
			1. AAMA 2604 - High Performance Organic Coatings on Architectural Extrusions and Panels.
			2. AAMA 2605 - High Performance Organic Coatings on Architectural Extrusions and Panels.
		3. ASTM International (ASTM):
			1. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
			2. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
			3. ASTM D822 - Standard Practice for Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings.
			4. ASTM D4214 - Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films.
			5. ASTM D2244 - Standard Test Method for Calculation of Color Differences From Instrumentally Measured Color Coordinates.
			6. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
			7. ASTM E330 - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
			8. ASTM E413 - Classification for Rating Sound Insulation.
	1. DEFINITIONS
		1. Louver Terminology: Definitions of terms for metal louvers contained in AMCA 501 apply to this Section, unless otherwise defined in this Section or in referenced standards.
		2. Standard Free Area: Free area of a louver 48 inches (1220 mm) wide by 48 inches (1220 mm) high, identical to that provided.
		3. Maximum Standard Airflow: Airflow at point of beginning water penetration through a louver 48 inches (1220 mm) wide by 48 inches (1220 mm) high, identical to that provided.
		4. Drainable-Blade Louver: Louver designed to collect and drain water to exterior at sill by means of gutters in front edges of blades and channels in jambs and mullions.
		5. Minimum Weather Louver Effectiveness: Weather louver effectiveness rating shall be based on tests conducted in accordance with:
			1. AMCA Standard 500-L.
	2. SUBMITTALS
		1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
		2. Product Data: Manufacturer's data sheets for each product and assembly specified.
			1. Preparation instructions and recommendations.
			2. Storage and handling requirements and recommendations.
			3. Cleaning methods.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Engineering Review: Submit theoretical calculations prepared by a professional engineer specializing in the application of welding technology demonstrating that each fillet weld joining blade and frame members will withstand a minimum of 526 pounds of force in shear.
		2. Shop Drawings: For units and accessories. Include plans; elevations; sections; and details showing profiles, angles, and spacing of elements. Show unit dimensions related to wall openings and adjacent construction; free area for each size indicated for louvers; profiles of frames at jambs, heads, and sills; and anchorage details and locations.
			1. Verify openings by field measurements before fabrication and indicate measurements on Shop Drawings.

\*\* NOTE TO SPECIFIER \*\* Retain below if any products are indicated to withstand specific design loadings. See AIA Document A201, 3.12.11 for Contractor's responsibility for calculations if subparagraph below is retained with "Professional Engineer Qualifications" Paragraph in "Quality Assurance" Article. Delete or modify below if Architect assumes or is required by law to assume design responsibility.

* + - 1. For installed products indicated to comply with design loadings, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

\*\* NOTE TO SPECIFIER \*\* Delete selection samples if colors have already been selected.

* + 1. Selection Samples: Two complete color charts showing the full range of colors available for units with factory-applied color finishes.
		2. Samples for Verification: For each finish specified, two samples representing actual finishes specified; prepared on Samples of same thickness and material indicated for final Work. Where finishes involve normal color and texture variations, include Sample sets showing the full range of variations expected.
	1. QUALITY ASSURANCE
		1. Manufacturer Qualifications: Minimum 5 years manufacturing similar products. The manufacturer shall have implemented a program for the management of quality objectives, continual improvement, and monitoring of customer satisfaction to assure that customer needs and expectations are met.

\*\* NOTE TO SPECIFIER \*\* Insert installer qualifications. Delete if not required.

* + 1. Installer Qualifications: Minimum 2 years experience installing similar louvers.

\*\* NOTE TO SPECIFIER \*\* Retain paragraph below if services of a qualified engineer are required in "Submittals" Article.

* + 1. Professional Engineer Qualifications: A professional engineer legally qualified to practice in jurisdiction where Project is located and experienced in providing engineering services of kind indicated. Engineering services are defined as those performed for installations of products that are similar to those indicated for this Project in material, design, and extent.
		2. Source Limitations: Obtain products through one source from a single manufacturer where alike in one or more respects regarding type, design, or factory-applied color finish.
		3. Welding Standards: As follows.
			1. Comply with AWS D1.2, "Structural Welding Code - Aluminum."
			2. Comply with AWS D1.3, "Structural Welding Code - Sheet Steel."
	1. DELIVERY, STORAGE, AND HANDLING
		1. Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly indicating manufacturer and material.
		2. Store materials in a dry area indoors, protected from damage and in accordance with manufacturer's instructions.
		3. Handling: Protect materials and finishes during handling and installation to prevent damage.
	2. SEQUENCING AND SCHEDULING
		1. Field Measurements: Verify openings and adjacent construction by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
			1. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish opening dimensions and proceed with fabricating products without field measurements. Coordinate construction to ensure that actual opening dimensions correspond to established dimensions.
			2. Coordinate Setting Drawings, diagrams, templates, instructions, and directions for installation of anchorages that are to be embedded in concrete or masonry construction. Coordinate delivery of such items to Project site.
	3. PROJECT CONDITIONS
		1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.
	4. WARRANTY
		1. Manufacturer's Warranty: Provide manufacturer's standard limited warranty for louver systems for a period of 1 year from date of installation, no more than 18 months after shipment from manufacturing plant. When notified in writing from the Owner of a manufacturing defect, manufacturer shall promptly correct deficiencies without cost to the Owner.

\*\* NOTE TO SPECIFIER \*\* Delete if 70% fluoropolymer finish not required.

* + 1. Manufacturer's Finish Warranty: Provide manufacturer's limited warranty for 70% fluoropolymer-based finish on aluminum substrates.

\*\* NOTE TO SPECIFIER \*\* Delete warranty period not required.

* + - 1. Warranty Period: 10 years.
			2. Warranty Period: 20 years.
			3. Finish coating shall not peel, blister, chip, crack or check.
			4. Chalking, fading or erosion of finish when measured by the following tests:
			5. Finish coating shall not chalk in excess of 8 numerical ratings when measured in accordance with ASTM D4214.
			6. Finish coating shall not change color or fade in excess of 5 NBS units as determined by ASTM D2244 and ASTM D822.
			7. Finish coating shall not erode at a rate in excess of .01 mils/year confirmed by Florida test samples.

\*\* NOTE TO SPECIFIER \*\* Delete if 50% fluoropolymer finish not required.

* + 1. Manufacturer's Finish Warranty: Provide manufacturer 5 year limited warranty for 50% fluoropolymer-based finish on aluminum substrates.
			1. Finish coating shall not peel, blister, chip, crack or check.
			2. Chalking, fading or erosion of finish when measured by the following tests:
			3. Finish coating shall not chalk in excess of 8 numerical ratings when measured in accordance with ASTM D4214.
			4. Finish coating shall not change color or fade in excess of 5 NBS units as determined by ASTM D2244 and ASTM D822.
			5. Finish coating shall not erode at a rate in excess of .01 mils/year confirmed by Florida test samples.

\*\* NOTE TO SPECIFIER \*\* Delete if baked enamel/acrylic finish not required.

* + 1. Manufacturer's Finish Warranty: Provide manufacturer 1 year limited warranty for baked enamel /acrylic enamel finish on aluminum substrates.
			1. Finish coating shall not peel, blister, chip, crack or check.
			2. Chalking, fading or erosion of finish when measured by the following tests:
			3. Finish coating shall not chalk in excess of 8 numerical ratings when measured in accordance with ASTM D4214.
			4. Finish coating shall not change color or fade in excess of 5 NBS units as determined by ASTM D2244 and ASTM D822.
			5. Finish coating shall not erode at a rate in excess of .01 mils/year confirmed by Florida test samples.

\*\* NOTE TO SPECIFIER \*\* Delete if Class I anodized finish not required.

* + 1. Manufacturer's Finish Warranty: Provide manufacturer 5 year limited warranty for Class I anodized finish.

\*\* NOTE TO SPECIFIER \*\* Delete if Class II anodized finish not required.

* + 1. Manufacturer's Finish Warranty: Provide manufacturer 1 year limited warranty for Class II anodized finish.

\*\* NOTE TO SPECIFIER \*\* Airolite's Miami-Dade and Florida Building Code louvers are designed to meet the stringent criteria establish by the Florida Building Code. Miami-Dade and Florida Building Code louvers provide high volume flow rates, impact resistance, protection against water penetration and high wind-loads. Miami-Dade and Florida Building Code louvers are available in 5 and 6-inch frame depths.

1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: Airolite Co. (The), which is located at:P.O. Box 410Schofield, WI 54476Tel: 715-841-8757Fax: 715-841-8773Email: [request info (info@airolite.com)](https://arcat.com/rfi?action=email&company=Airolite%252BCo.%252B(The)&message=RE%253A%2520Spec%2520Question%2520(10212air)%253A%2520&coid=30230&spec=10212air&rep=&fax=715-841-8773);Web: <https://www.airolite.com>

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
		2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.
	1. LOUVERS - GENERAL
		1. Louver shall be of welded construction and furnished with bird screen, insect screen, sill pans, supports, installation hardware and finishes as specified or required for a complete installation.
		2. The supporting structure shall be designed to accommodate the point loads transferred by the louvers when subject to the design wind loads.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - 1. Louvers shall be secured to a structural substrate in accordance with Dade County Product Approval Drawings.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. MIAMI-DADE COUNTY APPROVED STATIONARY HURRICANE LOUVER (HVHZ)

\*\* NOTE TO SPECIFIER \*\* K605MD Miami-Dade is a sightproof, horizontal, drainable head louver that serves a number of design requirements. The louver is 100% sightproof when viewed from any orientation or perspective, yields high free area, high air volume flow rates at moderate static pressure differential, and provides moderate protection against water infiltration. Delete if not required. Delete if not required.

* + 1. Miami-Dade Sightproof, Horizontal Blade, Drainable Head Louver:
			1. Product: K605MD as designed and manufactured by The Airolite Company LLC.
				1. Miami-Dade Notice of Acceptance Number: 09-05193.15.
			2. Application: Miami-Dade Approved Product for use in open structures or installations where the enclosed space is designed to accommodate water infiltration (wet rooms). Open structure building envelope protection for single unit sizes up to 72-inches wide by 144-inches high (1829 mm by 3658 mm) or 144-inches wide by 72-inches high (3658 mm by 1829 mm) for wet rooms.
			3. Miami-Dade County Protocols Compliance:
				1. PA-201 Large and Small Missile Impact Test.
				2. PA-202 Uniform Static Air Pressure Test.
				3. PA-203 Cyclic Wind Pressure Test - Maximum Design Pressure Rating +/- 110 psf (5.28 kPa).
			4. AMCA Listing Label Compliance:
				1. 540 - Test Method for Louvers Impacted by Windborne Debris. - Enhanced Protection
			5. Material: Extruded Aluminum, Alloy 6063-T5.
			6. Louver Depth: 5 inches (127.0 mm).
			7. Blade: 0.081 inch (2.06 mm). Blades shall be horizontal, inverted-V type with a center hook and spaced 2 inches (50.8 mm) on center.
			8. Frame: 0.081 inch (2.06 mm).
			9. Test Standard: AMCA Standard 500-L.
			10. Free Area - 4 feet by 4 feet (1219 mm by 1219 mm) unit: 8.31 ft2 (0.77 m2).
			11. Percent Free Area: 52%.
			12. Beginning Point of Water Penetration: 1,057 fpm (5.37 m/s).
			13. Air Volume Flow Rate at Beginning Point of Water Penetration: 8,780 cfm (4.14 m3/s).
			14. Pressure Drop at Beginning Point of Water Penetration: 0.25 inch H2O (0.063 kPa).

\*\* NOTE TO SPECIFIER \*\* SCV602MD is a sightproof, vertical blade, drainable louver that complies with the Florida Building Code and is Miami-Dade approved for use in the High Velocity Hurricane Zone for open building structure envelope protection or installations where the enclosed space is designed to accommodate water infiltration (wet rooms). Delete if not required.

* + 1. Miami-Dade Sightproof, Vertical Blade, Drainable Head Louver:
			1. Product: Storm Class Louver SCV602MD as designed and manufactured by The Airolite Company LLC.
				1. Miami-Dade Notice of Acceptance Number: 11-1103.02.
			2. Application: Louvers shall be tested in accordance with Miami-Dade protocols TAS-201, TAS-202 and TAS-203 and approved for open structure building envelope protection for single unit sizes up to 4 feet wide by 8 feet high (1219 mm by 2438 mm) for wet rooms.
			3. Miami-Dade County Protocols Compliance:
				1. PA-201 Large and Small Missile Impact Test.
				2. PA-202 Uniform Static Air Pressure Test.
				3. PA-203 Cyclic Wind Pressure Test - Maximum Design Pressure Rating +/- 150 psf (7.2 kPa).
			4. AMCA Listing Label Compliance:
				1. 540 - Test Method for Louvers Impacted by Windborne Debris - Enhanced Protection.
				2. 550 - Test Method for High Velocity Wind Driven Rain Resistant Louvers.
			5. Material: Extruded Aluminum, Alloy 6063-T5.
			6. Louver Depth: 6 inches (152.4 mm).
			7. Blade: 0.081 inch (2.06 mm). Blades shall be vertical, inverted-V type with a center hook and spaced 2 inches (50.8 mm) on center.
			8. Frame: 0.081 inch (2.06 mm).
			9. Test Standard: Wind.
			10. Free Area - 4 feet by 4 feet unit (1219 mm by 1219 mm): 5.88 ft2 (0.55 m2).
			11. Percent Free Area: 37%.
			12. Beginning Point of Water Penetration: 1,250 fpm (6.35 m/s).
			13. Air Volume Flow Rate at Beginning Point of Water Penetration: 7,350 cfm (3.47 m3/s).
			14. Pressure Drop at Beginning Point of Water Penetration: 0.12 inch H2O (0.030 kPa).
			15. Wind Driven Rain Water Penetration Test:
				1. Exterior Wind Velocity: 29 mph (13/ m/s).
				2. Rainfall Rate: 3 inches (75 mm)/hr.
				3. Effectiveness: 99.4%.
				4. Core Ventilation: 693 fpm (3.5 m/s)
			16. Wind Driven Rain Water Penetration Test:
				1. Exterior Wind Velocity: 50 mph (22 m/s).
				2. Rainfall Rate: 8 inches (200 mm)/hr.
				3. Effectiveness: 99.1%.
				4. Core Ventilation: 681 fpm (3.5 m/s).

\*\* NOTE TO SPECIFIER \*\* SCV660MD is a vertical blade louver that is Florida Building Code Approved for use in the High Velocity Hurricane Zone and Miami-Dade approved for open building structure envelope protection or installations where the enclosed space is designed to accommodate water infiltration (wet room). Delete if not required.

* + 1. Miami-Dade Sightproof, Vertical Blade, Visible Mullion:
			1. Product: Storm Class Louver SCV660MD as designed and manufactured by The Airolite Company LLC.
				1. Miami-Dade Notice of Acceptance Number: 12-0418.05.
			2. Application: Louvers shall be tested in accordance with Miami-Dade protocols TAS-201, TAS-202 and TAS-203 and approved for open structure building envelope protection for single unit sizes up to 4-feet wide x 8-feet high for wet rooms.

\*\* NOTE TO SPECIFIER \*\* Option. Delete if not required.

* + - 1. Provide motorized damper Model VCD-40.
			2. Miami-Dade County Protocols Compliance:
				1. PA-201 Large and Small Missile Impact Test.
				2. PA-202 Uniform Static Air Pressure Test.
				3. PA-203 Cyclic Wind Pressure Test - Maximum Design Pressure Rating +/- 150 psf (7.2 kPa).
			3. AMCA Listing Label Compliance:
				1. 540 - Test Method for Louvers Impacted by Windborne Debris - Enhanced Protection.
				2. 550 - Test Method for High Velocity Wind Driven Rain Resistant Louvers.
			4. Material: Extruded Aluminum, Alloy 6063-T5.
			5. Louver Depth: 6 inches (152.4 mm).
			6. Blade: 0.063 inch (1.60 mm). Blades shall be vertical, V-type with center hook and spaced 0.75 inch (19 mm) on center.
			7. Frame: 0.095 inch (2.41 mm).
			8. Test Standard: Wind-Driven Rain.
			9. Free Area - 4 feet by 4 feet (1219 mm by 1219 mm) unit: 7.29 ft2 (0.68 m2).
			10. Percent Free Area: 46%.
			11. Beginning Point of Water Penetration: 1,250 fpm (6.35 m/s).
			12. Air Volume Flow Rate at Beginning Point of Water Penetration: 9,112 cfm (4.30 m3/s).
			13. Pressure Drop at Beginning Point of Water Penetration: 0.18 inch H2O (0.04 kPa).
			14. Tested in accordance with AMCA 540 Test Method for Louvers Impacted by Wind Borne Debris and AMCA 550 Test Method for High Velocity Wind Driven Rain.
			15. Wind Driven Rain Water Penetration Test:
				1. Exterior Wind Velocity: 29 mph (13 m/s).
				2. Rainfall Rate: 3 inches (75 mm)/hr.
				3. Effectiveness: 100.0%.
				4. Core Ventilation: 984 fpm (5.0 m/s).
			16. Wind Driven Rain Water Penetration Test:
				1. Exterior Wind Velocity: 50 mph (22 m/s).
				2. Rainfall Rate: 8 inches (200 mm)/hr.
				3. Effectiveness: 100.0%.
				4. Core Ventilation: 984 fpm (5.0 m/s).

\*\* NOTE TO SPECIFIER \*\* SCH601MD is a sightproof, horizontal blade Storm Class Louver that is Florida Building Code approved for use in the High Velocity Hurricane Zone and Miami-Dade approved for installations where the enclosed space is designed to drain or otherwise accommodate water penetration (wet rooms). (Florida Product Approval N.:10093; Miami-Dade NOA No.: 12-0830.06). Delete if not required.

* + 1. Miami-Dade Sightproof, Horizontal Blade Louver:
			1. Product: Storm Class Louver Type SCH601MD as designed and manufactured by The Airolite Company LLC.
				1. Florida Product Approval N.:10093; Miami-Dade NOA No.: 12-0830.06.
			2. Application: Louvers shall be tested in accordance with Miami-Dade protocols TAS-201, TAS-202 and TAS-203 and approved for open structure building envelope protection for single unit sizes up to 6 feet wide by 12 feet high (1829 mm by 3658 mm) for wet room protection.
			3. Miami-Dade County Protocols Compliance:
				1. PA-201 Large and Small Missile Impact Test.
				2. PA-202 Uniform Static Air Pressure Test.
				3. PA-203 Cyclic Wind Pressure Test - Maximum Design Pressure Rating +/- 150 psf (7.2 kPa).
			4. AMCA Listing Label Compliance:
				1. 540 - Test Method for Louvers Impacted by Windborne Debris - Enhanced Protection.
				2. 550 - Test Method for High Velocity Wind Driven Rain Resistant Louvers. VCD-40 Damper Required for Rating.
			5. Material: Extruded Aluminum, Alloy 6063-T5.
			6. Louver Depth: 6 inches (152.4 mm).
			7. Blade: 0.081 inch (2.06 mm). Blades shall be horizontal, inverted V-type with center hook and spaced 2-inches on center.
			8. Frame: 0.081 inch (2.06 mm).
			9. Test Standard: AMCA Standard 500-L.
			10. Free Area - 4 feet by 4 feet (1219 mm by 1219 mm) unit: 7.58 ft2 (0.704 m2).
			11. Percent Free Area: 47%.
			12. Beginning Point of Water Penetration: 1,250 fpm (6.35 m/s).
			13. Air Volume Flow Rate at Beginning Point of Water Penetration: 9,475 cfm (4.47 m3/s).
			14. Pressure Drop at Beginning Point of Water Penetration: 0.32 in. H2O (0.081 kPa).
			15. Wind Driven Water Penetration Test:
				1. Exterior Wind Velocity: 29 mph (13 m/s).
				2. Rainfall Rate: 3 inches (75 mm)/hr.
				3. Effectiveness: 99.8%.
				4. Core Ventilation: 763 fpm (3.9 m/s).
			16. Wind Driven Rain Water Penetration Test:
				1. Exterior Wind Velocity: 50 mph (22 m/s).
				2. Rainfall Rate: 8 inches (200 mm)/hr.
				3. Effectiveness: 99.2%.
				4. Core Ventilation: 676 fpm (3.4 m/s).

\*\* NOTE TO SPECIFIER \*\* K6746MD is a drainable louver that is Florida Building Code approved for use in the High Velocity Hurricane Zone and Miami-Dade approved for installations where the enclosed space is designed to drain or otherwise accommodate water penetration (wet rooms). (Florida Product Approval No.: 10093; Miami-Dade NOA No.: 12-0830.05). Delete if not required.

* + 1. Miami-Dade, Horizontal Blade, Drainable Head Louver:
			1. Product: Drainable Louver Type K6746MD with visible mullions as designed and manufactured by The Airolite Company LLC.
				1. Miami-Dade Notice of Acceptance Number: Florida Product Approval No.: 10093; Miami-Dade NOA No.: 12-0830.05.
			2. Application: Louvers shall be tested in accordance with Miami-Dade protocols TAS-201, TAS-202 and TAS-203 and approved for open structure building envelope protection for single unit sizes up to 6 feet wide by 12 feet high (1829 mm by 3658 mm) or 12 feet wide by 6 feet high (3658 mm by 1829 mm), for wet room protection.
			3. Miami-Dade County Protocols Compliance:
				1. PA-201 Large and Small Missile Impact Test.
				2. PA-202 Uniform Static Air Pressure Test.
				3. PA-203 Cyclic Wind Pressure Test - Maximum Design Pressure Rating +/- 150 psf (7.2 kPa).
			4. AMCA Listing Label Compliance:
				1. 540 - Test Method for Louvers Impacted by Windborne Debris.
			5. Material: Extruded Aluminum, Alloy 6063-T5.
			6. Louver Depth: 6 inches (152.4 mm).
			7. Blade: 0.081 inch (2.06 mm). Blades shall be drainable and spaced approximately 4 inches (102 mm) on center.
			8. Frame: 0.125 inch (3.18 mm).
			9. Test Standard: AMCA Standard 500-L.
			10. Free Area - 4 feet by 4 feet (1219 mm by 1219 mm) unit: 9.41 ft2 (0.88 m2).
			11. Percent Free Area: 59%.
			12. Beginning Point of Water Penetration: 1,077 fpm (5.476.35 m/s).
			13. Air Volume Flow Rate at Beginning Point of Water Penetration: 10,135 cfm (4.78 m3/s).
			14. Pressure Drop at Beginning Point of Water Penetration: 0.20 in. H2O (0.050 kPa).

\*\* NOTE TO SPECIFIER \*\* K8206AMD is a combination drainable stationary and airfoil adjustable blade louver that is Florida Building Code approved for use in the High Velocity Hurricane Zone and Miami-Dade approved for installations where the enclosed space is designed to drain or otherwise accommodate water penetration (wet rooms). (Florida Product Approval No.: 10093; Miami-Dade NOA No.: 12-0830.05). Delete if not required.

* + 1. Miami-Dade, Horizontal Combination Blade Louver:
			1. Product: Combination Drainable Stationary and Airfoil Adjustable Blade Louver Type K8206AMD as designed and manufactured by The Airolite Company LLC.
				1. Miami-Dade Notice of Acceptance Number: Florida Product Approval No.: 16743; Miami-Dade NOA No.: 13-0919.04.
			2. Application: Louvers shall be tested in accordance with Miami-Dade protocols TAS-201, TAS-202 and TAS-203 and approved for open structure building envelope protection for single unit sizes up to 5 feet wide by 10 feet high (1524 mm by 3048 mm), for wet room protection.
			3. Miami-Dade County Protocols Compliance:
				1. PA-201 Large and Small Missile Impact Test.
				2. PA-202 Uniform Static Air Pressure Test.
				3. PA-203 Cyclic Wind Pressure Test - Maximum Design Pressure Rating +/- 150 psf (7.2 kPa).
			4. AMCA Listing Label Compliance:
				1. 540 - Test Method for Louvers Impacted by Windborne Debris.
			5. Material: Extruded Aluminum, Alloy 6063-T5.
			6. Louver Depth: 6 inches (152.4 mm).
			7. Stationary Blade: 0.081 inch (2.06 mm).
			8. Adjustable Blade: 0.081 inch (2.06 mm).
			9. Head/Sill Frame: 0.25 inch (3.18 mm).
			10. Jamb Frame: 0.125 inch (6.35 mm).
			11. Test Standard: AMCA Standard 500-L.
			12. Free Area - 4 feet by 4 feet (1219 mm by 1219 mm) unit: 7.27 ft2 (0.68 m2).
			13. Percent Free Area: 45.4%.
			14. Beginning Point of Water Penetration: 1,125 fpm (5.72 m/s).
			15. Air Volume Flow Rate at Beginning Point of Water Penetration: 8,179 cfm (3.86 m3/s).
			16. Pressure Drop at Beginning Point of Water Penetration: 0.17 in. H2O (0.042 kPa).

\*\* NOTE TO SPECIFIER \*\* T9106MD is an acoustic louver that is Florida Building Code approved for use in the High Velocity Hurricane Zone and Miami-Dade approved for installations where the enclosed space is designed to drain or otherwise accommodate water penetration (wet rooms). Certified by Underwriter's Laboratory under ASTM E 330, Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights, and Curtain Walls by Uniform Static Air Pressure Difference, to comply with the requirements of the Florida Building Code. (Florida Product Approval No.: FL16787.1; Miami-Dade County NOA No.: 14-0902.08 (Exp. 11/20/2019). Delete if not required.

* + 1. Miami-Dade Parallelogram Blade Acoustic Louver.
			1. Product: Acoustic Louver Type T9106MD with visible mullions as designed and manufactured by The Airolite Company LLC.
				1. Miami-Dade Notice of Acceptance Number: Florida Product Approval No.: FL16787.1; Miami-Dade NOA No.: 14-0902.08.
			2. Application: Louvers shall be tested in accordance with Miami-Dade protocols TAS-201, TAS-202 and TAS-203 and approved for open structure building envelope protection for single unit sizes up to 6 feet wide by 12 feet high (1829 mm by 3658 mm) or 12 feet wide by 6 feet high (3658 mm by 1829 mm), for wet room protection.
			3. Miami-Dade County Protocols Compliance:
				1. PA-201 Large and Small Missile Impact Test.
				2. PA-202 Uniform Static Air Pressure Test.
				3. PA-203 Cyclic Wind Pressure Test - Maximum Design Pressure Rating +/- 150 psf (7.2 kPa).
			4. AMCA Listing Label Compliance:
				1. 540 - Test Method for Louvers Impacted by Windborne Debris.
			5. Frame Material: Aluminum, 0.125 inch (3.18 mm).
			6. Blade Material: Aluminum sheet, 0.080 inch (2.0 mm).
			7. Louver Depth: 6 inches (150 mm), unless otherwise indicated.
			8. Type: Visible Mullion.
			9. Airborne Sound Transmission Loss: STC 10 per ASTM E 413, determined by testing per ASTM E 90.
			10. Percent Free Area: 30.5%.
			11. Beginning Point of Water Penetration: 827 fpm (4.20 m/s)
			12. Air Volume Flow Rate at Beginning Point of Water Penetration: 4,037 cfm (1.91 m3/s).
			13. Pressure Drop at Beginning Point of Water Penetration: 0.069 in. H2O (0.017 kPa).
			14. Blade Spacing: 5 inches (127 mm) o.c.
			15. Blade Angle: 45 degrees,
	1. FLORIDA STATE CODE APPROVED STATIONARY LOUVER

\*\* NOTE TO SPECIFIER \*\* K6746X is a drainable louver certified by Underwriter's Laboratory under ASTM E 330, Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights, and Curtain Walls by Uniform Static Air Pressure Difference, to comply with the requirements of the Florida Building Code. (Florida Product Approval No.: FL7708.2; UL Classified: R25376). Delete if not required.

* + 1. FL Approved Horizontal Blade, Drainable Louver:
			1. Product: Drainable Louver Type K6746X with visible vertical mullions as designed and manufactured by The Airolite Company LLC.
				1. Florida Product Approval No.: FL7708.2; UL Classified: R25376.
			2. ASTM E330-02, Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights, and Curtain Walls by Uniform Static Air Pressure Difference, to +/- 200 psf (9.6 kPA) in compliance with the Florida Building Code.
			3. Material: Extruded Aluminum, Alloy 6063-T5.
			4. Louver Depth: 6 inches (152.4 mm).
			5. Blade: 0.081 inch (2.06 mm). Blades shall be stationary, incorporate drainable gutters, and be spaced 4-inches (101.6 mm) on center. Jamb frames shall incorporate drainable gutters to ensure resistance to water penetration.
			6. Frame: 0.081 inch (2.06 mm).
			7. Blade Angle: 35 degree.
			8. Miami-Dade County Protocols Compliance:
				1. PA-201 Large and Small Missile Impact Test. Welded Construction Required
				2. PA-202 Uniform Static Air Pressure Test.
				3. PA-203 Cyclic Wind Pressure Test - Maximum Design Pressure Rating +/- 150 psf (7.2 kPa). Welded Construction Required.
			9. AMCA Listing Label Compliance:
				1. 540 - Test Method for Louvers Impacted by Windborne Debris.
			10. Test Standard: AMCA Standard 500-L.
			11. Free Area - 4 feet by 4 feet (1219 mm by 1219 mm) unit: 9.41 ft2 (0.88 m2).
			12. Percent Free Area: 59%.
			13. Beginning Point of Water Penetration: 1,077 fpm (5.47 m/s).
			14. Air Volume Flow Rate at Beginning Point of Water Penetration: 10,135 cfm (4.78 m3/s).
			15. Pressure Drop at Beginning Point of Water Penetration: 0.20 in. H2O (0.050 kPa).
			16. Maximum Qualified Wind Design Load +/- 200 PSF (9.6 kpa).

\*\* NOTE TO SPECIFIER \*\* SCH501X is a horizontal blade, Storm Class louver certified by Underwriter's Laboratory under ASTM E 330, Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights, and Curtain Walls by Uniform Static Air Pressure Difference, to comply with the requirements of the Florida Building Code. (Florida Product Approval No.: FL7708.3; UL Classified: R25376). Delete if not required.

* + 1. FL Approved Horizontal Blade Louver:
			1. Product: Storm Class Louver Type SCH501X as designed and manufactured by The Airolite Company LLC.
				1. Florida Product Approval No.: FL7708.3; UL Classified: R25376.
			2. ASTM E330-02, Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights, and Curtain Walls by Uniform Static Air Pressure Difference, to +/- 200 psf (9.6 kPA) in compliance with the Florida Building Code.
			3. Material: Extruded Aluminum, Alloy 6063-T5.
			4. Louver Depth: 5 inches (127.0 mm).
			5. Blade: 0.081 inch (2.06 mm). Blades shall be horizontal, inverted-V type with a center hook and spaced 2 inches (50.8 mm) on center.
			6. Frame: 0.081 inch (2.06 mm).
			7. Miami-Dade County Protocols Compliance:
				1. PA-201 Large and Small Missile Impact Test. Welded Construction Required.
				2. PA-202 Uniform Static Air Pressure Test.
				3. PA-203 Cyclic Wind Pressure Test - Maximum Design Pressure Rating +/- 150 psf (7.2 kPa). Welded Construction Required.
			8. AMCA Listing Label Compliance:
				1. 540 - Test Method for Louvers Impacted by Windborne Debris - Enhanced Protection.
				2. 550 - Test Method for High Velocity Wind Driven Rain Resistant Louvers. VCD-40 Damper Required for rating.
			9. Test Standard: AMCA Standard 500-L.
			10. Water Penetration Test: Wind Driven Rain.
			11. Free Area - 4 feet by 4 feet (1219 mm by 1219 mm) unit: 6.80 ft2 (0.632 m2).
			12. Percent Free Area: 43%.
			13. Beginning Point of Water Penetration: 1,250 fpm (6.35 m/s).
			14. Air Volume Flow Rate at Beginning Point of Water Penetration: 9,337 cfm (4.41 m3/s).
			15. Pressure Drop at Beginning Point of Water Penetration: 0.18 in. H2O (0.045 kPa).
			16. Wind Driven Water Penetration Test:
				1. Exterior Wind Velocity: 29 mph (13 m/s).
				2. Rainfall Rate: 3 inches (75 mm)/hr.
				3. Effectiveness: 99.1%.
				4. Core Ventilation: 787 fpm (4.0 m/s).
			17. Wind Driven Rain Water Penetration Test:
				1. Exterior Wind Velocity: 50 mph (22 m/s).
				2. Rainfall Rate: 8 inches (200 mm)/hr.
				3. Effectiveness: 99.2%.
				4. Core Ventilation: 689 fpm (3.5 m/s).
			18. Maximum Qualified Wind Design Load +/- 200 PSF (9.6 kpa).

\*\* NOTE TO SPECIFIER \*\* SCV602X is a vertical blade, Storm Class louver that is certified by Underwriter's Laboratory under ASTM E 330, Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights, and Curtain Walls by Uniform Static Air Pressure Difference, to comply with the requirements of the Florida Building Code. (Florida Product Approval No.: FL7708.4; UL Classified: R25376). Delete if not required.

* + 1. FL Approved Vertical Blade Louver:
			1. Product: Storm Class Louver Type SCV602X as designed and manufactured by The Airolite Company LLC.
				1. Florida Product Approval No.: FL7708.4; UL Classified: R25376.
			2. ASTM E330-02, Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights, and Curtain Walls by Uniform Static Air Pressure Difference, to +/- 200 psf (9.6 kPA) in compliance with the Florida Building Code.
			3. Maximum Louver Size: 60 inches (1,520 mm) wide by 96 inches (2,438 mm) high. Larger units will be fabricated and installed in multiple sections.
			4. Material: Extruded Aluminum, Alloy 6063-T5.
			5. Louver Depth: 6 inches (152.4 mm).
			6. Blade: 0.081 inch (2.06 mm). Blades shall be vertical, rain-resistant V-type with a center hook and spaced 1-7/8 inches (47.6 mm) on center.
			7. Frame: 0.081 inch (2.06 mm).
			8. Miami-Dade County Protocols Compliance:
				1. PA-201 Large and Small Missile Impact Test. Welded Construction Required.
				2. PA-202 Uniform Static Air Pressure Test.
				3. PA-203 Cyclic Wind Pressure Test - Maximum Design Pressure Rating +/- 150 psf (7.2 kPa). Welded Construction Required.
			9. AMCA Listing Label Compliance:
				1. 540 - Test Method for Louvers Impacted by Windborne Debris - Enhanced Protection.
				2. 550 - Test Method for High Velocity Wind Driven Rain Resistant Louvers.
			10. Test Standard: AMCA Standard 500-L.
			11. Water Penetration Test: Wind Driven Rain.
			12. Free Area - 4 feet by 4 feet (1219 mm by 1219 mm) unit: 5.88 ft2 (0.55 m2).
			13. Percent Free Area: 37%.
			14. Beginning Point of Water Penetration: 1,250 fpm (6.35 m/s).
			15. Air Volume Flow Rate at Beginning Point of Water Penetration: 7,350 cfm (3.47 m3/s).
			16. Pressure Drop at Beginning Point of Water Penetration: 0.12 in. H2O (0.030 kPa).
			17. Wind Driven Water Penetration Test:
				1. Exterior Wind Velocity: 29 mph (13 m/s).
				2. Rainfall Rate: 3 inches (75 mm)/hr.
				3. Effectiveness: 99.4%.
				4. Core Ventilation: 693 fpm (3.5 m/s).
			18. Wind Driven Rain Water Penetration Test:
				1. Exterior Wind Velocity: 50 mph (22 m/s).
				2. Rainfall Rate: 8 inches (200 mm)/hr.
				3. Effectiveness: 99.1%.
				4. Core Ventilation: 681 fpm (3.5 m/s).
			19. Maximum Qualified Wind Design Load +/- 200 PSF (9.6 kpa).

\*\* NOTE TO SPECIFIER \*\* K6744X is a drainable louver certified by Underwriter's Laboratory under ASTM E 330, Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights, and Curtain Walls by Uniform Static Air Pressure Difference, to comply with the requirements of the Florida Building Code. (Florida Product Approval No.: FL7708.1; UL Classified: R25376). Delete if not required.

* + 1. FL Approved Horizontal Blade, Drainable Louver:
			1. Product: Drainable Louver Type K6744X with Visible Vertical Mullions as designed and manufactured by The Airolite Company LLC.
				1. Florida Product Approval No.: FL7708.1; UL Classified: R25376.
			2. ASTM E330-02, Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights, and Curtain Walls by Uniform Static Air Pressure Difference, to +/- 200 psf (9.6 kPA) in compliance with the Florida Building Code.
			3. Material: Extruded Aluminum, Alloy 6063-T5.
			4. Louver Depth: 4 inches (101.6 mm).
			5. Blade: 0.081 inch (2.06 mm). Blades shall be stationary, incorporate drainable gutters, and be spaced 3-1/4 inches (82.5 mm) on center. Jamb frames shall incorporate drainable gutters to ensure resistance to water penetration.
			6. Frame: 0.081 inch (2.06 mm).
			7. Blade Angle: 35 degree.
			8. Miami-Dade County Protocols Compliance:
				1. PA-201 Large and Small Missile Impact Test. Welded Construction Required.
				2. PA-202 Uniform Static Air Pressure Test.
				3. PA-203 Cyclic Wind Pressure Test - Maximum Design Pressure Rating +/- 150 psf (7.2 kPa). Welded Construction Required.
			9. AMCA Listing Label Compliance:
				1. 540 - Test Method for Louvers Impacted by Windborne Debris.
			10. Test Standard: AMCA Standard 500-L.
			11. Free Area - 4 feet by 4 feet (1219 mm by 1219 mm) unit: 8.98 ft2 (0.84 m2).
			12. Percent Free Area: 56%.
			13. Beginning Point of Water Penetration: 1,151 fpm (5.85 m/s).
			14. Air Volume Flow Rate at Beginning Point of Water Penetration: 10,336 cfm (4.89 m3/s).
			15. Pressure Drop at Beginning Point of Water Penetration: 0.20 in. H2O (0.050 kPa).

\*\* NOTE TO SPECIFIER \*\* T9106X is an acoustic louver certified by Underwriter's Laboratory under ASTM E 330, Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights, and Curtain Walls by Uniform Static Air Pressure Difference, to comply with the requirements of the Florida Building Code. (Florida Product Approval No.: FL7708.5; UL Classified: R25376). Delete if not required.

* + 1. FL Approved Horizontal Blade, Acoustic Louver:
			1. Product: Acoustic Louver stationary, parallelogram blades in a single frame Type T9106X as designed and manufactured by The Airolite Company LLC.
				1. Florida Product Approval No.: FL7708.5; UL Classified: R25376.
			2. ASTM E330-02, Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights, and Curtain Walls by Uniform Static Air Pressure Difference, to +/- 200 psf (9.6 kPA) in compliance with the Florida Building Code.
			3. Minimum Sound Transmission Classification: 8. Tested by an independent laboratory in accordance with ASTM E90, Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements, and ASTM E413, Standard Classification for Determination of Sound Transmission Class.
			4. Maximum louver size: 60 inches (1,520 mm) wide by 96 inches (2,438 mm) high. Larger units will be fabricated and installed in multiple sections.
			5. Material: Aluminum, Alloy 3003-H32.
			6. Acoustic Material: Fiberglass.
			7. Louver Depth: 6 inches (152.4 mm).
			8. Blade: 0.080 inch (2.03 mm)/12 gauge. Blades shall be positioned at 45 degrees and spaced 5 inches (127 mm) on center. Each blade and top and bottom frame cavity shall be filled with fiberglass acoustic insulation to absorb the transmission of sound. Acoustic insulation shall be held in place by perforated aluminum panels.
			9. Frame: 0.080 inch (2.03 mm)/12 gauge.
			10. Blade Angle: 45 degree.
			11. Miami-Dade County Protocols Compliance:
				1. PA-201 Large and Small Missile Impact Test. Welded Construction Required.
				2. PA-202 Uniform Static Air Pressure Test.
				3. PA-203 Cyclic Wind Pressure Test - Maximum Design Pressure Rating +/- 150 psf (7.2 kPa). Welded Construction Required.
			12. AMCA Listing Label Compliance:
				1. 540 - Test Method for Louvers Impacted by Windborne Debris - Enhanced Protection.
				2. 550 - Test Method for High Velocity Wind Driven Rain Resistant Louvers.
			13. Test Standard: AMCA Standard 500-L.
			14. Free Area - 4 feet by 4 feet (1219 mm by 1219 mm) unit: 4.89 ft2 (0.45 m2).
			15. Percent Free Area: 31%.
			16. Beginning Point of Water Penetration: 799 fpm (4.06 m/s).
			17. Air Volume Flow Rate at Beginning Point of Water Penetration: 3,907 cfm (1.84 m3/s).
			18. Pressure Drop at Beginning Point of Water Penetration: 0.060 in. H2O (0.015 kPa).
			19. Maximum Qualified Wind Design Load +/- 200 PSF (9.6 kpa).
	1. LOUVER SCREENS
		1. General: Provide louvers with screens as manufactured by The Airolite Co. at locations indicated on Drawings.

\*\* NOTE TO SPECIFIER \*\* Delete paragraph above or below. If retaining above, indicate locations on Drawings or in schedules. Revise below if screens are also located on interior louvers.

* + 1. General: Provide exterior louvers with louver screens.

\*\* NOTE TO SPECIFIER \*\* Retain applicable requirements from subparagraphs below to suit louver locations, types, and function.

* + - 1. Screen Location for Fixed Louvers: Interior face.
			2. Screen Location for Adjustable Louvers: Interior face, unless otherwise indicated.

\*\* NOTE TO SPECIFIER \*\* Delete subparagraph above or below.

* + - 1. Screen Location for Adjustable Louvers: Exterior face, unless otherwise indicated.
			2. Screening Type: Bird screening, unless otherwise indicated.

\*\* NOTE TO SPECIFIER \*\* Retain subparagraph above and below if insect screening is required at selected locations. Delete above and revise below if insect screening is required on all exterior louvers.

* + - 1. Screening Type: Insect screening where indicated.
		1. Attachment: Secure screens to louver frames with stainless-steel machine screws, spaced 18 inches (458 mm) o.c.
		2. Louver Screen Frames: As manufactured by The Airolite Co; to sizes indicated on Drawings.
			1. Fabrication: Mitered corners.
			2. Metal: Roll formed aluminum.

\*\* NOTE TO SPECIFIER \*\* Delete finish not required.

* + - 1. Finish: Same finish as louver frames to which louver screens are attached.
			2. Finish: Mill finish, unless otherwise indicated.

\*\* NOTE TO SPECIFIER \*\* Rewirable allows screen mesh to be replaced without replacing frame, which is desirable for insect screen. Non-rewirable requires frame to be replaced when replacing screen mesh, which is typical for bird screen. Delete type not required.

* + - 1. Type: Rewirable frames with a driven spline or insert for securing screen mesh.
			2. Type: Non-rewirable, U-shaped frames for permanently securing screen mesh.

\*\* NOTE TO SPECIFIER \*\* If more than one screen type is required, coordinate selection with Drawings and with Mechanical Engineer for required percentage of open area. Retain paragraphs below for louver material selected. Delete all three if manufacturer's standard screening is acceptable.

* + 1. Louver Screening for Aluminum Louvers: As manufactured by The Airolite Co.

\*\* NOTE TO SPECIFIER \*\* Retain one or more of five subparagraphs below or insert another mesh or wire size. If both bird screening and insect screening are required, indicate location of each on Drawings or in schedules.

* + - 1. Bird Screening: Flattened, expanded aluminum, 3/4 by 0.050 inch (19 by 1.27 mm) thick.
			2. Bird Screening: Flattened, expanded aluminum, 3/4 inch by 0.125 inch (19 by 3.18 mm) thick.
			3. Bird Screening: Aluminum, 1/2 inch (12.7 mm) square mesh, 0.063 inch (1.6 mm) wire.
			4. Bird Screening: Aluminum, 1/4 inch (6.35 mm) square mesh, 0.047 inch (1.19 mm) wire.
			5. Bird Screening: Aluminum, 1 inch (25.4 mm) square mesh, 0.120 inch (3.05 mm) wire.
			6. Bird Screening: Stainless steel, 1/2 inch (12.7 mm) square mesh, 0.047 inch (1.19 mm) wire.
			7. Bird Screening: Stainless steel, 1 inch (25.4 mm) square mesh, 0.063 inch (1.60 mm) wire.
			8. Insect Screening: Aluminum, 18-by-16 (1.4-by-1.6 mm) mesh, 0.012 inch (0.30 mm) wire.
			9. Insect Screening: Stainless steel, 18-by-18 (1.4-by-1.4 mm) mesh, 0.009 inch (0.23 mm) wire.

\*\* NOTE TO SPECIFIER \*\* Delete paragraph below if no galvanized steel louvers.

* + 1. Louver Screening for Galvanized Steel Louvers: As manufactured by The Airolite Co.

\*\* NOTE TO SPECIFIER \*\* Retain one or more of four subparagraphs below or insert another mesh or wire size. If both bird screening and insect screening are required, indicate location of each on Drawings or in schedules.

* + - 1. Bird Screening: Galvanized steel, 1/2 inch (12.7 mm) wire cloth, 0.041 inch (1.04 mm) wire.
			2. Bird Screening: Stainless steel, 1/2 inch (12.7 mm) square mesh, 0.047 inch (1.19 mm) wire.
			3. Insect Screening: Fiberglass
			4. Insect Screening: Stainless steel, 18-by-18 (1.4-by-1.4 mm) mesh, 0.009 inch (0.23 mm) wire.

\*\* NOTE TO SPECIFIER \*\* Delete paragraph below if no stainless-steel louvers.

* + 1. Louver Screening for Stainless-Steel Louvers: As manufactured by The Airolite Co.

\*\* NOTE TO SPECIFIER \*\* Retain one or both subparagraphs below or insert another mesh or wire size. If both bird screening and insect screening are required, indicate location of each on Drawings or in schedules.

* + - 1. Bird Screening: Stainless steel, 1/2 inch (12.7 mm) square mesh, 0.047 inch (1.19 mm) wire.
			2. Insect Screening: Stainless steel, 18-by-18 (1.4-by-1.4 mm) mesh, 0.009 inch (0.23 mm) wire.

\*\* NOTE TO SPECIFIER \*\* Delete this Article if blank-off panels are not required.

* 1. BLANK-OFF PANELS
		1. General: Provide blank-off panels as manufactured by The Airolite Co. at locations indicated on Drawings.

\*\* NOTE TO SPECIFIER \*\* Delete attachment not required. Other methods include slide bolts and cam latches with or without hinges.

* + - 1. Attachment: Blank-off panels attached to back of louver frames with stainless-steel sheet-metal screws.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Uninsulated, Blank-off Panels: Metal sheet as manufactured by The Airolite Co.

\*\* NOTE TO SPECIFIER \*\* Retain applicable metal and thickness requirements below. Thicknesses indicated are examples only; revise to suit louver conditions. If retaining "as indicated," show on Drawings or in schedules.

* + - 1. Aluminum Sheet for Aluminum Louvers: 0.050 inch (1.2 mm) thickness, unless otherwise indicated.
			2. Galvanized Steel Sheet for Galvanized Steel Louvers:
				1. Thickness: 0.052 inch (1.3 mm), unless otherwise indicated.
				2. Thickness: 0.040 inch (1.0 mm), unless otherwise indicated.
			3. Stainless-Steel Sheet for Stainless-Steel Louvers:
				1. Thickness: 0.0500 inch (1.3 mm), unless otherwise indicated.
				2. Thickness: 0.0375 inch (0.95 mm), unless otherwise indicated.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Insulated, Blank-off Panels: Laminated metal-faced panels consisting of insulating core surfaced on back and front with metal sheets as manufactured by The Airolite Co.

\*\* NOTE TO SPECIFIER \*\* Delete thickness not required.

* + - 1. Metal Facing Sheets: Aluminum sheet, 0.032 inch (0.8 mm) thick.
			2. Thickness: 1 inch (25 mm).
			3. Thickness: 2 inches (50 mm).

\*\* NOTE TO SPECIFIER \*\* Insulation materials are examples only; verify availability and code acceptability with manufacturer selected. Revise to suit Project.

* + - 1. Insulating Core: Unfaced, mineral wool insulation complying with ASTM C 612, Class 1 and 2 pan in pan construction.
			2. Insulating Core: Extruded-polystyrene insulation board complying with ASTM C 578, Type VII pan and plate construction.

\*\* NOTE TO SPECIFIER \*\* Delete below if not required.

* + - 1. Seal perimeter joints between panel faces and louver frames.
	1. FINISHES, GENERAL
		1. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
		2. Finish units after assembly.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. ALUMINUM FINISHES
		1. Compliance: Finish designations prefixed by AA comply with system established by the Aluminum Association for designating aluminum finishes.

\*\* NOTE TO SPECIFIER \*\* Firs finish below is standard with many manufacturers; second is a heavy-anodized finish. Verify availability with manufacturers selected.

* + 1. Class I, Clear Anodic Finish: AA-M12C22A41 complying with AAMA 611.
			1. Mechanical Finish: Nonspecular as fabricated.
			2. Chemical Finish: Etched, medium matte.
			3. Anodic Coating: Architectural Class I, clear coating 0.018 mm or thicker.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Class I, Color Anodic Finish: AA-M12C22A42/A44 complying with AAMA 611.
			1. Mechanical Finish: Nonspecular as fabricated.
			2. Chemical Finish: Etched, medium matte.
			3. Anodic Coating: Architectural Class I, integrally colored or electrolytically deposited color coating 0.018 mm or thicker. Color to fall in standard range for color variation in anodic finishes.

\*\* NOTE TO SPECIFIER \*\* Delete colors not required.

* + - 1. Color: Champagne bronze.
			2. Color: Light bronze.
			3. Color: Medium bronze.
			4. Color: Dark bronze.
			5. Color: Extra Dark bronze.
			6. Color: Black.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Baked-Enamel Finish: AA-C12C42R1x.
			1. Apply baked enamel complying with paint manufacturer's specifications for cleaning, conversion coating, and painting.
			2. Chemical Finishes: Cleaned with inhibited chemicals and acid-chromate-fluoride-phosphate conversion coating.

\*\* NOTE TO SPECIFIER \*\* Subparagraph below references AAMA standard for pigmented organic coating on extrusions. Delete if not required.

* + - 1. Organic Coating: Thermosetting, modified-acrylic enamel primer/topcoat system complying with AAMA 2603, except with a minimum dry film thickness of 1.5 mils (0.04 mm), medium gloss.

\*\* NOTE TO SPECIFIER \*\* Delete color options not required.

* + - 1. Color: As indicated by manufacturer's color designations.
			2. Color: Match Architect's sample.
			3. Color: As selected by Architect from manufacturer's full range of colors.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. High-Performance Organic Coating Finish: AA-C12C42R1x.
		2. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
			1. Chemical Finishes: Cleaned with inhibited chemicals and acid-chromate-fluoride-phosphate conversion coating.

\*\* NOTE TO SPECIFIER \*\* Subparagraph below references AAMA standard for high-performance organic coating on extrusions and panels. Revise if specific products are required Delete one of the two following subparagraphs; if both are required, indicate location of each system on Drawings, in schedules, or by inserts. Retain applicable color requirement for each from choices following subparagraph below.

* + - 1. Fluoropolymer Two-Coat Coating System: Manufacturer's standard two-coat, thermocured system consisting of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with AAMA 2605.
			2. Fluoropolymer Three-Coat Coating System: 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 percent polyvinylidene fluoride resin by weight; complying with AAMA 2605.

\*\* NOTE TO SPECIFIER \*\* Delete color options not required.

* + - 1. Color: As indicated by manufacturer's color designations.

\*\* NOTE TO SPECIFIER \*\* Subparagraph below can have varying effect on cost.

* + - 1. Color: Match Architect's sample.
			2. Color: As selected by Architect from manufacturer's full range of colors.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Woodgrain Finish;
			1. Airowood Woodgrain Finish as manufactured by The Airolite Co.
			2. Finish shall comply with AAMA 2604.

\*\* NOTE TO SPECIFIER \*\* Delete wood grain not required.

* + - 1. Wood Grain: AL301 Honey Knotty Pine
			2. Wood Grain: AL302 Golden Knotty Pine
			3. Wood Grain: AL303 Dark Oak
			4. Wood Grain: AL304 Cinnamon Cherry
			5. Wood Grain: AL305 Natural Cherry
1. EXECUTION
	1. EXAMINATION AND PREPARATION
		1. Prepare substrates and openings using methods recommended by manufacturer for achieving best result for substrates under project conditions.
		2. Do not proceed with installation until substrates and nailers have been prepared using the methods recommended by the manufacturer and deviations from manufacturer's recommended tolerances are corrected. Commencement of installation constitutes acceptance of conditions.
		3. If preparation is the responsibility of another installer, notify Architect in writing of deviations from manufacturer's recommended installation tolerances and conditions.
	2. INSTALLATION
		1. Install in accordance with manufacturer's instructions.
			1. Locate and place units level, plumb, and at indicated alignment with adjacent work.
			2. 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.
			3. Form closely fitted joints with exposed connections accurately located and secured.
			4. Provide perimeter reveals and openings of uniform width for sealants and joint fillers as indicated on Drawings.
			5. Repair finishes damaged by cutting, welding, soldering, and grinding. Restore finishes so no evidence remains of corrective work. Return items that cannot be refinished in the field to the factory, make required alterations, and refinish entire unit or provide new units.
			6. Protect galvanized and nonferrous-metal surfaces from corrosion or galvanic action by applying a heavy coating of bituminous paint on surfaces that will be in contact with concrete, masonry, or dissimilar metals.

\*\* NOTE TO SPECIFIER \*\* Verify that Section title listed below is correct for this Project's Specifications because Section title may have changed since this Section was updated.

* + 1. Install concealed gaskets, flashings, joint fillers, and insulation, as installation progresses, where weathertight joints are required. Comply with Division 7 Section "Joint Sealants" for sealants applied during installation.
	1. ADJUSTING, CLEANING AND PROTECTION

\*\* NOTE TO SPECIFIER \*\* Paragraph below applies only to louvers, delete if only specifying grilles.

* + 1. Test operation of adjustable louvers and adjust as needed to produce fully functioning units that comply with requirements.
		2. Protect products from damage until completion of project. Use temporary protective coverings where needed and approved by manufacturer. Remove protective covering at the time of Substantial Completion.
		3. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION