1. Section 10 71 13
2. EXTERIOR SUN CONTROL DEVICES
3. \*\* NOTE TO SPECIFIER \*\*
4. Notes in blue, such as this one, are explanatory and intended to guide the design/construction professional and user in the proper selection and use of materials. This specification should be modified where necessary to accommodate individual project conditions.
5. Modify footers to align when using this section name and number.
6. Revise this Section by deleting and inserting text to meet Project specific requirements.
7. This Section uses the term "Architect." Change this term to match that used to identify the design professional as defined in the General and Supplementary Conditions.
8. Verify that Section titles referenced in this Section are correct for this Project's Specifications; Section titles may have changed.

Metric conversion, where used, is soft metric conversion.

1. This section is based on the products of Renson, Inc., which is located at:
3755 N. Josey Ln #116848
Carrollton, TX 75007
2. For assistance in the use of products in this section, contact Renson, Inc. by calling Tel: 310-658-4878, by email at request info (us@renson.net) or visit their website at
3. http://www.renson-outdoor.com

Renson Outdoor is a European worldwide pioneer and trendsetter in outdoor living concepts. Renson was founded in 1909 in Belgium. Although it has deep local roots, it is increasingly widening its horizons internationally. With over 1,000 collaborators worldwide and production plants in Belgium, UK, Italy and the US, it is intensifying its ambition to expand from a Belgian business to a global player.
4. Renson [aluminum pergolas](https://www.renson-outdoor.com/en-us/aluminum-pergolas) are a shining example of quality and sleek design. The [carports](https://www.renson-outdoor.com/en-us/carports-overview), [siding elements](https://www.renson-outdoor.com/en-us/siding) and [outdoor elements](https://www.renson-outdoor.com/en-us/outdoor-elements) contribute to a high-quality all-round outdoor concept. All Renson Outdoor products are available in the same style which enables you to effortlessly continue the style you have created around your home.

 **SECTION 10 71 13; Copyright 2020, Renson**

* 1. PART 1 GENERAL
		1. SECTION INCLUDES
			1. Section includes furnishing and installing add-on, pre-engineered metal pergolas including framing, rotatable extruded aluminum blade roof system, roof drains and leaders, fascia components, ceiling and accessories including framing, enclosure, and attachment hardware. The exterior sun control and rain protectiondevice includes:

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

* + - * 1. Aluminum frame.
				2. Motorized louvered roof
				3. Hardware as required for installation/assembly
				4. Accessories (optional)
		1. RELATED REQUIREMENTS
			1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, Specification Sections, apply to this Section.

\*\* NOTE TO SPECIFIER \*\* Revise paragraphs below to suit project requirements.

* + - 1. Section 06 10 00 – Rough Carpentry for blocking at connection to existing building.
			2. Division 26 – Electrical, for rough-in, connections, and control wiring.
		1. DEFINITIONS
			1. Span Side: Corresponds to the span of the blades.
			2. Pivot Side: is the side where the blades rotate.
		2. REFERENCE STANDARDS
			1. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate 2014.
			2. ASTM B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate (Metric) 2014.
			3. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes 2014.
			4. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric) 2013.
			5. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass 2018.
			6. ASTM C1172 - Standard Specification for Laminated Architectural Flat Glass 2014.
			7. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2020.
			8. National Association of Architectural Metal Manufacturers (NAAMM): NAAMM MFM - Metal Finishes Manual.
			9. NEMA MG 1 - Motors and Generators 2018.
			10. NFPA 701 - Standard Methods of Fire Tests for Flame Propagation of Textiles and Films.
			11. UL 326, Door, Drapery, Grate, Louver, and Window Operators and Systems, UL (DIR) - Online Certifications Directory Current Edition.
			12. CSFM Title 19, NFPA 701 - California State Fire Marshall (CSFM) registered.

\*\* NOTE TO SPECIFIER \*\* Delete item below if project does not have lighting.

* + - 1. IEC 62031:200801 LED Modules for General Lighting.

\*\* NOTE TO SPECIFIER \*\* Delete item below if project is not pursuing LEED.

* + - 1. U.S. Green Building Council, LEED Building Design and Construction (BD+C) Version 4.0 Rating System. (LEED v4.0)

\*\* NOTE TO SPECIFIER \*\* Delete items below if project is not in Florida.

* + - 1. Florida Building Code - Product Approval.

\*\* NOTE TO SPECIFIER \*\* Delete items below if project is in United States. .

* + - 1. European Standard EN 1090-3:2008.
			2. European Standard EN 13561:2016.
		1. ADMINISTRATIVE REQUIREMENTS
			1. Preinstallation Meeting: Conduct a preinstallation meeting one week prior to start of this work; require attendance by **[Architect,] [Owner,] [Contractor,] [Construction Manager,]** installer and related trades.
				1. Conduct meeting to verify pergola requirements, delivery and storage, staging and sequencing, substrate conditions, utility connections, manufacturer's installation instructions, and protection of completed work.
		2. SUBMITTALS
			1. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
			2. Product Data: Manufacturer's data sheets on each product to be used, including the installation manual.
			3. Shop Drawings: Submit manufacturer's standard plans, elevations, sections, construction details, and utility connections as necessary for this work and relationship to adjacent construction.
			4. Samples: For each finish product specified, two complete sets of color chips representing colors.
			5. Fabric: Submit 2 samples representing actual products specified for shade cloth.
		3. closeout submittals
			1. Operating and maintenance data that includes recommendations for periodic checking and adjustment of rotatable system and periodic cleaning and maintenance of all components.
			2. Warranty Documentation: Submit manufacturer warranty.
		4. QUALITY ASSURANCE
			1. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than 10 years of documented experience.
			2. Installer Qualifications: Company specializing in performing work of the type specified.
				1. Installer to be trained and certified by manufacturer.
			3. Source Limitations: Obtain pre-engineered metal pergola through one source from a single manufacturer.
		5. DELIVERY, STORAGE, AND HANDLING
			1. Deliver pergolas to project site ready for installation.
			2. Store products in manufacturer's unopened packaging until ready for installation, in a clean, dry location protected from exposure to any harmful elements.
			3. Protect components and accessories from corrosion, deformation, damage and deterioration when stored at job site. Keep materials free from dirt, rain, and foreign matter.
		6. FIELD CONDITIONS
			1. Field Measurements: Contractor is to verify location and elevation of construction contiguous with pre-engineered aluminum pergolas by field measurements before fabrication and indicate measurements on shop drawings.

\*\* NOTE TO SPECIFIER \*\* delete below if not allowed.

* + - * 1. Established Dimensions: Where field measurements cannot be made without delaying the work, establish dimensions and proceed with fabricating aluminum pergolas without field measurements. Contractor is responsible to coordinate footer locations and elevations with any interferences with or attachments to abutting structures.
		1. WARRANTY
			1. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.

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

Renson warrantees the products it manufactures to be free of defects in materials, leaks, and workmanship for 1 year from date of shipment.

Renson also offers a 20 year limited warrantee against peeling, flaking, chipping of pergola deck when properly maintained, and pass on manufacturer's warrantees for accessory items.

No other warrantees, either expressed or implied, are applicable unless stated in writing, and Renson is not responsible for damage caused during material handling or storage onsite or by improper use or installation

* + - 1. Provide 10 year manufacturer warranty for supporting structure that fails in materials or workmanship within warranty period as indicated.
			2. Provide 10 year manufacturer warranty for load-bearing structure that fails in materials or workmanship within warranty period as indicated.
			3. Provide 10 year manufacturer warranty for blades that fail in materials or workmanship within warranty period as indicated.

\*\* NOTE TO SPECIFIER \*\* Delete if no fabric.

* + - 1. Fabric: Warranted for intended use for 5 years from date of shipment.

\*\* NOTE TO SPECIFIER \*\* Delete if no motor.

* + - 1. Motors: Warranted 2 years for motorization and electronic control.

\*\* NOTE TO SPECIFIER \*\* Delete if no heaters, speakers or lighting components.

* + - 1. Electrical components: Warranted 2 years for lighting components.

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

* + - 1. Warranty: Provide manufacturer's standard limited warranty for adhesion of the paintwork.

\*\* NOTE TO SPECIFIER \*\* 10 years is the standard warranty, any projects within 550 yards from the coast are only eligible for a 5 year warranty.

* + - * 1. Warranty Period: 10 years.

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

* + - 1. Warranty: Provide manufacturer's standard limited warranty for color and shine of the paintwork.

\*\* NOTE TO SPECIFIER \*\* 5 years is the standard warranty, any projects within 1640 feet from the coast are only eligible for a 5 year warranty, 15 year warranty available when project submits registration and performs annual maintenance with Renson maintenance set and is a distance greater than 550 yards from the coast.

* + - * 1. Warranty Period: **[5] [15]** years.

* 1. PART 2 PRODUCTS
		1. MANUFACTURERS
			1. Basis-of-Design Product by Manufacturer: Aero ([www.renson-outdoor.com](http://www.renson-outdoor.com)). The exterior sun control and rain protection device is an aluminum louvered roof that is added on to an existing roof structure by Renson, Inc.

3755 N. Josey Ln #116848
Carrollton, TX 75007
Tel: 310-658-4878
Email: request info: usa@renson.net

Web: <http://www.renson-outdoor.com>

* + - 1. Substitutions: See Section 01 60 00 - Product Requirements.
		1. AERO SYSTEM
			1. Description: a pre-engineered, exterior sun and rain control device structure comprised of a frame containing rotating louvers at the roof plane.
			2. The rotating louvers form a watertight roof when closed and drain to the columns by means of integrated gutters. The frame structure is comprised of 4 beams (2 pivot profiles and 2 tension profiles), which are made of aluminum profiles that are attached to each other at the corners. The louvers rotate.
			3. Engineering:
				1. Design aluminum pergola structure for dead load, specified live load, calculated additional uniform dead load, and combinations of these loads. Deflection of panels to meet l/200.
			4. Dimensions:

\*\* NOTE TO SPECIFIER \*\* Edit dimensions to match project. Roofs for the Aero have a 177" maximum span and a 244" maximum pivot and a maximum passage height of 110".

* + - * 1. Span Side: **[Insert value feet and inch]**.
				2. Pivot Side: **[Insert value feet and inch]**.
			1. Blades.
				1. Aluminum Extrusions: B221 and ASTM B 429 6061-T6 alloy and temper.
				2. Fasteners: Stainless steel.
				3. Rotation: 155°
				4. Blade Mounting.

Pivot sides: use stainless steel shafts.

Incline blades per manufacturer's guidelines for optimum water drainage.

* + - 1. Color.
				1. Roof: **[Insert Color]**.
				2. Frame: **[Insert Color]**.
			2. Comfort.
				1. Protecto: **[Yes] [No].** Closes the visible gap between louvers and frame (additional splash & insect protection, sleek design, thermal comfort)
		1. POWER, DATA AND CONTROL SYSTEM
			1. Motorized Operation:
				1. System type: As recommended by pergola manufacturer; sized to pergola conditions.
				2. Electrical Connection Requirements: 24 VDC linear motor with driving profile, 230 Volt AC. Listed and classified by UL (DIR) as suitable for the purpose specified and indicated.
				3. Controls: **[Wall mounted switch] [Handheld remote] [Controlled by app] [Connect to building automation system]**.
			2. Accessories:

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

* + - * 1. **[LED: [Updown LED on Frame] [LED in Louvers].]**

**[Color Temperature: [3000K] [5500K] [RGB]]**

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

\*\* NOTE TO SPECIFIER \*\* Rain sensor closes the blades automatically when there is rain. It rotates the blades to their pre-set snow position whenever there is precipitation combined with a freezing temperature.

* + - * 1. Rain sensor kit: Rain Monitor.

\*\* NOTE TO SPECIFIER \*\* Wind sensor kit closes the blades when wind speeds are greater than 50 km/hour. The wind sensor has priority over the rain sensor.

* + - * 1. Wind sensor kit: Wind sensor and accessories.
			1. Performance:
				1. Blade Rotation: Maximum 155°.
				2. Water Drainage: 33 gal/yd2 h.
				3. Load-bearing capacity: 20.4 psf.
		1. FABRICATION
			1. Shop fabricate pergola to the greatest extent possible to minimize field assembly.
			2. Form pergolas to required shapes and sizes, with true lines and angles, square, rigid and without warp, and with metal faces flat and free of dents and distortion. All components and profiles to be pre-cut and coated in color of choice. Make exposed metal edges and corners free of sharp edges and burrs and safe to touch.
			3. Prewire pergola ready for on-site service connection.
			4. Disassemble as necessary for shipping and handling.
			5. Provide supports, anchorages, and accessories as required for complete assembled system.
				1. Provide inserts as required for installation into concrete.
			6. Where dissimilar metals contact each other, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation.
		2. FINISHES
			1. Color: As selected by Architect from manufacturer's standard range of colors.
			2. Performance: Per AAMA Specifications for shop-applied coatings.
			3. Finish: Provide AAMA 2603 finish in color specified.
			4. Finish: Provide AAMA 2604 finish in color specified.
			5. Finish: Provide AAMA 2605 finish in color specified.
			6. Aluminum Finishes.

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

* + - * 1. High-Performance Organic Coating Finish:

Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

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.

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. 1.2 mils (.03 mm) dry film thickness.

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

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. 2.0 mils (.05 mm) dry film thickness.

\*\* NOTE TO SPECIFIER \*\* Retain one color requirement below.

Color and Gloss: As indicated by manufacturer's color and gloss designations.

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

Color and Gloss: Match Architect's sample.

Color and Gloss: As selected by Architect from manufacturer's full range of colors and glosses.

* 1. PART 3 - EXECUTION
		1. EXAMINATION
			1. Examine substrates, adjacent areas, and supporting foundation, with installer present, for compliance with manufacturer's requirements, including installation tolerances and other conditions affecting performance of this work.
			2. Verify that bearing surfaces are ready to receive this work.
			3. Examine rough-in of required electrical services prior to placement of pergola.
			4. If preparation is responsibility of another installer, notify Architect of unsatisfactory conditions prior to proceeding with this work.
			5. Proceed with installation only after unsatisfactory conditions have been corrected.
		2. PREPARATION
			1. Clean areas of supporting foundation thoroughly prior to installation.
			2. Prepare substrate surfaces using methods as recommended by manufacturer under project conditions.
			3. Set pre-engineered metal pergola plumb and aligned. Level base plates true to plane with full bearing on concrete bases.
		3. INSTALLATION
			1. Install pergola in accordance with manufacturer's written instructions. and in proper relationship with adjacent construction.
			2. Set pergola plumb and aligned, anchor devices level and true to plane with full bearing on concrete substrate, and securely fasten to concrete base as indicated.
			3. Install connection to electrical systems. See Division 26.
			4. Test for proper operation and adjust until satisfactory results are achieved.
			5. Temporary electrical power shall be provided.
			6. Connect electrical power service to power distribution system according to requirements specified in Division 26.
			7. Install in accordance with manufacturer's instructions and approved submittals. Install support brackets and with clearance sufficient to permit unencumbered operation of shade and hardware as recommended by manufacturer.
			8. Fabric: Install straight and flat without buckling or distortion. Shade fabric shall not telescope on the roll.

Retain the following for motorized operation with a wall switch.

* + - 1. Locate controls **[\_\_\_\_.] [where directed.]**
		1. TOLERANCES
			1. Maximum Variation From True Position: **[\_\_\_\_\_\_\_\_\_\_\_\_\_\_] [As specified in EN 1090-3]**.
			2. Maximum Offset From True Alignment: **[\_\_\_\_\_\_\_\_\_\_\_\_\_] [As specified in EN 1090-3]**.
		2. FIELD QUALITY CONTROL
			1. Field Inspection: Coordinate field inspection in accordance with appropriate sections in Division 01.

\*\* NOTE TO SPECIFIER \*\* Include if manufacturer provides field quality control with onsite personnel for instruction or supervision of product installation, application, erection or construction. Delete if not required.

* + - 1. Manufacturer's Services: Coordinate manufacturer's services in accordance with appropriate sections in Division 01.
		1. SYSTEM STARTUP
			1. Provide manufacturer's field representative to perform systems startup.
			2. Prepare and start equipment and systems in accordance with manufacturers' instructions and recommendations. Installer shall demonstrate rotatable components to be in uniform and smooth working order.
			3. Adjust for proper operation within manufacturer's published tolerances.
		2. CLEANING
			1. Clean pergola in accordance with manufacturer's written instructions.
			2. Touch-up, repair or replace damaged components or exposed finishes prior to Date of Substantial Completion.
		3. CLOSEOUT ACTIVITIES
			1. Demonstration: Demonstrate operation of system to Owner's personnel.
				1. Use operation and maintenance data as reference during demonstration.
				2. Conduct walking tour of project.
				3. Briefly describe function, operation, and maintenance of each component.
			2. Training: Train Owner's personnel on operation and maintenance of system.
				1. Use operation and maintenance manual as training reference, supplemented with additional training materials as required.
				2. Provide minimum of one hour of training.
				3. Location: At project site.
		4. PROTECTION
			1. Protect installed pergola from subsequent construction operations.
		5. MAINTENANCE
			1. Proper maintenance measures shall be taken to ensure a long life for the pergola. The following cleaning conditions shall be met to qualify for product warranty consideration:
				1. Documented cleaning, one to two times per calendar year.
				2. Use manufacturer's standard Renson Maintenance Set.
				3. Rotatable components should be thoroughly cleaned and lubricated yearly to maintain smooth, trouble free operation.
	1. END OF SECTION

ATTENTION

Renson products are intended for use by qualified professional contractors, not consumers, as a component of a larger construction assembly as specified by a qualified design professional, general contractor or builder. They should be installed in accordance with those specifications and Renson’s instructions. Renson disclaims all, and assumes no, liability for on-site inspections, for its products installed improperly, or by unqualified persons or entities, or as part of an improperly designed or constructed building, for the nonperformance of adjacent building components or assemblies, or for other construction activities beyond Renson’s control. Improper use of Renson products or use as part of an improperly designed or constructed larger assembly or building may result in serious damage to Renson products, and to the structure of the building or its components. RENSON DISCLAIMS ALL WARRANTIES EXPRESS OR IMPLIED EXCEPT FOR EXPLICIT LIMITED WRITTEN WARRANTIES ISSUED TO AND ACCEPTED BY BUILDING OWNERS IN ACCORDANCE WITH RENSON'S WARRANTY PROGRAMS WHICH ARE SUBJECT TO CHANGE FROM TIME TO TIME. For the fullest, most current information on proper application, clean-up, mixing and other specifications and warranties, cautions and disclaimers, please refer to the Renson. website, www.renson-outdoor.com.