

GUIDE SPECIFICATIONS
EXTERIOR SUN CONTROL SPECIALTIES - FIXED HORIZONTAL LOUVER SYSTEM

Division 10 - Specialties
Section 10.000 □ Fixed horizontal louver system

1.0 GENERAL

1.1 RELATED SECTIONS:

- 1.1.1 Section 0□ .. Structural steel
- 1.1.2 Section 08920 Glazed aluminum curtain wall
- 1.1.3 Section 0□ .. Aluminum cladding

Products supplied by this section and installed by other trades:

Specifier co-ordinate this work with designated trades in other sections of these project specifications.

- 1.1.4 Operable Fabricated Aluminum Vertical louver system installed to the window wall as indicated on the architectural drawings.
- 1.1.5 Steel or aluminum attachment brackets for fixed horizontal louver system

1.2 SUMMARY:

- 1.2.1 Provide Interior fixed aluminum vertical louver system with related specified hardware to complete the installation to the following locations:
Specifier provide the scope of the work
- 1.2.2 Vertical louver system shall be mounted to brackets protruding from the window wall / facade as indicated on the architectural drawings
- 1.2.3 Aluminum cladding supplied and installed by other trades shall be coordinated with this trade to ensure smooth integration of the specified system

1.3 QUALITY ASSURANCE:

- 1.3.1 All bidders submitting bids on the work of this section shall meet or exceed the quality of materials, components and assemblies herein. Bidders who do not comply with these specifications shall refrain from submitting a bid
- 1.3.2 Alternate bids, alternate products shall be submitted to the Design Consultant ten (10) days prior to tender closing. Alternate bids can only be submitted as an alternate to the specified base bid product
- 1.3.3 Manufacturer shall have a minimum of fifteen (15) years experience in the manufacture of the specified shading system. All work specified under this section shall be supplied by one subcontractor
- 1.3.4 Conform to applicable Building Codes, relevant local codes and all other standards noted
Specifier provide details of any specific codes to be met
- 1.3.5 Install one complete sample with accessories on site. Review the installation before proceeding with the remainder of the work. Adjust sample installation, as required, to gain acceptance. Accepted work may form part of the final installation

1.4 SUBMITTALS AND TEST REPORTS:

- 1.4.1 Submit fully detailed drawings prepared in AutoCAD 2000 version format showing all components, finishes and other construction conditions, installation, controls and all applicable dimensions according to Section 01300 □ Submittals
- 1.4.2 Submit structural calculations for local approval, taking account of maximum potential wind and snow loads
- 1.4.3 Submit duplicate samples of the key components of the specified fixed horizontal louver system with the specified finish. Minimum size 40□ (1000mm) for review
- 1.4.4 Submit duplicate samples of the specified brackets and attachment methods

- 1.4.5 Submit duplicate copies of maintenance instructions including the name, address and other contact details of local service company

1.5 INSPECTION / PREPARATION

- 1.5.1 Verify that the structure necessary to carry the horizontal louver system is a proper installation and secure
- 1.5.2 Notify general contractor in writing of any deficiencies in the work of other trades that would affect the fixed horizontal louver system
- 1.5.3 Make accurate measurements at the site before fabrication.. Check layout of glazing framing sections, spans and loading capabilities

1.6 DELIVERY, STORAGE AND HANDLING:

- 1.6.1 Do not deliver to site until areas to receive the fixed horizontal louver system are completely finished
- 1.6.2 Deliver materials in original protective wrappers or containers, with manufacturer's labels and sealed intact
- 1.6.3 Handle and store materials in accordance with the manufacturer's recommendations, protecting materials and finishes from damage or soiling

1.7 WARRANTY:

- 1.7.1 Provide a limited manufacturer's warranty from date of Substantial Completion covering the following periods:
 - Aluminum components and steel hardware Two (2) years
 - Aluminum and steel finishes Ten (10) years
- 1.7.2 Provide a limited installation warranty from date of Substantial Completion of one (1) year

2.0 PRODUCTS

2.1 MANUFACTURER:

- 2.1.1 Arc Structures, Inc.
1, 115 28 Street SE
Calgary, Alberta,
Canada T2A 5K4
Tel: 403 204 8699
Fax: 403 204 8676
e-mail: sales@arcstructures.com
Web: www.arcstructures.com

2.2 SYSTEM:

- 2.2.1 System to comprise:
Specifier select appropriate option
 - 1. Operable vertical louvers attaching directly to the window wall, or
 - 2. Operable vertical louvers attaching to a secondary steel structure

2.3 MATERIALS:

- 2.3.1 Aluminum and steel hardware and brackets:
Specifier: Dependent upon the system selected above, certain items in the section will need to be deleted

Mounting brackets:

Specifier select appropriate option

1. System to be attached to steel or aluminum plates projecting from the window wall, supplied by the window wall manufacturer, **or**
2. System to be attached to mounting brackets to be supplied by the manufacturer of the fixed horizontal louver system. Brackets to fix to:

Specifier select the appropriate option

- a. Projecting studs supplied by the window wall manufacturer
 - b. Nosing of the window wall mullions
 - c. Brick or block work, using resin anchors or similar
 - d. Studs (provided by the structural steel contractor) projecting through the cladding
 - e. Steel work behind the cladding using engineered steel or aluminum spacers to take up the distance between the steel structure and the cladding, **or**
3. System to be attached to horizontal steel posts supplied by the structural steel contractor. Mounting brackets and / or vertical steel posts shall be manufactured from engineered wall thickness to support the full weight of the system and applied wind and snow loads including the safety ratio as determined by the local building and construction codes. Mounting assembly will be equipped with attachment provision for cladding integration, as appropriate Method of attaching to the structure to be coordinated with the structural steel contractor or the window wall contractor as appropriate.

Louvers:

System shall incorporate single skin fabricated louvers.

- a. The louvers shall be 24" wide with a radius of curvature of 35" .
- b. The louvers shall comprise the following components:
 - Extruded 1-3/8" aluminum round tubing leading edges
 - 1/8" Perforated Sheet aluminum skin with 1/8" holes spaced at 3/8" center to center.
 - Aluminum screw attached, manufactured end caps to fit precisely to the profile of the fabricated louver

2.3.2 Material quality and coatings:

- a. All extruded aluminum components shall be extruded from 6063-T6 quality aluminum
- b. All aluminum components shall have the following finish:
 - Two (2) coat Duracron finish to a standard color,
 - Steel components shall be manufactured from mild steel Fe230G while any stainless steel components shall be manufactured from Stainless 18-8.
- c. Steel components shall be hot dip galvanized or zinc plated,

2.2.3 Electrical Operation

- d. System to be operated by means of linear actuators
- e. Number and size / output torque of linear actuators to be determined by reference to the specific project requirements
- f. Linear actuators to be rated for external use
- g. Linear actuators to be supplied with appropriate mounting brackets for fixing back to the structure
- h. Each linear actuator to connect to an aluminum or steel operating strip which in turn connect the louvers in a single bank together
- i. Operating strips to be manufactured from material with engineered dimensions to sufficient to support the applied loads

2.2.4 Nysan Matrix Intelligent Sun Control System

- A. Shade Manufacturer to provide an automated control system that provides the following

- a. Computer controlled motorized shade system equipped with a solar program, which accounts for Building Latitude/longitude, time of day, day of year orientation of building and solar conditions. Using this data it will adjust shades to allow for maximum daylight/glare control while maximizing outward visibility
- b. Up to 32 preset stops to allow for maximum sun control within the building space.
- c. Computer control system which allow for the shades to be divided into zones and scheduled to allow for specific requirements from building tenants or owners.
- d. Manual override capabilities either through computer or switching system to allow for window cleaning and other maintenance functions.
- e. Ability to accept override commands from BMS System to allow for fire alarm retraction.
- f. Ability to set maximum and minimum amounts of direct sunlight to enter the building as measured out from the window on the floor.
- g. Ability to add, or delete shades to system for future needs
- h. Ability to modify zones and schedules according to tenant/ owner needs without rewiring shades or switches (dependant upon the number of shades driven by each motor)
- i. Shade Control Computer may be networked to Building Computer Network(s) to allow users to override shade functions from desktop computers connected to the network.
- j. Shades to be controlled through an RS 485 computer bus line
- k. Each Matrix[®] shade controller to independently control 4 motors and have 15 addresses allowing a total of 60 motors to be controlled on one bus line without additional hardware
- l. For more than 60 motors 8 port routers to be used which allow for the control of 480 Motors per router.
- m. Computer to be a Windows based Pentium 4 - 2 Ghz system with High speed internet connection, CD Rom and 20Gig Hard Drive

B. Wiring

- a. Each roller shade motor shall be powered by a 3 conductor (plus ground) wire connected to the Matrix[®] Board, which is powered by std. 120V/220V power. Matrix[®] shall be supplied as one Matrix[®] board for every 4 motors or part thereof mounted in properly identified junction boxes supplied under this section. Identification labels shall clearly show Zone(s) and Group(s) that are controlled.
- b. Group and or Zone controllers shall be wired to the Matrix[®] relays with a low voltage Cat 5 [®] 8 conductor cable and RJ 45 Connectors.
- c. All line voltage power to be connected to board through screw down terminal strips, all low voltage switching and computer bus (RS 485) terminations to be RJ 45 connections.

C. Nysan Matrix[®] Controller:

- a. Supply Matrix[®] unit(s) controlling one or more Matrix[®] operated Zone(s), Group(s), programmed within the Windows environment or with a hand held Windows CE machine or directly from the Matrix[®] Board and configured to provide the following functions:
- b. Switch

- a Rocker Type or Decora Recessed mount 120V AC / 220V AC, 15A / 10A Complete with cover plate selected from standard manufacturers range.
- b Momentary

3.0 EXECUTION

3.1 FABRICATION:

- 3.1.1 Fixed horizontal louver system components manufactured and assembled allowing for custom installation techniques to suit project requirements
- 3.1.2 Finished assemblies shall be square, true to size and free from twist or other defects that could affect their strength or appearance. Factory applied finish should be uniform, smooth and without blemishes

3.2 INSTALLATION:

- 3.2.1 Install work using skilled tradesman and install in strict accordance with manufacturer's recommendations.
- 3.2.2 All items installed, plumbed, squared and rigidly anchored maintaining uniform clearances and accurate alignment measurements
- 3.2.3 The fixed horizontal louver system shall be pre-measured and manufactured off-site

3.3 ADJUSTING AND CLEANING:

- 3.3.1 Adjust components as required to ensure trouble free performance
- 3.3.2 Prior to Substantial Completion clean down once the fixed horizontal louver system
- 3.3.3 Replace work which cannot be satisfactorily repaired, adjusted or cleaned.

END