PART 2 PRODUCTS

2.01 Manufacturers

A. The louvers and related materials herein specified and indicated on the drawings shall be as manufactured by:
   Construction Specialties, Inc.
   49 Meeker Avenue
   Cranford, New Jersey 07016
   Telephone: 800-631-7379
B. Products equal to the CS materials may be offered providing that the manufacturer and materials are pre-approved at least 10 working days before the bid date.

2.02 Materials

A. Aluminum Extrusions: ASTM B211, Alloy 6063-T5, 6063-T6 or 6061-T6.
B. Aluminum Sheet: ASTM B3209, Alloy 1100, 3003 or 5005.

2.03 Fabrication, General

A. Provide CS louver models, bird screens, blank-off panels, structural supports and accessories as specified and/or shown on the drawings. Materials, sizes, depths, arrangements and material thickness to be as indicated or as required for optimal performance with respect to strength; durability; and uniform appearance.
B. Louvers to be mechanically assembled using stainless steel or aluminum fasteners.
C. Include supports, anchorage, and accessories required for complete assembly.

2.04 Louver Models

A. CS 7.5" (190.5) Deep High Performance Fixed Extruded Mullion Louver Model PL-4080
   1. **Material:** Heads, sills, jambs and mullions to be one piece structural aluminum members with integral caulking slot and retaining beads. Mullions shall be sliding interlock. Blades to be one piece aluminum extrusions with reinforcing bosses. Material thickness to be as follows: Heads, sills, jambs and mullions: 0.125" (2.06mm). Blades: 0.068 (1.73 mm). Perforated Face to be .125" perforated aluminum panel in single frame with 4" deep blades. Perforated element is face fastened to rear frame and supported by a .125" aluminum channel frame with mitered. Perforated face element shall be supported in rear as required to minimize deflection, warping, "oil canning" etc. and to comply with all engineering criteria. Spacing and location of rear supports will be determined by engineering analysis and shall be identified on the shop drawings. Louver manufactures must supply test data results from an 3rd party organization that have perforated sheet with rear blades in a single frame that meet or exceed performance listed below**.**
   2. **BSRIA Performance:** A 4' x 4' unit shall conform to the following and be licensed to bear the BSRIA seal:

Free Area	7.49 sq. ft. (0.804 sq. m.)
Free area velocity at the point of beginning water penetration	822 FPM (245.1 m/min)
Pressure drop at the point of beginning water penetration	0.13 in. H_2O (3.05 mm)

   3. **Wind Driven Rain Performance:** The louver test was based on a 39.370"(1.00m) x 39.370" (1.00 m) core area. Unit tested at a rainfall rate of 3.0 inches per hour (75 mm/hr) with a wind directed to the face of the louver at a velocity 29.1-mph (13 m/s) . The test data shall show the water penetration effectiveness rating at each corresponding ventilation rate.
   4.

Core Ventilation Rate (m/s):	0	0.5	1.0	1.5	2.0	2.5	3.0	3.5
Core Ventilation Rate (ft/min):	0	98	197	295	394	492	591	689
Free Area Ventilation Rate (ft/min):	0	193	387	583	777	970	1163	1360
Rating Effectiveness	B	C	C	C	C	C	C	D
Effectiveness Ratio	96.2	93.5	91.9	90.8	90.8	88.8	83.1	71.0
Effectiveness Rating:	A = 1 to 0.99		B = 0.989 to 0.95		C = 0.949 to 0.80		D = 0.80 to 0	

2.05 Finishes

A. General: Comply with NAAMM "Metal Finishes Manual" for finish designations and application recommendations, except as otherwise indicated. Apply finishes in factory. Protect finishes on exposed surfaces prior to shipment. Remove scratches and blemishes from exposed surfaces that will be visible after completing finishing process. Provide color as indicated or, if not otherwise indicated, as selected by architect.

B. 100% Fluoropolymer Resin Powder Coat System complying with AAMA-2605 standards for color and gloss retention. Finish thickness to be 1.5 to 3.0 mils.
   1. Finish to allow zero VOCs to be emitted into facility of application or at job site.
   2. Finish to adhere to a 4H Hardness rating.
   3. Furnish manufacturer's twenty (20) year warranty for finish for gloss and color retention.

OR

B. Three Coat Fluorocarbon Coating
   1. Louvers to be finished with a minimum 1.4 mil (0.035mm) thick full strength 70% resin, 3 coat Fluoropolymer system.
   2. All aluminum shall be thoroughly cleaned, etched and given a chromated conversion pre-treatment before application of the Kynar/Hylar coating. The coating shall consist of a primer, a high metallic color coat and a clear PVF_2 topcoat. It shall receive a bake cycle of 17 minutes at 450^0F. All finishing procedures shall be one continuous operation in the plant of the manufacturer.
   3. Manufacturer to furnish an extended 20 limited warranty for the Kynar/Hylar coating. This limited warranty shall begin on the date of material shipment.

OR

B. Two Coat Fluorocarbon Coating
   1. Louvers to be finished with a minimum 1.0 mil (0.025mm) thick full strength 70% resin, 2 coat Fluoropolymer system.
   2. All aluminum shall be thoroughly cleaned, etched and given a chromated conversion pre-treatment before application of the MICA II coating. The coating shall consist of a primer and a pearlescent pigmented PFV2 topcoat. It shall receive a bake cycle of 17 minutes at 4500F. All finishing procedures shall be one continuous operation in the plant of the manufacturer.
   3. Manufacturer to furnish an extended 20 limited warranty for the Kynar/Hylar coating. This limited warranty shall begin on the date of material shipment.

OR

B. Clear Anodize
   1. Louvers to be given a one hour 215R1 Architectural Class I anodic coating of 0.7 mil (0.018mm) thickness (Aluminum Association designation AA-C22A41).
   2. The thickness of the coating shall be tested in accordance with ASTM B244-68.

3. The coating shall be sealed to pass the ASTM B136-77 Modified Dye Stain Test.

OR

B. Bronze Anodic
   1. Louvers to be given a Bronze Anodic Architectural Class 1 coating of 0.7 mil (0.018mm) minimum thickness; and a minimum weight of 27 mg. per sq. in.
   2. The thickness of the coating shall be tested in accordance with ASTM B244-68.
   3. The coating shall be sealed to pass the ASTM B136-77 Modified Dye Stain Test.

2.06 Bird Screens

A. Unless otherwise indicated, all louvers to be furnished with mill finish bird or insect screens.
B. Screens to be 5/8" (15.9mm) mesh, 0.050" (1.27mm) thick expanded and flattened aluminum bird screen secured within 0.055" (1.40mm) thick extruded aluminum frames. Frames to have mitered corners and corner locks.

OR

B. Screens to be 18 x 16 aluminum mesh 0.011" (0.279mm) diameter wire insect screens secured within 0.055" (1.40mm) thick extruded aluminum frames. Frames to have mitered corners and corner locks.

2.07 Blank Offs

A. Furnish where indicated on the drawings blank–off panels fabricated by the louver manufacturer.
B. Blank-off panels to be 0.050" (1.27mm) thick aluminum sheet. Panels to be finished with Kynar 500 minimum I mil (0.025mm) thick full strength 70% resin Fluoropolymer coating. Color to be selected by the architect.

OR

B. Blank-off panels to be 1" (25.4mm) thick and to be faced on both sides with 0.032" (0.81 mm) thick aluminum sheet. Panels to be fabricated with an mineral wool core (#6 density) having an R-value of 4 (0F*ft2*h/Btu) per inch. Insulation to comply with ASTM C 612 Minteral fiber block and board thermal insulation Type 1VB. Panel perimeter frame to be 0.050" (1.27mm) thick-formed aluminum channels. Panel frame to be mitered at the corners. Panels to be finished black.

Complies Fire Performance:	
ASTM E 136 Behavior of Materials at 750 °C (1382 °F)	Non-Combustible
CAN4 S114 Test for Non-Combustibility	Non-Combustible
ASTM E 84 (UL 723) Surface Burning Characteristics	Flame Spread = 0
Smoke Developed = 0	
CAN/ULC S102 Surface Burning Characteristics	Flame Spread = 0
Smoke Developed = 0	
Thermal Resistance:	
ASTM C 518 (C177) R-value/inch @ 75 °F	4.2 $hr.ft^2.F/Btu$***
RSI value/25.4 mm @24 °C	0.74 m^2K/W

OR

B. Blank-off panels to be 2" (50.8mm) thick and to be faced on both sides with 0.032" (0.81 mm) thick aluminum sheet. Panels to be fabricated with an mineral wool core (#6 density) having an R-value of 8 (0F*ft2*h/Btu). Panel perimeter frame to be 0.050" (1.27mm) thick-formed aluminum channels. Panel frame to be mitered at the corners. Panels to be finished black.

Complies Fire Performance:

ASTM E 136 Behavior of Materials at 750 °C (1382 °F)	Non-Combustible
CAN4 S114 Test for Non-Combustibility	Non-Combustible
ASTM E 84 (UL 723) Surface Burning Characteristics	Flame Spread = 0
Smoke Developed = 0	
CAN/ULC S102 Surface Burning Characteristics	Flame Spread = 0
Smoke Developed = 0	

Thermal Resistance:

ASTM C 518 (C177) R-value/inch @ 75 °F	4.2 hr.ft^2.F/Btu***
RSI value/25.4 mm @24 °C	0.74 m^{2}K/W