FLEX CONNECT

FIELD-FABRICATED ACM + PLATE PANEL SYSTEM

SPECIFICATION

SECTION 07 42 43 · 2026

FLEX CONNECT®

Aluminum Composite Metal (ACM) Wall Panel Specification with etalbond® ACM

HOW TO USE THIS SPEC *Optional text is indicated by square brackets* **[ ]**. *Delete unwanted items and the square brackets in the final specification.*

PART 1 — GENERAL

1.1 SECTION INCLUDES

.1 Aluminum Composite Material (ACM) **[pressure-equalized rain-screen] [wet-seal] [dry-seal]** panels.

.2 **[Supply only] [Supply and install]**.

.3 Accessories including Aluminum Shadow Girts, hat bars, roof caps, drip flashing, jamb flashing, through-wall flashing, and all other architectural trims.

SPEC NOTE *Re 1.1.3 — items listed are available at extra cost and are not included with the basic panel package.*

.4 Standards for Consideration & Supporting Evidence.

.1 Carter Architectural Panels, Inc. is recognized as a leading ACM/MCM attachment-system designer and distributor. Through rigorous testing, Carter obtained **AAMA 508-21** for pressure-equalization behavior and water-penetration resistance, and **ASTM E330-14** for structural performance — referred to as AAMA 508-21 / ASTM E330-14 hereafter.

.2 **AAMA 508-21 / ASTM E330-14** addresses compliance with the following test methods:

- **ASTM E1233 (Modified)** — Pressure Equalization Behavior
- **ASTM E331** — Water Penetration Resistance
- **AAMA 501.1-05** — Dynamic Water Test
- **ASTM E330-14** — Uniform Static Air Pressure Difference
- Carter panel systems may be used on buildings of **Type I, II, III, or IV** construction for installations greater than 40 ft above grade.

.3 Relevance of **AAMA 508-21 / ASTM E330-14**:

- The tested panel was one complete fabricated unit, evaluated on the basis-of-design for real-world use.

- The tested assembly includes both the outer ACM plank material and the extruded attachment system and components required to secure the finished wall panel to the sub-structure — including, but not limited to, Aluminum Shadow Girts and filler strips / splines.

1.2 RELATED REQUIREMENTS BY OTHERS

- **[Section 06 10 00** — Rough Carpentry]
- **[Section 07 21 00** — Thermal Insulation]
- **[Section 07 27 00** — Air Barrier]
- **[Section 07 92 00** — Joint Sealants]

1.3 REFERENCE STANDARDS

.1 ACM Panels

.1 AAMA 2605 — Voluntary Specification, Performance Requirements and Test Procedures for Superior-Performing Organic Coatings on Aluminum Extrusions and Panels.

.2 ASTM B209 — Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.

.2 Panel Attachment System

.1 *See 1.6 Design & Performance Requirements and 1.8 Technical Data — utilizing the proprietary **Flex-Connect® extrusion system**.*

1.4 PRE-INSTALLATION MEETINGS

.1 Coordinate products, techniques, and sequencing of related work with Section **[01 31 19 — Project Meeting]** [and] **[01 31 19.33 — Pre-Installation Meetings]**.

1.5 SUBMITTALS

.1 Under the provisions of **[Section 01 33 00]**, provide the following:

.1 **Product Data:** Manufacturer's printed sheets illustrating the products to be incorporated into the project.

.2 **Shop Drawings:** Detail drawings showing openings, components, panel profile, dimensions, and details of each condition and attachment — such as treatment at edges, terminations, and flashings.

.3 **Product Samples:** 150 mm × 150 mm (6" × 6") showing the specified finish for each location.

.4 **Product Test Reports:** Indicate compliance with product requirements from a qualified independent testing agency (**AAMA; ASTM**).

.5 **Manufacturer's Instructions:** Indicate installation requirements, rough-in dimensions, and special procedures.

.6 **Sample Warranty:** As specified in this Section.

.7 **Maintenance Data:** Panel-replacement instructions and cleaning information.

.8 **LEED Credits:** Conform to **[Section 01 81 13 — Sustainable Design Requirements]** for documentation of LEED credits re: certification of project under LEED **[CAGBC] [USGBC]** 2026 Rating System.

1.6 DESIGN & PERFORMANCE REQUIREMENTS

.1 **Design**, fabricate, and install an Aluminum Composite Material (ACM) pressure-equalized rain-screen (PER) panel system in **[fire-rated (FR)]** core, to the following standards & requirements:

.1 The ACM panel system **MUST** be the FLEX Connect® design. All mounting hardware must be color-matched with color-matched splines, using the same Kynar / PVDF paint technology as the coil-coated ACM, provided by the manufacturer.

.2 Only a Progressive System (independent panel, one from another) that is pressure-fitted to perimeter extrusions. This design must allow a single panel to be independently removed and re-installed.

.3 Any ACM panel attachment system not meeting the standards above (1.6.1.1; 1.6.1.2), or any system using a track / grid layout or adhesives in place of mechanical fasteners, is **NOT** considered equal or comparable in design or performance to the FLEX Connect® architectural panel system.

.4 Review and evaluate the product test reports made available by the manufacturer to ensure performance expectations can be met. See www.carterpanels.com.

.2 **Structural Performance** — the FLEX Connect® ACM panel system withstands the following loads, based on testing to **ASTM E330-14**:

Note: default deflection of the support framing was restricted to L/180, referencing AAMA 508 Section 5.1.2.

PROPERTY	RESULT
Wind Load — Maximum Pressure Achieved	6,700 Pa (140 lbs/ft²) — equivalent to 235 mph / 378.2 km/h per the Ensewiler formula
Specified Design Load	6,700 Pa (140.0 lbs/ft²)
Positive Loading Net Deflection (+6,700 Pa)	0.642 in (16.3 mm)
Negative Loading Net Deflection (−6,700 Pa)	0.634 in (16.1 mm)

[1] *The cladding system did not disengage from the wall assembly. The FLEX Connect® panel system did not fail at 6,906 Pa (239 mph); the test-lab wall supplied to Carter failed first, which limited the peak structural test numbers.*

.3 **Static Water Penetration Resistance** — no uncontrolled water penetration when tested to **AAMA 508-21** at the test-pressure differential below over 15 continuous minutes:

.1 Test-Pressure Differential — Maximum Achieved: **6.27 lbs/ft² @ 300 Pa**. No continuous streaming observed on simulated exterior sheathing.

.4 **Water Penetration Resistance (Dynamic Pressure)** — any water penetrating the exterior rain-screen cladding was controlled and drained to the exterior with no continuous streaming. Tested to **AAMA 508-14 §5.7, referencing AAMA 501.1-05**, over 15 continuous minutes at 49 mph (80 km/h), with only 2.28% surface wetting — well below the 5% allowable.

.1 Test-Pressure Differential — Maximum Achieved: **6.24 lbs/ft² @ 300 Pa**.

.5 **Pressure Equalization Behaviour** — the FLEX Connect® system meets the requirements of **ASTM E1233 / E1233M-14** for wind-gust pressure differential (not to exceed 50% of maximum pressure).

.1 Maximum External Gust Pressure = 24.2 lbs/ft² @ 1,161 Pa = **23% pressure differential**, as required by AAMA 508-14 (ASTM E1233M-14).

.6 **Thermal Movements** — the FLEX Connect® system accommodates vertical and horizontal thermal movement, preventing buckling, joint opening, and other detrimental effects under seasonal temperature cycles. Systems using enlarged holes or loose-fitting attachments to accommodate thermal movement are **NOT** considered equal or comparable.

.1 Temperature Change (Range): **[120 °F / 67 °C ambient; 180 °F / 100 °C material surface]**.

1.7 QUALITY ASSURANCE

.1 Metal Wall Panel Manufacturer Qualifications: minimum 5 years' experience in metal fabrication and supplying metal wall-panel systems, and a Carter Architectural Panels Inc.–approved FLEX Connect® manufacturer.

.2 Metal Wall Panel Installer Qualifications: minimum 5 years' experience installing commercial metal wall-panel systems.

.3 Manufacturers must be an approved FLEX Connect® fabricator and must manufacture FLEX Connect® architectural panels to the tolerances and attributes established by Carter Architectural Panels, Inc. North America.

1.8 TECHNICAL DATA

Applicable standards for the ACM component of the FLEX Connect® architectural panel system:

CATEGORY	STANDARD
Rainscreen Testing	AAMA 508-14 Compliant
Air / Water / Wind Performance	AAMA 501.1-05 (Dynamic) · ASTM E1233 (Modified) · ASTM E330 (Static) · ASTM E331 (Static)

1.9 MOCK-UP

SPEC NOTE *A mock-up is specified only for special or large projects, and only upon request.*

.1 Provide a mock-up on the building consisting of the complete cladding system — including, but not limited to, Shadow Girts, metal furring, panels, securement devices, sealants, and moldings — for approval. Cladding finish and moldings to be the finish and color designated by the **[Architect]**.

.2 Location of mock-up as directed by the **[Architect]**. Size to be four panels minimum, in a 2-over-2 configuration.

.3 Modify the mock-up as necessary for **[Architect]** approval. Mock-up **[may] [may not]** remain in place as part of the completed work, and shall represent the standard for completed work.

1.10 DELIVERY, STORAGE & HANDLING

.1 Handle and store products to prevent damage and soiling, in accordance with the manufacturer's instructions.

.2 Store packaged or bundled products in original, undamaged crates with manufacturer's seals and labels intact. Do not remove from packaging or crates until required for installation.

1.11 PACKAGING WASTE MANAGEMENT

.1 Return undamaged pallets and crates to the systems manufacturer. All other plastics, packaging foam, banding, and fasteners are to be disposed of by the panel installer.

1.12 WARRANTY

COMPONENT	WARRANTY
ACM Panels	Manufacturer's standard **[1 year] [2 year]** warranty against panel integrity.
Finish Coating Performance	Manufacturer's standard **[20 year]** warranty against fading, color change, chalking, peeling, cracking, or delamination of the coating system.

PART 2 — PRODUCTS

2.1 MANUFACTURERS

.1 Aluminum Composite Metal panels to be obtained as single-source from Carter Architectural Panels–approved FLEX Connect® manufacturers.

.2 FLEX Connect® extrusion system to be obtained from Carter Architectural Panels Inc. — Brampton, ON L6T 5H9 (905.487.1684); Canton, GA 30114 (770.345.9550); Mesa, AZ 85212 (480.899.3955).

2.2 MATERIALS

SPEC NOTE *Delete items not required.*

.1 ACM Wall Panels

.1 FLEX Connect® **[Pressure-Equalized Rain-screen] [wet-seal] [dry-seal]** wall-cladding system.

.2 Thickness: **[3 mm (0.118")] [4 mm (0.157")]**.

.3 Panel Depth: to substrate — i.e. 25 mm (1") from face to sub-girts.

.4 Core: **[Fire-Rated (FR)]**.

.5 Aluminum Composite Material: etalbond® by Elval Colour, 4 mm [FR] core.

.6 Manufacturer's standard, as shown on drawings, and as follows:

- **Shadow Girt:** [.100"] extruded aluminum, 6063-T6 alloy-temper, painted.
- **Aluminum Extrusions:** FLEX Connect® extrusions, mill finish (6063-T6).
- **Perimeter Sealant:** Carter FLEX Connect® perimeter sealant.

2.3 FABRICATION

SPEC NOTE *See Quality Assurance (1.7.1 through .3 above) for manufacturer qualifications & criteria.*

.1 ACM / MCM wall-panel fabrication must be in accordance with the approved local building plans.

.1 **[ACM Formed Panel:** comprised of a fire-retardant / non-combustible extruded core sandwiched between two nominal 0.020" coil-coated 3105 H24 aluminum skins.]

.2 **[FR Core ACM Formed Panel:** comprised of an 80% mineral-filled, fire-resistant / non-combustible extruded core sandwiched between two nominal 0.020" coil-coated 3105 H24 aluminum skins.]

.2 **Fabrication Method:** shear, route, or cut ACM panel sheet to desired face-panel dimensions. Prepare FLEX Connect® extrusions for securing to the ACM panel per the manufacturer's written instructions and AAMA 508-14.

.3 **Fabricated Panel Tolerances:**

DIMENSION	TOLERANCE
Length	+ 1.6 mm (0.062 in)
Width	+ 1.6 mm (0.062 in)
Depth	± 0.2 mm (0.008 in)
Panel Bow	0.8% maximum of panel length or width
Squareness	5 mm (0.2 in) maximum

.4 **Rain-screen Panels:** provide positive drainage of condensation and water entering at joints to the exterior face of the wall per **[NRC "Rain-Screen Principles"]**. Panels to have drainage holes in the bottom of each panel — 8 mm (5/16") diameter on 16" centers, to AAMA 508-14.

SPEC NOTE *Finish below is shown as an example only. Specify the actual finish(es) per the ACM coil manufacturer.*

.5 **Finishes:** PPG, Sherwin-Williams, or Beckers (PVDF) fluoropolymer containing 70% Kynar 500 / Hylar 5000 resins to AAMA 620, **[color]**.

PART 3 — EXECUTION

3.1 EXAMINATION

.1 Verify that substrate conditions are acceptable prior to installation. Commencement of work indicates acceptance of the prepared substrates.

.2 Surfaces to receive the panel-system barrier must be sound, dry, clean, and free of oil, grease, dirt, excess mortar, and other contaminants. Fill spalled areas to provide an even plane.

3.2 PREPARATION

.1 Protect adjacent work areas and finished surfaces from damage by this Section of the work.

3.3 INSTALLATION

.1 See Carter Architectural Panels, Inc. installation instructions — www.carterpanels.com.

.2 **ACM Panels:**

.1 Install panels plumb, level, and true, in accordance with the manufacturer's written instructions.

.2 Anchor panels securely in place in accordance with the fabricator's approved shop drawings.

.3 Installation Tolerances: maximum deviation from horizontal and vertical alignment of installed panels not to exceed 6.4 mm (0.25") in 6.1 m (20 ft), non-cumulative.

3.4 SITE QUALITY CONTROL

.1 Upon the Owner's request, provide the wall-panel fabricator's site service or periodic site visit to inspect product installation in accordance with the fabricator's instructions.

3.5 ADJUSTING

.1 Repair panels with minor damage so that repairs are not discernible at a distance of 3.1 m (10'-0").

.2 Remove and replace panels damaged beyond repair.

.3 Remove protective film within 30 days of completion of panel installation and prior to application of any joint sealants.

3.6 CLEANING

.1 Clean installed products in accordance with the manufacturer's instructions prior to the Owner's acceptance.

3.7 WASTE MANAGEMENT

.1 Remove from site all damaged panels, packaging, temporary coverings, protective film, and other debris resulting from the work of this Section.

3.8 PROTECTION

.1 Protect installed panel finishes from damage during construction.

.2 Provide protective measures as required to ensure installed panels are not damaged by the work of other trades.

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