SECTION 07 42 43

EXTERIOR ALUMINUM COMPOSITE WALL PANELS

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\*\* NOTE TO SPECIFIER \*\* Universal Composite Panel Systems; products.
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This section is based on the products of Universal Composite Panel Systems, which is located at:
4800 Metalmaster Way
McHenry, IL 60050
Toll Free Tel: 855-OWN-UCPS
Email: [request info (info@UCPS.us)](http://admin.arcat.com/users.pl?action=UserEmail&company=Universal+Composite+Panel+Systems&coid=50444&rep=&fax=&message=RE:%20Spec%20Question%20(07430upc):%20%20&mf=)
Web: [ucps.us](http://ucps.us)
 [ [Click Here](http://www.arcat.com/arcatcos/cos50/arc50444.html) ] for additional information.
The UCPS 1000 Series brings a unique set of features not yet seen in the industry previously, as the hybrid attachment system that can be installed as both a wetseal and rainscreen system. This innovative design incorporates a first of its kind concealed drainage system. Additionally, installer safety was considered with a concealed fastener design, keeping the hands of the laborers safe from unseen fasteners.
The UCPS 1000 series will be a sure favorite of installers and architects alike, with perfect marks on the AAMA 508, V1 / W1 AAMA 509 rating, user-friendly installation, and a concealed drainage system that keeps the beautiful aesthetics composite wall panels are known for in-tact.
Designed by industry professionals with nearly 40 years of commercial sheet metal and roofing experience, the Universal Composite Panel System (UCPS) 1000 Series is a unique system that raises the bar in panel attachment.
The UCPS 1000 series will be a sure favorite of installers and architects alike, with perfect marks on the AAMA 508, V1/ W1 AAMA 509 rating, user-friendly installation, and a concealed drainage system that keeps the beautiful aesthetics composite wall panels are known for in-tact.

1. GENERAL
	1. SECTION INCLUDES

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

* + 1. Exterior aluminum composite pressure equalized rainscreen wall panel system
		2. Exterior aluminum composite wet seal wall panel system
	1. RELATED SECTIONS

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

* + 1. Section 05 10 00 - Structural Metal Framing.
		2. Section 05 40 00 - Cold-Formed Metal Framing
		3. Section 06 10 00 - Rough Carpentry.
		4. Section 07 25 00 - WeatherBarriers
		5. Section 07 27 26 - Fluid-Applied Membrane Air Barriers
		6. Section 07 27 00 - Air and Moisture Barriers.
		7. Section 07 60 00 - Flashing and Sheet Metal: Flashing and Sheet Metal
		8. Section 07 90 00 - Joint Protection
		9. Section 08 41 13 - Aluminum-Framed Entrances and Storefronts.
		10. Section 08 44 13 - Glazed Aluminum Curtain Walls.
	1. REFERENCES

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

* + 1. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
		2. ASTM C 297 - Standard Test Method for Flatwise Tensile Strength of Sandwich Constructions.
		3. ASTM D 1781 - Standard Test Method for Climbing Drum Peel for Adhesives.
		4. ASTM E 283 - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
		5. ASTM E 330 - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference
		6. ASTM E 331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference
		7. AAMA 508 - Voluntary Test Method and Specification for Pressure Equalized Rain Screen Wall Cladding Systems.
		8. AAMA 509 - Voluntary Test and Classification Method of Drained and Back Ventilated Rain Screen Wall Cladding Systems.
		9. AAMA 620 - Voluntary Specifications for High Performance Organic Coatings on Coil Coated Architec
		10. AAMA 2605 Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.
		11. ASTM B 209 Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
	1. DESIGN / PERFORMANCE REQUIREMENTS

\*\* NOTE TO SPECIFIER \*\* Include the following paragraphs for Pressure Equalized Rainscreen System only. Delete if not applicable.

* + 1. Provide an open joint rout and return pressure equalized rainscreen system which has been tested in accordance with AAMA 508 and AAMA 509 performance requirements.
		2. Provide composite panels that have been manufactured, fabricated and installed to meet the requirements of the manufacturer, withstand thermal and deflection loads, and without defects, damage, and/or failure.
		3. Provide exterior/interior wall cladding assemblies capable of withstanding the effects of load and stresses from dead loads, wind loads, snow loads, and normal thermal movement without evidence of permanent defects of wall assemblies and/or other components.
			1. Loads:
				1. Dead Load: As required by the applicable building code.
				2. Wind Load: As indicated by the Architect and/or Structural Engineer of the project.
			2. Anchor deflection at connection points of framing members, in any direction not to exceed 1/16 inch.
			3. Allow for free horizontal and vertical movement, due to thermal expansion and contraction of components.
				1. Buckling, opening of joints, undue stress on fasteners, failure of sealant, or any other detrimental effects of thermal movement will not be permitted.
				2. Fabrication, assembly, and erection procedures shall take into account the ambient temperature at the time of the respective operation.

\*\* NOTE TO SPECIFIER \*\* Include the following paragraphs for Wet Seal System system only. Delete if not applicable.

* + 1. Provide route and return, caulked joint wall assembly system.
		2. Provide composite panels that have been manufactured, fabricated and installed to meet the requirements of the manufacturer, withstand thermal and deflection loads, and without defects, damage, and/or failure.
		3. Provide exterior/interior wall cladding assemblies capable of withstanding the effects of load and stresses from dead loads, wind loads, snow loads, and normal thermal movement without evidence of permanent defects of wall assemblies and/or other components.
			1. Loads:
				1. Dead Load: As required by the applicable building code.
				2. Wind Load: As indicated by the Architect and/or Structural Engineer of the project.
			2. Anchor deflection at connection points of framing members, in any direction not to exceed 1/16 inch.
			3. Allow for free horizontal and vertical movement, due to thermal expansion and contraction of components.
				1. Buckling, opening of joints, undue stress on fasteners, failure of sealant, or any other detrimental effects of thermal movement will not be permitted.
				2. Fabrication, assembly, and erection procedures shall take into account the ambient temperature at the time of the respective operation.
			4. Air leakage shall not exceed not more than 0.06cfm/sf of wall area, when tested at 1.57psf in accordance with ASTM E 283
			5. No water infiltration under static pressure when tested in accordance with ASTM E 331 at a differential of 10 percent of inward acting design load, 10psf minimum after 15 minutes. Water penetration is defined as the appearance of uncontrolled water in the wall.
			6. Wall design shall feature provisions to drain to the exterior face of the wall. Any leakage at joints and any condensation that may occur within the construction.
			7. Provide systems that have been tested in accordance with ASTM E 330 at 70 psf permanent deformation shall be less than 0.05 inch
	1. SUBMITTALS
		1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
		2. Product Data: Manufacturer's data sheets on each product to be used, including:
			1. Material descriptions, component dimensions, component profiles, and finishes.
			2. Preparation instructions and recommendations.
			3. Storage and handling requirements and recommendations.
			4. Installation methods.
		3. Shop Drawings: Submit shop drawings showing layout, details of edge conditions, joints, panel profiles, corners, and product components, including finish, color and texture, anchorage, and attachment system. Distinguish between factory and field-assembly work.
			1. Include details showing thickness and dimension of the various system parts, fastening and anchoring methods, locations of joints and the location and configuration of joints necessary to accommodate thermal movement.
			2. For installed products indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for the preparation.

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

* + 1. Selection Samples: For each finish product specified, two complete sets of color chart or chips representing manufacturer's full range of available colors and patterns.
		2. Verification Samples: For each finish product specified, two samples, minimum size 3 inches (76 mm) square, representing actual product, color, and patterns.
		3. Manufacturer's Certificates: Certify products meet or exceed specified requirements. Include test reports for air infiltration, water penetration and structural performance.
		4. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for cleaning and maintenance of all components.
	1. QUALITY ASSURANCE
		1. Manufacturer Qualifications: Minimum 5 years' documented experience in metal fabrication and supplying metal wall panel systems of the type specified and capable of providing field service representation during construction.
		2. Installer Qualifications: Minimum 5 years' documented experience installing commercial metal wall panel systems of the metal wall panel systems of the type specified.

\*\* NOTE TO SPECIFIER \*\* Include a mock-up if the project size and/or quality warrant taking such a precaution. The following is one example of how a mock-up on a large project might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.

* + 1. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
			1. Finish areas designated by Architect.
			2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
			3. Refinish mock-up area as required to produce acceptable work.
			4. Accepted mock-ups shall be comparison standard for remaining Work
	1. DELIVERY, STORAGE, AND HANDLING
		1. Deliver products with the identification label intact, and packaged, boxed, wrapped in the manufacturer's original, unopened, undamaged containers, or be otherwise protected to assure complete protection from reasonable damage during shipment, storage and handling.
			1. Protect finish of panels by applying PVC removable plastic film. Film must be removed immediately after installation to avoid prolonged exposure to direct sunlight.
			2. Protect composite wall panels against transportation damage. Provide marking to identify components consistently with Drawings.
			3. To prevent adhesive transfer to finish, exterior aluminum composite wall panels must not be stored for prolong periods of time, be stored in direct sunlight, or be subjected to high heat, prior to installation.
		2. Exercise care in unloading, storing, and installing panels to prevent bending, warping, twisting, and surface damage.
		3. Store materials as recommended by manufacturer. Store enclosed spaces, above ground, and under protective covers. Extreme care shall be taken to avoid contact with moisture, condensation, or materials which might cause staining, such as lime, cement, fresh concrete, and/or chemicals.
			1. Protect panels from moisture and condensation with tarpaulins or other suitably ventilated weather tight covering.
			2. Slope panels to insure positive drainage and prevent water accumulation.
			3. Do not store panels in any enclosed space where ambient temperature can exceed 120 degrees Fahrenheit.
	2. SEQUENCING
		1. Ensure information required for installation of products of this section are furnished to affected trades in time to prevent interruption of construction progress.
		2. Verify all measurements by field measurements before any fabrication.
	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 absolute limits.
	4. WARRANTY
		1. Provide Panel Manufacturer's Standard 10 year limited finish warranty.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: Universal Composite Panel Systems, which is located at: 4800 Metalmaster Way; McHenry, IL 60050; Toll Free Tel: 855-OWN-UCPS; Email: [request info (info@UCPS.us)](http://admin.arcat.com/users.pl?action=UserEmail&company=Universal+Composite+Panel+Systems&coid=50444&rep=&fax=&message=RE:%20Spec%20Question%20(07430upc):%20%20&mf=); Web: [ucps.us](http://ucps.us)

\*\* 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. COMPOSITE METAL PANEL
		1. Composite Metal Panels:

\*\* NOTE TO SPECIFIER \*\* Select one of the following two system paragraphs and delete the one that is not required.

* + - 1. UCPS 1000 Pressure Equalized Rainscreen System:
				1. Standard PE Core
				2. Fire-Rated (FR) Core
			2. UCPS 1000 Wetseal System:
				1. Standard PE Core
				2. Fire-Rated (FR) Core
			3. Core must be Thermoplastic material that meets performance characteristics specified when fabricated into composite assembly.
			4. Face Sheets should be made from aluminum alloy 0.20 inch thick and as follows:
				1. Coil coated with specified high performance finish
				2. Thermally bonded in continuous process without glues or adhesives to core material
			5. Tested for resistance to delaminating as follows:
				1. Bond Strength: 1,500 psi minimum, per ASTM C 297
				2. Peel Strength: 33.6 inch-lb/inch minimum, per ASTM D 1781
				3. No change in bond performance afar eight hours of submission in boiling water after 21 days of immersion in water at 70 degree Fahrenheit.
			6. Fire Performance for both 4 mm and 6 mm (FR and PE Core)
				1. Flame Spread: < 25, when tested per ASTM E 84
				2. Smoke Developed: < 450, when tested per ASTM E 84
				3. Surface Flammability: Intermediate Scale Multi Story Apparatus Test: Passed.
			7. Production Tolerances:
				1. Width plus or minus 0.08 inch /3ft
				2. Length: plus or minus 0.08 inch /3ft
				3. Thickness: plus or minus 0.008 inch for 4 mm panels / plus or minus 0.012 inch for 6mm panels
				4. Bow: Maximum 0.8 percent length or width.
				5. Squareness: Maximum 0.2 inch
				6. Edges of sheet shall be square and trimmed with no displacement of aluminum sheet or protrusion of core material.
			8. Panel Thickness: Material thickness shall be 3 mm Standard PE Core, 4 mm Standard PE Core, or 6 mm Fire-Rated (FR) Core, as specified based on application and core composition.
			9. Rainscreen Panels: Provide for positive drainage of condensation and water entering at joints to exterior face of wall in accordance with "Rain Screen Principles". Panels to have drainage holes in bottom of each panel measuring 10 mm (3/8 inch) diameter on 610 mm (24 inch) centers, to AAMA 508-07.
		1. UCPS 1000 Attachment Extrusions:
			1. Alloy 6063-T6
			2. Clips or Perimeter Extrusions as required
			3. Internal Weep System
			4. Mechanically Attached to Panel
			5. AAMA 508 and AAMA 509 tested.
			6. Tubular design keeps fasteners and rivets encapsulated.
		2. Stiffeners:
			1. Allow 6063-T6
			2. Spaced as required for flatness and per Structural Engineer requirements
			3. Attached with VHB Tape and Silicone
	1. ACCESSORlES
		1. Installer is to supply standard accessories, including fasteners, clips, anchorage devices, attachments, backer-rods, weep baffles, and sealants.
	2. FINISH
		1. Factory Finish:
			1. Coil coated with a fluoropolymer resin-based coating that meets or exceeds performance values expressed in AAMA 620.
		2. Color:
			1. Standard color as selected by the owner/architect from manufacturer's standard color palette.
	3. FABRICATI0N
		1. Shop fabricate to size and joint configuration indicated on the drawings.
			1. a. Where final dimensions cannot be established by field measurements, provide allowance for field adjustment as recommended by the fabricator.
		2. Form panel lines, breaks and angles to be sharp and true, with a surface that is free from warp and/or buckle.
			1. Fabricate with sharply formed edges, with no displacement of aluminum sheet or protrusion of core.
			2. Based on project requirements and location/type of panel requested, panels will have pre-attached perimeter extrusions and stiffeners at the manufacturer or they will be shipped loose.
1. EXECUTION
	1. EXAMINATION
		1. Do not begin installation until substrates have been properly prepared.
		2. Verify that substrate conditions, installed under other sections, are acceptable for product installation.
		3. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
	2. PREPARATION
		1. Clean surfaces thoroughly prior to installation.
		2. Protect adjacent work areas and finished surfaces from damage during product installation.
		3. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
	3. INSTALLATION
		1. Install in accordance with manufacturer's instructions.
		2. Install panels plumb, level and true, in compliance with manufacturer's recommendations.
		3. Anchor panels securely in place, in accordance with fabricator's approved shop drawings.
		4. Comply with provisions of section 07 90 00 - Joint Protection for installation of joint sealers.
		5. Installation Tolerances: Maximum deviation from horizontal and vertical alignment of installed panels: 0.25 inch in 20 feet, non- cumulative.
		6. Remove protective film immediately after installation of panels to avoid prolonged exposure to direct sunlight
		7. Repair panels with minor damage so those repairs are not noticeable at a distance of 120 inches.
		8. Remove and replace panels damaged beyond repair.
		9. Remove from project site damaged panels, protective film, and other debris attributable to work of this section.
	4. CLEANING
		1. Clean installed products in accordance with manufacturer's instructions prior to owner's acceptance.
	5. PROTECTION
		1. Protect installed products until completion of project.

END OF SECTION