SECTION 07 42 13

METAL PLATE WALL PANELS

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\*\* NOTE TO SPECIFIER \*\* Dri Design, Inc.; Metal wall panel products.
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This section is based on the products of Dri Design, Inc., which is located at:
12480 Superior Ct. Suite 1
Holland, MI 49424
Tel: 616-355-2970
Fax: 616-355-2972
Email: [request info (sales@dri-design.com)](https://admin.arcat.com/users.pl?action=UserEmail&company=Dri+Design,+Inc.&coid=42691&rep=&fax=616-355-2972&message=RE:%20Spec%20Question%20(07410dri):%20%20&mf=)
Web: <http://www.dri-design.com>
 [ [Click Here](https://www.arcat.com/arcatcos/cos42/arc42691.html) ] for additional information.
Dri-Design began developing systems in in the mid-90s by working to combine a beautifully simple design with new objectives about the way a system could perform, both at the time of installation and for decades later. The result of our meticulous engineering was a style of metal wall panel system that had not existed previously. It was, and is, a 100% recyclable, pressure equalized rain-screen, architectural metal wall system that attaches to nearly any substrate without the use of clips or extrusions. It is not laminated, nor a composite material, so panels will never delaminate. It doesn't require joint sealants, gaskets, or butyl tape, and therefore eliminates the staining and maintenance associated with them. It is manufactured efficiently and installs faster than any comparable product, saving time and money.
Dri-Design's patented design has passed the most stringent air, water and structural testing requirements in the industry, including the AAMA 508-07 test for pressure equalized rain-screens, as well as Miami-Dade County hurricane testing. All of this in a system that provides nearly endless design possibilities, with an unlimited palate of colors, finishes, materials, textures, and custom perforations, including imaging.

1. GENERAL
	1. SECTION INCLUDES

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

* + 1. Aluminum Metal Plate Wall Panels
		2. Copper Metal Plate Wall Panels
		3. Zinc Alloy Metal Plate Wall Panels
		4. Stainless Steel Metal Plate Wall Panels
		5. Textured Metal Plate Wall Panels
		6. Tapered Metal Plate Wall Panels
		7. Perforated Metal Plate Wall Panels
	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 27 00 - Air Barriers.
		5. Section 07 60 00 - Flashing and Sheet Metal.
		6. Section 07 90 00 - Joint Protection.
		7. Section 08 12 00 - Metal Frames Metal Doors and Frames.
		8. Section 08 43 13 - Aluminum-Framed Storefronts.
		9. Section 08 54 13 - Fiberglass Windows
		10. Section 08 44 23 - Structural Sealant Glazed Curtain Wall.
	1. REFERENCES

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

* + 1. AAMA CW-RS-1 - The Rain Screen Principle and Pressure Equalized Wall Design.
		2. AAMA 501.1 - Standard Test Method for Water Penetration of Windows, Curtain Walls and Doors Using Dynamic Pressure.
		3. AAMA 501.2 - Quality Assurance and Diagnostic Water Leakage Field Check of Installed Storefronts, Curtain Walls, and Sloped Glazing Systems.
		4. AAMA 508 - Voluntary Test Method and Specification for Pressure Equalized Rain Screen Wall Cladding Systems;.
		5. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum.
		6. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.
		7. ASTM B 69 - Standard Specification for Rolled Zinc.
		8. ASTM B 117 - Standard Practice for Operating Salt Spray (Fog) Apparatus
		9. ASTM C 754 - Standard Specification for Installation of Steel Framing Members to Receive Screw- Attached Gypsum Panel Products.
		10. ASTM D 523 - Standard Test Method for Specular Gloss.
		11. ASTM D 2244 - Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates.
		12. ASTM D 2247 - Standard Practice for Testing Water Resistance of Coatings in 100% Relative Humidity.
		13. ASTM D 4214 - Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films.
		14. ASTM E 8/E 8M - Standard Test Methods for Tension Testing of Metallic Materials.
		15. ASTM E18 - Standard Test Methods for Rockwell Hardness of Metallic Materials; 2015
		16. 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
		17. ASTM E 330/E 330M - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference;.
		18. ASTM E 331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.
		19. ASTM E 1233/E 1233M - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights, and Curtain Walls by Cyclic Air Pressure Differential
		20. Testing Application Standards; Florida Building Code, TAS 202 - Criteria for Testing Impact and Non-Impact Resistant Building Envelope Components Using Uniform Static Air Pressure Loading.
		21. Testing Application Standards; Florida Building Code, TAS 203 - Criteria for Testing Products Subject to Cyclic Wind Pressure Loading.
		22. LEED - Leadership in Energy and Environmental Design.
		23. NAAMM - National Association of Architectural Metal Manufacturers.
		24. SMACNA - Sheet Metal and Air Conditioning Contractor's National Association.
		25. PS-1 - Structural Plywood; 2009.

\*\* NOTE TO SPECIFIER\*\* Edit the following paragraphs as applicable for the System specified. Consult with manufacturer for additional information on the Design Load capabilities of the system specified.

* 1. DESIGN / PERFORMANCE REQUIREMENTS
		1. Metal Plate Wall Panel Assembly: Provide metal plate wall panels, attachment system components, miscellaneous metal framing, and accessories necessary for a complete weather tight wall system based on AAMA CW-RS-1.

\*\* NOTE TO SPECIFIER \*\* The following paragraph is applicable to Perforated Metal Plate Wall Panels systems. Delete if not applicable.

* + 1. Design, fabricate, and erect a dry joint, pressure equalized rainscreen aluminum wall panel system without use of sealants, gaskets, or butyl tape, tested as installed in compliance with AAMA 508, and as follows:
			1. Cyclic Static Air Pressure Differential: Pass cycled pressure loading at 25 psf in 100 three-second cycles in accordance with ASTM E 1233/E 1233M.
			2. Air Infiltration: Pass when tested at 1.57 psf (25 mph) in accordance with ASTM E 283.
			3. Water Penetration:
				1. Static: Pass water penetration test under 25.0 psf positive static air pressure difference for at least 15 minutes with 5 gallons per sf per hour of water applied in accordance with ASTM E 331.
				2. Dynamic: Pass water penetration test under 15.0 psf dynamic pressure difference for at least 15 minutes with 5 gallons per sf per hour of water applied in accordance with AAMA 501.1.
			4. Structural: Provide systems tested in accordance with ASTM E 330/E 330M and certified to be without permanent deformation or failure of structural members.

\*\* NOTE TO SPECIFIER \*\* The following paragraph is applicable to Aluminum and Textured Metal Plate Wall Panels systems only. Delete if not applicable.

* + 1. High Velocity Hurricane Zone (HVHZ): Comply with ASTM E8/E8M test methods and performance requirements of Florida Building Code and Miami-Dade County test protocols TAS-202 and TAS-203 for HVHZ with at least plus 61 psf to minus 80 psf design pressure rating.
			1. Application: For aluminum plate thickness of 0.080 inch only.

\*\* NOTE TO SPECIFIER \*\* Include the following paragraph for aluminum wall panel finishes only. Delete if not applicable.

* + 1. Aluminum Finish Performance Requirements:

\*\* NOTE TO SPECIFIER \*\* Select the performance requirements for the aluminum finish specified from the following paragraphs and delete those not required.

* + - 1. Superior Performance Organic Coating System: AAMA 2605 multiple coat, thermally cured polyvinylidene fluoride (PVDF) resin system.
				1. Two-Coat Fluoropolymer: AAMA 2605, fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pre-treat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' installation instructions.
				2. Three-Coat Fluoropolymer: AAMA 2605, fluoropolymer finish containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat. Prepare, pre-treat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' installation instructions.
				3. Two-Coat Mica Fluoropolymer: AAMA 2605, fluoropolymer finish with suspended mica flakes containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pre-treat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' installation instructions.
				4. Four-Coat Fluoropolymer: AAMA 2605, fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat and clear coats. Prepare, pre-treat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' installation instructions
			2. Color Anodized Finish: AAMA 611, Architectural Class I, color anodized coating of 0.0007 inch (0.7 mils) minimum thickness.
			3. Clear Anodized Finish: AAMA 611, Architectural Class I, clear anodized coating of 0.0007 inch (0.7 mils) minimum thickness.
	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 and finish descriptions, sizes of individual components and profiles
			2. Preparation instructions and recommendations.
			3. Storage and handling requirements and recommendations.
			4. Installation methods.
		3. Shop Drawings: Fabrication and installation layouts of metal plate wall panels; including details of edge conditions, joints, panel profiles, corners, anchorages, attachment system, trim, flashings, closures, and accessories; and special details.
			1. Identify factory-assembled, shop-assembled, and field-assembled work.
			2. Provide full scale details of following:
				1. Manufacturer's standard sheet metal trims.
				2. Components of wall panel construction, anchorage methods, and hardware.
		4. Coordination Drawings: Exterior elevations, drawn to scale coordinated with installers of the following Work:
			1. Metal plate wall panels and attachments.
			2. Girts.
			3. Wall-mounted items including doors, windows, louvers, and lighting fixtures.
			4. Penetrations of wall by pipes and utilities.

\*\* NOTE TO SPECIFIER \*\* Delete the following paragraphs if LEED is not applicable.

* + 1. LEED Submittals: Provide documentation of how the requirements of Credit will be met:
			1. List of proposed materials with recycled content. Indicate post-consumer recycled content and pre-consumer recycled content for each product having recycled content.
			2. Product data and certification letter indicating percentages by weight of post-consumer and pre-consumer recycled content for products having recycled content.

\*\* 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 chips representing manufacturer's full range of available colors and patterns.
		2. Verification Samples: For each finish product specified, two samples, minimum size 2 inches by 3 inches (51 mm by 76 mm) representing actual product, color, and finish.
		3. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
		4. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for cleaning and maintenance of all components.
	1. QUALITY ASSURANCE
		1. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with at least five years of documented experience.
		2. Installer Qualifications: Company specializing in performing work of this section and approved by manufacturer with at least three years of documented experience.

\*\* 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 fabrication/installation workmanship.
			1. Locate where designated by Architect.
			2. Build mockup of typical wall panel assembly, including girts, corner, soffits, supports, attachments, and accessories. Include at least four panels to represent a four-way panel joint and showing full thickness.
			3. Water Spray Test: Conduct water-spray test of mockup metal panel assembly, test water penetration in accordance with AAMA 501.2.
			4. Approval of mockups does not constitute approval of deviation from Contract Documents unless approved by Architect.
			5. Approved mockups may become part of completed Work.
			6. Do not proceed with remaining work until workmanship, color, and finish are approved by Architect.
			7. Refinish mock-up area as required to produce acceptable work.
			8. Accepted mock-ups shall be comparison standard for remaining Work
		2. Pre-Installation Meeting:
			1. Convene at site a minimum of 2 weeks prior to beginning Work of this Section.
			2. Meeting should include Owner, Architect, Installer, Panel manufacturer's representative, Structural support installer(s), and Installer's whose work interfaces with or affects wall panels including installers of doors, windows, louvers and mechanical or electrical penetrations.
			3. Review and discuss project conditions, scheduling, related work and other matters affecting erection
			4. Verify availability of materials, installer's personnel, equipment, and facilities needed to maintain schedule.
			5. Review means and methods related to installation, including manufacturer's written instructions.
			6. Examine support conditions including tolerances, alignment and attachment to structural members.
			7. Review flashings, special siding details, wall penetrations, openings, and condition of other construction that affects this Work.
			8. Review temporary protection requirements for during and after installation of this Work.
	1. DELIVERY, STORAGE, AND HANDLING
		1. Deliver panels, components, and other manufactured items without damage or deformation.
		2. Store products in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
		3. Storage and Handling: Store materials in clean, dry, interior area in accordance with manufacturer's instructions.
		4. Protect panels during transportation, handling, and installation from weather, excessive temperatures and construction operations.
		5. Handle panels in strict compliance with manufacturer's instructions and recommendations, and in a manner to prevent bending, warping, twisting, and surface damage. Store panels vertically with top of panel down, storage of panels horizontally is not permitted.
		6. Do not store panels in contact with other materials that might cause staining, denting, or other surface damage.
		7. Remove strippable protective covering from aluminum panel prior to installation.
	2. SEQUENCING
		1. Ensure that information required for installation of products of this section are furnished to affected trades in time to prevent interruption of construction progress.
		2. Coordination: Coordinate panel assemblies with rain drainage, flashing, trim, stud back-up, soffits, and other adjoining work.
		3. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.
	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.
		2. Verify locations of structural members and wall opening dimensions by field measurements to the extent possible before panel fabrication and indicate measurements on Shop Drawings.
	4. WARRANTY

\*\*NOTE TO SPECIFIER\*\* Extended warranties are available for exterior aluminum finishes. Consult with panel manufacturer for additional information and complete the warranty period below for the finish specified. Delete if not required.

* + 1. Provide panel material manufacturer warranty, agreeing to repair finish of aluminum plate wall panels showing evidence of deterioration of factory-applied finishes within specified warranty period.
			1. Finish Warranty Period: \_\_\_\_\_ years from Date of Substantial Completion.
			2. Warranty Coverage: In accordance with AAMA 2605 for 70 percent PVDF resin on aluminum finish requirements.
				1. Fading, Loss of Color Retention: Loss of 5 Delta E units (Hunter) or less, in accordance with ASTM D 2244.
				2. Chalking, Chalky White Powder on Panel Surface: Chalking at No. 8 or less for colors, or No. 6 for white, in accordance with ASTM D 4214.
				3. Loss of Adhesion: Loss of 10 percent due to cracking, checking or peeling, or failure to adhere to bare metal.
				4. Gloss Retention: 50 percent or less in accordance with ASTM D 523.
				5. Salt Spray, Accelerated: At least 4,000 hours in accordance with ASTM B 117.
				6. Humidity Testing, Accelerated: At least 4,000 hours in accordance with ASTM D 2247.
			3. Warranty Coverage: In accordance with AAMA 611 Class 1 anodized aluminum finish requirements.
				1. Loss of Adhesion: Resists cracking, crazing, flaking, and blistering when forming and welding completed prior to finishing; post forming or welding voids warranty.
				2. Fading - Loss of Color Retention: Loss of 5 Delta E units (Hunter) or less, in accordance with ASTM D 2244.
				3. Chalking, Chalky White Powder on Panel Surface: Chalking at No. 8 or less in accordance with ASTM D 4214.
				4. Salt Spray, Accelerated: At least 3,000 hours in accordance with ASTM B 117.

\*\*NOTE TO SPECIFIER\*\* Use the following paragraph for Copper, Zinc and Stainless Steel finishes. Extended warranties are available. Consult with panel manufacturer for additional information and complete the warranty period below for the finish specified. Delete if not required.

* + 1. Provide panel material manufacturer warranty, agreeing to repair finish of metal plate wall panels that show evidence of deterioration of finishes within specified warranty period.
			1. Finish Warranty Period: \_\_\_\_\_ years from Date of Substantial Completion.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: Dri Design, Inc., which is located at: 12480 Superior Ct. Suite 1; Holland, MI 49424; Tel: 616-355-2970; Fax: 616-355-2972; Email: [request info (sales@dri-design.com)](https://admin.arcat.com/users.pl?action=UserEmail&company=Dri+Design,+Inc.&coid=42691&rep=&fax=616-355-2972&message=RE:%20Spec%20Question%20(07410dri):%20%20&mf=); Web: <http://www.dri-design.com>

\*\* 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.

\*\* NOTE TO SPECIFIER \*\* Edit the following paragraphs to include the Metal Plate Wall Panel System required from the following paragraphs and delete those not required.

* 1. ALUMINUM METAL PLATE WALL PANELS
		1. Aluminum Plate Wall Panels:
			1. Panel Size:
				1. Depth: 1-1/4 inch, nominal.
				2. Size: As indicated on Drawings.
				3. Joints: As indicated on Drawings.
			2. Material:
				1. Aluminum: Tension-leveled, alloy and temper as recommended by manufacturer for application and in compliance with manufacturers design requirements.
				2. Aluminum Thickness: 0.080 inch minimum.
				3. Weight: Less than 2 lbs per sf.
			3. Finish:

\*\* NOTE TO SPECIFIER \*\* Select the finish required from the following paragraphs and delete those not required. Coordinate with the performance requirements specified.

* + - * 1. Two-Coat Fluoropolymer with color as selected by the Architect.
				2. Three-Coat Fluoropolymer with color as selected by the Architect.
				3. Four-Coat Fluoropolymer with color as selected by the Architect.
				4. Two-Coat Mica Fluoropolymer with color as selected by the Architect.
				5. Clear Anodized Finish
				6. Color Anodized Finish.

Champagne

Light bronze

Medium bronze

Dark bronze

Extra dark bronze

Black

Copper

* + 1. Accessories:
			1. Provide components required for a complete metal plate wall panel assembly including trim, copings, fascia, mullions, sills, corner units, flashings, and similar items. Match material and finish of panels unless otherwise indicated.
			2. Provide integral drainage system and manufactures standard extrusions at termination of dissimilar materials.
			3. Flashing and Trim: Match material, finish, and color of adjacent wall panels.
				1. Thickness: At least 0.040 inch.
				2. Coordinate with Flashing specified in Section 07 60 00 - Flashing and Sheet Metal.
			4. Panel Fasteners: Provide stainless steel fasteners, or coated fasteners designed to withstand design loads, with at least 7/16 inch diameter head and neoprene washer.
			5. Sub-Girts: Galvanized, provide size and gage in accordance with design requirements.
				1. Furring Channel: Hat, C, U or Z type as recommended by manufacturer.
				2. Flat Strap: At least 14 gage, 0.0747 inch (1.90 mm) thick.
				3. Coordinate with metal framing specified in Section 05 40 00 - Cold-Formed Metal Framing.
			6. Substrate Wall Sheathing: Plywood, PS 1, Grade C-D, Exposure I, at least 5/8 inch thick.
				1. Coordinate with sheathing specified in Section 06 10 00 - Rough Carpentry.
			7. Weather Barriers: Provide climate specific weather barrier with performance characteristics for air penetration, water vapor transmission, and water penetration resistance.
				1. Coordinate with weather barrier specified in Section 07 27 00 - Air Barriers.
			8. Sealants: As recommended by metal panel manufacturer for openings within wall panels and perimeter conditions.
				1. Coordinate with sealant specified in Section 07 90 00 - Joint Protection.
	1. COPPER METAL PLATE WALL PANELS
		1. Copper Plate Wall Panels:
			1. Panel Size:
				1. Depth: 1-1/4 inch, nominal.
				2. Size: As indicated on Drawings.
				3. Joints: As indicated on Drawings.
			2. Material:
				1. Copper: Alloy and temper as recommended by manufacturer for application and in compliance with manufacturers design requirements.
				2. Weight:

32 oz per sq ft

48 oz per sq ft

* + - 1. Finish: Comply with NAAMM's - Metal Finishes Manual for Architectural and Metal Products, for recommendations of designating finishes.
				1. Bright copper.
		1. Accessories:
			1. Provide components required for a complete metal plate wall panel assembly including trim, copings, fascia, mullions, sills, corner units, flashings, and similar items. Match material and finish of panels unless otherwise indicated.
			2. Provide integral drainage system and manufactures standard extrusions at termination of dissimilar materials.
			3. Flashing and Trim: Match material, finish, and color of adjacent wall panels.
				1. Thickness: At least 0.040 inch.
				2. Coordinate with Flashing specified in Section 07 60 00 - Flashing and Sheet Metal.
			4. Panel Fasteners: Provide copper, stainless steel, or hardware-bronze fasteners, or coated fasteners designed to withstand design loads, with at least 7/16 inch diameter head and neoprene washer.
			5. Sub-Girts: Galvanized, provide size and gage in accordance with design requirements.
				1. Furring Channel: Hat, C, U or Z type as recommended by manufacturer.
				2. Flat Strap: At least 14 gage, 0.0747 inch (1.90 mm) thick.
				3. Coordinate with metal framing specified in Section 05 40 00 - Cold-Formed Metal Framing.
			6. Substrate Wall Sheathing: Plywood, PS 1, Grade C-D, Exposure I, at least 5/8 inch thick.
				1. Coordinate with sheathing specified in Section 06 10 00 - Rough Carpentry.
			7. Weather Barriers: Provide climate specific weather barrier with performance characteristics for air penetration, water vapor transmission, and water penetration resistance.
				1. Coordinate with weather barrier specified in Section 07 27 00 - Air Barriers.
			8. Sealants: As recommended by metal panel manufacturer for openings within wall panels and perimeter conditions.
				1. Coordinate with sealant specified in Section 07 90 00 - Joint Protection.
	1. ZINC ALLOY METAL PLATE WALL PANELS
		1. Zinc Alloy Plate Wall Panels:
			1. Panel Size:
				1. Depth: 1-1/4 inch, nominal.
				2. Size: As indicated on Drawings.
				3. Joints: As indicated on Drawings.
			2. Material:
				1. Zinc Alloy: Alloy and temper as recommended by manufacturer for application, Architectural Rolled Zinc, Type 1-Cut from Strip, in accordance with ASTM B 69 and in compliance with manufacturers design requirements.
				2. Thickness:

1.0 mm (0.039 inch)

1.5 mm (0.059 inch)

* + - * 1. Tensile Strength: Range of 14 to 38 ksi; ASTM B 69.
				2. Hardness: Range of 54 to 74; in accordance with Rockwell tester for 15T scale; ASTM E 18.
			1. Finish: Comply with NAAMM's - Metal Finishes Manual for Architectural and Metal Products, for recommendations of designating finishes.

\*\* NOTE TO SPECIFIER \*\* Select the finish required from the following paragraphs and delete those not required. Coordinate with the performance requirements specified.

* + - * 1. Preweathered Zinc:

Quartz Zinc; zinc finish with dark grey aspect.

Anthra Zinc; zinc with black aspect.

* + - * 1. Pigmented Preweathered Zinc:

Pigmento Blue, zinc with blue pigmented aspect.

Pigmento Red, zinc with red pigmented aspect.

Pigmento Green, zinc with green pigmented aspect.

Pigmento Brown, zinc with brown pigmented aspect.

* + - * 1. AZENGAR Zinc:

Engraved zinc with matt aspect.

* + 1. Accessories:
			1. Provide components required for a complete metal plate wall panel assembly including trim, copings, fascia, mullions, sills, corner units, flashings, and similar items. Match material and finish of panels unless otherwise indicated.
			2. Provide integral drainage system and manufactures standard extrusions at termination of dissimilar materials.
			3. Flashing and Trim: Match material, finish, and color of adjacent wall panels.
				1. Thickness: At least 0.040 inch.
				2. Coordinate with Flashing specified in Section 07 60 00 - Flashing and Sheet Metal.
			4. Panel Fasteners: Provide stainless steel or coated fasteners designed to withstand design loads, with at least 7/16 inch diameter head and neoprene washer.
			5. Sub-Girts: Galvanized, provide size and gage in accordance with design requirements.
				1. Furring Channel: Hat, C, U or Z type as recommended by manufacturer.
				2. Flat Strap: At least 14 gage, 0.0747 inch (1.90 mm) thick.
				3. Coordinate with metal framing specified in Section 05 40 00 - Cold-Formed Metal Framing.
			6. Substrate Wall Sheathing: Plywood, PS 1, Grade C-D, Exposure I, at least 5/8 inch thick.
				1. Coordinate with sheathing specified in Section 06 10 00 - Rough Carpentry.
			7. Weather Barriers: Provide climate specific weather barrier with performance characteristics for air penetration, water vapor transmission, and water penetration resistance.
				1. Coordinate with weather barrier specified in Section 07 27 00 - Air Barriers.
			8. Sealants: As recommended by metal panel manufacturer for openings within wall panels and perimeter conditions.
				1. Coordinate with sealant specified in Section 07 90 00 - Joint Protection.
	1. STAINLESS STEEL METAL PLATE WALL PANELS
		1. Stainless Steel Plate Wall Panels:
			1. Panel Size:
				1. Depth: 1-1/4 inch, nominal.
				2. Size: As indicated on Drawings.
				3. Joints: As indicated on Drawings.
			2. Material:
				1. Stainless Steel: Type 304 or 316 as recommended by manufacturer for application in compliance with manufacturers design requirements.
				2. Thickness:

18 gage, 0.050 inch (1.27 mm).

* + - 1. Finish: Comply with NAAMM's - Metal Finishes Manual for Architectural and Metal Products, for recommendations of designating finishes.
				1. No. 4 Bright Polished.
		1. Accessories:
			1. Provide components required for a complete metal plate wall panel assembly including trim, copings, fascia, mullions, sills, corner units, flashings, and similar items. Match material and finish of panels unless otherwise indicated.
			2. Provide integral drainage system and manufactures standard extrusions at termination of dissimilar materials.
			3. Flashing and Trim: Match material, finish, and color of adjacent wall panels.
				1. Thickness: At least 0.040 inch.
				2. Coordinate with Flashing specified in Section 07 60 00 - Flashing and Sheet Metal.
			4. Panel Fasteners: Provide manufacturer's recommended fasteners designed to withstand design loads, with at least 7/16 inch diameter head and neoprene washer.
			5. Sub-Girts: Galvanized, provide size and gage in accordance with design requirements.
				1. Furring Channel: Hat, C, U or Z type as recommended by manufacturer.
				2. Flat Strap: At least 14 gage, 0.0747 inch (1.90 mm) thick.
				3. Coordinate with metal framing specified in Section 05 40 00 - Cold-Formed Metal Framing.
			6. Substrate Wall Sheathing: Plywood, PS 1, Grade C-D, Exposure I, at least 5/8 inch thick.
				1. Coordinate with sheathing specified in Section 06 10 00 - Rough Carpentry.
			7. Weather Barriers: Provide climate specific weather barrier with performance characteristics for air penetration, water vapor transmission, and water penetration resistance.
				1. Coordinate with weather barrier specified in Section 07 27 00 - Air Barriers.
			8. Sealants: As recommended by metal panel manufacturer for openings within wall panels and perimeter conditions.
				1. Coordinate with sealant specified in Section 07 90 00 - Joint Protection.
	1. TEXTURED METAL PLATE WALL PANELS
		1. Textured Aluminum Plate Wall Panels:
			1. Panel Size:
				1. Depth: 6 inch, nominal.
				2. Size: As indicated on Drawings.
				3. Joints: 1/8 inch.
			2. Material:
				1. Aluminum: Tension-leveled, alloy and temper as recommended by manufacturer for application and in compliance with manufacturers design requirements.
				2. Aluminum Thickness:

0.063 inch

0.080 inch

* + - * 1. Weight: Less than 4 lbs per sf.
			1. Finish:

\*\* NOTE TO SPECIFIER \*\* Select the finish required from the following paragraphs and delete those not required. Coordinate with the performance requirements specified.

* + - * 1. Two-Coat Fluoropolymer with color as selected by the Architect.
				2. Three-Coat Fluoropolymer with color as selected by the Architect.
				3. Four-Coat Fluoropolymer with color as selected by the Architect.
				4. Two-Coat Mica Fluoropolymer with color as selected by the Architect.
				5. Clear Anodized Finish
				6. Color Anodized Finish.

Champagne

Light bronze

Medium bronze

Dark bronze

Extra dark bronze

Black

Copper

* + 1. Accessories:
			1. Provide components required for a complete metal plate wall panel assembly including trim, copings, fascia, mullions, sills, corner units, flashings, and similar items. Match material and finish of panels unless otherwise indicated.
			2. Provide integral drainage system and manufactures standard extrusions at termination of dissimilar materials.
			3. Flashing and Trim: Match material, finish, and color of adjacent wall panels.
				1. Thickness: At least 0.040 inch.
				2. Coordinate with Flashing specified in Section 07 60 00 - Flashing and Sheet Metal.
			4. Panel Fasteners: Provide stainless steel fasteners, or coated fasteners designed to withstand design loads, with at least 7/16 inch diameter head and neoprene washer.
			5. Sub-Girts: Galvanized, provide size and gage in accordance with design requirements.
				1. Furring Channel: Hat, C, U or Z type as recommended by manufacturer.
				2. Flat Strap: At least 14 gage, 0.0747 inch (1.90 mm) thick.
				3. Coordinate with metal framing specified in Section 05 40 00 - Cold-Formed Metal Framing.
			6. Substrate Wall Sheathing: Plywood, PS 1, Grade C-D, Exposure I, at least 5/8 inch thick.
				1. Coordinate with sheathing specified in Section 06 10 00 - Rough Carpentry.
			7. Weather Barriers: Provide climate specific weather barrier with performance characteristics for air penetration, water vapor transmission, and water penetration resistance.
				1. Coordinate with weather barrier specified in Section 07 27 00 - Air Barriers.
			8. Sealants: As recommended by metal panel manufacturer for openings within wall panels and perimeter conditions.
				1. Coordinate with sealant specified in Section 07 90 00 - Joint Protection.
	1. TAPERED METAL PLATE WALL PANELS
		1. Tapered Aluminum Plate Wall Panels:
			1. Panel Size:
				1. Depth: 1-1/4 inch, nominal.
				2. Size: As indicated on Drawings.
				3. Joints: As indicated on Drawings.
			2. Material:
				1. Aluminum: Tension-leveled, alloy and temper as recommended by manufacturer for application and in compliance with manufacturers design requirements.
				2. Aluminum Thickness: 0.080 inch minimum.
				3. Weight: Less than 2 lbs per sf.
			3. Finish:

\*\* NOTE TO SPECIFIER \*\* Select the finish required from the following paragraphs and delete those not required. Coordinate with the performance requirements specified.

* + - * 1. Two-Coat Fluoropolymer with color as selected by the Architect.
				2. Three-Coat Fluoropolymer with color as selected by the Architect.
				3. Four-Coat Fluoropolymer with color as selected by the Architect.
				4. Two-Coat Mica Fluoropolymer with color as selected by the Architect.
				5. Clear Anodized Finish
				6. Color Anodized Finish.

Champagne

Light bronze

Medium bronze

Dark bronze

Extra dark bronze

Black

Copper

* + 1. Tapered Zinc Alloy Plate Wall Panels:
			1. Panel Size:
				1. Depth: 1-1/4 inch, nominal.
				2. Size: As indicated on Drawings.
				3. Joints: As indicated on Drawings.
			2. Material:
				1. Zinc Alloy: Alloy and temper as recommended by manufacturer for application, Architectural Rolled Zinc, Type 1-Cut from Strip, in accordance with ASTM B 69 and in compliance with manufacturers design requirements.
				2. Thickness:

1.0 mm (0.039 inch)

1.5 mm (0.059 inch)

* + - * 1. Tensile Strength: Range of 14 to 38 ksi; ASTM B 69.
				2. Hardness: Range of 54 to 74; in accordance with Rockwell tester for 15T scale; ASTM E 18.
			1. Finish: Comply with NAAMM's - Metal Finishes Manual for Architectural and Metal Products, for recommendations of designating finishes.

\*\* NOTE TO SPECIFIER \*\* Select the finish required from the following paragraphs and delete those not required. Coordinate with the performance requirements specified.

* + - * 1. Preweathered Zinc:

Quartz Zinc; zinc finish with dark grey aspect.

Anthra Zinc; zinc with black aspect.

* + - * 1. Pigmented Preweathered Zinc:

Pigmento Blue, zinc with blue pigmented aspect.

Pigmento Red, zinc with red pigmented aspect.

Pigmento Green, zinc with green pigmented aspect.

Pigmento Brown, zinc with brown pigmented aspect.

* + - * 1. AZENGAR Zinc:

Engraved zinc with matt aspect.

* + 1. Tapered Stainless Steel Plate Wall Panels:
			1. Panel Size:
				1. Depth: 1-1/4 inch, nominal.
				2. Size: As indicated on Drawings.
				3. Joints: As indicated on Drawings.
			2. Material:
				1. Stainless Steel: Type 304 or 316 as recommended by manufacturer for application in compliance with manufacturers design requirements.
				2. Thickness:

18 gage, 0.050 inch (1.27 mm).

* + - 1. Finish: Comply with NAAMM's - Metal Finishes Manual for Architectural and Metal Products, for recommendations of designating finishes.
				1. No. 4 Bright Polished.
		1. Accessories:
			1. Provide components required for a complete metal plate wall panel assembly including trim, copings, fascia, mullions, sills, corner units, flashings, and similar items. Match material and finish of panels unless otherwise indicated.
			2. Provide integral drainage system and manufactures standard extrusions at termination of dissimilar materials.
			3. Flashing and Trim: Match material, finish, and color of adjacent wall panels.
				1. Thickness: At least 0.040 inch.
				2. Coordinate with Flashing specified in Section 07 60 00 - Flashing and Sheet Metal.
			4. Panel Fasteners: Provide manufacturer's recommended fasteners designed to withstand design loads, with at least 7/16 inch diameter head and neoprene washer.
			5. Sub-Girts: Galvanized, provide size and gage in accordance with design requirements.
				1. Furring Channel: Hat, C, U or Z type as recommended by manufacturer.
				2. Flat Strap: At least 14 gage, 0.0747 inch (1.90 mm) thick.
				3. Coordinate with metal framing specified in Section 05 40 00 - Cold-Formed Metal Framing.
			6. Substrate Wall Sheathing: Plywood, PS 1, Grade C-D, Exposure I, at least 5/8 inch thick.
				1. Coordinate with sheathing specified in Section 06 10 00 - Rough Carpentry.
			7. Weather Barriers: Provide climate specific weather barrier with performance characteristics for air penetration, water vapor transmission, and water penetration resistance.
				1. Coordinate with weather barrier specified in Section 07 27 00 - Air Barriers.
			8. Sealants: As recommended by metal panel manufacturer for openings within wall panels and perimeter conditions.
				1. Coordinate with sealant specified in Section 07 90 00 - Joint Protection.
	1. PERFORATED METAL PLATE WALL PANELS
		1. Perforated Aluminum Plate Wall Panels:
			1. Panel Size:
				1. Depth: 1-1/4 inch, nominal.
				2. Size: As indicated on Drawings.
				3. Joints: As indicated on Drawings.
			2. Material:
				1. Aluminum: Tension-leveled, alloy and temper as recommended by manufacturer for application and in compliance with manufacturers design requirements.
				2. Aluminum Thickness: 0.080 inch minimum.
				3. Weight: Less than 2 lbs per sf.
			3. Finish:

\*\* NOTE TO SPECIFIER \*\* Select the finish required from the following paragraphs and delete those not required. Coordinate with the performance requirements specified.

* + - * 1. Two-Coat Fluoropolymer with color as selected by the Architect.
				2. Three-Coat Fluoropolymer with color as selected by the Architect.
				3. Four-Coat Fluoropolymer with color as selected by the Architect.
				4. Two-Coat Mica Fluoropolymer with color as selected by the Architect.
				5. Clear Anodized Finish
				6. Color Anodized Finish.

Champagne

Light bronze

Medium bronze

Dark bronze

Extra dark bronze

Black

Copper

* + 1. Perforated Copper Plate Wall Panels:
			1. Panel Size:
				1. Depth: 1-1/4 inch, nominal.
				2. Size: As indicated on Drawings.
				3. Joints: As indicated on Drawings.
			2. Material:
				1. Copper: Alloy and temper as recommended by manufacturer for application and in compliance with manufacturers design requirements.
				2. Weight:

32 oz per sq ft

48 oz per sq ft

* + - 1. Finish: Comply with NAAMM's - Metal Finishes Manual for Architectural and Metal Products, for recommendations of designating finishes.

\*\* NOTE TO SPECIFIER \*\* Select the finish required from the following paragraphs and delete those not required. Coordinate with the performance requirements specified.

* + - * 1. Bright copper.
		1. Perforated Stainless Steel Plate Wall Panels:
			1. Panel Size:
				1. Depth: 1-1/4 inch, nominal.
				2. Size: As indicated on Drawings.
				3. Joints: As indicated on Drawings.
			2. Material:
				1. Stainless Steel: Type 316 as recommended by manufacturer for application in compliance with manufacturers design requirements.
				2. Thickness:

18 gage, 0.050 inch (1.27 mm).

* + - 1. Finish: Comply with NAAMM's - Metal Finishes Manual for Architectural and Metal Products, for recommendations of designating finishes.
				1. No. 4 Bright Polished.
		1. Accessories:
			1. Provide components required for a complete metal plate wall panel assembly including trim, copings, fascia, mullions, sills, corner units, flashings, and similar items. Match material and finish of panels unless otherwise indicated.
			2. Provide integral drainage system and manufactures standard extrusions at termination of dissimilar materials.
			3. Flashing and Trim: Match material, finish, and color of adjacent wall panels.
				1. Thickness: At least 0.040 inch.
				2. Coordinate with Flashing specified in Section 07 60 00 - Flashing and Sheet Metal.
			4. Panel Fasteners: Provide manufacturer's recommended fasteners designed to withstand design loads, with at least 7/16 inch diameter head and neoprene washer.
			5. Sub-Girts: Galvanized, provide size and gage in accordance with design requirements.
				1. Furring Channel: Hat, C, U or Z type as recommended by manufacturer.
				2. Flat Strap: At least 14 gage, 0.0747 inch (1.90 mm) thick.
				3. Coordinate with metal framing specified in Section 05 40 00 - Cold-Formed Metal Framing.
			6. Substrate Wall Sheathing: Plywood, PS 1, Grade C-D, Exposure I, at least 5/8 inch thick.
				1. Coordinate with sheathing specified in Section 06 10 00 - Rough Carpentry.
			7. Weather Barriers: Provide climate specific weather barrier with performance characteristics for air penetration, water vapor transmission, and water penetration resistance.
				1. Coordinate with weather barrier specified in Section 07 27 00 - Air Barriers.
			8. Sealants: As recommended by metal panel manufacturer for openings within wall panels and perimeter conditions.
				1. Coordinate with sealant specified in Section 07 90 00 - Joint Protection.
	1. FABRICATI0N
		1. Fabricate and finish wall panels within manufacturer's facilities and fulfill indicated performance requirements demonstrated by laboratory testing.
		2. Provide post-finishing of panels, paint aluminum wall panels only after completion of panel fabrication and ensure exposed edges are coated.
		3. Provide post anodizing of panels, anodize aluminum wall panels only after completion of panel fabrication and ensure exposed edges are anodic coated without crazing of surface at formed edges.
1. EXECUTION
	1. EXAMINATION
		1. Do not begin installation until substrates have been properly prepared.
		2. Examine substrates, and Work areas and conditions for compliance with requirements for installation tolerances, wall panel supports, and other conditions affecting performance of this Work.
		3. Examine wall framing to verify that girts, angles, channels, studs, and other structural wall panel support members and anchorage have been installed within alignment tolerances required by wall panel manufacturer.
		4. Verify that weather barrier has been installed over sheathing or substrate to prevent air infiltration or water penetration.
		5. Examine rough-in for components and systems penetrating wall panels to coordinate actual penetration locations relative to wall panel joint locations prior to installation.
		6. 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. Install sub girt, base angles, sills, furring, and other wall panel support members and provide anchorage in accordance with panel manufacturer's installation instructions.
		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 wall panels in accordance with manufacturer's installation instructions, including pressure equalized rainscreen installation method and installation guidelines.
			1. Wall panels consist of single sheets of metal formed with interlocking gutter and drainage system integral to the panel with single horizontal attachment for dry-joint rainscreen assembly.
			2. The use of secondary drainage channels, brackets, support pins, joint sealants or gaskets to manage the drainage of wall panel system is not permitted.
			3. Attach wall panels using progressive interlocking method, engaging bottom of panel in top of previous panel working bottom up, and left to right.
			4. Install wall panels with single top attachment in pre-punched holes to allow individual panels to move due to thermal expansion.
			5. Do not compromise internal gutter.

\*\* NOTE TO SPECIFIER \*\* Include the following paragraph for Zinc Alloy Metal Wall Panels systems only. Delete if not applicable.

* + 1. Installers shall wear gloves and long sleeve shirts to prevent oils on fingers and skin from leaving marks on zinc alloy surfaces. Use mineral oil approved by zinc alloy supplier to remove finger prints.
		2. Install wall panels for orientation, sizes, and locations as indicated on Drawings.
		3. Install wall panels with proper anchorage and other components for this Work securely in place.
		4. Install wall panels with provisions for thermal and structural movement.
		5. Install shims to plumb substrates as necessary for installation of wall panels.
		6. Install weather tight seals at perimeter of wall panel openings.
			1. Test for proper adhesion on small unexposed area of solid surfacing prior to use.
		7. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA - Architectural Sheet Metal Manual.
			1. Provide concealed fasteners where possible, and set units true to line and level as indicated.
			2. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.
			3. Install flashing and trim as wall panel Work proceeds.
		8. Install weather tight escutcheons for pipe and conduit penetrating exterior walls.
		9. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action as recommended by wall panel manufacturer.
		10. To limit damage due to galvanic action on metal panels from water flowing over surfaces, install metals in the following order from top to bottom; aluminum, zinc, galvalume, lead, and copper.
		11. Install attachment system to support wall panels and with provisions to provide a complete weather tight wall system, including sub girts, extrusions, flashings and trim.
			1. Include attachment to supports and trims at locations using dissimilar materials.
			2. Do not apply sealants to joints, unless noted otherwise on Drawings or Shop Drawings.
			3. Install starter extrusion at base course and at cut panel locations.
		12. Install accessories with positive anchorage to building and weather tight mounting and provisions for thermal expansion, and coordinate installation with flashings and other components.
			1. Install components required for a complete wall panel assembly including trim, copings, flashings and other accessory items.
	1. TOLERANCES
		1. Shim and align wall panel units with installed tolerances of 1/4 inch in 20 feet, non-cumulative, on level, plumb, and location lines as indicated.
	2. FIELD QUALITY CONTROL
		1. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect completed metal wall panel installation, including accessories.
		2. Remove and replace metal wall panels where tests and inspections indicate that they do not comply with specified requirements.
		3. Perform additional tests and inspections, at Contractor's expense, to verify compliance of replaced wall panels or necessary additional work with specified requirements.
		4. Prepare test and inspection reports.
	3. CLEANING
		1. Upon completion of wall panel installation, clean finished surfaces as recommended by panel manufacturer.
		2. Upon completion of wall panel installation, clear weep holes and drainage channels of obstructions and dirt.
	4. PROTECTION
		1. Protect installed products until completion of project.
		2. Provide protection of wall panels as necessary due to cleaning of adjacent materials with chemicals that may harm wall panel finish.
		3. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION