

- b. Interior Face Sheet: [26 gauge] [24 gauge] [22 gauge] thickness, with stucco embossed surface and a Light Mesa profile
 - 1) Finish: [Polyester two-coat system] [Modified silicone-polyester two-coat system] [Fluoropolymer two-coat system] [Vinyl plastisol two-coat system].
 - 2) Color: [As indicated] [As selected by Architect from manufacturer's standard colors] [Match Architect's custom color]
- 3. Panel Width: [36 inches (914 mm)] [42 inches (1067 mm)] [as shown on drawings]
- 4. Panel Thickness: [2 inch (51 mm)] [2.5 inch (64 mm)] [3 inch (76 mm)] [4 inch (102 mm)] [as shown on drawings]
- 5. Insulating Core: Polyurethane with zero ozone depletion potential blowing agent
 - a. Closed Cell Content: 90% or more as determined by ASTM D 6226
 - b. Compressive Strength: As required to meet structural performance requirements and with a minimum of 15 psi as determined by ASTM D 1621
 - c. Minimum Density: 2.0 pcf (32 kg/m³) as determined by ASTM D 1622

Specifier: Insert corresponding panel thickness R-value below if using IMP as continuous insulation or U-factor if treating as an assembly for code compliance purposes. Refer to [Section 07 42 13](#) and Paragraph 2.2 J above. Coordinate with information on drawings. Consult Ceco representative for details.

- d. Thermal Resistance R-Value: [insert corresponding value] deg. F * hr * sq. ft./Btu (K * sq. m/W) per ASTM C 518 at 75 degrees Fahrenheit mean temperature.
- 6. Heat Transfer Coefficient (U-factor): [insert corresponding value] Btu/hr * sq. ft. * deg. F (W/K * sq. m) as determined by ASTM C 1363 at 75 degrees Fahrenheit mean temperature. Tested specimen must include at least two engaged side joints.
- I. Concealed Fastener, Insulated Metal Wall Panels with foam core: Structural metal panels consisting of flat exterior metal sheet with the look of precast concrete finish, and interior metal sheet with a light mesa profile, with factory foamed-in-place polyurethane core in thermally-separated profile, with tongue-and-groove panel edges, attached to supports using concealed fasteners.
 - 1. Basis of Design: Ceco, CF Tuff-Cast
 - 2. G-90 galvanized coated steel conforming to ASTM A 653 and/or AZ50 aluminum-zinc alloy coated steel, conforming to ASTM A 792/A 792M, minimum grade 33, preprimed by the coil-coating process per ASTM A 755/A 755M

Specifier: Prior to selecting metal thickness and panel thickness below, consult manufacturer's span tables and review selection against panel thickness requirements and span condition. Select appropriate panel configuration to meet requirements of design wind pressure. **Important: Consult this document when specifying gauge with the intent that it meet a prescriptive decimal thickness requirement in addition to strength performance requirements. ([Click Here To View](#))**

- a. Exterior Face Sheet: [24 gauge] [22 gauge] thickness, with stucco embossed surface
 - 1) Finish: [Fiber-reinforced polymer coating]
 - 2) Color: [As indicated] [As selected by Architect from manufacturer's standard colors] [Match Architect's custom color]

- b. Interior Face Sheet: [26 gauge] [24 gauge] [22 gauge] thickness, with stucco embossed surface and a Light Mesa profile
 - 1) Finish: [Polyester two-coat system] [Modified silicone-polyester two-coat system] [Fluoropolymer two-coat system] [Vinyl plastisol two-coat system].
 - 2) Color: [As indicated] [As selected by Architect from manufacturer's standard colors] [Match Architect's custom color]
- 3. Panel Width: [36 inches (914 mm)] [42 inches (1067 mm)] [as shown on drawings]
- 4. Panel Thickness: [2 inch (51 mm)] [2.5 inch (64 mm)] [3 inch (76 mm)] [4 inch (102 mm)] [as shown on drawings]
- 5. Insulating Core: Polyurethane with zero ozone depletion potential blowing agent
 - a. Closed Cell Content: 90% or more as determined by ASTM D 6226
 - b. Compressive Strength: As required to meet structural performance requirements and with a minimum of 15 psi as determined by ASTM D 1621
 - c. Minimum Density: 2.0 pcf (32 kg/m³) as determined by ASTM D 1622

Specifier: Insert corresponding panel thickness R-value below if using IMP as continuous insulation or U-factor if treating as an assembly for code compliance purposes. Refer to Ceco literature and Paragraph 2.2 J above. Coordinate with information on drawings. Consult Ceco representative for details.

- d. Thermal Resistance R-Value: [insert corresponding value] deg. F * hr * sq. ft./Btu (K * sq. m/W) per ASTM C 518 at 75 degrees Fahrenheit mean temperature.
- 6. Heat Transfer Coefficient (U-factor): [insert corresponding value] Btu/hr * sq. ft. * deg. F (W/K * sq. m) as determined by ASTM C 1363 at 75 degrees Fahrenheit mean temperature. Tested specimen must include at least two engaged side joints.
- J. Concealed Fastener, Insulated Metal Wall Panels with foam core: Structural metal panels consisting of exterior metal sheet and interior metal sheet with matching Mesa 4 by 1/8 inch (102 by 3 mm) or Light Mesa 4 by 1/16 inch (102 by 1.5 mm) o.c. profile. Factory foamed-in-place polyurethane core in thermally-separated profile, with tongue-and-groove panel edges, attached to supports using concealed fasteners.
 - 1. Basis of Design: Ceco, CF Partition
 - 2. G-90 galvanized coated steel conforming to ASTM A 653 and/or AZ50 aluminum-zinc alloy coated steel, conforming to ASTM A 792/A 792M, minimum grade 33, prepainted by the coil-coating process per ASTM A 755/A 755M or 3042B stainless steel ASTM A 240.

Specifier: Prior to selecting metal thickness and panel thickness below, consult manufacturer's span tables and review selection against panel thickness requirements and span condition. Select appropriate panel configuration to meet requirements of design wind pressure. **Important: Consult this document when specifying gauge with the intent that it meet a prescriptive decimal thickness requirement in addition to strength performance requirements. (Click Here To View)**

- a. Exterior Face Sheet: [26 gauge] [24 gauge] [22 gauge] thickness, with stucco embossed surface and Mesa or Light Mesa profile.
 - 1) Finish: [Polyester two-coat system] [Modified silicone-polyester two-coat system] [Fluoropolymer two-coat system] [Vinyl plastisol two-coat system] [304 Stainless Steel] [316 Stainless Steel].

- 2) Color: [As indicated] [As selected by Architect from manufacturer's standard colors] [Match Architect's custom color].
 - b. Interior Face Sheet: [26 gauge] [24 gauge] [22 gauge] thickness, with stucco embossed surface and Mesa or Light Mesa profile.
- 1) Finish: [Polyester two-coat system] [Modified silicone-polyester two-coat system] [Fluoropolymer two-coat system] [Vinyl plastisol two-coat system] [304 Stainless Steel] [316 Stainless Steel].
- 2) Color: [As indicated] [As selected by Architect from manufacturer's standard colors] [Match Architect's custom color].
- 3. Panel Width: [36 inches (914 mm)] [42 inches (1067 mm)] [44.5 inches (1130 mm)] [as shown on drawings]
- 4. Panel Thickness: [2 inch (51 mm)] [2.5 inch (64 mm)] [3 inch (76 mm)] [4 inch (102 mm)] [5 inch (127 mm)] [6 inch (152 mm)] [as shown on drawings].
- 5. Insulating Core: Polyurethane with zero ozone depletion potential blowing agent
 - a. Closed Cell Content: 90% or more as determined by ASTM D 6226
 - b. Compressive Strength: As required to meet structural performance requirements and with a minimum of 15 psi as determined by ASTM D 1621
 - c. Minimum Density: 2.0 pcf (32 kg/m³) as determined by ASTM D 1622

Specifier: Insert corresponding panel thickness R-value below if using IMP as continuous insulation or U-factor if treating as an assembly for code compliance purposes. Refer to Ceco literature and Paragraph 2.2 J above. Coordinate with information on drawings. Consult Ceco representative for details.

- d. Thermal Resistance R-Value: [insert corresponding value] deg. F * hr * sq. ft./Btu (K * sq. m/W) per ASTM C 518 at 75 degrees Fahrenheit mean temperature.
- 6. Heat Transfer Coefficient (U-factor): [insert corresponding value] Btu/hr * sq. ft. * deg. F (W/K * sq. m) as determined by ASTM C 1363 at 75 degrees Fahrenheit mean temperature. Tested specimen must include at least two engaged side joints.

2.4 METAL WALL PANEL ACCESSORIES

- A. General: Provide complete metal panel assemblies incorporating trim, copings, fasciae, gutters and downspouts, and miscellaneous flashings. Provide required fasteners, closure strips, and sealants as indicated in manufacturer's written instructions.
- B. Flashing and Trim: Match material, thickness, and finish of metal panels.
- C. Panel Clips: ASTM A 653/A 653M, G90 (Z180) hot-dip galvanized zinc coating, one-piece, configured for concealment in panel joints, and identical to clips utilized in tests demonstrating compliance with performance requirements.
- D. Panel Fasteners: Self-drilling or Self-tapping screws and other acceptable fasteners recommended by metal panel manufacturer. Where exposed fasteners cannot be avoided, supply corrosion-resistant fasteners with heads matching color of metal panels by means of factory-applied coating, with weathertight resilient washers.
- E. Joint Sealers:
 - 1. Sealants: Provide Tape Mastic Sealants, Non-skinning sealants, and Urethane Sealants in accordance with manufacturers standards

2. Vertical Joint Gasket: Manufacturers standard EPDM gasket. Color: [Black] [Or custom color].

2.5 FABRICATION

- A. General: Provide factory fabricated and finished metal panels, trim, and accessories meeting performance requirements, indicated profiles, and structural requirements.
- B. Fabricate metal panel joints configured to accept sealant providing weathertight seal.
- C. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's written instructions, approved shop drawings, and project drawings.

2.6 FINISHES

- A. Finishes, General: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturer's written instructions.
- B. Exterior Face Sheet Coil-Coated Finish System
 1. Silicone-Polyester Two-Coat System: 0.20 – 0.25 mil primer with 0.7 – 0.8 mil color coat, [meeting solar reflectance index requirements].
 - a. Basis of Design: Ceco, Silicone Polyester.

Specifier: Ceco's fluoropolymer coatings are based on Arkema, Inc. Kynar 500 and Solvay Solexis Hylar 500 PVF2 resins.

2. Fluoropolymer Two-Coat System: 0.2 – 0.3 mil primer with 0.7 - 0.8 mil 70 percent PVDF fluoropolymer color coat, AAMA 621, [meeting solar reflectance index requirements].
 - a. Basis of Design: Ceco, Fluoropolymer.

Specifier: Select interior face sheet finish from the options below; Igloo White system is standard unless otherwise indicated. Verify with Ceco; not all finishes are available on all products.

- C. Interior Face Sheet Coil-Coated Finish System
 1. Polyester Two-Coat System: 0.20 – 0.25 mil primer with 0.7 – 0.8 mil color coat
 - a. Basis of Design: Ceco, Igloo White
 2. Silicone-Polyester Two-Coat System: 0.20 – 0.25 mil primer with 0.7 – 0.8 mil color coat
 - a. Basis of Design: Ceco, Silicone Polyester
 3. Fluoropolymer Two-Coat System: 0.2-mil primer with 0.7 - 0.8 mil 70 percent PVDF fluoropolymer color coat
 - a. Basis of Design: Ceco, Fluoropolymer
 4. Vinyl Plastisol Two-Coat System: 0.2 mil primer with 4 mil high solids plastisol finished with PVC technology.
 - a. Basis of Design: Ceco, Vinyl
 5. 304 and 316 Stainless Steel: 2B 304 or 2B 316 Stainless Steel.
 - a. Basis of Design: Ceco, Stainless Steel

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine metal panel system substrate with Installer present. Inspect for erection tolerances and other conditions that would adversely affect installation of metal panels.

1. Inspect framing that will support insulated metal panels to determine if support components are installed as indicated on approved shop drawings and are within tolerances acceptable to metal panel manufacturer and installer. Confirm presence of acceptable framing members at recommended spacing to match installation requirements of metal panels.
2. Panel Support Tolerances: Confirm that metal panel supports are within tolerances acceptable to metal panel manufacturer but not greater than the following:
 - a. 1/4 inch (6 mm) in 20 foot (6100 mm) in any direction.
 - b. 3/8 inch (9 mm) over any single wall plane.
 - c. Girt Spacing 8 feet (2438 mm) or more: 1/4 inch (6 mm) out only.
 - d. Girt Spacing Less Than 8 feet (2438 mm): 1/8 inch (3 mm) out only.
 - e. CF Architectural girt spacing less than 4 feet (1219 mm): 1/16 inch (1.5 mm) inch out only.
- B. Correct out-of-tolerance work and other deficient conditions prior to proceeding with insulated metal panel installation.

3.2 METAL PANEL INSTALLATION

- A. Concealed-Fastener Insulated Metal Panels with foam core: Install metal panel system in accordance with manufacturer's written instructions, approved shop drawings, and project drawings. Install metal panels in orientation, sizes, and locations indicated. Anchor panels and other components securely in place. Provide for thermal and structural movement.
- B. Attach panels to metal framing using screws, fasteners, sealants, and adhesives recommended for application by metal panel manufacturer.
 1. Fasten metal panels to supports with fasteners at each location indicated on approved shop drawings, at spacing and with fasteners recommended by manufacturer.
 2. Cut panels in field where required using manufacturer's recommended methods.
 3. Provide weatherproof jacks for pipe and conduit penetrating metal panels.
 4. Dissimilar Materials: Where elements of metal panel system will come into contact with dissimilar materials, treat faces and edges in contact with dissimilar materials as recommended by metal panel manufacturer
- C. Attach panel flashing trim pieces to supports using recommended fasteners and joint sealers
- D. Joint Sealers: Install sealants where indicated and where required for weatherproof performance of metal panel assemblies
 1. Seal panel base assembly, openings, panel head joints, and perimeter joints using sealants indicated in manufacturer's instructions

Specifier: Retain optional wall panel vapor seal bead below when recommended based upon architect's water vapor transmission analysis.

2. Seal wall panel joints; apply continuously without gaps in accordance with manufacturer's written instructions, approved shop drawings, and project drawings
3. Prepare joints and apply sealants per requirements of Division 07 Section.

3.3 ACCESSORY INSTALLATION

- A. General: Install metal panel accessories with positive anchorage to building and weather tight mounting; provide for thermal expansion. Coordinate installation with flashings and other components.
 1. Install components required for a complete metal panel assembly, including trim, copings, flashings, sealants, closure strips, and similar items.
 2. Comply with details of assemblies utilized to establish compliance with performance requirements and manufacturer's written installation instructions.

3. Set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently weather resistant.

3.4 FIELD QUALITY CONTROL

Specifier: Retain one or both paragraphs below and edit options when scope and complexity of insulated metal panel installation justifies independent inspection and testing provisions.

- A. Testing Agency: [Owner will engage] [Engage] an independent testing and inspecting agency acceptable to Architect to perform field tests and inspections and to prepare test reports.
- B. Water-Spray Test: After completing portion of metal panel assembly including accessories and trim, test 2-bay area selected by Architect for water penetration, according to AAMA 501.2.

3.5 CLEANING AND PROTECTION

- A. Remove temporary protective films immediately in accordance with metal panel manufacturer's instructions. Clean finished surfaces as recommended by metal panel manufacturer.
- B. Replace damaged panels and accessories that cannot be repaired to the satisfaction of the Architect.

END OF SECTION