

SECTION 09520
METAL PANEL CEILINGS

PART GENERAL

SECTION INCLUDES

Suspended Snap-In Metal Panel Ceiling System.

Suspended Lay-In Metal Panel Ceiling System.

Positive-Fastened Metal Panel Ceiling System.

Suspension Systems and Trim.

RELATED SECTIONS

Section 09260 - Gypsum Board Assemblies.

Section 09511 - Suspended Acoustical Ceilings.

Section 14201 - Passenger Elevators.

Section 15840 - Air Terminal Units.

Section 16510 - Interior Luminaires.

REFERENCES

AA DAF-45 - Designation System for Aluminum Finishes; Aluminum Association (AA).

AAMA 605.2 - Specification for High Performance Organic Coatings on Architectural Extrusions and Panels.

AAMA 606.1 - Voluntary Guide Specification and Inspection Methods for Integral Color Anodic Finishes for Architectural Aluminum.

AAMA 607.1 - Voluntary Guide Specification and Inspection Methods for Clear Anodic Finishes for Architectural Aluminum.

AAMA 608.1 - Voluntary Guide Specification and Inspection Methods for Electrolytically-Deposited Color Anodic Finishes for Architectural Aluminum.

ASTM B 209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.

ASTM B 209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate (Metric).

ASTM D 1730 - Standard Practices for Preparation of Aluminum and Aluminum-Alloy Surfaces for Painting.

DIN 50939 - Protection Against Corrosion; Chromating of Aluminum, Directives, Symbols, and Methods of Test; Deutsches Institut für Normung.

SUBMITTALS

Submit under provisions of Section 01300.

Product Data: Manufacturer's descriptive literature, specifications, installation instructions, and recommendations, for each component and finish.

Shop Drawings: Indicate the following:

Reflected ceiling plans; show locations of ceiling-mounted items, and points of suspension.

Field measurements of construction over which enclosures will be installed, with notation of dimensions which vary significantly from the Contract Documents.

Details of interface with dissimilar and restraining materials, project-specific conditions, ceiling-mounted items, perimeter conditions, moldings, and trim.

Scale: 1/4 inch to 1 foot (1:50).

Selection Samples: Two sets, representing manufacturer's full range of available materials and finishes.

Verification Samples: Two samples of each type panel and related component which will be exposed in the finished Work, representing actual material and finish of products to be installed; minimum size for panels 24 inches (610 mm) square, minimum size for linear components 24 inches (610 mm) long.

Installer's qualifications.

Manufacturer's printed installation instructions for metal panel ceiling components; include component storage requirements.

Manufacturer's written instructions for maintenance of materials and finishes.

QUALITY ASSURANCE

Designer's Qualifications: Structural engineer licensed to practice in the State in which the project is located.

Manufacturer Qualifications: Minimum five years documented experience producing metal panel ceilings similar to those specified in this section.

Maintaining an in-house quality assurance program that documents panel dimensions, corners, and alignment.
Having sufficient capacity to produce required units within project time requirements.

Installer Qualifications: Minimum five years documented experience installing metal panel ceilings similar to those specified in this section, and approved by manufacturer.

Mock-Up: Construct mock-up using materials specified in this section.

Construct mock-up at locations indicated or directed, and as follows:

Size: __ feet by __ feet (__ mm by __ mm).

Include panels, reveals if any, indicated accessories, fasteners, and anchors.

Obtain Architect's acceptance of mock-up before beginning construction activities of this section; accepted mock-up will be standard by which completed construction activities of this section is judged.

Mock-up may not remain as part of Work.

Accepted mock-up may remain as part of Work.

Pre-Installation Meeting: Convene at job site seven calendar days prior to scheduled beginning of construction activities of this section to review requirements of this section.

Require attendance by representatives of the following:

Installer of this section.

Other entities directly affecting, or affected by, construction activities of this section.

Notify Architect four calendar days in advance of scheduled meeting date.

DELIVERY, STORAGE, AND HANDLING

Deliver, handle, and store components in manner to prevent bending, warping, twisting, and surface damage.

Deliver and store components of this section in manufacturer's unopened packaging until installation.

Store components off ground/floor on skids; protect against warpage, scratches, damage from moisture, exposure to direct sunlight, and other surface contamination until installation.

WARRANTY

Manufacturer's Warranty: Metal ceiling panel manufacturer's five-year warranty against defects in product materials and fabrication.

PART PRODUCTS

MANUFACTURERS

Acceptable Manufacturer: Metalwerks Division, Metal Sales and Service, Inc., P.O. Box 637, Kennett Square, PA 19348. ASD. Tel: (800) 321-7816.

Requests for substitution will be considered in accordance with provisions of Section 01600.

Substitutions: Not permitted.

Supply all components specified in this section from the same manufacturer.

METAL PANEL CEILING

Metal Panel Ceilings - Performance Requirements:

Deflection: Maximum $1/360$ of clear span under imposed loads, including air terminal units, luminaires, and other indicated ceiling-mounted items.

Load design: Ensure ceiling-mounted items will not induce eccentric loads; where such items may induce rotation of ceiling system components, provide stabilizing reinforcement. Include provisions for structural movement without adversely affecting metal panel ceiling system appearance or performance.

Metal Panel Ceiling: Metalwerks Concept 2000 system; shop-fabricated and assembled from metal panels, complete with all connections, supports, and anchors, with dimensions based on actual field measurements and coordinated with adjacent work.

Type: SN2000 snap-in type panels, downward acting, removable at any point in the ceiling, with continuous bead four sides; in narrow-style tee-bar system of same material as panel material, profile to accommodate panel edges, and finish matching panel finish, unless otherwise indicated.

Type: SU2000 lay-in panel type, upward acting, removable at any point in the ceiling, with continuous flange four sides; in special "J"-channel shaped overlap suspension system of same material and finish as panel, unless otherwise indicated.

Type: SC2000 positive-fastening type removable panels, in suspension system as required by manufacturer; panels capable of being formed to radius.

Profiles: Indicated on drawings.

Panel size: Width __ inches (__ mm); length __ inches (__ mm).

Panel size: As indicated on drawings.

Panel radius: __ inches (__ mm).

Panel radius: As indicated on drawings.

Exposed components: Fabricated from materials selected for surface flatness, smoothness, and freedom from surface blemishes.

Panels: Stainless steel sheet.

Sheet thickness: 20 gage (0.9 mm).

Sheet thickness: 18 gage (1.2 mm).

Sheet thickness: 16 gage (1.5 mm).

Sheet thickness: 14 gage (1.9 mm).

Sheet thickness: 13 gage (2.3 mm).

Sheet thickness: 12 gage (2.7 mm).

Sheet thickness: 11 gage (3.0 mm).

Finish: Number 4 brushed finish.

Finish: Number 6 finish.

Finish: Number 8 mirror finish.

Finish: Number 2B mechanical finish.

Perforations: Match perforation size and pattern of approved sample.

Panels: Aluminum sheet, with strength and durability not less than that for ASTM B 209/ASTM B 209M, alloy 5005, temper H15.

Sheet thickness: Minimum 0.040 inch (1.0 mm).

Sheet thickness: Minimum 0.050 inch (1.3 mm).

Sheet thickness: Minimum 0.063 inch (1.6 mm).

Sheet thickness: Minimum 0.080 inch (2.0 mm).

Sheet thickness: Minimum 0.125 inch (3.1 mm).

Finish: Fluoropolymer coating.

Finish: Polyester powder coating.

Finish: Clear anodic finish, AA-M12C22A31, nonspecular as fabricated mechanical finish, chemically etched medium matte, with AAMA 607.1 Class II clear coating 0.010 mm or thicker.

Finish: Clear anodic finish, AA-M12C22A41, nonspecular as fabricated mechanical finish, chemically etched medium matte, with AAMA 607.1 Class I clear coating 0.018 mm or thicker.

Finish: Color anodic finish, AA-M12C22A32, nonspecular as fabricated mechanical finish, chemically etched, medium matte, with AAMA 606.1 or 608.1 Class II integrally colored or electrolytically deposited color coating 0.010 mm or thicker.

Finish: Color anodic finish, AA-M12C22A34, nonspecular as fabricated mechanical finish, chemically etched, medium matte, with AAMA 606.1 or 608.1 Class I integrally colored or electrolytically deposited color coating 0.018 mm or thicker.

Color: _____.

Color: Selected from full range of manufacturer's standard colors.

Color: Match Architect's sample.

Perforations: Match perforation size and pattern of approved sample.

MATERIALS

Fluoropolymer Coating Finish: Polyvinylidene fluoride three-coat coating system, applied by coater certified by coating manufacturer, conforming to AAMA 605.2, and as follows:

Pretreatment: Chemical etch with cleaner specified by coating manufacturer.

Primer: Acid-resistant primer coating specified by coating manufacturer; dry film thickness range 0.2 to 0.3 mils (0.005 to 0.007 mm).

Color Coat: Containing minimum 70 percent polyvinylidene resin by weight; Kynar 500(R) or Hylar 5000(R); dry film thickness of 0.8 to 1.2 mils (0.02 to 0.03 mm).

Top Coat: Clear top coating containing minimum 70 percent polyvinylidene resin by weight; minimum dry film thickness of 0.8 mils (0.02 mm).

Polyester Powder Coating Finish: Manufacturer's standard electrostatically- or spray-applied polyester powder coating system as follows:

Multi-stage pretreatment process in accordance with ASTM D 1730, Type B, method 5 or 7, and DIN 50939.

Finish coat: One coat commercial-grade polyester powder coating.

Second finish coat: Additional coat commercial-grade polyester powder coating.

Total coating thickness: 2.5 to 3.5 mils (0.06 to 0.08 mm) dry film thickness on panel face; 3.5 to 5 mils (0.08 to 0.12 mm) dry film thickness on panel edges and corners.

Wall and Interface Moldings: Same material as panel material, profiles as indicated, and finish matching panel finish, unless otherwise indicated.

Attachments and Secondary Suspension Accessories: As required to provide complete system; formed galvanized steel, extruded aluminum, or structural steel shapes.

Sound Absorbing Pads: Glass fiber, 1 inch (25 mm) thick, wrapped in PVC sheet, factory installed.

FABRICATION

Fabricate components to profiles and sizes indicated on approved shop drawings.

Apply protective masking to surfaces which will be exposed in finished work; ensure that masking materials, including adhesive, will not adversely affect appearance of components.

PART EXECUTION

EXAMINATION

Review the shop drawings and verify field conditions:

Verify that dimensions of locations to receive metal panel ceilings are in accordance with approved shop drawings.

Verify that substrates to receive metal panel ceilings are prepared for installation of metal panel ceiling.

Verify that above-ceiling construction activities in locations to receive metal panel ceilings are complete.

Do not permit construction activities of this section to begin in an area until above-ceiling construction activities in that area are completed.

INSTALLATION

Install components of metal panel ceiling systems in accordance with approved shop drawings and manufacturer's instructions.

Framing:

Install to achieve indicated ceiling height after above-ceiling construction activities are complete; coordinate location of hangers with construction activities of related sections. Space hangers to achieve specified deflection limits; anchoring securely to substrates.

Laterally brace suspension system, if required.

Install main runners independent of walls, columns, and other above-ceiling items.

Space main runners maximum 48 inches (1220 mm) on center, and 6 inches (150 mm) from wall surfaces; butt splices and install lap strips as indicated.

Attach main runners to hangers to prevent turning or twisting, and to transmit full loads to hangers.

Installation Tolerances: Variation from horizontal or indicated slope of 1/8 inch in 8 feet (3.9 mm in 3 m), maximum.

Coordinate installation of fixtures and equipment to be installed in ceiling system.

CLEANING

After removing factory-applied masking, clean exposed surfaces using materials and methods specified in manufacturer's instructions.

PROTECTION

Protect installed components from damage to finish or function by subsequent construction activities; do not remove factory-applied masking from components until time of Substantial Completion.

Repair damaged components and finishes, if any, in accordance with manufacturer's recommendations; replace components which cannot be repaired to Architect's acceptance.

OWNER-PERSONNEL INSTRUCTION

Instruct Owner's personnel in the care and maintenance of ceiling

system.

END OF SECTION