
09 54 23 - LINEAL METAL CEILINGS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Sections included under Division 0 & Division 1 are included as a part of this Section as though bound herein.
- B. Bidding and Contract Requirements of the Specifications and the Drawings govern the Work of this section. Provide materials, labor, equipment and services necessary to furnish, deliver and install work of this Section as shown on Drawings, as specified or as required by job conditions.
- C. Coordinate work with that of other trades affecting or affected by work of this Section and cooperate to assure the steady progress of the Work.

1.2 SUMMARY

- A. This Section includes linear metal pans and specially engineered suspension systems. Interior or (protected horizontal) exterior linear metal ceiling system (fire-rated) (non-fire-rated) assemblies, consisting of pre-finished aluminum or steel pans mounted to a carrier system and incorporating lighting fixtures and air handling components as applicable to the particular project design.
- B. Linear metal ceiling are to match in dimension, finish, installation, etc. the linear wood ceiling system installed at interior locations.

1.3 RELATED SECTIONS

- A. Related Sections include the following:
 - 1. Division 5 – Light Gauge Metal Framing
 - 2. Section 09 54 01 – Linear Wood Ceilings
 - 3. Division 26 – Electrical

1.4 REFERENCES

- A. ASTM C635 or C636: Manufacturing and Installation of Suspended Ceilings.
- B. Underwriters Laboratories Inc.: Fire Resistance Directory, Design Nos. D218, P230, and P267.
- C. ASTM E119: Fire Tests of Building Construction and Materials.
- D. ASTM C423: Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.

1.5 SUBMITTALS

- A. In accordance with Division 1 – Submittal Procedures
- B. Product Data: Submit manufacturer's technical data for each type of ceiling unit and suspension system required.
- C. Installation Instructions: Submit manufacturer's installation instructions as referenced in Part 3, Installation.
- D. Samples: Minimum 3-1/2 inch or 5-1/2 inch samples of specified panel; 8 inch long samples of exposed wall molding and suspension system, including main runner
- E. Samples: Submit representative sample of color and finish of all exposed materials.
- F. Shop drawings:
 - 1. Reflected ceiling plans: Contractor shall indicate layout arrangement of ceiling design, dimensions and locations of related integrated lighting and air distribution components.
 - 2. Contractor shall provide a layout drawing locating the light gauge metal framing member attached to the metal roof decking.
 - 3. Contractor shall coordinate installation and support of recessed light fixtures and furnish and install all necessary accessories, items, components required for complete installation.
 - 4. Installation drawings: Detail complete installation including carrier system, connections between carriers and pans, details of level changes and/or changes in pattern, installation of related lighting and air distribution components, access requirements, sound absorption requirements, and fire rating requirements when applicable.

- G. Certifications: Manufacturer's certifications that products comply with specified requirements, including laboratory reports showing compliance with specified tests and standards.
- H. Manufacturer's data: Submit manufacturer's catalog cuts or standard drawings showing details of system with project conditions clearly identified and manufacturer's recommended installation instructions, including independent lab report on wind testing.
- I. Maintenance materials: Submit one percent of amount of linear metal ceiling components installed.
- J. All products not conforming to manufacturer's current published values must be removed, disposed of and replaced with complying product at the expense of the Contractor performing the work.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Delivery of materials: Deliver materials in original unopened packages, clearly labeled with manufacturer's name, item description, specification number, type, and class as applicable.
- B. Inspection: Promptly inspect delivered materials, file freight claims for damage during shipment, and order replacement materials as required. Any damaged materials shall be promptly removed from the job site.
- C. Storage: Store in manner that will prevent warpage, water damage, or damage of any kind. Prevent interference to/by other trades and any other adverse job conditions due to storage locations or methods.
- D. Handling: Handle in such a manner as to ensure against racking, distortion, or physical damage of any kind.

1.7 QUALITY ASSURANCE

- A. Subcontractor qualifications: Installer shall have not less than three years of successful experience in the installation of linear metal ceiling systems on projects with requirements similar to requirements specified.
- B. Requirements of regulatory agencies: Codes and regulations of authorities having jurisdiction.
- C. Source quality control.
 - 1. Test reports: Manufacturer will provide test certification for minimum requirements as tested in accordance with applicable industry standards and/or to meet performance standards specified by various agencies.
 - 2. Changes from system: System performance following any substitution of materials or change in assembly design must be certified by the manufacturer.

- D. Delete below if work of this Section is not extensive or complex enough to justify a preinstallation conference. If retaining, coordinate with Division 1 Section "Project Meetings."

1.8 PROJECT CONDITIONS

- A. Existing conditions: (Include specific alteration work requirements for project.)
- B. Environmental requirements: Building shall be enclosed with windows and exterior doors in place and glazed, and roof water-tight before installation of linear metal ceiling system and related ceiling components. Climatic condition range of 60 °F (16 °C) to 85 °F (29 °C) and relative humidity of not more than 70%.
- C. Coordination with other work:
1. Mechanical work: Ductwork above ceiling shall be complete and permanent heating and cooling systems operating to climate conditions prior to installation of linear metal ceiling components.
 2. Electrical work: Installation of conduit above ceiling shall be complete before installation of linear metal ceiling components.
 3. Fire protection work: Fire protection lines and/or equipment occurring above ceiling shall be completed and tested before linear metal ceiling components are installed.
- D. Protection: Protect completed work above ceiling system from damage during installation of linear metal ceiling components.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Ceiling Panels:
1. Basis of Design: Armstrong World Industries, Inc.
 2. Certainteed
 3. Or equal approved by the Architect in writing

2.2 LINEAR METAL ASSEMBLY

- A. Ceiling Panels Type "LM":
1. Basis of Design: METALWORKS Linear Exterior, 5490 FXMP, as manufactured by Armstrong World Industries
Armstrong Sales Contact: Rob Hager,
Sales Rep Phone: 216-513-7210
 2. Color: Effects Maple, **Carrier molding to be black**
 3. Planks: 4" Unperforated
 4. Size: 96" x 4" x 5/8"
 5. Fire Rating: Class A
- B. Support system:

1. Special Installation Note! – Installation for this project will involve furnishing and installing the **ceiling support carriers** directly to the light gauge metal framing as indicated on the drawing details. **Installer to furnish and install all required anchoring clips to attach carriers to metal framing.**
 - a. Installer shall provide direction as to location of the supporting light gauge framing. Refer to Submittals.
 - b. Installer shall coordinate support of light fixtures.
- C. Accessories: Furnish and install all accessories as required for complete exterior installation. Including but not limited to:
 1. Carrier Molding
 2. Pressure Springs
 3. Panel Splices
 4. Filler Strips
 5. Pan retainer clip
 6. Seismic clip
 7. Mechanical fasteners: Material and finish to match item to which installed; type and size as required for particular installation.
 8. **Rigid attachment clips**

2.3 FABRICATION

- A. Pans: Edges formed to snap onto carrier members and provide positive locking mechanism with no additional fasteners; factory-finished to match approved samples.
- B. Support system: Formed and fabricated for mechanical connection with adjoining section and pre-punched holes for [direct suspension] or [mechanically fastened in place].

PART 3 EXECUTION

3.1 INSPECTION

- A. For exterior ceiling applications only, Examine areas to receive linear metal ceiling system for conditions that will adversely affect installation.
- B. Do not start work until unsatisfactory conditions are corrected.
- C. Work to be concealed: Verify work above ceiling suspension system is complete, tested, and installed in manner that will not affect layout and installation of linear metal ceiling system.
- D. Exterior* wind bracing to be approved by a registered professional engineer licensed by the state where the product is being installed.
*Exterior refers to horizontal applications such as soffits and drive-throughs— not intended for fascias or facade use.

3.2 PREPARATION

- A. Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders, and comply with layout shown on reflected ceiling plans.
- B. Coordination: Coordinate and schedule installation of linear metal ceiling system with work of other trades affected by this installation, with particular attention given to electrical work required to be installed and operating before ceiling work can begin.

3.3 INSTALLATION

- A. Reference: Install in accordance with approved shop drawings and manufacturer's instructions. Follow architects' details for thermal and building expansion joint treatments.
- B. Carrier system:
 - 1. Adjustment: Align support system straight, level, and in required position
 - 2. Mechanical fasteners: Where required, install in manner that will provide completed assembly to conform to project design requirements.
- C. Pans:
 - 1. General: Snap metal pans into position; splice end-to-end with integral splice.
 - 2. End plugs: When pan ends are visible, install end plugs flush with end surface.
- D. Lighting components: Refer to Electrical Drawings and Specifications.
- E. Exterior installation: Install hanger reinforcements, compression posts and other structural components as required per structural engineer's evaluation

3.4 CLEANING

- A. PARALINE pans: Clean painted pans with nonabrasive, non-solvent-based commercial cleaner. Clean polished finishes with nonabrasive, quick-drying glass cleaner. A soft cotton cloth is recommended.
- B. Immediately remove any corrosive substances or chemicals that would attack painted finish.
- C. Touch up all minor scratches and spots, as acceptable, or replace damaged sections when touch-up is not permitted.
- D. Removal of debris: Remove all debris resulting from work of this section.

END OF SECTION