

SECTION 09 51 13 - ACOUSTICAL CEILINGS

PART 1 - GENERAL

1.01 WORK SUMMARY

- A. Work Included: Provide products in accordance with the Contract Documents. The Contract Documents are as defined in the "Agreement". The "General Conditions Governing All Contracts" shall apply to all work under the Contract. The Work of this Section shall include but not be limited to the following:

1. Acoustical ceilings.
2. Indirect suspension system.
3. Edge trim.

- B. Related Sections:

2. Section 09 21 00 - Gypsum Drywall Systems.
3. Section 09 90 00 - Painting.
4. Division 23 and 26 for Mechanical and Electrical work.

1.02 COORDINATION:

- A. Coordinate with all equipment, mechanical, electrical, and other trades affected by the work and resolve all discrepancies and conflicts in an approved manner.

1.03 QUALITY ASSURANCE:

- A. Qualifications of Installer: Work under this Section shall be performed by an experienced specialty installer who is regularly engaged in the type of work required herein.

1. Installer shall be acceptable to the manufacturer of both the suspension system and the acoustical units.
2. Installer shall be capable of producing the modifications of standard components as shown.

- B. Flame Spread Rating: Acoustical ceiling panels shall be classified by Underwriter's Laboratories, Inc., under hazard classification for a flame spread of 25 or under.

- C. All suspended ceilings and suspension systems shall be in accordance with the requirements of the Building Code of the City of New York.

1.04 SUBMITTALS:

- A. Manufacturer's Data: Manufacturer's product specifications and installation instructions for acoustical ceiling material, and for suspension system, including certified laboratory test reports and other data as required to show compliance with this Section.

1. Indicate structural classification of suspension system.
 - B. Shop Drawings: Submit Show Drawing details and reflected ceiling plans of suspension systems and ceilings required by this Section. Show location of ceiling units and other items of general construction, equipment, mechanical and electrical work which are to be coordinated with the ceilings. Indicate framing and support details for work supported by the suspension system.
 - C. Samples:
 1. Acoustical Panels: Submit full size samples of each acoustic panel unit specified. Samples shall show the full range of exposed color and texture to be expected in the completed work.
 2. Suspension System: Submit 12" long samples of each trim molding of suspension system.
 - D. Maintenance Stock: At time of substantial completion, deliver stock of maintenance material to the Resident Engineer. Furnish full size units matching the units installed, packaged with protective covering for storage, and identified with appropriate labels. Furnish one carton for each type acoustic panel unit installed.
- 1.05 PRODUCT DELIVERY, STORAGE AND HANDLING:
- A. Deliver all acoustical units and suspension system components in manufacturer's original unopened packages fully identified with type, finish, performance data and compliance labels.
 - B. Handle and store in accordance with manufacturer's instructions and recommendations. Store in a place protected from damage, exposure to the elements and high humidity.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, provide products as manufactured by one of the following, or approved equal:
 1. Mineral Fiber Panel Ceilings
 - a. Armstrong World Industries, Inc.
 - b. Celotex Corporation.
 - c. USG Interiors, Inc.
 - d. Or Approved Equal.
 2. Indirect-Hung Suspension Systems and Edge Moldings
 - a. Armstrong World Industries.
 - b. USG Interiors, Inc.
 - d. Celotex Corporation.

d. Or Approved Equal.

2.02 ACOUSTIC PANELS

- A. Water-Felted, Mineral-Base Acoustical Panels for Acoustical Panel Ceiling: Provide acoustical panels complying with the following:
1. Products: USG "Olympia Mars Clima Plus".
 2. Classification: Panels fitting ASTM E 1264 for Type III, mineral base with painted finish; Form 2, water felted.
 3. Color: As selected.
 4. Light Reflectance Coefficient: Not less than LR 0.80.
 5. Noise Reduction Coefficient: NRC 0.50.
 6. Ceiling Attenuation Class: Not less than CAC 35.
 7. Edge Detail: Reveal sized to fit flange of exposed suspension system members.
 8. Thickness: 5/8 inch
 9. Size: 24 by 24 inches

2.03 SUSPENSION SYSTEM MATERIALS:

- A. Standard for Metal Suspension Systems: Provide metal suspension systems of type and finish indicated which comply with applicable ASTM C 635 requirements and local Building Code.
1. Provide suspension systems acceptable to manufacturers of ceiling units.
- B. Attachment Devices: Size for 5 times design load indicated in ASTM C 635, Table 1, Indirect Hung.
- C. Hangers: Wire hangers, 9 gage, with paint or zinc coating.
- D. Main Runners: Carrying channels fabricated from cold rolled steel with rust inhibitive paint finish. Size shall be 1-1/2" deep, weighing 475 lbs/1000 l.f., for a hanger spacing of 4'-0" on center. Clips for attachment of hangers to carrying channels shall comply with the seismic design requirements.
- E. Coordination of Components: Provide suspension system which is coordinated with partitions, and which is coordinated with the indicated limitations and requirements for hanging from the structure and supporting equipment, light fixtures, HVAC components, and similar work indicated to be supported by or located in suspended ceilings. Include all necessary components for a complete system.
- F. Exposed tee grid systems "Fineline DXF/DXLF" as manufactured by Donn-USG Interior Systems.
1. Main and cross tees shall be fabricated of cold-rolled steel, electro-zinc coated and factory painted to match color of tile; 9/16" exposed flange.
 2. Edge Molding: "Z" and "F" shaped, 9/16" reveal edge molding, finish to match grid,

unless otherwise indicated.

3. Maximum deflection: 1/360 span.

- G. Support Clips: Manufacturer's standard support clips for securing tee grid to metal ceiling suspension system (runner bars).

2.04 MISCELLANEOUS MATERIALS

- A. Acoustical Sealant: Resilient, non-staining, non-shrinking, non-hardening, non-skinning, non-drying, non-sag sealant intended for interior sealing of joints. Provide one of the following:
 1. BA-98; Pecora Corp.
 2. Tremco Acoustical Sealant; Tremco.
 3. Or Approved Equal.

PART 3 - EXECUTION

3.01 PRE-INSTALLATION CONFERENCE:

- A. Prior to the start of ceiling installation, meet at the Project Site with the installers of related work, including lighting, ductwork and similar work in the ceiling plenum. Review areas of potential interference and resolve conflicts before proceeding with the work. Coordinate ceiling layout with the layout of other work which penetrates or is supported by the ceiling.

3.02 ENVIRONMENTAL CONDITIONS:

- A. Space Enclosure: Do not install ceilings until wet work in the space has been completed and is nominally dry, and until work above ceilings has been completed, and until ambient conditions of temperature and humidity will be continuously maintained at values near those indicated for final occupancy.

3.03 INSPECTION AND PREPARATORY WORK:

- A. Examine metal ceiling suspension system previously installed by others and the conditions under which acoustical ceiling work is to be performed; remedy any unsatisfactory conditions.

3.04 INSTALLATION - GENERAL:

- A. Codes and Standards: Install materials in accordance with manufacturer's printed instructions, and to comply with governing regulations, fire resistance rating requirements where indicated, and industry standards applicable to the work.
- B. Suspended Ceiling Installation: Comply with ASTM C-636 as applicable to acoustical panel ceilings, except to the extent more stringent requirements are indicated or required for compliance with governing regulations or fire resistance ratings.

1. Provide supplementary framing and support members as required to support ceiling system where items of work do not permit standard hanger and support system.
 2. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of the supporting structure or of the ceiling suspension system.
 3. Splay hangers only where required, and if permitted with fire-resistance-rated ceilings, to miss obstructions; offset resulting horizontal forces by bracing, counter splaying, or other equally effective means.
 4. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with the location of hangers at spacings required to support standard suspension system members, install supplemental suspension members and hangers in the form of trapezes or equivalent devices. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards and publications.
 5. Secure wire hangers to ceiling suspension members and to supports above with a minimum of 3 tight turns. Connect hangers either directly to structures or to inserts, eye screws, or other devices that are secure, that are appropriate for substrate, and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
 6. Secure flat, angle, channel, and rod hangers to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices that are secure and appropriate for both the structure to which hangers are attached and the type of hanger involved. Install hangers in a manner that will not cause them to deteriorate or fail due to age, corrosion, or elevated temperatures.
 7. Secure bracing wires to ceiling suspension members and to supports with a minimum of 4 tight turns.
 8. Do not attach hangers to steel deck tabs.
 9. Do not attach hangers to steel roof deck. Attach hangers to structural members.
 10. Space hangers not more than 48 inches (1200 mm) o.c. along each member supported directly from hangers, unless otherwise shown; and provide hangers not more than 8 inches (200 mm) from ends of each member.
 11. No tile shall be less than half a tile length.
- C. Install edge moldings and reveal moldings of the type indicated at edges of acoustical panel ceiling areas, and at locations where edge of tile would otherwise be exposed after completion of the work.
1. Sealant Bed: Apply continuous ribbon or tape of acoustical sealant on back of vertical leg before fastening to vertical surface. Locate so that sealant will not be exposed after installation is completed.
 2. Secure moldings to building construction by fastening through holes drilled in vertical leg. Space holes not more than 3" from each end and not more than 16" o.c. between end holes. Draw-up fasteners for tight set against vertical surfaces.
 - a. Masonry or Concrete: Fasten with wood or machine screws into lead shield type anchors drilled into construction.

- b. Steel Stud: Fasten with toggle bolts, or similar self-expanding screw anchors.
 - 3. Miter corners of moldings accurately to provide hairline joints.
 - 4. Level moldings with ceiling suspension system, to a level tolerance of 1/8" in 12'-0".
 - 5. All joints in moldings shall be cut accurately and installed with tight neat joint; all corners shall be mitered. Field applied tape and excess drywall compound shall be removed from moldings immediately.
 - 6. Provide perimeter tiles @ half size at all times.
- D. Install exposed spline acoustical panel systems in coordination with suspension system and according to ASTM C-636 "Recommended Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels".

3.05 CLEANING AND PROTECTION:

- A. Clean exposed surfaces of acoustical panels and edge moldings; comply with manufacturer's instructions for cleaning and touch-up of minor finish damage. Remove and replace work which cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.
- B. Protect acoustical panel ceilings so that the work will be without damage and deterioration at the time of acceptance by the Architect.

END OF SECTION