

INTEGRATED CEILING SYSTEM:

SECTION 233713 – INTEGRATED CEILING SYSTEM

PART 1 – GENERAL

* 1. RELATED DOCUMENTS
1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division \*\* Specifications Sections, apply to this section
	1. SUMMARY
2. Sections Includes:
	1.
3. Related Sections:
	1. CODES AND STANDARDS
4. ASTM C635 / C635M, Standard Specification for Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings
5. ASTM C635 / C635M, Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels
6. IEST-RP-CC-001, Institute of Environmental Sciences HEPA and ULPA Filters
7. IEST-RP-CC006, Institute of Environmental Sciences Recommended Practices for Testing Clean Rooms
8. IES-RP-CC034, Institute of Environmental Sciences Recommended Practices for HEPA and ULPA Filter Leak Tests
	1. SUBMITTALS
9. Product Data: For each type of produce indicated, include the following:
	1. Data Sheet: Indicate materials of construction, mounting details and performance data including initial resistance.
	2. Source quality-control reports.
	3. Coordination drawings to be provided for each room where Integrated Ceiling System is installed.

PART 2 - PRODUCTS

2.1 INTEGRATED CEILING SYSTEM

1. Laminar Flow Diffusers
	1. ***\*\* NOTE TO SPECIFIER \*\* Insert specification for laminar flow diffuser model and construction to be used.***
2. Heavy Duty Ceiling Grid
3. Manufacturers: Subject to compliance with requirements and performance listed in section 2.2 Source Quality Control, products by one of following manufacturer is acceptable
	1. Titus (Basis of Design)
	2. Bio-Grid
4. Integrated Ceiling System shall meet requirements for Heavy-Duty Systems as specified by ASTM C635.
5. Integrated Ceiling System shall be designed to support a minimum weight of 16 lbs/ft2 when installed per ASTM C636.
6. Construction
	1. Heavy Duty Ceiling Grid
		1. Provide extruded aluminum tee and angle frame assembly suspension system to support Diffusers, fill-in panels and light fixtures. The face of the tee shall be 1-1/2" x 1-7/16" high. Minimum wall thickness of the tees and angles shall be 0.125" with a minimum weight of 0.43 lbs. per linear ft.
		2. The suspension system shall be pre-cut for field assembly utilizing “Quick Snap” connectors.
		3. The system shall be fully reconfigurable for future changes.
		4. Verify exact locations of diffusers, lights, fill-in panels & framing with architectural reflected ceiling plans.
		5. All tees and angles shall be pre-punched on 6" centers for attachment to minimum 12 gauge pre-stressed hanger wires attached on 48” centers to structural support members. Manufacturer shall furnish 1/8" thick closed cell antimicrobial polyethylene gasket tape to be field installed on the frame assembly to provide an airtight seal between diffuser/tee grid or blank-off panel/tee grid interface. Gasket tape shall be field installed by contractor after framing surfaces have been wiped clean, free from any construction dust.
		6. The ceiling framing system shall be finished to match laminar flow diffusers and blank-off panels.
		7. Grid shall be coated with a white Polyester Powder coat finish with Antimicrobial inhibitors.
	2. Solid Blank-Off Panels
		1. Diffuser manufacturer shall furnish solid face blank-off panels where indicated on the drawings and where columns may penetrate the ceiling or where interstitial access is required. Panel to be solid 0.093” thick aluminum sheet metal providing a seal between the room and interstitial space. The installing contractor shall cut all fill-in panel(s) for the surgical light column(s), medical gas column(s), and other ceiling mounted apparatus as required on the drawings after this equipment located.
		2. Panels shall be coated with a Polyester Powder Coat finish with Antimicrobial inhibitors.
	3. Ceiling Level UniStrut
		1. Provide ceiling level UniStrut of P1001 type to integrate with extruded aluminum tees and angle frames to provide an integrated ceiling system for support of system components and light fixtures (provided by division 26). System manufacturer to supply angle frame for perimeter of system. To be field cut by installing contractor as necessary to cover rough opening in hard ceiling.
		2. Aluminum tee and angle brackets to attach directly to ceiling level UniStrut. UniStrut spring nuts, bolts, and washers required to attach ceiling level UniStrut to above ceiling grade structure and below ceiling grade imaging equipment to be supplied by installing contractor.
		3. Provider of ceiling level UniStrut shall also supply extruded aluminum UniStrut cover plates finished to match tee and angle frame components

PART 3 – EXECUTION

3.1 EXAMINATION

1. The installing contractor shall examine all openings, mechanical and electrical work, and adjoining and adjacent construction to receive Integrated Ceiling System prior to commencing this Work.
2. The installing contractor shall field verify rough hard ceiling opening dimensions are as required in submittals and hard ceiling conditions to be plumb and level with square corners to receive Integrated Ceiling Systems.
3. Openings not acceptable for Integrated Ceiling System installations shall be corrected by the appropriate contractor until conditions are satisfactory to installing contractor
4. The General Contractor shall coordinate corrective/remedial work promptly.
5. Proceeding with the installation of the Ceiling System indicates the installing contractor accepts the openings and conditions.
6. Verify exact diffuser, blank panel and accessory locations as shown on the Contract Drawings.

3.2 INSTALLATION

1. Install and coordinate system and components per ASTM C636, and manufacturer’s recommended guidelines.
2. Install 1/8-inch-thick closed cell polyethylene gasket tape on the top side of all horizontal ceiling grid surfaces.
3. Assemble framing sections in accordance with manufacturer’s installation instructions. Torque (#20) screws shall be utilized for mechanical fastening of “Quick Connectors”
4. Provide inserts, power-driven type anchors, hangers or other Architect / Engineer approved hanger anchoring and suspension system devices and methods.
5. Install suspended ceiling hangers plumb and free from contact with insulation or other objects within ceiling plenum not part of supporting structural or ceiling suspension systems. Splay hangers only where required to avoid obstructions and offset resulting horizontal forces by bracing or counter splaying, per ASTM C636.
6. Where width of ducts, cable trays and other construction within ceiling plenums causes hanger spacing to interfere with the location of hangers required to support suspension system members, install supplemental suspension members and hangers in the form of trapeze or equivalent Architect / Engineer approved devices. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards.
7. Secure wire hangers to structure by looping and wire-tying, either directly to structures or to inserts, eye screws, or other devices and fasteners appropriate for the substrates.
8. Coordinate insert and hanger location with other Work.
9. Hanger wires for framing shall be installed a maximum 48” on center, and a maximum 6 inches framing ends.
10. Hangers shall not penetrate ductwork, ductwork insulation or piping insulation. Integrated Ceiling System shall not be suspended from ductwork, conduit, pipes or plumbing equipment. Hangers shall not interfere with heating and ventilating equipment and their maintenance.
11. The Electrical Contractor will utilize the Integrated Ceiling System for lay-in type lighting fixtures. The Electrical Contractor shall provide any separate primary support or secondary frame members required to anchor and support lighting fixtures and equipment and to supplement and strengthen the standard suspension system in conformance with N.E.C. requirements. Provide openings for flush down- lighting fixtures located within blank-off panels as shown on Electrical Drawings and reflected ceiling plans.

END OF SECTION 233713