

SECTION 09548

LUMINOUS CEILING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Ceiling elements and supports.
- B. Luminaires and accessories.

1.02 RELATED SECTIONS

- A. Section 09511 - Suspended Acoustical Ceilings.
- B. Section 09900 - Paints and Coatings.
- C. Section 16070 - Hangers and Supports.
- D. Section 16510 - Interior Luminaires.

1.03 REFERENCES

- A. ASTM C 636/C 636M - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels; 2006.
- B. NFPA 70 - National Electrical Code; National Fire Protection Association; 2008.

1.04 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate layout of luminaires, support locations and details for ceiling suspension.
- C. Product Data: Provide data showing ceiling component construction and finishes.
- D. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency specified under Quality Assurance. Include instructions for storage, handling, protection, examination, preparation, and installation of product.
- E. Maintenance Data: Manufacturer's instructions for cleaning and replacement.

1.05 QUALITY ASSURANCE

- A. Electrical Work: Conform to requirements of NFPA 70.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- C. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

1.06 MOCK-UP

- A. Provide mock-up of each type of luminous ceiling system, including at least one of each component.
 - 1. Locate where directed.
- B. Analyze mockup to determine illumination level and comfort achieved.
- C. Mock-up may remain as part of the Work.

1.07 PRE-INSTALLATION MEETING

- A. Convene one week prior to commencing work of this section.

1.08 EXTRA MATERIALS

- A. See Section 01600 - Product Requirements, for additional provisions.
- B. Furnish two of each type and color of luminous element.
- C. Furnish two standard lengths of each type and color of grid support.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Luminous Ceilings:
 - 1. Tess USA, (800) 658-8377.

2.02 LUMINOUS CEILING COMPONENTS

- A. Suspension system as described under Section 095100.
- B. Luminous Panels: Flat acrylic panel, 0.125 inch (3.2 mm) thick, clear.
- C. Luminaires: Specified in Section 16510.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that mechanical work above luminous ceiling has been completed and does not interfere with ceiling installation or performance.

3.02 PREPARATION

- A. Paint surfaces and mechanical installations in cavity above luminous elements. Use 90 percent reflectance white paint applies as specified in Section 09900.
- B. Lay out system on room axis as indicated.
- C. Lay out system to a balanced grid design with edge units no less than 50 percent of acoustical unit size.

3.03 INSTALLATION

- A. Locate luminaires to achieve even luminance of the ceiling luminous elements or as indicated.
- B. Support luminaires independently of ceiling grid in accordance with provisions of Section 16070.
- C. Install suspension system in accordance with ASTM C 636/C 636M and manufacturer's instructions and as supplemented in this section.
- D. Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.

- E. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.
- F. Do not eccentrically load system, or produce rotation of runners.
- G. Coordinate installation of ceiling elements and supports with other Work in the vicinity.
- H. Install edge molding at intersection of ceiling and vertical surfaces, using longest practical lengths. Miter corners. Provide edge moldings at junctions with other interruptions.
- I. Form expansion joints as detailed. Form to accommodate plus or minus 1 inch (25 mm) movement. Maintain visual closure.

3.04 INSTALLATION TOLERANCES

- A. Maximum Deflection: $1/360$ of span, maximum.
- B. Maximum Variation from Flat and Level Surface: $1/8$ inch in 10 feet (3 mm in 3 m).
- C. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

3.05 CLEANING

- A. Clean luminous ceiling elements in accordance with manufacturer's instructions.

END OF SECTION