

PART 1 - GENERAL

1.1 REFERENCES

- .1 American Society for Testing and Materials (ASTM):
 - .1 ASTM C635/C635M-13a, Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.
 - .2 ASTM C636/C636M-13, Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels.
 - .3 ASTM E84-16, Standard Test Method for Surface Burning Characteristics of Building Materials.
 - .4 ASTM E1264-14, Classification for Acoustical Ceiling Products.
- .2 Underwriters Laboratories Canada (ULC):
 - .1 CAN/ULC S102-10, Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.

1.2 DESIGN REQUIREMENTS

- .1 Design ceiling suspension systems in accordance with ASTM C636/C636M and manufacturer's printed directions.
 - .2 Design tile ceiling system for adequate support of electrical fixtures as required by the current bulletin of the Electrical Safety Authority. Acoustic panel system is not designed to carry the weight of electrical equipment.
 - .3 Design hanger anchor and entire suspension system static loading not to exceed 25% of their ultimate capacity including lighting fixture dead loads.
 - .4 Design tile suspension system to support weight of mechanical and electrical items such as air handling boots and lighting fixtures, and with adequate support to allow rotation/relocation of light fixtures. Acoustic panel system is not designed to carry the weight of mechanical and electrical equipment.
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- 1.2 DESIGN REQUIREMENTS (Cont'd)
- .5 Design subframing as necessary to accommodate, to avoid conflicts and interferences where ducts or equipment prevent regular spacing of hangers.
- 1.3 ACTION AND INFORMATIONAL SUBMITTALS
- .1 Submit submittals in accordance with Section 01 33 00.
- .2 Product Data:
- .1 Submit manufacturer's instructions, printed product literature and data sheets for acoustical suspension and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Shop drawings:
- .1 Submit reflected ceiling plans for special grid patterns as indicated.
- .2 Indicate lay-out, insert and hanger spacing and fastening details, access door dimensions, and locations and acoustical unit support at ceiling fixture.
- .4 Samples:
- .1 One full-size sample of each type of tile panels to be used.
- .2 One of each type of suspension system members.
- .5 Certificates: Submit certificate stating that suspended ceiling systems provide adequate support for electrical fixtures, as required by current bulletin of Electrical Inspection Department of Ontario Hydro.
- .6 Closeout submittals:
- .1 Operation and Maintenance Data: submit operation and maintenance data for acoustical suspension for incorporation into manual.
- 1.4 DELIVERY, STORAGE AND HANDLING
- .1 Deliver, store and handle materials in accordance with Section 01 61 00 and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
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1.4 DELIVERY,
STORAGE AND
HANDLING
(Cont'd)

- .3 Storage and Handling Requirements:
 - .1 Store materials in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect acoustical ceiling tiles and tracks from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.
- .4 Packaging Waste Management: remove for reuse and return of pallets, crates, padding and packaging materials in accordance with Section 01 74 20.

1.5 EXTRA MATERIALS

- .1 Provide extra materials of acoustic units in accordance with Section 01 78 00.
- .2 Provide acoustical units amounting to 2% of gross ceiling area for each pattern and type required for project.
- .3 Extra materials to be from same production run as installed materials.
- .4 Clearly identify each type of acoustic unit, including colour and texture.
- .5 Deliver to Departmental Representative, upon completion of the work of this section.
- .6 Store where directed by Departmental Representative.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Heavy duty system to ASTM C635/C635M as required to support intended loads.
 - .2 Acoustic ceiling tile (ACT):
 - .1 Conforming to ASTM E1264.
 - .2 Salvaged tiles: In accordance with Section 02 41 19. Coordinate with noted Section as required for reinstallation under work of this Section. Replace with new to match existing type if salvaged tiles are damaged and additional supply is required for reinstallation.
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2.1 MATERIALS
(Cont'd)

- .2 (Cont'd)
- .3 New tiles:
- .1 New tiles to match existing corridor 004 at corridor 113 only and meet the following criteria:
- .1 Conforming to ASTM E1264, Type III, Form 2, Pattern CD.
- .2 Size: 600 mm x 1200 mm x 15 mm thick.
- .3 Wet-formed mineral fibre with factory-applied latex paint.
- .4 Fire performance: Conforming to ASTM E84 and CAN/ULC S102, flame spread rating of 25 or less and smoke developed index of 50 or less.
- .5 Tile to have square edges, humidity and sag resistance and greater than 50% total recycled content.
- .2 New tiles, typical: Mineral fibre tile sized at 600 x 1200 x 16 mm thick, flat, square edge, white colour, fissured pattern, maximum flame spread rating 25 to CAN/ULC-S102, STC minimum 35.
- .3 New tiles, gypsum backed: Designed for improved sound transmission loss, composite panel unit is to consist of a mineral fibre tile sized at 600 x 1200 x 16 mm thick, flat, square edge, white colour, fissured pattern, maximum flame spread rating 25 to CAN/ULC-S102, and be complete with a sound deadening asphaltic mastic layer and gypsum board panel bonded to the back of the acoustic tile with this mass bonded layer amounting to a thickness of 14 mm, the overall composite unit is to have an STC rating of 48.**
- .3 Suspension system: non-fire rated, two directional exposed tee bar grid, including wall moulding.
- .4 Exposed tee bar grid components for ceiling tile: cold rolled steel, zinc coated, shop painted, satin sheen, white, interlocking, main and cross tee of double web with rectangular bulb, depth governed by span, 25 mm exposed face.
- .5 Hangers: 3.6 mm galvanized soft annealed steel wire.

- 2.1 MATERIALS
(Cont'd)
- .6 Accessories: splices, clips, wire ties, retainers and wall moulding flush, to complement suspension system components, as recommended by system manufacturer.
 - .7 Hold down clips: Manufacturer's standard clip for use with specified grid.

PART 3 - EXECUTION

- 3.1 EXAMINATION
- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for acoustical ceiling tile and track installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Departmental Representative.
 - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied.

- 3.2 INSTALLATION
- .1 Install new and modify existing acoustical ceilings in accordance with ASTM C636/C636M, reviewed shop drawings and manufacturer's written instructions.
 - .2 Install suspension system to manufacturer's instructions and Certification Organizations tested design requirements.
 - .3 Co-ordinate suspension system with related components.
 - .4 Do not erect ceiling suspension system until work above ceiling has been inspected and approved by Departmental Representative.
 - .5 Support suspension system main runners at 1200 mm oc maximum with hangers from structure. Assembly shall support super-imposed loads. Maximum permissible deflection, 1/360th of span to ASTM C635/C635M deflection test.
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