

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 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.

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.

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| <u>2.1 MATERIALS</u><br>(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

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| <u>3.1 EXAMINATION</u> | .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.<br>.1 Visually inspect substrate in presence of Departmental Representative.<br>.2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.<br>.3 Proceed with installation only after unacceptable conditions have been remedied. |
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| <u>3.2 INSTALLATION</u> | .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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3.2 INSTALLATION  
(Cont'd)

- .6 Attach cross member to main runner to provide rigid assembly.
- .7 Acoustic lay-in tiles:
  - .1 Install acoustic tiles in grid system openings supported by bottom flanges of members. Provide special shapes and sizes to provide a complete installation by cutting tile to fit into openings. Fit tile moderately tight between upright legs of members.
  - .2 Carefully cut and trim acoustic tiles to accommodate items piercing the finished ceiling plane.
  - .3 Cut acoustic units to fit adjacent work. Butt joints tight, terminate edges with moulding.
  - .4 Secure each panel into grid opening with concealed hold down clips.
- .8 Install flush edge molding at junction of acoustic unit ceiling and other materials around entire length of joint.

3.3 CLEANING

- .1 Cleaning:
  - .1 Leave work area clean at end of each day.
  - .2 Upon completion, remove surplus materials, rubbish, tools and equipment.
  - .3 Touch up scratches, abrasions, voids and other defects in painted surfaces.
- .2 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 20.
  - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

3.4 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by acoustical suspension installation.