
Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Division 1 – General Requirements.

1.2 REFERENCES

- .1 ASTM International
 - .1 ASTM C635/C635M-07, Standard Specifications for the Manufacture, Performance and Testing of Metal Suspension Systems for Acoustical Tile and Lay-In Panel Ceilings.
 - .2 ASTM C636/C636M-08, Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels.
 - .3 ASTM E1477-98a-2013, Standard Test Method for Luminous Reflectance Factor of Acoustical Materials by Use of Integrating-Sphere Reflectometers.
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-92.1-M89, Sound Absorptive Prefabricated Acoustical Units.
- .3 Green Seal Environmental Standards (GS)
 - .1 GS-11-2011, Paints and Coatings. 3rd Edition.
- .4 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
- .5 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards
 - .1 SCAQMD Rule 1113, Architectural Coatings.
- .6 Underwriter's Laboratories of Canada (ULC)
 - .1 CAN/ULC-S102-10, Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 00 10 - General Instructions.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for ceiling panels and ceiling suspension system and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Submit 2 copies of WHMIS MSDS in accordance with Section 01 35 29.06 - Health and Safety Requirements.
- .3 Shop Drawings:
 - .1 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Ontario, Canada.

- .2 Indicate layout, insert and hanger spacing and fastening details, splicing method for main and cross runners, change in level details, and acoustical unit support at ceiling fixture and lateral bracing and accessories.
- .4 Samples:
 - .1 Submit for review and acceptance of each unit.
 - .2 Samples will be returned for inclusion into work.
 - .3 Submit duplicate full size samples of each type acoustical units.

1.4 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements 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.
- .3 Storage and Handling Requirements:
 - .1 Store materials indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store materials inside, level, under cover. Protect from weather, damage from construction operations and other causes, in accordance with manufacturer's printed instructions.
 - .3 Handle materials to prevent damage to edges or surfaces. Protect metal accessories and trim from being bent or damaged.
 - .4 Store and protect acoustic ceiling materials from nicks, scratches, and blemishes.
 - .5 Replace defective or damaged materials with new.

Part 2 Products

2.1 COMPONENTS

- .1 Acoustic units for suspended ceiling system: to CAN/CGSB-92.1.
 - .1 Pattern smooth – textured panel, class 10M- 100M
 - .2 Flame spread rating of 25 or less in accordance with CAN/ULC-S102.
 - .3 Smoke developed 50 or less in accordance with CAN/ULC-S102.
 - .4 Light Reflectance (LR) range of .79 to ASTM E1477.
 - .5 Edge type square.
 - .6 Colour flat white.
 - .7 Size 610 x 1220 x 16 mm thick.
 - .8 Shape flat.
 - .9 Prior to ordering, to be coordinated with M&E fixtures to ensure both are either imperial or metric systems.
- .2 Acoustical Suspension:
 - .1 Intermediate duty system to ASTM C635.
 - .2 Basic materials for suspension system: commercial quality cold rolled steel, zinc coated.

- .3 Suspension system: non fire rated, two directional exposed tee bar grid.
 - .4 Exposed tee bar grid components: shop painted satin sheen, white colour. Components die cut. Main tee with double web, rectangular bulb and 25 mm rolled cap on exposed face. Cross tee with rectangular bulb; web extended to form positive interlock with main tee webs; lower flange extended and offset to provide flush intersection.
 - .5 Hanger wire: galvanized soft annealed steel wire, 3.6 mm diameter for access tile ceilings.
 - .6 Hanger inserts: purpose made.
 - .7 Accessories: splices, clips, wire ties, retainers and wall moulding flush, to complement suspension system components, as recommended by system manufacturer.
- .3 Performance/Design Criteria:
- .1 Maximum deflection: 1/360th of span to ASTM C635 deflection test.

2.2 ACCESSORIES

- .1 Touch-up paint: in accordance with manufacturer's recommendations for surface conditions:
 - .1 Paint: VOC limit 250 g/L maximum to GS-11.

Part 3 Execution

3.1 EXAMINATION

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for product installation in accordance with manufacturer's written instructions prior to acoustical ceiling installation.
 - .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 and after receipt of written approval to proceed from Departmental Representative .

3.2 INSTALLATION

- .1 Ceiling Tiles with ceiling mounted fire alarm devices are to be replaced upon removal of each device. In addition, contractor to replace all ceiling tiles damaged during construction.
- .2 Installation: in accordance with ASTM C636 except where specified otherwise.
- .3 Suspension System:
 - .1 Erect ceiling suspension system after work above ceiling has been inspected by Departmental Representative.
 - .2 Secure hangers to overhead structure using attachment methods acceptable to Departmental Representative.

- .3 Install hangers spaced at maximum 1200 mm centres and within 150 mm from ends of main tees.
- .4 Install wall moulding to provide correct ceiling height.
- .5 Interlock cross member to main runner to provide rigid assembly.
- .6 Ensure finished ceiling system is square with adjoining walls and level within 1:1000.
- .7 Sprinkler heads and other penetrations through the ceiling shall have a 52mm oversized ring, sleeve or adapter through the ceiling tile to allow for free movement of at least 25mm in all horizontal directions. Alternatively a swing joint that can accommodate 25mm of ceiling movement in all horizontal directions is permitted at the top of the sprinkler head extension.

3.3 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 00 10 – General Instructions.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 00 10 - General Instructions

3.4 PROTECTION

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

END OF SECTION