

PART 1 - GENERAL

1.1 REFERENCES

- .1 American Society for Testing and Materials International (ASTM).
 - .1 ASTM C635, Specifications for the Manufacture, Performance and Testing of Metal Suspension Systems for Acoustical Tile and Lay-In Panel Ceilings.
 - .2 ASTM C636, Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels.
 - .3 ASTM E1477, Standard Test Method for Luminous Reflectance Factor of Acoustical Materials by Use of Integrating-Sphere Reflectometers
 - .4 ASTM E1264, Classification for Acoustical Ceiling Products.
- .2 Canadian General Standards Board (CGSB).
 - .1 CAN/CGSB-92.1, Sound Absorptive Prefabricated Acoustical Units.
- .3 Canadian Standards Association (CSA)
 - .1 CSA B111, Wire Nails, Spikes and Staples.
- .4 Health Canada/Workplace Hazardous Materials Information System (WHMIS).
 - .1 Material Safety Data Sheets (MSDS).
- .4 Underwriter's Laboratories of Canada (ULC).
 - .1 CAN/ULC-S102, Surface Burning Characteristics of Building Materials and Assemblies.

1.2 SUBMITTALS

- .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit duplicate samples of acoustical units.
- .3 Submit reflected ceiling plans for special grid patterns as indicated.
- .4 Indicate lay-out, insert and hanger spacing and fastening details, splicing method for main and cross runners, location of access splines change in level details, access door dimensions, and locations and acoustical unit support at ceiling fixture lateral bracing and accessories.

1.3 ENVIRONMENTAL
REQUIREMENTS

- .1 Permit wet work to dry before commencement of installation.
- .2 Maintain uniform minimum temperature of 15°C and humidity of 20 - 40% before and during installation.
- .3 Store materials in work area 48 hours prior to installation.

1.4 DESIGN
REQUIREMENTS

- .1 Maximum deflection: 1/360th of span to ASTM C635 deflection test.

1.5 STORAGE AND HANDLING

- .1 Store materials inside, level, under cover. Protect from weather, damage from construction operations and other causes, in accordance with manufacturer's printed instructions.
- .2 Handle materials to prevent damage to edges or surfaces. Protect metal accessories and trim from being bent or damages.

1.6 EXTRA
MATERIALS

- .1 Provide extra materials of acoustic units in accordance with Section 01 78 00 - Closeout Submittals.
- .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.

1.7 CLOSEOUT
SUBMITTALS

- .1 Provide maintenance data for acoustical ceilings for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

PART 2 - PRODUCTS

- 2.1 ACOUSTIC CEILING PANELS.1 Acoustic units for suspended ceiling system: to ASTM E1264, Type 4, pattern "E" Fire Class A.
- .1 Material: mineral fibre with anti-microbial treatment.
 - .2 Pattern: "E".
 - .3 Facing: vinyl
 - .4 Water repellant, Washable to ASTM 4828, Scrubbable to ASTM 2486.
 - .5 Suitable for clean rooms up to 150 Class 5
 - .6 Flame spread rating of 25 or less in accordance with CAN/ULC-S102.
 - .7 Smoke developed 50 or less in accordance with CAN/ULC-S102.
 - .8 Noise reduction coefficient NRC designation of 0.70
 - .9 Light Reflectance: 0.86 to ASTM E1477.
 - .10 Edge type square.
 - .11 Colour white.
 - .12 Size: 610 x 610 x 19 mm thick.
 - .13 Shape flat.
 - .14 Reference Standard: Armstrong Health Zone Ultima 15/16" square lay in; or equivalent.
- 2.2 ACOUSTIC 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. 610 x 610 x 24 mm. With wall angle.
 - .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.
 - .6 Hanger wire: galvanized soft annealed steel wire, 3.6 mm diameter for access tile ceilings.
 - .7 Hanger inserts: purpose made.
 - .8 Carrying channels: 38mm channel, of galvanized steel.
 - .9 Accessories: splices, clips, wire ties, retainers and wall moulding flush reveal, to complement suspension system components, as recommended by system manufacturer.

PART 3 - EXECUTION

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| <u>3.1 INSTALLATION OF
SUSPENSION SYSTEM</u> | .1 | Installation in accordance with ASTM C636 except where specified otherwise. |
| | .2 | Install suspension system to manufacturer's instructions. |
| | .3 | Do not erect ceiling suspension system until work above ceiling has been inspected by Departmental Representative. |
| | .4 | Install acoustical units parallel to building lines with edge unit not less than 50% of unit width. Refer to reflected ceiling plan. |
| | .5 | Secure hangers to overhead structure using attachment methods acceptable to Departmental Representative |
| | .6 | Install hangers spaced at maximum 1200 mm centres and within 150 mm from ends of main tees. |
| | .7 | Lay out system according to reflected ceiling plan. |
| | .8 | Install wall moulding to provide correct ceiling height. |
| | .9 | Completed suspension system to support super-imposed loads, such as lighting fixtures diffusers grilles and speakers. |
| | .10 | Support at light fixtures diffusers with additional ceiling suspension hangers within 150 mm of each corner and at maximum 600 mm around perimeter of fixture. |
| | .11 | Interlock cross member to main runner to provide rigid assembly. |
| | .12 | Finished ceiling system to be square with adjoining walls and level within 1:1000. |
| | .13 | In fire rated ceiling systems, secure lay-in panels with hold-down clips and protect over light fixtures, diffusers, air return grilles and other appurtenances according to Certification Organizations design requirements. |
| <u>3.2 INSTALLATION
OF ACOUSTIC PANELS</u> | .1 | Install acoustical panels and tiles in ceiling suspension system. |
| | .2 | Co-ordinate ceiling work to accommodate components of |

other sections, such as light fixtures, diffusers, speakers, sprinkler heads, to be built into acoustical ceiling components.

- .3 Scribe acoustic units to fit adjacent work butt joints tight, terminate edges with moulding.

3.3 CLEANING

- .1 Touch up scratches, abrasions, voids and other defects in painted surfaces.

3.4 COMMISSIONING

- .1 Train user staff in the care, cleaning and replacement of acoustical ceiling tile.
- .2 Acceptance of maintenance material turned over to owner.

END OF SECTION