

PART 1 - GENERAL

1.1 REFERENCES

- .1 ASTM International
 - .1 ASTM C 635/C 635M-13a, Standard Specifications for the Manufacture, Performance and Testing of Metal Suspension Systems for Acoustical Tile and Lay-In Panel Ceilings.
 - .2 ASTM C 636/C 636M-13, Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels.
- .2 Canada Green Building Council (CaGBC)
 - .1 LEED Canada 2009 for Design and Construction Leadership in Energy and Environmental Design Green Building Rating System Reference Guide.
- .3 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .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 Mock-Ups:
 - .1 If required by Departmental Representative, provide mock-up for review and acceptance.
 - .2 Upon acceptance mock-ups may remain as part of Work.
 - .3 Ceiling system to show basic construction and assembly, treatment at walls, recessed fixtures, splicing, interlocking, finishes, acoustical unit installation.
- .4 Sustainable Design Submittals:
 - .1 LEED Canada Submittals: in accordance with Section 01 35 21 - LEED Requirements.

- 1.3 CLOSEOUT
SUBMITTALS
- .1 Submit in accordance with Section 01 78 00 - Closeout Submittals.
 - .2 Operation and Maintenance Data: submit operation and maintenance data for acoustical suspension for incorporation into manual.
- 1.4 QUALITY
ASSURANCE
- .1 Certifications: submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- 1.5 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 off ground, indoors, 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 Develop Construction Waste Management Plan related to Work of this Section and in accordance with Section 01 35 21 - LEED Requirements.
 - .5 Packaging Waste Management: remove for reuse or return of pallets, crates, padding, banding, and packaging materials as specified in Construction Waste Management Plan in accordance with Section 01 74 21 - Construction/Demolition Waste Management.
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PART 2 - PRODUCTS

- 2.1 DESIGN CRITERIA .1 Design Requirements: maximum deflection:
1/360th of span to ASTM C 635/ASTM C635M
deflection test.
- .2 Design seismic restraint as required by
National Building Code of Canada.
- 2.2 MATERIALS .1 Intermediate duty system to ASTM C 635/ASTM
C635M.
- .2 Basic materials for suspension system:
commercial quality cold rolled steel zinc
coated with factory applied baked polyester
finish. Finish colour: standard white.
- .3 Suspension system: non fire rated, made up as
follows:
.1 2 directional exposed tee bar grid.
.2 Face Profile: 24 mm.
.3 Recycled content: minimum 50%
pre-consumer or post-consumer.
- .4 Exposed tee bar grid components: white.
Components die cut. Main tee with double web,
rectangular bulb and 25 mm rolled cap on
exposed face.
.1 Shadow line wall moulding.
- .5 Hanger wire: galvanized soft annealed steel
wire:
.1 3.6 mm diameter for access tile
ceilings.
- .6 Hanger inserts: purpose made.
- .7 Accessories: splices, clips, wire ties,
retainers and wall moulding shadow reveal, to
complement suspension system components, as
recommended by system manufacturer.
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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 and after receipt of written approval to proceed from Departmental Representative.

3.2 INSTALLATION

- .1 Manufacturer's Instructions: comply with manufacturer's written recommendations, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.
- .2 Installation: to ASTM C 636/C 636M except where specified otherwise.
- .3 Install suspension system to manufacturer's instructions.
- .4 Do not erect ceiling suspension system until work above ceiling has been inspected and approved by Departmental Representative.
- .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.

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- 3.2 INSTALLATION (Cont'd)
- .8 Ensure suspension system is co-ordinated with location of related components.
 - .9 Install wall moulding to provide correct ceiling height.
 - .10 Completed suspension system to support super-imposed loads, such as lighting fixtures, diffusers, grilles and speakers.
 - .11 Support at light fixtures and diffusers with additional ceiling suspension hangers within 150 mm of each corner and at maximum 600 mm around perimeter of fixture.
 - .12 Attach cross member to main runner to provide rigid assembly.
 - .13 Frame at openings for light fixtures, air diffusers, speakers and at changes in ceiling heights.
 - .14 Install access splines to provide 50% ceiling access.
 - .15 Finished ceiling system to be square with adjoining walls and level within 1:1000.
 - .16 Expansion joints:
 - .1 Supply and install "Z" shaped metal trim pieces at each side of expansion joint. Design to accommodate plus or minus 25 mm movement and maintain visual closure. Finish metal components to match adjacent exposed metal trim. Provide backing plates behind butt joints.
- 3.3 CLEANING
- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .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 74 11 - Cleaning.
 - .1 Touch up scratches, abrasions, voids and other defects in painted surfaces.
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3.3 CLEANING
(Cont'd)

- .3 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal and Section 01 35 21 - LEED Requirements.
.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.

3.5 SCHEDULE

- .1 As indicated.