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| Version | Date | Description of Revisions |
| 1 | August 30, 2006 | Approved final document. |
| 2 | November 13, 2009 | Modified ‘Related Section’ |
| 3 | June 25, 2012 | Addition of Reference and Replacement Parts sections on this page |
| 4 | July 9, 2012 | Reformatted to Reduce White Space |
| 5 | April 23, 2015 | General formatting |
| 6 | September 30, 2015 | First draft Phase 1 update AV |
| **7** | **December 14, 2015** | **Updated, Finalized Specification – Legal Reference eDOCS #6324301 v3 (AV)** |

NOTE:

This is a CONTROLLED Document. Any documents appearing in paper form are not controlled and should be checked against the on-line file version prior to use.

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**The on-line copy is the current version of the document.**

# GEneral

## Related Sections

### *[Under "Related Sections", identify other Sections that are related to, and/or dependent on, the work results or information specified elsewhere. The list should be limited to Sections with specific information that the reader might expect to find in this Section, but is specified elsewhere. For example, if hardware for aluminum entrances is specified in the aluminum entrance Section, a cross-reference would be appropriate in the finish hardware Section. The purpose of this cross-referencing is for information only, to aid in finding those other requirements—not to define the scope of the Section.*

### *Cross-referencing here may also be used to coordinate assemblies or systems whose components may span multiple Sections and which must meet certain performance requirements as an assembly or system.*

### *Contractor is responsible for coordination of the Work.*

### *This Section is to be completed/updated during the design development by the Consultant. If it is not applicable to the section for the specific project it may be deleted.]*

### *[List Sections specifying installation of products supplied but not installed under this Section and indicate specific items.]*

### Section [\_\_\_\_\_\_ – \_\_\_\_\_\_\_\_\_\_\_\_]: Execution requirements for ...[item]... specified under this Section.

### *[List Sections specifying products installed but not supplied under this Section and indicate specific items.]*

### Section [\_\_\_\_\_\_ – \_\_\_\_\_\_\_\_\_\_\_\_]: Product requirements for ...[item]... for installation under this Section.

### *[List Sections specifying related requirements.]*

### Section [\_\_\_\_\_\_ – \_\_\_\_\_\_\_\_\_\_\_\_]: [Optional short phrase indicating relationship].

## References

*[Delete .1 if Section 01060 – Regulatory Requirements is included in Contract Documents.]*

### Comply with the latest edition of the following statutes, codes, standards, and all amendments thereto:

#### American Society for Testing and Materials (ASTM International):

##### ASTM C635/C635M-13a, Standard Specification for the Manufacture, Performance and Testing of Metal Suspension Systems for Acoustical Tile and Lay-In Panel Ceilings.

##### ASTM C636/C636M-13, Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels.

#### Canadian Standards Association (CSA)

##### CSA B111-1974 (R2003), Wire Nails, Spikes and Staples.

#### Canadian General Standards Board (CGSB)

##### CAN/CGSB-51.34-M86, Vapour Barrier, Polyethylene Sheet, for Use in Building Construction and Amendment No. 1.

#### Underwriters Laboratories of Canada (ULC)

##### CAN/ULC-S102-10, Standard Method of Test for Surface Burning Characteristics of Building Materials.

## Design Requirements

### Maximum Deflection: 1/360th of span in accordance with ASTM C635/C635M-13a deflection test.

## Submittals

### Samples:

#### Submit samples in accordance with Section 01300 – Submittals.

#### Submit duplicate full size samples of each type acoustical units and ceiling suspension system.

### Shop Drawings:

#### Submit reflected ceiling plans for special grid patterns as indicated.

#### 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].

## Quality Assurance

### Regulatory Requirements:

#### Fire-resistance rated floor/ceiling and roof/ceiling assembly: Certified by Canadian Certification Organization accredited by Standards Council of Canada.

#### Fire-resistance rated suspension system: Certified by a Canadian Certification Organization accredited by Standards Council of Canada.

### Mock-up:

#### Construct mock-up [10] [\_\_\_] m2 minimum of [each type] [\_\_\_] acoustical [panel] [tile] ceiling including [one inside corner] [and] [one outside corner].

#### Construct mock-up where directed [by the Consultant].

#### Allow [24] [\_\_\_] hours for inspection of mock-up by the [Consultant] [\_\_\_] before proceeding with ceiling work.

#### When accepted, mock-up will demonstrate minimum standard for this work. Mock-up may [not] [\_\_\_] remain as part of the finished work.

## Environmental Requirements

### Permit wet work to dry before the commencement of installation.

### Maintain uniform minimum temperature of 15degrees Celsius and humidity of 20% to 35% before and during installation.

### Store materials in work area 48 hours prior to installation.

## Maintenance Materials

### Provide acoustical units amounting to [2%] [     ] of gross ceiling area for each pattern and type required for the Contract Work.

### Extra materials to be from same production run as installed materials.

### Clearly identify each type of acoustic unit, including colour and texture.

### Deliver extra materials to the [Consultant], upon completion of the work of this Section.

### Store where directed by the [Consultant].

## Measurement and Payment

*[Choose one of the following payment language provisions that best suits the individual project.*

*If this Section is not specifically referenced by an item in the Bid Form, please use the following language:*

### The work of this Section will not be measured separately for payment. All costs associated with the work of this Section shall be included in the Contract Price.

*OR If this Section is specifically referenced in the Bid Form, use the following language and identify the relevant item in the Bid Form:*

### All costs associated with the work of this Section shall be included in the price(s) for Item No(s). \_\_\_ in the Bid Form.

*If the work of this Section is to be measured and paid for by several different methods, please amend the standard wording given above to reflect the different methods of measurement and payment.*]

# PRODUCTS

## Materials – Acoustical Panels

### Acceptable Manufacturers:

#### *[Consultant to provide names of three acceptable manufacturers]*

#### Approved Equivalent

### Acoustic units for suspended ceiling system: to *[Consultant to find alternative to withdrawn standard CAN/CGSB 92.1 and amend]*

#### Type [\_\_\_\_\_].

#### Pattern [\_\_\_\_\_], Class [A], [   ].

#### Textures: [Smooth], [fine], [medium], [   ].

#### Flame spread rating of [\_\_\_\_] or less in accordance with CAN/ULC-S102-10.

#### Smoke developed [\_\_\_\_] or less in accordance with CAN/ULC-S102-10.

#### Noise reduction coefficient (NRC) designation of [\_\_\_\_].

#### Light reflectance range of [\_\_\_\_\_].

#### Ceiling plenum sound transmission range of [\_\_\_\_\_].

#### Edge type [square] [bevelled] [reveal edge], [    ].

#### Colour: [\_\_\_\_].

#### Size [\_\_\_\_\_] x [\_\_\_\_\_] x [\_\_\_\_] mm thick.

#### Shape [flat] [ vault shaped].

#### Fire-resistance rated, certified for use in [     ] hour floor/ceiling and roof/ceiling assembly. Certification Organizations Design No. [     ].

### Adhesive: type recommended by acoustic unit manufacturer.

### Staples, nails and screws: to [CSA B111-1974 (R2003)] non-corrosive finish as recommended by acoustic unit manufacturer.

### Fibrous acoustical media: to *[Consultant to find alternative to withdrawn standard CAN/CGSB 92.1 and amend]*, [\_\_\_\_] mm thick x [\_\_\_\_\_] x [\_\_\_\_\_] mm, density [\_\_\_\_] kg/m3, [with] [without] spacers, [flame spread rating of \_\_\_\_\_\_], and [smoke developed rating of \_\_\_\_\_] to [CAN/ULC-S102-10,) NRC \_\_\_\_\_\_].

### Spacers: [\_\_\_\_\_] mm x [\_\_\_\_\_\_] mm galvanized wire acoustical media supports, crimped and welded, to allow [\_\_\_\_] mm space between back of unit and acoustical media.

### Polyethylene: to [CAN/CGSB-51.34-M86], 0.15 mm thick.

### Hold down clips: purpose made clips to secure tile to suspension system, approved for use in fire-rated systems.

## Materials – Suspension System

### [Light] [Intermediate] [Heavy] duty system to ASTM C635/C635M-13a.

### Basic materials for suspension system: [commercial quality cold rolled steel] [zinc coated] [aluminum sheet] [mill finished].

### Suspension system: Non-fire rated, made up as follows:

#### Two directional exposed tee bar grid.

##### Acceptable material: [\_\_\_].

##### Approved Equivalent

#### One directional exposed tee bar grid.

##### Acceptable material: [\_\_\_].

##### Approved Equivalent.

#### [one] [two] directional concealed tee spline.

##### Acceptable material: [\_\_\_].

##### Approved Equivalent.

#### concealed tee access spline

#### concealed T&G runner

#### concealed H runner, tee spline and flat steel spline

#### concealed zee runner and flat steel spline.

##### Acceptable material: [\_\_\_].

##### Approved Equivalent

#### metal pan special tee system

### Fire-resistance rated suspension system: certified for use in [\_\_\_] hour, Certification Organizations Design No. [\_\_\_] floor/ceiling and roof/ceiling assembly, Certified [two directional exposed tee bar grid] [concealed tee spline] [concealed T & G runner] [concealed H runner, tee spline and flat steel spline] [concealed Zee runner and flat steel spline].

### Exposed tee bar grid components: [shop painted satin sheen] [white] [black] [colour] [clear anodized]. 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].

### Hanger wire: galvanized soft annealed steel wire.

#### 3.6 mm diameter for access tile ceilings.

#### In accordance with ULC design requirements for fire rated assemblies.

#### 2.6 mm diameter for [other] ceilings.

### Hanger inserts: purpose made.

### Carrying channels: 38 mm x [\_\_\_] mm channel, of [\_\_\_] mm thick [painted] [galvanized] steel.

### Accessories: splices, clips, wire ties, retainers and wall moulding [flush] [reveal], to complement suspension system components, as recommended by the system manufacturer.

# EXECUTION

## Examination

### Do not install acoustical panels and tiles until work above ceiling has been inspected by the Consultant.

## Installation – Suspension System

### Installation: in accordance with ASTM C636 except where specified otherwise.

### Install suspension system in accordance with the manufacturer's instructions [and Certification Organizations tested design requirements].

### Do not erect ceiling suspension system until work above ceiling has been inspected by the [Consultant].

### Secure hangers to overhead structure using attachment methods [as indicated] [acceptable to the [Consultant]].

### Install hangers spaced at maximum [1,200] mm centres and within [150] mm from ends of main tees.

### Lay out [centre line of ceiling both ways, to provide balanced borders at room perimeter] [with border units not less than 50% of standard unit width] [system according to reflected ceiling plan].

### Ensure suspension system is coordinated with the location of related components.

### Install wall moulding to provide the correct ceiling height.

### Completed suspension system to support super-imposed loads, such as [lighting fixtures] [diffusers] [grilles] and [speakers].

### 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.

### [Interlock] [Attach] cross member to main runner to provide rigid assembly.

### Frame at openings for light fixtures, air diffusers, speakers and at changes in ceiling heights.

### Install access splines to provide [10] [25] [50] percent ceiling access.

### Finished ceiling system is to be square with adjoining walls and level within 1:1000.

### Expansion joints

#### Erect two main runners parallel, [25] [50] mm apart, on building expansion joint line. Lay in strip of acoustic tile/board, [painted black], 25% narrower than space between 2 'T' bars.

#### 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.

## Installation - General

### Install acoustical panels and tiles in ceiling suspension system.

### Install fibrous acoustical media and spacers over entire area above suspended metal panels.

### 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 in accordance with [Certification Organizations design requirements.]

## Application

### Install [adhesive bonded] [stapled] [ screwed] [nailed] acoustic units to clean, dry and firm substrate.

### Install acoustical units [parallel to building lines with edge unit not less than 50% of unit width] [with directional pattern running in the same direction.] [Refer to reflected ceiling plan.]

### Scribe acoustic units to fit adjacent work. Butt joints tight, terminate edges with moulding.

## Interface With Other Work

### Coordinate ceiling work to accommodate the components of other Work impacting the ceiling work, such as light fixtures, diffusers, speakers, sprinkler heads, to be built into acoustical ceiling components.

## Schedule

*[Note: Consultant to insert provisions indicating the location of each acoustic unit. Coordinate with drawings and schedules on the Drawings.]*

### [\_\_\_\_\_].

## Cleaning

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

**END OF SECTION**