

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 09 29 00 – Gypsum Board.

1.2 REFERENCES

- .1 American Society for Testing and Materials (ASTM).
 - .1 ASTM A641/A641M-09a, Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire.
 - .2 ASTM A653/A653M-10, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
 - .3 ASTM C423-09a, Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.
 - .4 ASTM C635/C635M-07, Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.
 - .5 ASTM C636/C636M-08, Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels.
 - .6 ASTM E84-10b, Standard Test Method for Surface Burning Characteristics of Building Materials.
 - .7 ASTM E1264-08e1, Standard Classification for Acoustical Ceiling Products.
 - .8 ASTM E1414-06, Standard Test Method for Airborne Sound Attenuation Between Rooms Sharing a Common Ceiling Plenum.
 - .9 ASTM E1477-98a(2008), Standard Test Method for Luminous Reflectance Factor of Acoustical Materials by Use of Integrating-Sphere Reflectometers.
- .2 Underwriters Laboratories of Canada (ULC).
 - .1 CAN/ULC-S102-10, Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.

1.3 SYSTEM DESCRIPTION

- .1 Design Requirements.
 - .1 Maximum deflection: 1/360th of span to ASTM C635/C635M deflection test.

1.4 SUBMITTALS

- .1 Samples.
 - .1 Submit samples in accordance with Section 01 33 00.
 - .2 Submit 150 mm x 150 mm sample of each type of acoustical units.
 - .3 Submit 200 mm length of each type of wall moulding and suspension system including main runner and cross tee.

- .2 Closeout Submittals.
 - .1 Provide maintenance data for incorporation into Operation and Maintenance Manual specified in Section 01 78 00.

1.5 QUALITY ASSURANCE

- .1 Single-source responsibility: provide acoustical panel units and grid components by single manufacturer.
- .2 Surface Burning Characteristics: identify acoustical ceiling components with appropriate markings of applicable testing and inspecting organization.
 - .1 Surface Burning Characteristics: tested per ASTM E84 and complying with CAN/ULC-S102 and ASTM E1264 for Class A products, Flame Spread 25 or less, Smoke Developed 50 or less.

1.6 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver all material to site in manufacturer's original unopened packaging with labels clearly identifying product name and manufacturer.
- .2 Store materials in a dry, enclosed area protected from exposure to moisture, construction activity, and direct sunlight in strict accordance with manufacturer's recommendations.
- .3 Handle all products with appropriate precautions and care as stated manufacturer's instructions to avoid chipping edges or damaging units in any way.
- .4 Cleaning and Waste Management in accordance with Section 01 74 00.

1.7 SEQUENCING

- .1 Co-ordinate ceiling work to accommodate components of other Sections including, but not limited to gypsum board, mechanical systems, electrical systems, diffusers, and light fixtures.

1.8 MAINTENANCE

- .1 Comply with requirements of Section 01 78 00.
- .2 Provide maintenance materials as follows:
 - .1 Acoustical Ceiling Units: supply quantity of full-size units equal to 5 percent of amount installed for each type of unit.
 - .2 Exposed Suspension System Components: supply quantity of each exposed suspension component equal to 2 percent of amount installed.
- .3 Maintenance materials to be from same production run as installed materials.

Part 2 Products

2.1 MANUFACTURERS

- .1 Acceptable Products.
 - .1 Acoustical Ceiling System.
 - .1 Suspension System (typical).
 - .1 Armstrong Prelude XL 15/16".
 - .2 CertainTeed 15/16" Classic Hook.
 - .2 Acoustic Units (ACS).
 - .1 Armstrong Cortega #769.
 - .2 CertainTeed Baroque BET-197.

2.2 MATERIALS

- .1 Suspension System.
 - .1 Non-Rated Suspension System.
 - .1 All main beams and cross tees: commercial quality hot-dipped galvanized steel to ASTM A653/A653M , double-web steel construction with 15/16" exposed flange design, exposed surfaces chemically cleansed, capping pre-finished galvanized steel in baked polyester paint, rotary stitching.
 - .1 Structural Classification: ASTM C635/C635M Intermediate duty.
 - .2 Colour: white.
- .2 Acoustical Ceiling Units.
 - .1 Acoustic Units (ACS).
 - .1 Classification: Type III, Form 2, Pattern C D to ASTM E1264.
 - .2 Surface Texture: medium texture.
 - .3 Composition: wet-formed mineral fibre.
 - .4 Noise Reduction Coefficient (NRC): 0.55.
 - .5 Ceiling Attenuation Class (CAC): 35 to ASTM E1414.
 - .6 Light reflectance (LR): 0.82 to ASTM E1477.
 - .7 Edge Type: square edge.
 - .8 Colour: white.
 - .9 Size: 2'-0" x 4'-0" x 5/8" thick.
 - .10 Shape: flat.
 - .11 Fire Resistance: Class A.
 - .12 Surface Finish: factory-applied vinyl latex paint.

2.3 ACCESSORIES

- .1 Edge Mouldings and Trim: manufacturer's standard metal mouldings of types and profiles for edges and penetrations, including light fixtures, that fit type of edge detail and suspension system indicated. Provide mouldings with exposed flange of same width as exposed runner.

- .2 Attachment Devices: size for 5 times design load indicated in ASTM C635/C635M, Table 1, Direct Hung unless otherwise indicated.
- .3 Wire for Hangers and Ties: ASTM A641/A641M, Class 1 zinc coating, soft temper, pre-stretched, with yield stress load of at least 3 times design load, but not less than 12 gauge (0.106”) diameter.

2.4 FABRICATION

- .1 Fabricate acoustical units for suspended ceiling system to ASTM E1264.

Part 3 Execution

3.1 EXAMINATION

- .1 Do not install acoustic tiles in ceiling suspension system until work above ceiling has been inspected by Contract Administrator.
- .2 Do not proceed with installation until all wet work such as painting has been completed and thoroughly dried out.

3.2 PREPARATION

- .1 Measure each ceiling area and establish layout of acoustical units to balance border widths at opposite edges of each ceiling. Avoid use of less than half width units at borders and comply with reflected ceiling plans. Coordinate panel layout with mechanical, electrical, and sprinkler fixtures.

3.3 INSTALLATION

- .1 Install suspension system and panels in accordance with manufacturer’s printed instructions, and in compliance with ASTM C636/C636M and with authorities having jurisdiction.
- .2 Suspend main beam from overhead construction with hanger wires spaced 1220 mm on center along length of main runner and within 150 mm of ends. Install hanger wires plumb and straight spaced.
- .3 Install wall moldings at intersection of suspended ceiling, vertical surfaces, and lay-in diffusers. Miter corners where wall moldings intersect or install corner caps.
- .4 Install acoustical panels in coordination with suspended system, with edges resting on flanges of main runner and cross tees. Cut and fit panels neatly against abutting surfaces. Support edges by wall moldings.

3.4 ADJUSTING AND CLEANING

- .1 Replace damaged and broken panels.
- .2 Clean exposed surfaces of acoustical ceiling, including trim, edge moldings, and suspension members. Comply with manufacturer's instructions for cleaning and touch-up of minor finish damage. Remove and replace work that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION