SECTION 09 5100

ACOUSTICAL CEILINGS AND SUPPORT GRIDS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Suspended metal ceiling grid systems
2. Acoustical panels.

B. Related Sections:
1. Division 01: Administrative, procedural, and temporary work requirements.

1.2 REFERENCES

A. ASTM International (ASTM):
1. A641 - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire.
2. C635 - Standard Specification for Metal Suspension Systems for Acoustical Tile and Lay-In Panel Ceilings.
3. C636 - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels.
4. E1264 - Standard Classification of Acoustical Ceiling Products.
5. A653 – Standard specification for galvanized sheet steel

B. Ceiling and Interior Systems Construction Association (CISCA) - Ceiling Systems Handbook.

C. Underwriters Laboratories, Inc. (UL) - Fire Resistance Directory.

1.3 SUBMITTALS

A. Quality Control Submittals:
1. Certificates of Compliance: Certification from an independent testing laboratory that acoustical panels meet fire hazard classification requirements.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Minimum 5 years experience in work of this Section.

B. Installed System: Conform to International Building Code and UL.

C. Fire Hazard Classification: Class A rated, tested to ASTM E1264.

1.5 PROJECT CONDITIONS

A. Environmental Requirements: Install in approximately same conditions of temperature and humidity as will prevail after installation.

1.6 MAINTENANCE

A. Extra Materials: 2 percent of acoustical panels.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturers - Suspension System:
1. Armstrong World Industries, Inc. (www.ceilings.com)
2. Chicago Metallic Corporation. (www.chicago-metallic.com)
3. USG Interiors, Inc. (www.usg.com)
4. Cemco Steel Farming
5. Or eqaul

B. Acceptable Manufacturers - Acoustical Units:
1. Armstrong World Industries, Inc. (www.ceilings.com)
2. BPB America, Inc. (www.bpb-na.com)
3. USG Interiors, Inc. (www.usg.com)
4. Certainteed
5. Or equal

2.2 MATERIALS

A. Exposed Suspension Grid System:
1. ASTM C635, heavy duty, die cut, interlocking ends.
2. Grid type: Exposed T.
3. Material: Fire rated systems which shall be steel. Room R108 shall be extruded aluminum.
4. Runners: 1-1/2 inches high, 15/16 inch exposed width.
5. Perimeter molding: Angle shape.
6. Finish: Factory applied enamel paint, sprayed and baked, white color to match acoustical panels color.
7. Accessories: Stabilizer bars.

B. Concealed Suspension Grid System (for gypsum board ceiling):
1. ASTM A653, minimum thickness .0538 inches for channels and .0329 inches for hat sections.
2. Grid type: 2 ½ inch x ½ inch CR channels at 24 inch centers perpendicular to 7/8” hat sections at 16 inch centers.
3. Material: Cold rolled steel.
4. Runners: 2 1/2 inches high, 1/2 inch flange CR channel.
5. Framing: 7/8 inch CR hat section
6. Perimeter ties: CR angle shape, 1 inch x 1 inch.
7. Finish: Galvanized G60.
8. Accessories: Stabilizer bars.

C. Acoustical Panels:
1. Size: 24 x 24 inches x 3/4 inch min. thick. Tile in Room R108 shall be moisture resistant.
2. Edge configuration: Tegular.
3. Performance requirements: Tested in accordance with ASTM E1264. Fire rated systems shall be tested per ASTM E-84.
   a. NRC: .60.
   b. CAC: 35.
   c. Light reflectance: LR-.85.

2.3 ACCESSORIES

A. Support Channels: Galvanized steel; size and type to suit application.

B. Hanger Wire:
1. ASTM A641, minimum 12 gage galvanized steel.

C. Hold Down Clips: Minimum 24 gage spring steel, manufacturer's standard profile.

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D. Impact Clips: Minimum 24 gage spring steel, manufacturer's standard profile.

E. Touch-Up Paint: Color to match acoustical panels and suspension grid.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install ceilings in accordance with ASTM C636 and CISCA Handbook.

B. Minimize panels less than one half size.

C. Install molding around perimeters and abutting surfaces. Miter molding at exterior corners; cut flanges and bend web to form interior corners.

D. Space hanger wires maximum 48 inches on center. Install additional hangers where required to support light fixtures and ceiling supported equipment. Install diagonal wires as required to meet seismic requirements of the International Building Code and as required to stabilize grid.

E. Do not suspend hangers directly from metal deck. Attach steel channel horizontally to adjacent framing members; place hanger at regular spacing.

F. Hang suspension system independent of walls, columns, ducts, pipes, and conduit.

G. Where ducts or other equipment prevent regular spacing of hangers:
   1. Reinforce nearest related hangers to span extra distance, or:
   2. Suspend steel channel horizontally beneath duct or equipment; place hanger at regular spacing.

H. Exposed Grid:
   1. Install main tees at maximum 48 inches on center.
   2. Install cross tees to form 24 x 24 inch modules. Lock cross tees to main tees.
   3. Support ends of tees on flange of perimeter molding.
   4. Support ends of tees on flange of perimeter molding.
   5. Place acoustical panels with edges resting flat on suspension.

I. Concealed Grid:
   1. Install main CR channels at maximum 24 inches on center with tie wires.
   2. Install hat sections onto and perpendicular to CR channels on 16 inch centers
   3. Tie vertical and horizontal hat sections at ceiling level changes with continuous CR angles.
   4. Attach vertical hat sections at ceiling level changes to wood framing with screws.
   5. Stabilize and square grid with diagonal tie wires

J. Cutting Acoustic Units:
   1. Cut to fit irregular grid and perimeter edge trim and around penetrations.
   2. Locate cuts to be concealed.
   3. Cut and field paint exposed edges of reveal edge units to match factory edge.

K. Place hold down clips over cross tees at mid-point of each module.

L. Place impact clips over cross tees at mid-point of each module.

M. Lighting Fixture Protection: Form trapezoidal, five sided box of acoustical panels cut to size over each light fixture; conform to UL requirements.

N. Installation Tolerances: Ceilings level to 1/8 inch in 12 feet measured in any direction.

O. Fire rated systems: Install in strict conformance with manufacturer’s instructions.

3.2 ADJUSTING

A. Touch up minor scratches and abrasions to match factory finish.
B. Verify and adjust square and level of all ceiling systems as required.

END OF SECTION

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