
THIS SECTION IS BASED ON CHICAGO METALLIC'S "TEMPRA™ 4000 (9/16) EXPOSED"

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes: Provide metal suspension system for acoustical panel ceilings including but not limited to:
1. exposed metal suspension systems for acoustical panel ceilings.
- B. Related Sections:
1. Division 01 Section "Sustainable Design and LEED Requirements" for additional LEED requirements.
 2. Section 09 22 26, Suspension Systems.
 3. Section 09 51 13, Acoustical Panel Ceilings.
 4. Section 09 54 00, Specialty Ceilings.
 5. Section 09 58 00, Integrated Ceiling Assemblies.
 6. Section 13 48 00, Sound, Vibration, and Seismic Control.
 7. Section 23 50 00, Central Heating Equipment.
 8. Section 26 50 00, Lighting.

1.3 REFERENCES

- A. Abbreviations and Acronyms:
1. ASCE: The American Society of Civil Engineers; www.asce.org.
 2. CISCA: Ceilings & Interior Systems Construction Association; www.cisca.org.
 3. LEED: Leadership in Energy and Environmental Design; www.usgbc.org.
- B. Reference Standards:
1. ASCE 7-10 - Minimum design loads for buildings and other structures
 2. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
 3. ASTM C635/C635M - Standard Specification for Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings
 4. ASTM C636/C636M - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels
 5. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products
 6. ASTM C841 - Standard Specification for Installation of Interior Lathing and Furring

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| 7. | ASTM E119 | - Standard Test Methods for Fire Tests of Building Construction and Materials |
| 8. | ICC ES AC 156 | - Acceptance Criteria for Seismic Certification by Shake-Table Testing of Nonstructural Components |

1.4 SUBMITTALS

- A. Product Data: Submit sheets listing dimensions, load carrying capacity and standard compliance.
- B. Samples: Submit samples of main tee and cross tee with couplings.

1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Supply additional material equal to []% of ceiling area. Additional material should match products installed and have the appropriate labels and identification.
- B. Supply extra materials that match Products installed and are packaged with protective covering for storage and identified with labels describing contents.

1.6 QUALITY ASSURANCE

- A. Single-Source Responsibility: Provide acoustical panel units and grid components by a single manufacturer.
- B. Fire Performance Details: Suspension ceiling components will feature markings of applicable testing and inspecting organization.
- C. Fire-Resistance: As specified in ASTM E119 and listed in the determined ceiling design in the Underwriters Laboratories Fire Resistance Directory.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Protect system components from excessive moisture in shipment, storage, and handling. Deliver in unopened bundles and store in a dry place with adequate air circulation. Do not deliver material to building until wet conditions such as concrete, plaster, paint, and adhesives have been completed and cured to a condition of equilibrium.

1.8 WARRANTY

- A. Manufacturer Warranty: Submit a written warranty executed by manufacturer for a period of 40 years from date of Substantial Completion, agreeing to repair or replace suspension system components that fail or are compromised within the specified warranty period. Failed or compromised parts can include, but are not limited to:
 - 1. Rusting or defects directly made by the manufacturer.

PART 2 - PRODUCTS**2.1 MANUFACTURERS**

- A. Chicago Metallic Double Web [Intermediate] [Heavy] Duty Non-Fire Rated Suspension System manufactured by ROCKFON, 4849 South Austin Avenue, Chicago, IL 60638. 1-800-323-7164; www.rockfon.com.

2.2 MATERIALS

- A. Seismic Performance: Acoustical ceiling shall withstand the effects of earthquake motions determined according to ASCE 7 and ICC ES AC 156.
- B. Basic Steel Material and Finish: Commercial quality, CS Type A to ASTM A653/A653M, hot-dip galvanized to not less than G30 zinc coating designation.
- C. Main Tees and Cross Tees: All suspension main tee and cross tee components are manufactured from commercial quality steel with factory punched cross tee slots, hanger holes and integral bayonet-style end couplings. The main tees are capped with steel capping affixed to a flange and is coated with factory applied baked-on enamel paint.
1. Structural Classification Standard: ASTM C635/C635M [Intermediate] [Heavy] Duty.
 2. Color: Standard white unless otherwise noted.
 3. Specified Product: "Chicago Metallic Tempra™ 4000 (9/16) Exposed" by ROCKFON.
- D. Perimeter Treatment Components:
1. Angle Moldings: Manufactured from 0.020" thick steel and finished identical to main tees and cross tees.
 2. Channel Moldings: Manufactured from 0.018" thick steel with factory applied standard white baked-on enamel paint finish.
 3. Shadow Line Moldings: Manufactured from 0.020" thick steel with 3/4" and 3/8" hemmed edge and finished with factory applied standard baked-on enamel paint.

PART 3 - EXECUTION**3.1 EXAMINATION**

- A. Examine substrates, areas and conditions, including structural framing to which metal acoustical ceiling suspension assemblies attach or abut, with installer present, for compliance with requirements specified in this and other Sections affecting ceiling installation and anchorage and with requirements for installation tolerances and other conditions affecting performance of metal acoustical ceiling suspension assemblies.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install metal acoustical ceiling suspension assemblies to comply with ASTM C636/C636M and seismic design requirements indicated, according to manufacturer's written instructions and CISCA's "Ceiling Systems Handbook."

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- B. Main Tees: Installed [48"] [60"] on center, by direct suspension from existing structure in accordance with ASTM C754 and ASTM C841 with not less than 12 ga steel hanger wires, wrapped tightly 3 full turns, spaced 48" on center along component length.
 - C. Cross Tees:
 - 1. Installed perpendicular to main tees [20"] [24"] [30"] [48"] [60"] on center to form [] by [] modules.
 - 2. Installed perpendicular to module forming cross tees [20"] [24"] [30"] on center forming [] by [] modules.
 - 3. Installed adjacent to each unsupported side of recessed fixtures.
 - D. [Angle] [Shadow Line] Moldings: Installed on vertical surfaces, intersecting suspension components by appropriate method in accordance with industry accepted practice.

3.3 REPAIR

- A. Remove damaged or compromised components; replace with undamaged components.

3.4 CLEANING

- A. Clean exposed grid with non-solvent based non-abrasive commercial cleaning solution. Comply with manufacturer's instructions for cleaning grid components. Remove any components that cannot be effectively cleaned or repaired.

END OF SECTION