

**DIVISION 9 - FINISHES**  
**ACOUSTICAL SUSPENSION SYSTEMS**

**PART 1 - GENERAL**

**1-01 DESCRIPTION**

A. Lockheed procurement documents and Division 1 apply to work of this section.

B. Work included

Metal suspension systems for acoustical tile and lay-in panel ceilings.

C. Related work specified elsewhere

1. Rough Carpentry  
Section 06100
2. Gypsum Wallboard  
Section 09250
3. Acoustical Treatment  
Section 09500
4. Sprinkler System  
Division 15
5. Mechanical Registers and Grilles  
Division 15
6. Light Fixtures  
Division 16

**1-02 QUALITY ASSURANCE**

A. Acceptable manufacturers

As noted under Part 2.

B. Standards

1. Uniform Building Code

The design, fabrication and installation of acoustical suspension systems and installation of ceiling mounted items shall conform to Uniform Building Code (UBC), current adopted edition Chapter 47 and UBC Standard 47-18. The system shall not be used to support other loads such as conduit, communications lines, etc.

2. Framing system shall comply with ASTM C635, Standard Specification for Metal Suspension System for Acoustical Tile and Lay-in Panel Ceiling.

3. Ceiling and Interior Systems Contractors Guidelines for seismic restraint of direct hung suspended ceiling assemblies.

C. Qualifications of installer

By qualified installer acceptable to the manufacturer of suspension systems.

**1-03 SUBMITTALS**

A. Make submittals for approval in accordance with provisions of Section 01300.

1. Product data

Submit manufacturer's specifications and product data, including certified laboratory test reports, to show compliance with contract documents.

2. Shop drawings

Submit shop drawings of seismic bracing systems for review and acceptance prior to installation.

B. Make submittals of record in accordance with the provisions of Section 01700.

1. Record drawings

Record final seismic bracing location and details on record drawings.

**1-04 PRODUCT DELIVERY AND STORAGE**

Deliver manufacturer's materials in original packages, containers, or bundles bearing brand name and manufacturer's name. Keep stored in dry and protected area until used.

## **PART 2 - PRODUCTS**

### **2-01 ACCEPTABLE MANUFACTURERS**

- A. Armstrong Cork Company
- B. Chicago Metallic Corporation
- C. Conwed
- D. Donn Corporation

### **2-02 SUSPENSION SYSTEM DESIGN**

- A. T-bar system having UL label qualifying for one hour rating regardless of type lay-in panel used, compatible with acoustic lay-in panel selected.
- B. Suspension system shall be classified as heavy duty per current UBC and UBC Standards.
- C. Runner connections shall withstand 180 lbs. in tension or compression, or twice the actual load, whichever is greater.

### **2-03 SUSPENSION SYSTEM COMPONENTS**

- A. Grid members

Electro-galvanized steel, cold formed factory finished baked-on white enamel. Intersections of tees shall be joined with an independent interlocking clip that draws the members tightly together with bottom flanges flush. Provide expansion sleeves as required for one hour fire rated T-bar system.

- 1. Minimum depth  
1-1/2 in.
- 2. Minimum exposed flange width  
15/16 in.
- 3. Minimum thickness  
25 gauge

- B. Attachment clips

Electro-galvanized steel or stainless steel

C. Wall angles

1. 7/8 in. by 7/8 in. minimum by 25 gauge roll-formed from cold-rolled electro-galvanized steel, factory finished same as T-bars.
2. Runner connections capability

Withstand 180 lbs. in tension or compression, or twice the actual load, whichever is greater.

D. Hanger wires

12 gauge galvanized drawn and annealed steel wire in long prestraightened lengths (not coiled), cut to length.

### PART 3 - EXECUTION

#### 3-01 INSTALLATION

- A. Installation shall comply with the requirements of UBC Standard 47-18, Part II.
- B. Review area to receive the work to ensure that base work is complete and in acceptable condition. Report deficiencies to the Construction Engineer for correction.
- C. Protect adjacent surfaces from damage during application of materials. Keep materials clean during installation. Replace any dirty or defaced materials.
- D. Lay out ceiling areas, starting from center lines and working out in all directions, unless otherwise shown on drawings.
- E. Secure hangers to structure spaced a maximum of four feet on center. Attach to the beams or purlins with UL listed beam clamps or clips of a strength equivalent to that of a wire hanger. If conditions prevent suspending from structural steel, the hangers may be suspended from metal floor or roof deck as follows:  
  
Pass hanger wire through a small clearance hole in a 2 in. by 2 in. by 10 gauge steel plate with wire looped and welded to plate. Drill small clearance hole in bottom flute of deck hanger wire to pass through. Reference Facility Design Engineering Standard Details.
- F. Install the grid system in a flat plane. Level the entire system within 1/8 in. in 12 ft. All bottom flanges shall be flush.
- G. Brace ceiling grid system to walls or building framework to resist lateral seismic forces. Note location of compression struts on record drawings. Provide additional bracing as required to avoid obstructions such as ducts. Do not exceed 12 ft. maximum spacing between compression struts in any direction nor 6 feet from all perimeter walls.

- H. Install the system to meet special conditions at windows, columns, roll up doors, or elsewhere, as shown on drawings or required.
- I. The suspension system shall not be used to support or brace other systems such as conduit, wire, light fixtures, ducts, etc., unless specifically designed and detailed as such. Reference Facility Design Engineering Standard Details, Vol. II, III, and IV.
- J. Coordinate the work with work of other trades. Bear cost of any delay, damage, or default resulting from lack of cooperation or coordination with other sections.

END OF SECTION