

# Acoustical Ceiling Systems

Many renovations or repair projects do not have an architectural drawing available. In the absence of a design drawing the following shall be used as a construction standard for the installation of suspended ceilings and recessed lighting installed (there in).

## PREPARATION

- A. Coordination: Furnish layouts for preset inserts, clips, and other ceiling anchors whose installation is specified in other sections.
  - 1. Furnish concrete inserts and similar devices to other trades for installation well in advance of time needed for coordination of other work.
- B. Measure each ceiling area and unless shown differently on plans, 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.

## INSTALLATION

- A. General: Install acoustical ceiling systems to comply with installation standard referenced below, per manufacturer's instructions and CISCA "Ceiling Systems Handbook."
  - 1. Standards for Installation or Ceiling Suspension Systems" Comply with ASTM C 636 and ASTM E 580 (for seismic installs only).
- B. Arrange acoustical units and orient directionally patterned units in a manner shown by reflected ceiling plans.
- C. Suspend ceiling hangers from building structural members and as follows:
  - 1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or ceiling suspension system. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
  - 2. Where width of ducts and other construction within ceiling plenum produces hanger spacing that interfere with the location of hangers at spacing required to support standard suspension system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards.

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3. Secure wire hangers by looping and wire-tying, either directly to structures or to inserts, eyescrews, or other devices that are secure and appropriate for substrate, and in a manner that will not cause them to deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
  4. Secure flat, angle, channel, and rod hangers to structure, including intermediate framing members, by attaching to inserts, eyescrews, or other devices that are secure and appropriate for structure to which hangers are attached as well as for type of hanger involve, and in a manner that will not cause them to deteriorate or fail due to age, corrosion, or elevated temperatures.
  5. Do not support ceilings directly from permanent metal forms; furnish cast-in-place hanger inserts that extend through forms.
  6. Do not attach hangers to steel deck tabs.
  7. Space hangers not more than 4' –0" o.c. along each member supported directly from hangers, unless otherwise shown, and provide hangers not more than 8 inches from ends of each member.
- D. Install edge molding of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical units.
1. Sealant Bed: Apply continuous ribbon of acoustical sealant, concealed on back of vertical leg before installing moldings.
  2. Screw attach moldings to substrate at intervals not over 16 inches o.c. and not more than 3 inches from ends, leveling with ceiling suspension system to tolerance of 1/8 inch in 12' –0". Miter corners accurately and connect securely.
- E. Install acoustical panels in coordination with suspension system, with edges concealed by support of suspension members. Scribe and cut panels to fit accurately at borders and at penetrations.
1. Install hold down clips in areas indicated and in areas where required by governing regulation or for fire resistance ratings; space as recommended by panel manufacturer, unless otherwise indicated or required.

## CLEANING

Clean exposed surfaces of acoustical ceilings, 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.

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## **INSTALLATION OF LIGHTING FIXTURES**

Examine ceiling layout and construction; order fixtures and accessories for particular construction in which they will be installed. Coordinate fixture installation with work of other trades. Submit coordinated locations and mounting heights of fixtures to approving authority for review. Fixtures shall be securely attached to the building structure by mechanical means and by safety wire. Provide box-mounted studs and additional structural supports as required. Provide four safety wires per fixture. Each safety wire shall be capable of supporting four times the weight of the fixture. Safety wire shall be adjusted to be in slack tension. Recessed fixtures shall be attached to ceiling grid with seismically rated clips. Provide four clips per fixture.