



Designation: C 636 – 96

Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels¹

This standard is issued under the fixed designation C 636; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the Department of Defense.

1. Scope

1.1 This practice covers the installation of suspension systems for acoustical tile and lay-in panels. It is applicable to contractors whose services are utilized for installing acoustical ceilings and to other trades if their activities are responsible for interference with ceiling components or performance as defined in this recommended practice.

1.2 While the practices described in this document have equal application to rated fire-resistive suspension systems, additional requirements may have been imposed to obtain the fire endurance classification of particular floor-ceiling or roof-ceiling assemblies. These details should be obtained from the manufacturers.

1.3 Similarly, additional detailing may be necessary to meet sound attenuation requirements when ceiling plenums extend over contiguous rooms. These, too, should be obtained from the manufacturer of the acoustical material employed.

1.4 The values stated in inch-pound units are to be regarded as the standard.

1.5 While many of the practices described in this practice have application to the installation of metal suspension systems in exterior environments, the specific design of exterior ceiling installations requires the review and approval of the architect, engineer, or both, who are responsible for the construction of the building or modifications to an existing building. While recommendations from the manufacturer should be solicited, it remains the final responsibility of the architect/engineer to ensure proper application of the materials in question.

1.6 *This standard does not purport to address of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Installation of Components

2.1 Hangers:

¹ This practice is under the jurisdiction of ASTM Committee E-33 on Environmental Acoustics and is the direct responsibility of Subcommittee E33.04 on Application of Acoustical Materials and Systems.

Current edition approved June 10, 1996. Published August 1996. Originally published as C 636 – 69. Last previous edition C 636 – 92^{e1}.

2.1.1 Where acoustical ceilings are suspended from a structure of wood construction, attach hangers with suitable mechanical devices either to the bottom edge of the wood joists or to the vertical face of the wood joists near the bottom edge. Holding power tests certified by the manufacturer must be available on request for bottom edge attachment devices.

2.1.2 Where acoustical ceilings are suspended from a structure of concrete construction, mount hangers using cast-in-place hanger wires, hanger inserts, or other hanger attachment devices whose suitability has been demonstrated by standard construction practice or by certified test data.

2.1.3 Space hangers for carrying channels or main runners 4 ft 0 in. (1.2 m) on centers. If local situations allow greater center distances between hangers, reduce the load-carrying capacity of the ceiling suspension system commensurate with the actual center-to-center hanger distances used.

2.1.4 Each suspension wire shall not hang more than one in six out of plumb unless a countersloping wire or horizontal bracing is provided. See Fig. 1 for allowable countersloping methods. Suspension wires should not press against ducts or pipes.

2.1.5 Hangers formed from galvanized sheet metal stock shall be suitable for suspending carrying channels or main runners from an existing structure provided that the hangers do not yield, twist, or undergo other objectionable movement.

2.1.6 Wire hangers for suspending carrying channels or main runners from an existing structure shall be prepared from a minimum of No. 12-gage (2.05-mm) galvanized, soft-annealed, mild steel wire.

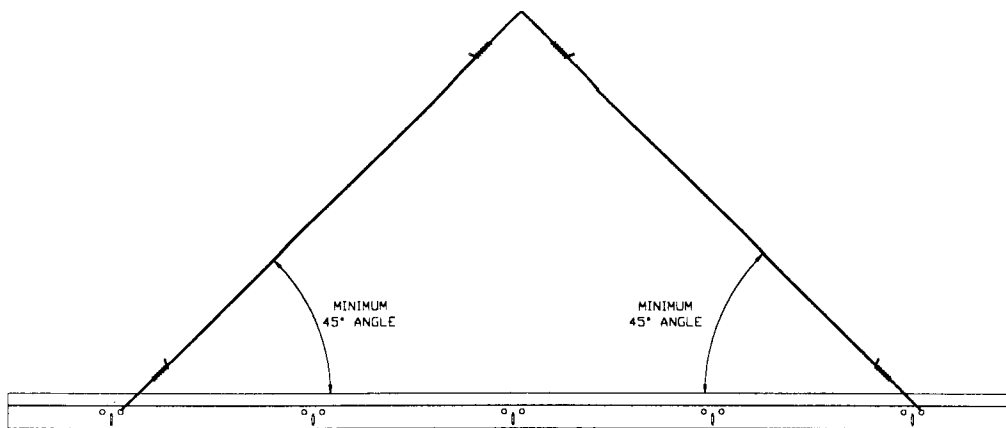
2.1.7 In some installations hanger wires are secured to special attachment devices that support the carrying channels or main runners. Such attachment devices shall have certified load test data from an independent test laboratory and shall be capable of carrying five times the design load.

2.2 Carrying Channels:

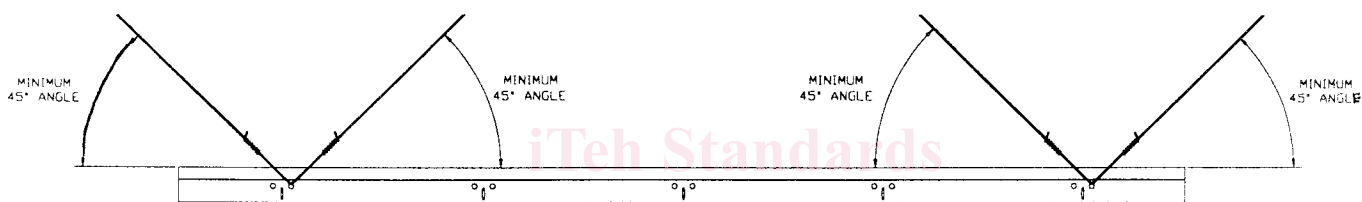
2.2.1 Install the carrying channels so that they are all level to within $\frac{1}{8}$ in. in 12 ft (3.2 mm in 3.66 m).

2.2.2 Perform leveling with the supporting hangers taut to prevent any subsequent downward movement of the carrying channels when the ceiling loads are imposed.

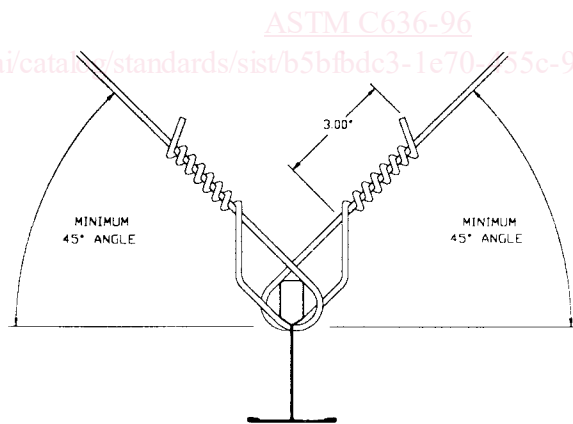
2.2.3 Local kinks or bends shall not be made in hanger wires



METHOD 1



METHOD 2



METHOD 3

FIG. 1 Allowable Countersloping Methods

as a means of leveling carrying channels.

2.2.4 In installations where hanger wires are wrapped around carrying channels, the wire loops shall be tightly formed to prevent any vertical movement or rotation of the member within the loop.

2.3 Main Runners:

2.3.1 Install main runners so that they are all level to within 1/4 in. in 10 ft (6.4 mm in 3.05 m). Determine evaluation of levelness from measurements taken below hanger points. Make

the measurements after completion of the ceiling installations but prior to building occupancy.

2.3.2 Where main runners are supported directly by hangers, perform leveling with the supporting hanger taut to prevent any subsequent downward movement of the main runners when the ceiling loads are imposed.

2.3.3 Local kinks or bends shall not be made in hanger wires as a means of leveling main runners.

2.3.4 In installations where hanger wires are wrapped