



Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings¹

This standard is issued under the fixed designation C 635; 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 specification covers metal ceiling suspension systems used primarily to support acoustical tile or acoustical lay-in panels.

1.2 Some suspension systems incorporate locking assembly details that enhance performance by providing some continuity or load transfer capability between adjacent sections of the ceiling grid. The test methods included in this specification do not provide the means for making a complete evaluation of continuous beam systems, nor for assessing the continuity contribution to overall system performance. However, the test methods can be used for evaluating primary structural members in conjunction with secondary members that interlock, as well as with those of noninterlocking type.

1.3 While this specification is applicable to the exterior installation of metal suspension systems, the atmospheric conditions and wind loading require additional design attention to ensure safe implementation. For that reason, a specific review and approval should be solicited from the responsible architect and engineer, or both, for any exterior application of metal suspension systems in the construction of a new building or building modification.

1.4 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are provided for information purposes only.

1.5 The following safety hazards caveat pertains only to the test methods described in this specification. *This standard does not purport to address all 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. Referenced Documents

2.1 ASTM Standards:

B 117 Practice for Operating Salt Spray (Fog) Apparatus²

3. Terminology

3.1 Definitions:

3.1.1 Where these terms appear in this specification they shall have the meaning herein indicated as follows:

3.1.1.1 *backing board*—a flat sheet of gypsum board to which acoustical tile is attached using adhesive, screws, staples, or other suitable means (Fig. 1c).

3.1.1.2 *bow*—the maximum component of deviation in the vertical plane of a main runner, cross runner, or wall molding where the centroidal axis of these structural components has been permanently deformed from end to end into the shape of a simple regular curve during the manufacturing process (Fig. 2).

NOTE 1—The meanings for *bow* and *camber* given here may differ from those applied elsewhere.

3.1.1.3 *camber*—the maximum component of deviation in the horizontal plane of a main runner, cross runner, or wall molding where the centroidal axis of these structural components has been permanently deformed from end to end into the shape of a simple regular curve during the manufacturing process (Fig. 2).

3.1.1.4 *carrying channel or hanging channel*—the three-sided or “[”-shaped metal sections that support the entire structural grid network in some forms of mechanical ceiling suspension systems (Fig. 1b). The carrying channels are usually suspended by hanger wires from the existing structure and the main runners are then attached to the channels.

3.1.1.5 *ceiling suspension system*—the entire network or grid of structural components, as defined by the ceiling suspension system manufacturer, that provides support for

¹ This specification 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 May 10, 2000. Published August 2000. Originally published as C 635 – 69. Last previous edition C 635 – 97.

² *Annual Book of ASTM Standards*, Vol 03.02.