



Standard Practice for Installing Sound-Isolating Lightweight Partitions¹

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1. Scope

1.1 This practice covers measures intended to prevent situations or conditions that will detract from the sound-insulating properties of acoustically-rated lightweight partitions. It is not intended to include all sound insulating constructions. Many acoustically-rated partitions are also fire rated and when being installed must be built in accordance with the construction details specified in the fire test construction. In any event, applicable building codes and regulations should be checked for possible conflicts.

1.2 Excluded from this scope are masonry type partitions having all or part of their construction from brick, concrete block, aggregate block, plaster block, poured concrete, etc. Also excluded are operable and demountable partitions (Operable are those partitions with a mechanism for easy movement; demountable partitions are those which are designed and installed with the intent of later being taken down and re-erected by a crew over a period of time, with the components being reusable). Not excluded are those partitions which are lightweight but have thin brick, tile, or plaster on one or both faces.

1.3 Plumbing wall and kitchen problems are excluded from this document.

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

1.5 *This standard may involve hazardous materials, operations, and equipment. This standard does not purport to address all of the safety concerns 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:

C 634 Terminology Relating to Environmental Acoustics²

¹ This practice is under the jurisdiction of ASTM Committee E-33 on Environmental Acoustics, and is the direct responsibility of Subcommittee E 33.04 on Application of Acoustical Materials and Systems.

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² *Annual Book of ASTM Standards*, Vol 04.06.

C 919 Practice for Use of Sealants in Acoustical Applications³

E 90 Test Method for Laboratory Measurement of Airborne-Sound Transmission Loss of Building Partitions²

E 336 Test Method for Measurement of Airborne Sound Insulation in Buildings²

E 413 Classification for Rating Sound Insulation²

E 597 Practice for Determining Single-Number Rating of Airborne Sound Isolation for Use in Multi-Unit Building Specifications²

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

3.1.1 *caulking*—a non-hardening permanently resilient material used to seal sound leaks and to damp vibration.

3.1.2 *sound leaks*—openings, often extremely small holes or cracks, through which sound can pass. In general, an air leak is a sound leak.

3.1.3 *short-circuit*—to reduce the transmission loss of a partition by direct connections that have low resistance to sound.

3.2 Definitions—for additional definitions of terms used in this standard, see Terminology C 634.

4. Summary of Practice

4.1 This practice details precautions that should be taken during the installation of lightweight partitions to maximize their sound insulating effectiveness. Potential problems with flanking sound transmission and sound leaks are discussed and methods to avoid these are offered. A number of figures and drawings are included to illustrate the potential errors and suggested precautions.

5. Significance and Use

5.1 Many of the benefits of walls with high sound transmission class ratings (STC), can be lost because of poor construction details or improper installation. Established reputable manufacturers of building materials and systems exercise great care to properly determine the acoustical performance of their products and, specifically, the ability of wall systems to attenuate sound. The laboratory-measured performance of

³ *Annual Book of ASTM Standards*, Vol 04.07.