Designation: D 1779 – 98

Standard Specification for Adhesive for Acoustical Materials[1]

This standard is issued under the fixed designation D 1779; 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 an adhesive for bonding prefabricated acoustical materials to the inside walls and ceilings of rooms in buildings. This adhesive is required to maintain a tensile adhesion (bond strength) of not less than 3.45×10^4 dynes/cm^2 (½ lb/in.^{2}) for a long period of time under the temperature and moisture conditions likely to be encountered and to maintain sufficient plasticity to allow for movement of parts of the building as it ages.

NOTE 1—*Cleanliness of Surface*—The surface to which the acoustical material is applied with the adhesive should be clean, sound, and dry. Surface coatings should be removed if their nature indicates an unsatisfactory installation, so that the adhesive can be applied to the base. When the adhesive is to be applied on a painted surface, test tile should be applied for 48 h to determine suitable adherence of the coating by examination. Acoustical adhesives are not intended to be applied to surfaces that are moist and that have an alkaline reaction, or that may later become moist or alkaline. Such surfaces, as concrete or plaster, should be properly dried and aged before applying the adhesive.

NOTE 2—*Load*—This adhesive is not recommended as a sole means of holding acoustical materials weighing more than 121 kg/m^2 (2½ lb/ft^2) to ceiling surfaces.

NOTE 3—*Amount and Condition of Material*—It is recommended that sufficient adhesive be used so that there is a contact surface of not less than 1.2×10^4 cm^2/m^2 (20 in.^{2}/ft^2) of acoustical material, with a minimum thickness of 0.3 cm (⅛ in.) and that the adhesive be applied in four separate nearly spherical portions of approximately equal size near the corners for a standard 30.5 by 30.5-cm (12 by 12-in.) tile. Fewer than or more than four portions for 30.5 by 30.5-cm tile are not recommended due to difficulty in leveling and in securing effective contact area on all portions. Adhesives that are hard, or do not wet the surface, or are difficult to spread should not be used.

NOTE 4—*Rigidity of Base Surfaces*—It is necessary that the material forming the base to which the adhesive is attached should be relatively smooth, firm, and rigid. If the pressure of applying tile and adhesive causes the base material to deflect excessively, tile previously applied may have their adhesive bond broken. This occurs on some types of gypsum board suspension systems.

NOTE 5—*Aging*—To date, no accelerated aging tests for adhesives have been developed to duplicate exactly aging in service. The aging tests in this specification are designed to accelerate the aging process and to test various manifestations of aging, and are intended to be satisfactory for comparing one adhesive with another; they do not necessarily reflect aging characteristics on an absolute basis. Purchasers of adhesives should receive from the manufacturer additional warranties and assurances of performance of the adhesive under normal aging.

NOTE 6—*Erection Practices*—Proper erection techniques are essential for proper performance of any acoustical adhesive. Use of a material meeting this specification will not in itself guarantee satisfactory performance. Only when tiles are applied by skilled and experienced workers following instructions from the manufacturer can the purchaser be assured of satisfactory performance of an adhesive.

1.2 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.3 *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:*

C 37 Specification for Gypsum Lath[2]

D 618 Practice for Conditioning Plastics and Electrical Insulating Materials for Testing[3]

D 907 Terminology of Adhesives[4]

E 104 Practice for Maintaining Constant Relative Humidity by Means of Aqueous Solutions[5]

2.2 *Federal Specification:*

MMM-A—00150B Interim Federal Specification for Acoustical Materials[6]

[1] This specification is under the jurisdiction of ASTM Committee D-14 on Adhesives and is the direct responsibility of Subcommittee D14.70 on Construction Adhesives.

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[2] *Annual Book of ASTM Standards*, Vol 04.01.

[3] *Annual Book of ASTM Standards*, Vol 08.01.

[4] *Annual Book of ASTM Standards*, Vol 15.06

[5] *Annual Book of ASTM Standards*, Vol 11.03.

[6] Available from Standardization Documents Order Desk, Bldg. 4 Section D, 700 Robbins Ave., Philadelphia, PA 19111–5094, Attn: NPODS.