



Designation: C 916 – 85 (Reapproved 1996)<sup>ε1</sup>

## Standard Specification for Adhesives for Duct Thermal Insulation<sup>1</sup>

This standard is issued under the fixed designation C 916; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

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

<sup>ε1</sup> NOTE—Keywords were added editorially in October 1996.

### 1. Scope

1.1 This specification covers minimum material requirements, and safety precautions in application, for adhesives to bond thermal insulation duct liner on the interior surfaces of sheet metal air conditioning ducts; and for coating exposed edges and joints of duct liner thermal insulation to minimize erosion of insulation fibers by air movement.

1.2 *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.* For specific precautionary statements, see Sections 7 and 9.

### 2. Referenced Documents

#### 2.1 ASTM Standards:

C 168 Terminology Relating to Thermal Insulating Materials<sup>2</sup>

D 93 Test Methods for Flash Point by Pensky-Martens Closed Cup Tester<sup>3</sup>

D 903 Test Method for Peel or Stripping Strength of Adhesive Bonds<sup>4</sup>

D 1151 Test Method for Effect of Moisture and Temperature on Adhesive Bonds<sup>4</sup>

E 84 Test Method for Surface Burning Characteristics of Building Materials<sup>5</sup>

#### 2.2 Other Standards:

NFPA No. 30, Flammable and Combustible Liquids Code<sup>6</sup>

SMACNA Duct Liner Application Standard<sup>7</sup>

ACGIH Threshold Limit Values<sup>8</sup>

### 3. Terminology

#### 3.1 Definitions:

3.1.1 *threshold limit value (TLV)*—the concentration in parts of vapor per million parts of air, by volume at 25°C and 101.3 kPa (1 atm) pressure. This value is an indication of the relative inhalation toxicity hazard of vapors from volatile solvents used in adhesives. Data on TLV of materials are published annually by ACGIH.

3.1.2 For definitions of other terms on thermal insulating materials used in this specification, see Terminology C 168.

#### 3.2 Definitions of Terms Specific to This Standard:

3.2.1 *flammable vehicle*—in an adhesive, the liquid portion having a flash point as determined by Test Methods D 93.

3.2.2 *nonflammable vehicle*—in an adhesive, the liquid portion having no flash point as determined by Test Methods D 93.

### 4. Classification of Adhesives

4.1 Adhesives supplied under this specification are classified as follows:

4.1.1 *Type I*—An adhesive in which the vehicle is nonflammable in the liquid (wet) state and which will pass the edge-burning test of 6.2.

4.1.2 *Type II*—An adhesive in which the vehicle is nonflammable in the liquid (wet) state and which will not pass the edge-burning test of 6.2.

4.1.3 *Type III*—An adhesive in which the vehicle is flammable in the liquid (wet) state and which will pass the edge-burning test of 6.2.

4.1.4 *Type IV*—An adhesive in which the vehicle is flammable in the liquid (wet) state and which will not pass the edge-burning test of 6.2.

### 5. Ordering Information

5.1 Attention of the purchaser is directed to the fact that four types of adhesives are available under this specification. If the purchaser does not specify which type is desired, the supplier shall furnish Type I only. Other purchaser options are described in 6.1.4 and 6.1.5.

### 6. Physical Requirements

#### 6.1 Requirements Applicable to All Types:

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee C-16 on Thermal Insulation and is the direct responsibility of Subcommittee C16.33 on Thermal Insulation Finishes and Thermal Transmission.

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<sup>2</sup> *Annual Book of ASTM Standards*, Vol 04.06.

<sup>3</sup> *Annual Book of ASTM Standards*, Vol 05.01.

<sup>4</sup> *Annual Book of ASTM Standards*, Vol 15.06.

<sup>5</sup> *Annual Book of ASTM Standards*, Vol 04.07.

<sup>6</sup> National Fire Protection Assn., Batterymarch Park, Quincy, MA 02269.

<sup>7</sup> Sheet Metal and Air Conditioning Contractors National Assn., 4201 Lafayette Center Drive, Chantilly, VA 22021.

<sup>8</sup> American Conference of Governmental Industrial Hygienists, 1330 Kemper Meadow Dr., Cincinnati, OH 45240.