



Standard Guide for Installation of Flexible Closed Cell Preformed Insulation in Tube and Sheet Form¹

This standard is issued under the fixed designation C1710; 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.

1. Scope

1.1 This guide covers recommended installation techniques for flexible closed cell pre-formed insulation in tube or sheet form. This guide is applicable to materials manufactured in accordance with Specification C534 (Elastomeric based insulation) or Specification C1427 (polyolefin based insulation). The materials covered in this guide encompass a service temperature of -297 to 300°F (-183 to 150°C) as indicated in the material specifications referenced above. Many of the recommendations made are specific to below ambient applications only.

1.2 The purpose of this guide is to optimize the thermal performance and longevity of installed closed cell flexible insulation systems. By following this guide, the owner, and designer can expect to achieve the energy savings expected and prevention of condensation under the specified design conditions. This document is limited to installation procedures and does not encompass system design.

1.3 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.4 *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:²

C168 Terminology Relating to Thermal Insulation

¹ This guide is under the jurisdiction of ASTM Committee C16 on Thermal Insulation and is the direct responsibility of Subcommittee C16.40 on Insulation Systems.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

C534 Specification for Preformed Flexible Elastomeric Cellular Thermal Insulation in Sheet and Tubular Form

C585 Practice for Inner and Outer Diameters of Thermal Insulation for Nominal Sizes of Pipe and Tubing

C1427 Specification for Extruded Preformed Flexible Cellular Polyolefin Thermal Insulation in Sheet and Tubular Form

2.2 Other Standards:

National Commercial, Industrial Insulation Standards (MICA Manual)³

ASHRAE Handbook (Fundamentals – Chapter 26)⁴

ASHRAE Handbook (Refrigeration – Chapter 33)⁴

3. Terminology

3.1 *Definitions*—Terminology C168 shall be considered as applying to the terms in this specification.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *seams*—Longitudinal or horizontal cross-sections where insulation meets and must be adhered to itself or other system components.

3.2.2 *butt joints*—Cross-sections where two pieces of tubular or sheet insulation must be adhered to itself or other system components.

3.2.3 *vapor (water) stops*—Locations / methods to prevent water or water vapor from traveling from one pipe insulation section to an adjacent insulation and prevent water traveling down the annular space between the pipe insulation and the tubular pipe.

3.2.4 *sleeving/multi layering*—Applying another layer of insulation over the first layer. This process is used when the insulation thickness required is greater than that which is commercially available. This technique is also employed when proper installation practice requires multiple layers and or staggered joint application, even if a single layer thickness is available.

³ Available from MICA (Midwest Insulation Contractors Association) 16712 Elm Circle, Omaha, NE 68130. <http://www.micainsulation.org>.

⁴ Available from American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Inc. (ASHRAE), 1791 Tullie Circle, NE, Atlanta, GA 30329, <http://www.ashrae.org>.