



Standard Practice for Inner and Outer Diameters of Thermal Insulation for Nominal Sizes of Pipe and Tubing¹

This standard is issued under the fixed designation C585; 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 practice is intended as a dimensional standard for preformed thermal insulation for pipes and tubing.

1.2 This practice covers insulation supplied in cylindrical sections and lists recommended single layer inner and outer diameters of insulation having nominal wall thicknesses from 1/2 to 5 in. (13 to 127 mm) to fit over standard sizes of pipe and tubing.

1.3 The values stated in inch-pound units are to be regarded as the standard. The values stated in SI units are provided for information only.

1.4 *This standard does not purport to address 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

C302 Test Method for Density and Dimensions of Preformed Pipe-Covering-Type Thermal Insulation

3. Terminology

3.1 *Definitions*—Definitions pertaining to insulation are defined in Terminology **C168**.

4. Significance and Use

4.1 The purpose of this practice is to ensure satisfactory fit on standard sizes, to accommodate radial expansion of pipes and tubes which are heated after being insulated, and to

minimize the number of insulation sizes and thicknesses to be manufactured and stocked.

4.2 While it is possible to manufacturer insulation to these recommended dimensions, exercise care in attempting to nest layers of different materials, or layers supplied by different manufacturers. Individual manufacturing processes will operate at slightly different tolerances. While the product will fit the pipe, it is possible that it will not readily nest as the outer layer between the different materials, or with a different manufacturer, and possibly the same manufacturer. Exercise care to determine these differences before specifying or ordering nesting sizes.

4.3 The wide range of outer diameter dimensional tolerances will prevent many pipe and tube insulations from nesting for staggered joints or double layered applications, or both unless specified when ordered from the manufacturer, distributor, or fabricator.

4.4 Dimensions in accordance with this practice do not necessarily permit application of one thickness of pipe insulation over another (Nesting or Simplified Dimensional System) to obtain total thicknesses greater than those manufactured as single layer, or for multilayer application when desired.

5. Summary of Practice

5.1 This practice provides for each pipe and tubing sizes the inner diameters with tolerances for calcium silicate, cellular foam plastics, cellular glass, mineral fiber, and perlite preformed pipe and tubing insulation identified by **Table 1** and **Table 2**.

5.2 This practice provides for each pipe and tubing sizes the outer diameters for calcium silicate, cellular foam plastics, cellular glass, mineral fiber, and perlite preformed pipe and tubing insulation identified by **Table 3**, **Table 4**, **Table 5** and **Table 6**.

5.3 This practice provides for a range of pipe and tubing sizes the outer diameter tolerances for calcium silicate and perlite preformed pipe and tubing insulation identified by **Table 3a**, **Table 4a**, **Table 5a**, and **Table 6a**.

5.4 This practice provides for a range of pipe and tubing sizes the outer diameters tolerances for cellular foam plastics,

¹ This practice is under the jurisdiction of ASTM Committee **C16** on Thermal Insulation and is the direct responsibility of Subcommittee **C16.20** on Homogeneous Inorganic Thermal Insulations.

Current edition approved May 1, 2016. Published May 2016. Originally approved in 1966 to replace C312 and C521. Last previous edition approved in 2010 as C585 – 10. DOI: 10.1520/C0585-10R16.

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.