



Designation: C450 – 08 (Reapproved 2014)

Standard Practice for Fabrication of Thermal Insulating Fitting Covers for NPS Piping, and Vessel Lagging¹

This standard is issued under the fixed designation C450; 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 provides tables of dimensions of preformed insulation that shall be used in fabricating covers for use on valves, ells, tees, flanges, and vessels in the pressure range from 150 to 1500 psi (1 to 10 MPa). These tables, which are part of this standard, are published separately as the ASTM Recommended Dimensional Standards for Fabrication of Thermal Insulation Fitting Covers for NPS Piping, and Vessel Lagging. The tables provide dimensions for use in forming pipe fitting covers for NPS pipe operating at high temperature and low temperature. The tables also include dimensions for use in forming thermal insulation into curved segments, and lagging, for application on vessels. This practice does not apply to reflective-type insulation.

1.2 This practice does not specify fabrication methods. Thermal insulation for fitting covers is formed by numerous fabrication methods. In general, insulations are cut by circular or band saws, shaped by grinders or millers, or molded. Each method has certain advantages and disadvantages, depending upon the material to be formed, number of cuts required, material waste permissible, and quantity of fittings being produced. Fitting parts are assembled using adhesives and fabrication cements applied using dip pots, rollers, doctor blades, brush, or trowel, depending upon the materials being used. Any specification of the fabrication techniques is beyond the scope of this standard.

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.*

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 April 1, 2014. Published April 2014. Originally approved in 1960. Last previous edition approved in 2008 as C450–08. DOI: 10.1520/C0450-08R14.

2. Referenced Documents

2.1 *ASTM Standards*:²

C168 Terminology Relating to Thermal Insulation

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

2.2 *ASTM Adjuncts*:³

Fabrication of Thermal Insulating Covers for NPS Piping and Vessel Lagging

3. Terminology

3.1 *Definitions*—For definitions used in this practice see Terminology C168.

4. Significance and Use

4.1 This system of dimensions provides a guide for forming thermal insulation in advance of field application. Forming is done by cutting, grinding, milling, or molding, depending upon the method most suitable for the thermal insulation being fabricated. It is equally applicable for all service temperature ranges.

5. Basis of Design

5.1 All dimensions presented are based on the use of pipe insulation manufactured to Practice C585 and to the Basic Dimensional Standards for Pipe Insulation as given in Tables 1 and Tables 2 of the Fabrication of Thermal Insulating Covers for NPS Piping and Vessel Lagging.³

5.2 The tables provide dimensions for insulation fitting covers for installation on nominal pipe size (NPS) pipe operating at high and low temperatures.

5.3 Dimensions presented for cutting beveled blocks from preformed thermal insulation (lags) are based on blocks 6 in. (152 mm) wide by the thickness required.

5.4 Dimensions given for flanged pairs, flanged fittings, and flanged valves do not allow for flange bolt removal. When bolt

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.

³ Available from ASTM International Headquarters. Order Adjunct No. ADJC0450A. Original adjunct produced in 1976. Adjunct last revised in 2002.