



Designation: C 1058 – 9703

Standard Practice for Selecting Temperatures for Evaluating and Reporting Thermal Properties of Thermal Insulation¹

This standard is issued under the fixed designation C 1058; 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 covers standard mean temperatures for reporting thermal properties of thermal insulations, products, and materials, and of related systems and components, both insulated and uninsulated.

1.2 Thermal properties ~~may~~ shall be determined as a function of temperature by standard test methods. (Test Methods C 177, C 201, C 236, C 335, C 518, C 745, C 976, C 1114, Guide C 653, and Practice C 687, all in combination with Practice C 1045.)

NOTE 1—Standard referenced materials are needed to span the temperature range of the tests.

1.3 This practice recommends standard conditions for use in testing and evaluating thermal properties as a function of temperature by standard test methods.

1.4 General applications of thermal insulations include:

1.4.1 Building envelopes,

1.4.2 Mechanical systems or processes, and

1.4.3 Building and industrial insulations.

1.5 ~~The mean test temperatures to measure thermal properties shall be selected from those listed in Table 1. It is recommended that thermal properties of insulation materials be evaluated over a mean temperature range that represents the intended end use. For this situation, the lowest and greatest mean temperatures should be within 10°C of the maximum and minimum mean temperature of interest. The temperature differences for any chosen mean temperature will depend upon both the thermal insulation application (see appropriate materials specification), the method of evaluation, and the limitations of the apparatus. Temperature differences or relevant temperature conditions required by ASTM material specifications shall take precedence over those recommended in this practice.~~

1.5.1 ~~Standard conditions are presented where both surfaces are exposed to fixed ambient temperatures that are typical for testing building constructions, both insulated and uninsulated (Table 2).~~

1.5.2 ~~Standard conditions are presented where the temperatures of the two surfaces are fixed and surface coefficients are not considered (Table 2 or Table 3).~~

1.5.3 ~~For conditions where the temperature of only one surface is fixed with the other exposed to fixed ambient temperature, use the mean temperatures of Table 1.~~

1.6 ~~The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only. Approximate inch-pound units are provided in the tables.~~

1.7 ~~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:~~

¹ This practice is under the jurisdiction of ASTM Committee C-16 on Thermal Insulation and is the direct responsibility of Subcommittee C16.30 on Thermal Measurements.

Current edition approved ~~May April 10, 1997; 2003. Published August 1997; May 2003. Originally published as C 1058 – 86, approved in 1986. Last previous edition approved 1997 as C 1058 – 927.~~