



Standard Guide for Development of Standard Data Records for Computerization of Thermal Transmission Test Data for Thermal Insulation¹

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1. Scope

1.1 This guide provides recommended formats for the recording of thermal transmission test data for thermal insulation and similar materials for inclusion in computerized material property databases. From this information, the database designer should be able to construct the database dictionary preparatory for development of a database schema.

1.2 This guide is applicable to thermal transmission test data obtained from standard test methods that cover planar and radial specimen geometries.

1.3 This guide is not intended for thermal transmission data obtained for thermal insulation assemblies or systems (that is, heat transmission coefficients for walls, roofs, ceilings, and floors).

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 requirements prior to use.*

2. Referenced Documents

2.1 ASTM Standards:

- C 168 Terminology Relating to Thermal Insulating Materials²
- C 177 Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus²
- C 335 Test Method for Steady-State Heat Transfer Properties of Horizontal Pipe Insulation²
- C 518 Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus²
- C 745 Test Method for Heat Flux Through Evacuated Insulations Using a Guarded Flat Plate Boiloff Calorimeter²
- C 1033 Test Method for Steady-State Heat Transfer Properties of Pipe Insulation Installed Vertically²
- C 1044 Practice for Using a Guarded-Hot-Plate Apparatus

- or Thin-Heater Apparatus in the Single-Sided Mode²
- C 1045 Practice for Calculating Thermal Transmission Properties from Steady-State Heat Flux Measurements²
- C 1114 Test Method for Steady-State Thermal Transmission Properties by Means of the Thin-Heater Apparatus²
- C 1363 Test Method for the Thermal Performance of Building Assemblies by Means of a Hot Box Apparatus²
- 2.2 *ISO Standards:*
 - ISO 8301 Thermal Insulation, Determination of Steady-State Thermal Resistance and Related Properties—Heat Flow Meter Apparatus³
 - ISO 8302 Thermal Insulation—Determination of Steady-State Thermal Resistance and Related Properties—Guarded Hot Plate Apparatus³
 - ISO 8497 Thermal Insulation—Determination of Steady-State Thermal Transmission Properties of Thermal Insulation for Circular Pipes³
 - ISO 8990 Thermal Insulation—Determination of Steady-State Thermal Transmission Properties—Calibrated and Guarded Hot Box³

3. Terminology

3.1 *Definitions*—For definitions of some terms applicable to this guide, see Terminology C 168

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *class, n*—a major material class, for example, ceramic, insulation, polymer, etc.

3.2.2 *data element, n*—an individual piece of information used to describe a material or to record test results; for example, a variable name or a test parameter.

3.2.2.1 *Discussion*—The term is synonymous with *data item*.

3.2.3 *essential field, n*—a field in a record that must be completed in order to make the record meaningful in accordance with the pertinent guidelines or standard.

3.2.3.1 *Discussion*—Fields are considered essential if required to make a comparison of property data from different sources meaningful. A comparison of data from different sources may still be possible if essential information is omitted, but the value of the comparison may be greatly reduced.

¹ This guide is under the jurisdiction of ASTM Committee C16 on Thermal Insulation and is the direct responsibility of Subcommittee C16.30 on Thermal Measurement.

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² *Annual Book of ASTM Standards*, Vol 04.06.

³ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036.