



Standard Guide for Defining the Test Result of a Test Method¹

This standard is issued under the fixed designation E2282; 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 The purpose of this guide is to provide guidelines for identifying the elements that comprise the test result of a test method and to illustrate how these elements combine into the test result.

1.2 Types of measurement scales used for expressing observations and test results are discussed.

1.3 No system of units is specified in this standard.

2. Referenced Documents

2.1 *ASTM Standards*:²

E177 Practice for Use of the Terms Precision and Bias in ASTM Test Methods

E456 Terminology Relating to Quality and Statistics

2.2 *ISO Standard*:³

ISO 3534-2 Statistics—Vocabulary and Symbols, Part 2: Applied Statistics

3. Terminology

3.1 *Definitions*—For a more extensive list of terms in E11 standards, refer to Terminology E456.

3.1.1 *binary scale, n*—nominal scale with only two possible categories.

3.1.2 *characteristic, n*—a property of items in a sample or population which, when measured, counted or otherwise observed, helps to distinguish between the items.

3.1.3 *interval scale, n*—continuous scale or discrete scale with equal sized scale values and an arbitrary zero.

ISO 3534-2

3.1.4 *nominal scale, n*—scale with unordered labeled categories or ordered by convention. ISO 3534-2

3.1.5 *observation, n*—the process of obtaining information regarding the presence or absence of an attribute of a test specimen, or of making a reading on a characteristic or dimension of a test specimen.

3.1.5.1 *Discussion*—Observation is also associated with the attribute or measurement information obtained from the process. The term “observed value” is preferred for this second usage.

3.1.6 *observed value, n*—the value obtained by making an observation.

3.1.7 *ordinal scale, n*—scale with ordered labeled categories. ISO 3534-2

3.1.8 *ratio scale, n*—continuous scale with equal sized scale values and an absolute or natural zero point. ISO 3534-2

3.1.8.1 *Discussion*—Ratio scales consist of only non-negative values.

3.1.9 *scale, n*—system of reference values for a characteristic. ISO 3534-2

3.1.10 *test determination, n*—the value of a characteristic or dimension of a single test specimen derived from one or more observed values.

3.1.11 *test method, n*—a definitive procedure that produces a test result.

3.1.11.1 *Discussion*—Examples of test methods include, but are not limited to: identification, measurement, and evaluation of one or more qualities, characteristics, or properties.

ASTM Regulations 2.2.6

3.1.12 *test observation, n*—see *observation*.

3.1.13 *test result, n*—the value of a characteristic obtained by carrying out a specified test method.

3.1.13.1 *Discussion*—The test method specifies that one or a number of individual observations be made, and their average or another appropriate function, (such as the median or the standard deviation), be reported as the test result. It can also require standard corrections to be applied, such as correction of gas volumes to standard temperature and pressure. Thus, a test result can be a result calculated from several observed values. In the simple case, the test result is the observed value itself.

ISO 3534-2

¹ This guide is under the jurisdiction of ASTM Committee E11 on Quality and Statistics and is the direct responsibility of Subcommittee E11.20 on Test Method Evaluation and Quality Control.

Current edition approved Oct. 1, 2014. Published November 2014. Originally approved in 2003. Last previous edition approved in 2013 as E2282 – 13. DOI: 10.1520/E2282-14.

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 International Organization for Standardization (ISO), 1, ch. de la Voie-Creuse, Case postale 56, CH-1211, Geneva 20, Switzerland, http://www.iso.ch.