



Standard Terminology Relating to Quality and Statistics¹

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^{ε1} NOTE—Editorial changes were made throughout in January 2004.

1. Scope

1.1 This terminology includes those quality and statistical terms in wide use in ASTM for which standard definitions appear desirable.

2. Referenced Documents

2.1 ASTM Standards:²

- E 29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications
- E 177 Practice for the Use of the Terms Precision and Bias in ASTM Test Methods
- E 178 Practice for Dealing with Outlying Observations
- E 1169 Guide for Conducting Ruggedness Tests
- E 1325 Terminology Relating to Design of Experiments
- E 1402 Terminology Relating to Sampling
- E 1488 Guide for Statistical Procedures to Use in Developing and Applying Test Methods
- E 1994 Practice for Use of Process Oriented AOQL and LTPD Sampling Plans
- E 2281 Practice for Process and Measurement Capability Indices
- E 2282 Guide for Defining the Test Result of a Test Method
- E 2334 Practice for Setting an Upper Confidence Bound for a Fraction or Number of Non-Conforming Items, or a Rate of Occurrence for Non-Conformities, Using Attribute Data, When there is a Zero Response in the Sample

3. Significance and Use

3.1 This terminology is the general terminology standard for terms defined by Committee E-11.

3.2 Citation is made to other E-11 standards which contain more extensive information regarding the particular term and

its usage. These references may be to other practices and guides or to more specific terminology standards, such as Terminology E 1325.

4. Terminology

acceptance (control chart or acceptance control chart usage, n), n —a decision that the process is operating in a satisfactory manner with respect to the statistical measures being plotted: action limits: *control limits*.

accepted reference value, n —a value that serves as an agreed-upon reference for comparison, and which is derived as: (1) a theoretical or established value, based on scientific principles, (2) an assigned or certified value, based on experimental work of some national or international organization, or (3) a consensus or certified value, based on collaborative experimental work under the auspices of a scientific or engineering group.

accuracy, n —the closeness of agreement between a test result and an accepted reference value.

NOTE 1—The term accuracy, when applied to a set of test results, involves a combination of a random component and of a common systematic error or bias component.

aliases, n —in a fractional factorial design, two or more effects which are estimated by the same contrast and which, therefore, cannot be estimated separately. **E 1325**

assignable cause, n —a factor that contributes to variation, and which is feasible to detect and identify.

NOTE 2—Many factors will contribute to variation but it may not be feasible (economically or otherwise) to identify some of them.

attribute data, n —observed values or determinations which indicate the presence or absence of specific characteristics.

DISCUSSION—Items or units of material may be evaluated by counting or measurement. Attributes are counted whereas variables are measured. Attribute distributions are discrete. See **variables data**.

attributes, method of, n —measurement of quality by the method of attributes consists of noting the presence (or absence) of some characteristic or attribute in each of the units in the group under consideration, and counting how

¹ This terminology is under the jurisdiction of ASTM Committee E 11 on Quality and Statistics and is the direct responsibility of Subcommittee E11.60 on Terminology.

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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.