



Standard Test Method of Variables Sampling of Metallic and Inorganic Coatings¹

This standard is issued under the fixed designation B762; 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 test method provides sampling plans that are intended for use in the inspection of metallic and inorganic coatings on products for the purpose of deciding whether submitted lots of coated products comply with the specifications applicable to the coating.

1.2 The sampling plans are variables plans. In plans of this type, several articles of product are drawn from a production lot. A characteristic of the coating on the drawn articles is measured. The values obtained are used to estimate the number of articles in the lot that do not conform to a numerical limit, for example a minimum thickness. The number is compared to a maximum allowable.

1.3 Variables plans can only be used when the characteristic of interest is measurable, the test method gives a numerical measure of the characteristic, and the specification places a numerical limit on the measured value. It is also necessary that the variation of the characteristic from article to article in a production lot be normally distributed (see [Appendix X2](#)). Each article must be tested in the same way (for example, coating thickness must be measured at the same location, see [X2.7](#)) so that the values from article to article are comparable. If one or more of these conditions are not met, a variables plan cannot be used. Instead, an attributes plan must be used. These are given in Test Method [B602](#) and Guide [B697](#).

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.*

2. Referenced Documents

2.1 ASTM Standards:²

¹ This test method is under the jurisdiction of ASTM Committee B08 on Metallic and Inorganic Coatings and is the direct responsibility of Subcommittee B08.10 on Test Methods.

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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.

[B602 Test Method for Attribute Sampling of Metallic and Inorganic Coatings](#)

[B697 Guide for Selection of Sampling Plans for Inspection of Electrodeposited Metallic and Inorganic Coatings](#)

2.2 *ANSI Standards:*³

[ANSI/ASQC Z1.9-1979 Sampling Procedures and Tables for Inspection by Variables for Percent Non-Conformance](#)
[ANSI/ASQC Z1.4-1981 Sampling Procedures and Tables for Inspection by Attributes](#)

2.3 *Military Standards:*⁴

[MIL-STD-105 Sampling Procedures and Tables for Inspection by Attributes](#)

[MIL-STD-414 Sampling Procedures and Tables for Inspection by Variables for Percent Defective](#)

3. Definitions

3.1 *destructive test*—test that destroys the tested article or makes it nonconforming to a requirement.

3.2 *nondestructive test*—test that neither destroys the tested article nor makes it nonconforming to a requirement.

3.3 *inspection lot*—collection of articles of the same kind that is submitted to inspection for acceptance or rejection as a group.

3.4 *sample*—articles randomly selected from an inspection lot whose quality is used to decide whether or not the inspection lot is of acceptable quality.

3.5 *standard deviation*—measure of dispersion equal to the square root of the mean of the squares of the deviations from the arithmetic mean of the distribution (see [9.2.6](#)).

4. Summary of Test Method

4.1 The plans in this test method provide the same protection as the attributes plans in Tables 1, 2, and 3 of Test Method [B602](#) and are interchangeable with them when the conditions necessary for variables sampling exist. This method has no plan comparable to Table 4 of Test Method [B602](#), because variables plans are subject to an excessive probability of error when the number of nonconforming articles in a lot is expected

³ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

⁴ Available from Standardization Documents Order Desk, DODSSP, Bldg. 4, Section D, 700 Robbins Ave., Philadelphia, PA 19111-5098.