Designation: D 2051 – 86 (Reapproved 1997)

Standard Test Method for Durability of Finish of Zippers to Laundering[1]

This standard is issued under the fixed designation D 2051; 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 covers the determination of the durability of the enamel or other decorative coating of a zipper when subjected to laundering.

1.2 *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:*

D 123 Terminology Relating to Textiles[2]
D 2050 Terminology Relating to Zippers[2]
D 2052 Test Method for Colorfastness of Zippers to Drycleaning[2]
D 2053 Test Method for Colorfastness of Zippers to Light[2]
D 2054 Test Method for Colorfastness of Zipper Tapes to Crocking[2]
D 2057 Test Method for Colorfastness of Zippers to Laundering[2]
D 2058 Test Method for Durability of Finish of Zippers to Drycleaning[2]
D 2059 Test Method for Resistance of Zippers to Salt Spray (Fog)[2]
D 2060 Test Methods for Measuring Zipper Dimensions[2]
D 2061 Test Methods for Strength Tests for Zippers[2]
D 2062 Test Methods for Operability of Zippers[2]

2.2 *AATCC Method:*

Method 61 Colorfastness to Washing, Domestic; and Laundering, Commercial: Accelerated[3]

3. Terminology

3.1 *Definitions*—For definitions of zipper terms used in this standard, refer to Terminology D 2050. For definitions of other textile terminology used in this standard, refer to Terminology D 123.

4. Summary of Test Method

4.1 Specimens are laundered in laboratory equipment at a low liquor-to-goods ratio under conditions of temperature, bleaching, and abrasive action that produce the effect of repeated launderings in a conveniently short time. The zipper coating is abraded by the throw, slide, and impact of an appropriate number of steel balls. The effects of the test on zipper coating are evaluated by noting the loss of coating on the zipper chain or components, or both.

5. Significance and Use

5.1 This test method is useful for testing to determine the effect of repeated laundering on the appearance of the decorative coating of a zipper.

5.2 This test method is considered satisfactory for acceptance testing of commercial shipments since the method has been used extensively in the trade for acceptance testing.

5.2.1 In case of a dispute arising from differences in reported test results when using Test Method D 2051 for acceptance testing of commercial shipments, the purchaser and the supplier should conduct comparative tests to determine if there is a statistical bias between their laboratories. Competent statistical assistance is recommended for the investigation of bias. As a minimum, the two parties should take a group of tests specimens that are as homogeneous as possible and that are from a lot of material of the type in question. The test specimens should then be randomly assigned in equal numbers to each laboratory for testing. The average results from the two laboratories should be compared using Student's *t*-test for unpaired data and an acceptable probability level chosen by the two parties before the testing is begun. If a bias is found, either its cause must be found and corrected or the purchaser and supplier must agree to interpret future test results in the light of the known bias.

5.3 The test method(s) in the standard along with those in Test Methods D 2052, D 2053, D 2054, D 2057, D 2058, D 2059, D 2060, D 2061, and D 2062 are a collection of proven test methods. They can be used as aids in the evaluation of zippers without the need for a thorough knowledge of zippers. The enumerated test methods do not provide for the evaluation of all zipper properties. Besides those properties measured by means of the enumerated test methods there are other properties that may be important for the satisfactory performance of a zipper. Test methods for measuring those properties have not been published either because no practical

[1] This test method is under the jurisdiction of ASTM Committee D-13 on Textiles, and is the direct responsibility of Subcommittee D13.54 on Subassemblies. The method was developed in cooperation with the Slide Fastener Association, Inc.

Current edition approved March 27, 1986. Published May 1986. Originally published as D 2051 – 61 T. Last previous edition D 2051 – 81.

[2] *Annual Book of ASTM Standards*, Vol 07.01.

[3] Technical Manual of the American Association of Textile Chemists and Colorists, P.O. Box 12215, Research Triangle Park, NC 27709.