Designation: D 2059 – 87 (Reapproved 1997)

Standard Test Method for Resistance of Zippers to Salt Spray (Fog)[1]

This standard is issued under the fixed designation D 2059; 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 resistance of all types of zippers to corrosion and their ability to function properly after exposure of specified duration in a prescribed salt spray.

1.2 The values stated in SI units are to be regarded as the standard. The values in parentheses are for information only.

1.3 *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:*

B 117 Practice for Operating Salt Spray (Fog) Testing Apparatus[2]

D 123 Terminology Relating to Textiles[3]

D 2050 Terminology Relating to Zippers[3]

D 2051 Test Method for Durability of Finish of Zippers to Laundering[3]

D 2052 Test Method for Colorfastness of Zippers to Drycleaning[3]

D 2053 Test Method for Colorfastness of Zippers to Light[3]

D 2054 Test Method for Colorfastness of Zipper Tapes to Crocking[3]

D 2057 Test Method for Colorfastness of Zippers to Laundering[3]

D 2058 Test Method for Durability of Finish of Zippers to Drycleaning[3]

D 2060 Test Methods for Measuring Zipper Dimensions[3]

D 2061 Test Methods for Strength Tests of Zippers[3]

D 2062 Test Methods for Operability of Zippers[3]

2.2 *U. S. Government Standard:*

MIL 105D Sampling Procedures and Tables for Inspecting Attributes[4]

3. Terminology

3.1 *Definitions:*

3.1.1 For definitions of terms relating to zippers used in this test method refer to Terminology D 2050. For definitions of other textile terms, refer to Terminology D 123.

4. Summary of Test Method

4.1 The effects of corrosion on zippers, should it occur, are evaluated visually and by measuring the crosswise strength and the force required to open and close the zipper both before and after exposure in a prescribed salt-spray atmosphere for a specified time.

5. Significance and Use

5.1 The resistance of a zipper to a variety of saline and non-saline environments can be estimated from the amount and nature of corrosion products and their effect on operability. Results of exposure to the salt spray are merely indicative of the reaction to other corrosive conditions. While the results cannot be related precisely to a given length of exposure in a specific atmosphere, they are useful for measuring relative performance under prescribed conditions for controlling a manufacturing process, and for measuring the effectiveness of protective coatings.

5.2 Test Method D 2059 for the determination of the resistance of zippers to salt spray is considered satisfactory for acceptance testing of commercial shipments of zippers since the test method is 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 2059 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 test 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 the

[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 Assn., Inc.

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[2] *Annual Book of ASTM Standards*, Vol 03.02.

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

[4] Available from Naval Publications and Forms Center, 5801 Tabor Ave., Philadelphia, PA 19120.