



Designation: D2052 – 05 (Reapproved 2022)

Standard Test Method for Colorfastness of Zippers to Drycleaning¹

This standard is issued under the fixed designation D2052; 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 change in shade and of staining of zipper stringers under drycleaning conditions. This test method is applicable to the textile portion of zipper stringers of all materials.

1.2 The values stated in SI units are to be regarded as standard. The values given in parentheses after SI units are provided for information only and are not considered standard.

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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*²

- D123 Terminology Relating to Textiles
- D2050 Terminology Relating to Subassemblies Used in the Manufacture of Textiles
- D2051 Test Method for Durability of Finish of Zippers to Laundering
- D2053 Test Method for Colorfastness of Zippers to Light
- D2054 Test Method for Colorfastness of Zipper Tapes to Crocking
- D2057 Test Method for Colorfastness of Zippers to Laundering
- D2058 Test Method for Durability of Finish of Zippers to Drycleaning

¹ This test method is under the jurisdiction of ASTM Committee D13 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 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.

D2059 Test Method for Resistance of Zippers to Salt Spray (Fog)

D2060 Test Methods for Measuring Zipper Dimensions

D2061 Test Methods for Strength Tests for Zippers

D2062 Test Methods for Operability of Zippers

D2724 Test Method for Bond Strength of Bonded, Fused, and Laminated Apparel Fabrics

D3692 Practice for Selection of Zippers for Care-Labeled Apparel and Household Furnishings

2.2 *AATCC Methods:*

Evaluation Procedure 1, AATCC Gray Scale for Color Change³

Evaluation Procedure 3, AATCC Chromatic Transference Scale³

3. Terminology

3.1 For all terminology related to D13.54, Subassemblies, refer to Terminology D2050.

3.1.1 The following terms are relevant to this standard: colorfastness, drycleaning.

3.2 For all other terminology relating to textiles, see Terminology D123.

4. Summary of Test Method

4.1 A specimen of the zipper stringer, in conjunction with multifiber test fabric is subjected to drycleaning. The drycleaned specimen is compared with an original specimen (see 10.1) and any change in color of the specimen or staining of the multifiber test cloth is then assessed using the AATCC Gray Scale for Color Change or the AATCC Chromatic Transference Scale, as appropriate.

5. Significance and Use

5.1 Test Method D2052 is useful for testing to determine if the degree of alteration in shade is satisfactory for the intended end-use and for determining if unacceptable staining of color into adjacent fabric will occur.

NOTE 1—For guidance in evaluating the results of this test method, refer to Practice D3692.

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

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

5.2.1 If there are differences of practical significance between reported test results for two laboratories (or more), comparative tests should be performed to determine if there is a statistical bias between them, using competent statistical assistance. As a minimum, the test samples should be used that are as homogeneous as possible, that are drawn from the material from which the disparate test results were obtained, and that are randomly assigned in equal numbers to each laboratory for testing. Other materials with established test values may be used for this purpose. The test results from the two laboratories should be compared using a statistical test for unpaired data, at probability level chosen prior to the testing series. If a bias is found, either its cause must be found and corrected, or future test results must be adjusted in consideration of the known bias.

5.3 The method(s) in this standard along with those in Test Methods [D2051](#), [D2053](#), [D2054](#), [D2057](#), [D2058](#), [D2059](#), [D2060](#), [D2061](#), and [D2062](#) are a collection of proven zipper 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 methods have yet been developed or because a valid evaluation of the information resulting from existing unpublished methods requires an intimate and thorough knowledge of zippers.

6. Apparatus

6.1 The apparatus shall be as specified in Test Method [D2724](#).

6.2 *AATCC Chromatic Transference Scale*, as specified in AATCC Evaluation Procedure 3.

6.3 *Gray Scales for Color Change*, as specified in AATCC Evaluation Procedure 1.

6.4 *AATCC Multifiber Test Fabric No. 10*.⁴

6.5 *Undyed Cotton Twill Cloth*, weighing $270 \text{ g/m}^2 \pm 70 \text{ g/m}^2$ free of finishes.⁴

7. Sampling

7.1 *Lot Sample*—As a lot sample for acceptance testing, take at random the number of individual containers from each shipping carton as directed in an applicable material specification or other agreement between the purchaser and the supplier. Consider individual containers from each shipping carton to be the primary sampling units.

NOTE 2—An adequate specification or other agreement between the purchaser and supplier requires taking into account the variability between

shipping cartons and between zippers in a container to provide a sampling plan with a meaningful producer's risk, consumer's risk, acceptable quality level, and limiting quality level.

7.2 *Laboratory Sample and Test Specimens*—As a laboratory sample for acceptance testing, take the number of zippers specified in Section 8 at random from each container in the lot sample. Consider the zippers as both the laboratory sample and the test specimens.

8. Number of Specimens

8.1 Unless otherwise agreed upon, as when specified in an applicable material specification, take one zipper at random from each individual container selected for sampling.

9. Test Specimen

9.1 The test specimen shall consist of approximately 40 cm^2 (6.4 in.^2) of zipper stringer taken from each zipper sample. The specimen need not be a continuous length.

9.2 A duplicate specimen shall be prepared and held for comparison in evaluating the results of the test.

10. Conditioning

10.1 The specimens shall be conditioned for at least 4 h in the standard atmosphere for testing textiles prior to being subjected to the drycleaning procedure. Preconditioning is not necessary.

11. Procedure

11.1 Using AATCC multifiber test fabric No. 10 for one side and undyed cotton twill cloth for the other, prepare a bag with inside dimensions of 200 mm by 100 mm (8 in. by 4 in.) by sewing the two superimposed fabrics around three sides. Place the specimen flatly inside the bag. Close the bag by any convenient means such as sewing or stapling the open side.

11.2 Dryclean the specimen in the bag as directed in Procedure for Drycleaning [D2724](#), 10.1 through 10.3.

11.3 Repeat the drycleaning procedure through two additional cycles, for a total of three cycles. Remove the specimens from the specimen bag and evaluate for color change and staining as directed in Section 12 of this test method.

12. Evaluation

12.1 Grade the textile portion of the specimens for change in color to the nearest one half rating unit as directed in AATCC Evaluation Procedure 1.

12.2 Grade the degree of staining of each stripe of the multifiber fabric to the nearest one half rating unit as directed in AATCC Evaluation Procedure 3.

13. Report

13.1 State that the specimens were tested as directed in ASTM Test Method D2052. Describe the material or product sampled, and the method of sampling used.

13.2 Report the following information:

13.2.1 Number of specimens tested,

13.2.2 Change in shade for each specimen as the noted grade on the AATCC Gray Scale for Color Change, and

⁴ Suitable material is available from Testfabrics, Inc., P.O. Drawer 0, Middlesex, NJ 08846.