



Designation: D6840 – 02 (Reapproved 2021)

Standard Test Method for Effect of Drycleaning on Buttons¹

This standard is issued under the fixed designation D6840; 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 is a means of determining the effect of drycleaning on certain physical attributes of buttons. The test method applies to buttons made from plastics, natural materials, cast metal, stamped metal, and electroplated plastic.

1.1.1 The observed attributes of buttons made from plastic and natural materials include: color change, color transfer, solubility, swelling, and loss of finish.

1.1.2 The observed attributes of buttons made of metal and electroplated buttons include: color change, oxidation, and color transfer.

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

1.3 *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

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

D3136 Terminology Relating to Care Labeling for Apparel, Textile, Home Furnishing, and Leather Products

D5497 Terminology Relating to Buttons (Withdrawn 2011)³

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.

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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.

³ The last approved version of this historical standard is referenced on www.astm.org.

3. Terminology

3.1 *Definitions*—For definitions of terms used in this test method, refer to Terminologies D123, D5497, and D3136.

4. Summary of Test Method

4.1 Specimens are sewn onto fabric and subjected to commercial dry cleaning. The dry cleaned specimens are measured and visually compared to an original specimen.

5. Significance and Use

5.1 This test method is useful for determining the change to the listed properties (see 1.1.1 and 1.1.2) and if the changes are acceptable for the intended use. This test may be used for acceptance testing of commercial shipments of buttons.

5.2 If there are differences of practical significance between the reported test results for two laboratories (or more), comparative tests should be performed to determine if there is a statistical bias between them. As a minimum, 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. The test results for the two laboratories should be compared using a statistical test for unpaired data, at a 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 for that material must be adjusted in consideration of the known bias.

6. Apparatus

6.1 The drycleaning apparatus shall be as specified in Test Method D2724.

6.2 AATCC Multifiber Test Fabric No. 10 or FA.

6.3 Undyed Cotton Twill Cloth, weighing 270 g/m \pm 70 g/m (0.6 lb/yd \pm 0.15 lb/yd).

6.4 *Measuring Device*—A set of measuring calipers or micrometer is required to determine the dimensions of the buttons before and after testing.

7. Sampling, Test Specimens, and Test Units

7.1 *Laboratory Sample*—Randomly select approximately 100 samples, from the same carton and from boxes within that carton, that adequately represent the material from which test specimens may be chosen.

7.2 *Test Specimen*—Randomly select 10 to 20 buttons from the laboratory sample for testing. If the test specimens are submitted for pre-production approval, testing of 10 buttons is acceptable. Retailers can test the garment with the buttons attached. It is not necessary to place garment in specimen bag.

8. Procedure

8.1 *Determination of Button Dimensions*—Using a set of calipers or a micrometer bring the instrument faces or anvils in contact with the button diameter and thickness. Record both dimensions to the nearest millimeter.

8.1.1 All buttons to be tested are measured prior to and after final drycleaning cycle.

8.1.2 Four untested buttons of each size, color and style are kept as comparative references.

8.1.3 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 the three sides. Place the specimens inside the bag. Close the bag by any convenient means.

NOTE 1—Each button style, size and color should be tested in a separate bag.

8.1.4 Dryclean the specimens in the bag as directed in Procedure for Drycleaning, Test Method **D2724**, 10.1 through 10.3.

8.1.5 Repeat the drycleaning procedure through two additional cycles for a total of three cycles. Remove the specimens from the specimen bag and evaluate.

9. Evaluation Report

9.1 State that the buttons were tested as directed in Test Method D6840.

9.2 Report the following information:

9.2.1 Diameter and thickness of buttons before drycleaning,

9.2.2 Diameter and thickness of buttons after three dry cleaning cycles,

9.2.3 Noticeable color change,

9.2.4 Noticeable change in finish,

9.2.5 Noticeable oxidation, and

9.2.6 Noticeable swelling.

10. Precision and Bias

10.1 No justifiable statement can be made wither on precision or on the bias of the procedures in Test Method D6840 for the durability of buttons to formulated drycleaning solvents since the test merely states whether there is change.

11. Keywords

11.1 buttons; formulated drycleaning

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