



Designation: D 2814 – 73

American Association of Textile Chemists and
Colorist Methods 119-1967 and 120-1967

Standard Methods of Test for COLOR CHANGE DUE TO FLAT ABRASION (FROSTING)¹

This Standard is issued under the fixed designation D 2814; 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.

1. Scope

1.1 These methods cover the determination of the resistance of colored fabrics to changes in shade caused by flat abrasion. The following two methods are included:

- 1.1.1 Emery Paper Method, and
- 1.1.2 Wire Screen Method.

1.2 Either method can be used on any colored fabric. Section 4 gives suggestions as to the fabrics for which each method is specifically intended.

2. Applicable Documents

2.1 ASTM Standards

- D 123 Definitions of Terms Relating to Textile Materials²
- D 1776 Conditioning Textiles and Textile Products for Testing²
- D 2905 Recommended Practice for Statements on Number of Specimens Required to Determine the Average Quality of a Textile Material³

3. Definitions

3.1 *frosting, n.*—a change in color in a limited area of a fabric caused by abrasive wear.

3.1.1 Frosting may be the result of differential wear, as in multicomponent blends in which the fibers do not match in shade, or of the abrasion of single-fiber constructions in which there is some variation in penetration, or incomplete penetration, of dyestuff. The use of the terms “differential wear” and “fibrillation” as substitutes for the concept of frosting is undesirable.

3.2 For definitions of other terms used in these methods, refer to Definitions D 123.

4. Uses and Significance

4.1 These methods produce, in an accelerated manner, a localized color change similar to that produced on some garments by abrasive action during actual wear.

4.1.1 The emery paper method attempts to duplicate the effect produced over relatively long periods of actual wear during which the garment is exposed to relatively severe abrasive action; thus, it is more applicable to the detection of poor dye penetration, and of abrasion-caused color changes in union-dyed blends and all-cotton fabrics.

4.1.2 The wire screen method attempts to duplicate the effect produced over relatively short periods of actual wear during which the garment is exposed to relatively mild abrasive action; thus, it is more applicable to cross-dyed blend fabrics, in which one fiber is abraded away faster than the other, for example, in some types of durable press fabrics.

5. Conditioning

5.1 Bring the specimens from the prevailing atmosphere to moisture equilibrium for testing in the standard atmosphere for testing textiles as directed in Method D 1776. Preconditioning is not necessary.

¹ These methods are under the jurisdiction of ASTM Committee D-13 on Textile Materials and are the direct responsibility of Subcommittee D13.59 on Fabric Test Methods, General.

Current edition approved June 27, 1973. Published August 1973. Originally published as D 2814 – 69 T. Last previous edition D 2814 – 69 T.

² *Annual Book of ASTM Standards*, Part 24.

³ *Annual Book of ASTM Standards*, Part 25.