



Designation: D6321 – 98(Reapproved 2004)

Standard Practice for the Evaluation of Machine Washable T-Shirts¹

This standard is issued under the fixed designation D6321; 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 practice covers test methods and procedures used to evaluate important characteristics of machine washable T-shirts. T-shirts may be made of knitted fabric composed of any textile fiber(s) or blend of fibers and intended to be used as underwear or as an outer garment.

1.2 T-shirts' characteristics may be assessed either as a final product or at any intermediate processing stage.

1.3 This practice excludes T-shirts intended for hand washing or dry cleaning care.

1.4 The values in SI units are to be regarded as the standard. The values given in parentheses are provided for information only.

1.5 *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 standards to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*²

[D123 Terminology Relating to Textiles](#)

[D1776 Practice for Conditioning and Testing Textiles](#)

[D3786 Test Method for Bursting Strength of Textile Fabrics—Diaphragm Bursting Strength Tester Method](#)

[D3787 Test Method for Bursting Strength of Textiles—Constant-Rate-of-Traversal \(CRT\) Ball Burst Test](#)

[D3887 Specification for Tolerances for Knitted Fabrics](#)

[D3940 Test Method for Bursting Strength \(Load\) and Elongation of Sewn Seams of Knit or Woven Stretch Textile Fabrics \(Withdrawn 1995\)](#)³

[D4154 Performance Specification for Men's and Boys' Knit-](#)

[ted and Woven Beachwear and Sports Shirt Fabrics D4156 Performance Specification for Women's and Girls' Knitted Sportswear Fabrics](#)

2.2 *AATCC Test Methods:*⁴

[Evaluation Procedure 1, Gray Scale for Color Change](#)

[Evaluation Procedure 2, Gray Scale for Staining](#)

[Evaluation Procedure 7, Instrumental Assessment of the Change in Color of a Textile Specimen](#)

[Method 107, Colorfastness to Water](#)

[Method 150, Dimensional Changes in Automatic Home Laundering of Garments](#)

[Method 172, Colorfastness to Non-Chlorine Bleach in Home Laundering](#)

[Method 179, Skewness Change and Garment Twist in Fabrics and Garments After Automatic Home Laundering](#)

2.3 *Other Documents:*

[A Glossary of AATCC Standard Terminology](#)⁴

[Standardization of Home Laundry Text Conditions](#)⁴

3. Terminology

3.1 *Definitions:*

3.1.1 *T-shirt, n*—a knitted garment, typically constructed of jersey or 1 by 1 rib fabric, used as either an undergarment or as an outer casual top with a rib collar, hemmed sleeves and bottom, and a body configuration that resembles the letter “T”.

3.1.1.1 *Discussion*—T-shirts may have either crew or v-neck styles; short or long sleeve lengths, and be adorned with appliques, embroidery, or garment printing or combinations of adornments. Henley and polo-styles shirts are excluded.

3.1.2 For definitions of other textile terms used in this standard, refer to terminology in Terminology [D123](#) and Glossary of AATCC Standard Terminology.

4. Significance and Use

4.1 This practice may be used to evaluate pertinent characteristics of washable T-shirts.

4.2 T-shirts may be subject to extra processes such as garment dyeing, garment washing, printing, application of embroidery or trims. An individual process or combination of processes may affect the performance of the final product.

¹ This practice is under the jurisdiction of ASTM Committee [D13](#) on Textiles, and is the direct responsibility of Subcommittee [D13.61](#) on Apparel.

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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.

⁴ Available from AATCC, PO Box 12215, Research Triangle Park, NC 27709.