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## Standard Guide to International Test Methods Associated with Textile Care Procedures<sup>1</sup>

This standard is issued under the fixed designation D 6322; 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 (€) indicates an editorial change since the last revision or reapproval.

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€<sup>1</sup> NOTE—Section 2 was modified editorially in September 2003.

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### 1. Scope

1.1 This guide lists general home laundering and commercial drycleaning textile care procedures and the associated ASTM (American Society for Testing and Materials), AATCC (American Association of Textile Chemists and Colorists), CGSB (Canadian General Standards Board), and ISO (International Organization for Standardization) standards available for the testing and evaluation of textile products.

1.2 This guide identifies the national, regional, and international textile and apparel test methods available to manufacturers, retailers, importers, testing organizations and other related parties.

1.3 This guide provides a list of test methods that can be used by the reader to evaluate the properties of textiles and apparel during refurbishing, textile and apparel care instructions; and, textile and apparel care labels.

1.4 This guide is not intended to be used in the establishment of performance criteria, but as a guide for product development and purchasing contracts. The country of Canada, however, has some performance criteria cited in The National Standard of Canada—Care Labelling of Textiles in CAN/CGSB–86.1-M91 (see Appendix X1)

1.5 This guide is applicable to textile and apparel articles; excluding upholstery fabrics, mattresses, carpet, leather, fur, and yarns.

1.6 *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:*

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<sup>1</sup> This guide is under the jurisdiction of ASTM Committee D13 on Textiles and is the direct responsibility of Subcommittee D13.62 on Textile Care Labeling . Current edition approved Sept. 10, 2000. Published November 2000. Originally published as D6322–98. Last previous edition D6322–98

- D 123 Terminology Relating to Textile Materials<sup>2</sup>
  - D 3136 Terminology Relating to Care Labels for Textile and Leather Products Other Than Textile Floor Coverings and Upholstery<sup>2</sup>
  - D 3786 Test Method for Bursting Strength, Hydraulic, of Knitted Goods and Nonwoven Fabrics—Diaphragm Bursting Strength Tester Method<sup>2</sup>
  - D 3787 Test Method for Bursting Strength of Knitted Goods—Constant-Rate-of-Traverse (CRT), Ball Burst Test<sup>2</sup>
  - D 3938 Guide for Determining or Confirming Care Instructions for Apparel and Other Textile Products<sup>2</sup>
  - D 4720 Practice for Evaluation of the Performance of Window Coverings—Soft<sup>2</sup>
  - D 4721 Practice for Evaluation of the Performance of Bedcoverings and Accessories, Machine Washable and Drycleanable<sup>2</sup>
  - D 5034 Test Method for Breaking Force and Elongation of Textile Fabrics (Grab Test)<sup>2</sup>
  - D 5035 Test Method for Breaking Force and Elongation of Textile Fabrics (Strip Method)<sup>2</sup>
  - D 5489 Guide for Care Symbols for Care Instructions on Textile Products<sup>2</sup>
- 2.2 *AATCC Standards*:<sup>3</sup>

NOTE 1—Refer to individual sections that follow for listing.

### 2.3 *CGSB Standards*:

CAN/CGSB-86.1-M91 The National Standard of Canada - Care Labelling of Textiles<sup>4</sup>

NOTE 2—Refer to individual sections that follow for listing.

### 2.4 *ISO Standards*:<sup>5</sup>

NOTE 3—Refer to individual sections that follow for listing.

### 2.5 *Other Documents*:

Federal Trade Commission Amendment to Trade Regulation Rule Concerning Care Labeling of Textile Wearing Apparel and Certain Piece Goods, Federal Register, Vol. 48, No. 99, May 20, 1983<sup>6</sup>

Federal Trade Commission Amendment to Trade Regulation Rule Concerning Care Labeling of Textile Wearing Apparel and Certain Piece Goods, Federal Register, Vol. 62, No. 25, February 6, 1997<sup>6</sup>

## 3. Terminology

### 3.1 *Definitions*:

3.1.1 For definitions of terms related to permanent care labeling, refer to Terminology D 3136 and AATCC Glossary. For definitions of other textiles terms used in this guide, refer to Terminology D 123, CAN/CGSB-86.1-M91, FTC 16 CFR Part 423, and ISO 3758.

## 4. Significance and Use

4.1 This guide identifies U.S., Canadian and other international test methods used in the process of determining and evaluating textile and apparel care label instruction effectiveness for properties such as colorfastness, susceptibility to damage due to retained bleaching agents, dimensional stability, safe ironing temperatures and appearance retention (see 1.5 for exclusions).

4.2 This guide is intended for general use by those who wish to compare care label evaluation methods of the United States with those of both The International Organization for Standardization (ISO) and the Canadian General Standards Board (CGSB).

4.3 The inclusion of AATCC, ASTM, CGSB, and ISO test methods provides broad reference information.

4.4 Consult specific ASTM textile fabric, apparel and home furnishing performance specifications for evaluation criteria.

4.4.1 A listing of all ASTM textile performance specifications may be found in Volumes, 07.01 and 07.02 of the *Annual Book of ASTM Standards*. These textile specifications are appropriate for apparel or textile products that have not been wet processed or dyed after the product was sewn into its final form.

4.5 *The National Standard of Canada*—Care Labelling of Textiles (CAN/CGSB-86 1-M91) includes performance criteria that is used in the evaluation of care claims, including written words or symbols, identified on garments or textile products that are offered for sale in Canada (see Appendix X1).

## 5. Summary of Guide

5.1 This guide lists test procedures used in evaluating care label instructions appropriate for colorfastness, susceptibility to damage due to retained bleaching agents, dimensional stability, safe ironing temperature, and appearance retention.

<sup>2</sup> *Annual Book of ASTM Standards*, Vol 07.01 and 07.02.

<sup>3</sup> *Annual AATCC Technical Manual*, available from the American Association of Textile Chemists and Colorists, P.O. Box 12215, Research Triangle Park, NC 27709.

<sup>4</sup> Available from CGSB, Sales Unit, Ottawa, Canada.

<sup>5</sup> Available from American National Standards Institute, 11 West 42nd Street, New York, NY 10036.

<sup>6</sup> Available from U.S. Government Printing Office, North Capital and H Streets, NW, Washington, DC 20401.

**6. General Considerations**

- 6.1 Wherever available AATCC, ASTM, CGSB, and ISO test methods have been listed to allow ease of comparison (see Fig. 1).
- 6.2 While AATCC, ASTM, CGSB, and ISO test methods may use similar conditions, it is important to note that the protocol may differ.
- 6.3 CGSB and ISO test procedures can not always be considered a direct comparison with, or a substitute for, test results from AATCC or ASTM test methods and vice versa.
- 6.4 The care procedures are listed in the order of customary consumer practice.

**7. Home Laundering and Commercial Drycleaning Textile Care Procedures and the Associated Standards**

7.1 This section is a list of general and specific international standards associated with the assessment of textile products for permanent care labels in the order of customary consumer practice.

- 7.1.1 Table 1 summarizes the general care procedures, the related care symbols, and the related standards;
- 7.2 *Assessment of Textile Products for Permanent Care Labels*—General information is given in the following standards:

7.2.1 *ASTM Standards*:

D 123 Terminology Relating to Textile Materials<sup>2</sup>

D 3136 Terminology Relating to Care Labels for Textile and Leather Products Other Than Textile Floor Coverings and Upholstery<sup>2</sup>














CARE PROCEDURE	REFERENCE SYMBOLS	COLORFASTNESS (GREY SCALE)	DIMENSIONAL STABILITY	APPEARANCE	STRENGTH LOSS
MACHINE WASH	ASTM 	AATCC 61 CAN/CGSB 4.2-19-M CAN/CGSB 4.2-58-M ISO 105-C06	AATCC 96 AATCC 99 AATCC 135/150 AATCC 160 AATCC 179 CAN/CGSB 4.2-25.1-M CAN/CGSB 4.2-29.2-M CAN/CGSB 4.2-58-M ISO 5077 ISO 6330	AATCC 88B AATCC 88C AATCC 124 AATCC 142 AATCC 143 CAN/CGSB 4.2-59.1-M CAN/CGSB 4.2-59.2-M CAN/CGSB 4.2-59.3-M CAN/CGSB 4.2-67-M ISO 7768 ISO 7769 ISO 7770	
	CGSB ASTM 				
HAND WASH	ISO 	AATCC 61a AATCC 143			
	ASTM 				
BLEACH	CGSB ASTM 	AATCC 61 AATCC 172 CAN/CGSB 4.2-58-M ISO 105-NO 1			AATCC 92 AATCC 114 CAN/CGSB 4.2-58-M CAN/CGSB 4.2-65-M
	ISO CGSB 				
TUMBLE DRY	ASTM CGSB ISO 		AATCC 96 AATCC 99 AATCC 135/150 AATCC 160 AATCC 179 CAN/CGSB 4.2-24.2-M CAN/CGSB 4.2-58-M ISO 5077 ISO 6330	AATCC 88B AATCC 88C AATCC 124 AATCC 142 AATCC 143 CAN/CGSB 4.2-59.1-M CAN/CGSB 4.2-59.2-M CAN/CGSB 4.2-59.3-M ISO 7768 ISO 7769 ISO 7770	
LINE DRY	ASTM CGSB 				
DRIP DRY	ASTM CGSB 				
DRY FLAT	ASTM CGSB 				
IRON	ASTM ISO 	AATCC 133 CAN/CGSB 4.2-57-M ISO 105-X11			
	CGSB ASTM 				
DRYCLEAN	ASTM CGSB ISO 	AATCC 132 AATCC 157 CAN/CGSB 4.2-29.1-M CAN/CGSB 4.2-20-M ISO 105-C06 ISO 105-DO1	AATCC 158 CAN/CGSB 4.2-25.1-M ISO 3175	AATCC 86 CAN/CGSB 4.2-66-M	

FIG. 1 Care Procedures With Associated Test Methods

D 3938 Guide for Determining or Confirming Care Instructions for Apparel and Other Textile Products<sup>2</sup>

D 5489 Guide for Care Symbols for Care Instructions on Textile Products<sup>2</sup>

7.2.2 *AATCC Standard:*

Monograph Nomenclature for Subjective Rating Process<sup>3</sup>

7.2.3 *CGSB Standards:*

No. 2–M Conditioning Textile Materials for Testing<sup>4</sup>

No. 86.1-M91 National Standard of Canada - Care Labelling of Textiles<sup>4</sup>

7.2.4 *ISO Standards:*

ISO 105 - A01 Textiles—General Principles of Testing<sup>5</sup>

ISO 3758 Textiles—Care Labelling Code Using Symbols<sup>5</sup>

7.3 *Colorfastness, Including Staining*—General information is given in the following standards:

7.3.1 *AATCC Standards:*

Evaluation Procedure 1—Gray Scale for Color Change<sup>3</sup>

Evaluation Procedure 2—Gray Scale for Staining<sup>3</sup>

Evaluation Procedure 7—Instrumental Assessment of the Change in Color of a Test Specimen<sup>3</sup>

Evaluation Procedure 8—AATCC Chromatic Transference Scale<sup>3</sup>

7.3.2 *GCSB Standards:*

*CAN/CGSB-4.2-M Textile Test Methods:*

No. 46-M/ISO 105–A02 Textiles—Tests for Colour Fastness - Part A02: Gray Scale for Assessing Change in Colour<sup>4</sup>

No. 47-M/ISO 105-A03 Textiles—Tests for Colour Fastness - Part A03: Gray Scale for Assessing Staining<sup>4</sup>

7.3.3 *ISO Standards:*

ISO 105 - A02 Gray Scale for Assessing Change in Colour<sup>5</sup>

ISO 105 - A03 Gray Scale for Assessing Staining<sup>5</sup>

ISO 105 - A05 Instrumental Assessment of Change In Colour for Determination of Grey Scale Rating<sup>5</sup>

7.4 *Assessment of Dimensional Stability Evaluation*—General information is given in the following standards:

7.4.1 *AATCC Documents:*

Monograph 1993 AATCC Standard Reference Detergent and Laundry Detergents in General<sup>4</sup>

7.4.2 *ISO Standards:*

ISO 3759 Preparation, Marking and Measuring of Fabric Specimens and Garments in Tests to Determine Dimensional Change<sup>5</sup>

ISO 6330 Textiles—Domestic Washing and Drying Procedures for Textile Testing<sup>5</sup>

7.5 *Washing and Drying Processes*—Specific information on colorfastness to laundering and dimensional stability testing is given in the following standards:

7.5.1 *AATCC Standards:*

Test Method 61 Colorfastness to Laundering, Home and Commercial: Accelerated<sup>3</sup>

Test Method 96 Dimensional Changes in Commercial Laundering of Woven and Knitted Fabrics Except Wool<sup>3</sup>

Test Method 99 Dimensional Changes of Woven and Knitted Wool Textiles: Relaxation, Consolidation and Felting<sup>3</sup>

Test Method 135 Dimensional Change in Automatic Home Laundering of Woven and Knit Fabrics<sup>3</sup>

Test Method 150 Dimensional Changes in Automatic Home Laundering of Garments<sup>3</sup>

Test Method 160 Dimensional Restoration of Knitted and Woven Fabrics After Laundering<sup>3</sup>

Test Method 179 Skewness Change in Fabric and Garment Twist Resulting from Automatic Home Laundering<sup>3</sup>

7.5.2 *CGSB Standards:*

*CAN/CGSB - 4.2-M Textile Test Methods:*

No. 19.1-M Colour Fastness to Washing - Accelerated Test - Launderometer<sup>4</sup>

No. 24.2 Dimensional Change in Laundering of Textiles<sup>4</sup>

No. 25.1-M Dimensional Change in Wetting<sup>4</sup>

No. 58-M Colour Fastness and Dimensional Change in Domestic Laundering of Textiles<sup>4</sup>

7.5.3 *ISO Standards:*

ISO 5077 Textiles— Determination of Dimensional Change in Washing and Drying<sup>5</sup>

ISO 105-C06 Colour Fastness to Domestic and Commercial Laundering<sup>5</sup>

7.6 *Bleaching Processes*—Specific information on properties such as colorfastness and susceptibility to damage due to retained bleaching agents is given in the following standards:

7.6.1 *AATCC Standards:*

Test Method 61 Colorfastness to Laundering, Home and Commercial: Accelerated<sup>3</sup>

Test Method 114 Chlorine Retained Tensile Loss: Multiple Sample Method<sup>3</sup>

Test Method 172 Colorfastness to Non-chlorine Bleach in Home Laundering<sup>3</sup>

7.6.2 *CGSB Standards:*

*CAN/CGSB - 4.2-M Textile Test Methods:*

No. 55-M Loss in Strength and Colour Change of Fabrics Due to Retained Chlorine<sup>4</sup>

No. 58-M Colour Fastness and Dimensional Change in Domestic Laundering of Textiles<sup>4</sup>

7.6.3 *ISO Standards:*

ISO 105 - N01 Colour Fastness to Bleaching: Hypochlorite<sup>5</sup>

ISO 5081 Woven Fabrics - Determination of Breaking Strength and Elongation (Strip method)<sup>5</sup>

7.7 *Ironing/Pressing Processes*—Specific information on colorfastness to ironing/pressing testing is given in the following standards

7.7.1 *AATCC Standards:*

Test Method 133 Colorfastness to Heat: Hot Pressing<sup>3</sup>

7.7.2 *CGSB Standards:*

CAN/CGSB - 4.2-M Textile Test Methods:

No. 57-M Determination of Maximum Safe Ironing Temperature<sup>4</sup>

7.7.3 *ISO Standards:*

ISO 105 - X11 Colour Fastness to Hot Pressing<sup>5</sup>

7.8 *Dry Cleaning Processes*—Specific information on testing for colourfastness and dimensional stability to dry cleaning is given in the following standards:

7.8.1 *AATCC Standards:*

Test Method 86 Dry-Cleaning: Durability of Applied Designs and Finishes<sup>3</sup>

Test Method 132 Colorfastness to Drycleaning<sup>3</sup>

Test Method 157 Colorfastness to Solvent Spotting: Perchloroethylene<sup>3</sup>

Test Method 158 Dimensional Changes on Drycleaning in Perchloroethylene: Machine Method<sup>3</sup>

7.8.2 *CGSB Standards:*

CAN/CGSB - 4.2-M Textile Test Methods:

No. 20-M Colour Fastness to Water<sup>4</sup>

No. 25.1-M Dimensional Change in Wetting<sup>4</sup>

No. 29.1-M Colour Fastness to Dry Cleaning Solvent<sup>4</sup>

7.8.3 *ISO Standards:*

ISO 105 - C06 Colour Fastness to Dry Cleaning: Perchloroethylene<sup>5</sup>

ISO 105 D01 Colour Fastness to Dry Cleaning: Hydrocarbon<sup>5</sup>

7.9 *Appearance After Refurbishing*—Specific information on appearance after refurbishing is given in the following standards:

7.9.1 *AATCC:*

Test Method 88B Appearance of Seams in Durable Press Items After Repeated Home Laundering<sup>3</sup>

Test Method 88C Retention of Creases in Fabrics after Repeated Home Laundering<sup>3</sup>

Test Method 124 Appearance of Fabrics After Repeated Home Laundering<sup>3</sup>

Test Method 142 Appearance of Flocked Fabrics After Repeated Home Laundering and/or Coin-op Drycleaning<sup>3</sup>

7.9.2 *CGSB Standards:*

CAN/CGSB - 4.2-M Textile Test Methods:

No. 59.1-M Appearance After Repeated Domestic Launderings—Smoothness<sup>4</sup>

No. 59.2-M Appearance After Repeated Domestic Launderings—Seams<sup>4</sup>

No. 59.3-M Appearance After Repeated Domestic Launderings—Pressed-in Creases<sup>4</sup>

No. 65-M Determination of Strength of Bonds of Bonded, Laminated and Fused Fabrics<sup>4</sup>

No. 66-M Dimensional Change and Appearance After Dry-Cleaning of Coated, Bonded, Laminated and Fused Fabrics<sup>4</sup>

No. 67-M Dimensional Change and Appearance After Laundering of Coated, Bonded, Laminated and Fused Fabrics<sup>4</sup>

7.9.3 *ISO Standards:*

ISO 7768 Method for Assessing the Appearance of Durable Press Products After Domestic Washing and Drying<sup>5</sup>

ISO 7769 Method for Assessing the Appearance of Creases in Durable Press Products After Domestic Washing and Drying<sup>5</sup>

ISO 7770 Method for Assessing the Appearance of Seams in Durable Press Products After Domestic Washing and Drying<sup>5</sup>

7.10 *Other Standards*—Other standards which may be used in evaluation of other properties related to care labeling are listed in the following section:

7.10.1 *ASTM Standards:*

D 3786 Test Method for Bursting Strength, Hydraulic, of Knitted Goods and Nonwoven Fabrics—Diaphragm Bursting Strength Tester Method<sup>2</sup>

D 3787 Test Method for Bursting Strength of Knitted Goods—Constant-Rate-of-Traversal (CRT), Ball Burst Test<sup>2</sup>

D 4720 Practice for Evaluation of the Performance of Window Coverings—Soft<sup>2</sup>

D 4721 Practice for Evaluation of the Performance of Bedcoverings and Accessories, Machine Washable and Drycleanable<sup>2</sup>

D 5034 Test Method for Breaking Force and Elongation of Textile Fabrics (Grab Test)<sup>2</sup>

D 5035 Test Method for Breaking Force and Elongation of Textile Fabrics (Strip Method)<sup>2</sup>

7.10.2 *AATCC Standards:*

Test Method 8 Colorfastness to Crocking: AATCC Crockmeter Method  
Test Method 86 Drycleaning: Durability of Applied Designs and Finishes<sup>3</sup>  
Test Method 116 Colorfastness to Crocking: Rotary Vertical Crockmeter Method<sup>3</sup>  
Test Method 128 Wrinkle Recovery of Fabrics: Appearance Method<sup>3</sup>

7.10.3 *CGSB Standards:*

1-GP-12 Standard Paint Colours<sup>4</sup>

CAN/CGSB - 4.2-M Textile Test Methods:

No. 9.1-M Breaking Strength of Fabrics - Strip Method - Constant-Time-to-Break Principle<sup>4</sup>

No. 11.2-M Bursting Strength - Ball Burst Test<sup>4</sup>

No. 33.1-M Method of Pressing - Ironing<sup>4</sup>

No. 33.2-M Method of Pressing - Steam Pressing<sup>4</sup>

No. 33.3-M Method of Pressing - Steaming<sup>4</sup>

No. 33.4-M Method of Pressing - Tension Pressing<sup>4</sup>

No. 46-M/ISO 105-A02:1987 Gray Scale for Assessing Change in Colour<sup>4</sup>

No. 47-M/ISO 105-A03:1987 Gray Scale for Assessing Staining<sup>4</sup>

7.10.4 *ISO Standard:*

ISO 9867 Evaluation of the wrinkle recovery of fabrics - Appearance Method<sup>5</sup>

## 8. Keywords

8.1 apparel; care label; care procedure; care symbol; fabric; international; label; textile; textile products; test methods

## APPENDIX

### (Nonmandatory Information)

#### X1. CANADIAN CRITERIA TO EVALUATE INSTRUCTIONS ON A CARE LABEL

*ASTM International takes no position respecting the validity of any patent rights asserted in connection with any item mentioned in this standard. Users of this standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, are entirely their own responsibility.*

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**TABLE Canadian Criteria to Evaluate Instructions on a Care Label<sup>AB</sup>**

Property	Criteria
<b>Laundering—Washing and Drying Combined</b>	
Colour Fastness (Grey Scale)	
Colour Change	4
Staining	4
	3-4 Nylon
More than one colour including white or almost white	4-5
Dimensional Stability	
Wovens (grow or shrink)	2 %
Knits	
Weft-knit underwear or sleepwear	10 %
Warp-knit slips, gowns, or other lingerie & sleepwear	5 %
Casual wear (including but not limited to T-shirts, jogging suits, sweaters)	6 %
Dresses, shirts, jackets, pants, coats, blouses, dress shirts	3 %
Home furnishing items	3 %
<b>Bleaching</b>	
Colour Fastness (Grey Scale)	
Colour Change	4
Staining	4
Damage Due to Retained Chlorine	
Yellowing on Whites	4
Colour Change on Colours	4
Strength Loss	10 %
<b>Ironing</b>	
Colour Change	...
<b>Dry Cleaning</b>	
Colour Fastness (Grey Scale)	
Colour Change	4
Staining	4-5 Whites only
Dimensional Stability	...

<sup>A</sup>This table is for information purposes only.

<sup>B</sup>Applicable to Garments and Fabric; The National Standard of Canada—Care Labeling of Textiles (CAN/CGSB-86.1-M91) (see ). The Canadian test methods are used when evaluating the instruction on a care label against the above criteria.