



Standard Guide to International Test Methods Associated with Textile Care Procedures¹

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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 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–86.1-2003. See [Table 1](#).

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.*

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2. Referenced Documents

2.1 ASTM Standards:²

- D123 Terminology Relating to Textiles
- D3136 Terminology Relating to Care Labeling for Apparel, Textile, Home Furnishing, and Leather Products
- D3938 Guide for Determining or Confirming Care Instructions for Apparel and Other Textile Products
- D4720 Performance Specification for Soft Window Covering Fabrics for Household Use
- D4721 Practice for Evaluation of the Performance of Machine Washable and Drycleanable Bedcoverings and Accessories
- D5489 Guide for Care Symbols for Care Instructions on Textile Products

2.2 AATCC Standards:³

- AATCC Evaluation Procedure 1 Gray Scale for Color Change
- AATCC Evaluation Procedure 2 Gray Scale for Staining
- AATCC Evaluation Procedure 7 Instrumental Assessment of the Change in Color of a Test Specimen
- AATCC Evaluation Procedure 8 AATCC 9-Step Chromatic Transference Scale
- AATCC Evaluation Procedure 12 Instrumental Assessment of Degree of Staining
- AATCC A Glossary of AATCC Standard Terminology
- AATCC Monograph Nomenclature for Subjective Rating Process
- AATCC Monograph M1, 1993 Standard Reference Detergent and Laundry Detergents in General
- AATCC Monograph M5 Standardization of Hand Laundering for Fabrics and Apparel

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 *Annual AATCC Technical Manual*, available from the American Association of Textile Chemists and Colorists (AATCC), P.O. Box 12215, Research Triangle Park, NC 27709, <http://www.aatcc.org>.

TABLE 1 Canadian Criteria to Evaluate Instructions on a Care Label⁴

Property		Criteria
Laundering—Washing and Drying Combined		
Colour Fastness (Grey Scale)		
Colour Change		4
Exception: In the case of textiles containing more than one colour, one of which is white or almost white, colour change of the white or almost white shall not exceed Grey Scale 4–5 contrast by reference to CAN/CGSB-4.2		4-5
Staining		4
Dimensional Stability		
All textiles	All textiles other than knitted textiles (grow or shrink) or those no more than the maximum dimensional change shown on the care label or on a separate label securely attached to or near the care label	3 %
Knitted Textiles	All knitted textiles, excluding coated knitted textiles and textiles having both woven and knitted components. The textile shall not shrink or stretch in either direction more than the maximum values given below or more than the maximum dimensional change shown on the care label or on a separate label securely attached to or near the care label	
Category of Knitted Textile		maximum dimensional change, each direction %
Weft-knit underwear and sleepwear		10
Warp-knit slips, gowns, and other lingerie and sleepwear		5
Casual wear (including but not limited to T-shirts, jogging suits, sweaters)		6
Dresses, skirts, jackets, pants, coats, blouses, dress shirts		3
Home furnishing items		3

⁴ In addition to the properties of colourfastness, dimensional stability, effect of retained bleaching agent whether or not included in detergent and maximum safe ironing temperature, use of this care symbol system signifies that as a result of the restorative treatment, there shall be no appreciable change in the appearance of the textile product. For additional information on performance specifications and recommended test methods for the assessment of appearance changes, refer to CAN/CGSB-86.1-2003.

[AATCC Monograph M6 Standardization of Home Laundry Test Conditions](#)

[AATCC Monograph M7 Standard Laboratory Practice for Home Laundering Fabrics Prior to Flammability Testing to Differentiate Between Durable and Non-Durable Finishes](#)

[AATCC Test Method 8 Colorfastness to Crocking: Crockmeter Method](#)

[AATCC Test Method 61 Colorfastness to Laundering, Home and Commercial: Accelerated](#)

[AATCC Test Method 86 Dry-Cleaning: Durability of Applied Designs and Finishes](#)

[AATCC Test Method 88B Smoothness of Seams in Fabrics After Repeated Home Laundering](#)

[AATCC Test Method 88C Retention of Creases in Fabrics after Repeated Home Laundering](#)

[AATCC Test Method 96 Dimensional Changes in Commercial Laundering of Woven and Knitted Fabrics Except Wool](#)

[AATCC Test Method 114 Chlorine Retained Tensile Loss: Multiple Sample Method](#)

[AATCC Test Method 116 Colorfastness to Crocking: Rotary Vertical Crockmeter Method](#)

[AATCC Test Method 124 Smoothness Appearance of Fabrics After Repeated Home Laundering](#)

[AATCC Test Method 128 Wrinkle Recovery of Fabrics: Appearance Method](#)

[AATCC Test Method 132 Colorfastness to Drycleaning](#)

[AATCC Test Method 133 Colorfastness to Heat: Hot Pressing](#)

[AATCC Test Method 135 Dimensional Change of Fabrics after Home Laundering](#)

[AATCC Test Method 142 Appearance of Flocked Fabrics After Repeated Home Laundering and/or Coin-op Drycleaning](#)

[AATCC Test Method 150 Dimensional Changes of Garments after Home Laundering](#)

[AATCC Test Method 157 Colorfastness to Solvent Spotting: Perchloroethylene](#)

[AATCC Test Method 158 Dimensional Changes on Drycleaning in Perchloroethylene: Machine Method](#)

[AATCC Test Method 172 Colorfastness to Non-chlorine Bleach in Home Laundering](#)

[AATCC Test Method 179 Skewness Change in Fabric and Garment Twist Resulting from Automatic Home Laundering](#)

[AATCC Test Method 188 Colorfastness to Sodium Hypochlorite Bleach in Home Laundering](#)

2.3 *CGSB Standards*:⁴

[CAN/CGSB-2-M Conditioning Textile Materials for Testing](#)
[CAN/CGSB-4.2 Textile Test Methods](#)

⁴ Available from Canadian General Standards Board (CGSB), Place du Portage III, 6B1 11 Laurier Street Gatineau, Quebec, Canada K1A 1G6.

CAN/CGSB-18.3/ISO 105-B02: 1994 Textiles—Tests for Colourfastness Part B02: Colourfastness to Artificial Light: Xenon Arc Fading Lamp Test (Reaffirmation of December 1997, including CGSB Amendment No.1)

CAN/CGSB-19.1 Colour Fastness to Washing - Accelerated Test - Launderometer

CAN/CGSB-20-M Colour Fastness to Water

CAN/CGSB-24 Colourfastness and Dimensional Change in Commercial Laundering

CAN/CGSB-25.1 Dimensional Change in Wetting

CAN/CGSB-29.1-M Colour Fastness to Dry Cleaning Solvent

CAN/CGSB-31-2004/ISO 105-X11: 1994 Textiles—Tests for Colourfastness Part X11: Colourfastness to Hot Pressing

CAN/CGSB-33 Methods of Pressing (Extension of June 1994)

CAN/CGSB-46-M/ISO 105-A02: 1987 (CP: 1993) Textiles—Tests for Colour Fastness - Part A02: Gray Scale for Assessing Change in Colour

CAN/CGSB-47-M/ISO 105-A03: 1987 (CP: 1993) Textiles—Tests for Colour Fastness - Part A03: Gray Scale for Assessing Staining

CAN/CGSB-55-M Loss in Strength and Colour Change of Fabrics Due to Retained Chlorine

CAN/CGSB-57-M Determination of Maximum Safe Ironing Temperature

CAN/CGSB-58 Dimensional Change in Domestic Laundering of Textiles

CAN/CGSB-59.1 (CP M88) Appearance After Repeated Domestic Launderings—Smoothness

CAN/CGSB-59.2 (CP M88) Appearance After Repeated Domestic Launderings—Seams

CAN/CGSB-59.3 (CP M88) Appearance After Repeated Domestic Launderings—Pressed-in Creases

CAN/CGSB-65-M Determination of Strength of Bonds of Bonded, Laminated and Fused Fabrics

CAN/CGSB-66-M Dimensional Change and Appearance After Dry-Cleaning of Coated, Bonded, Laminated and Fused Fabrics

CAN/CGSB-67-M Dimensional Change and Appearance After Laundering of Coated, Bonded, Laminated and Fused Fabrics

CAN/CGSB-86.1-2003 The National Standard of Canada—Care Labelling of Textiles

2.4 ISO Standards:⁵

ISO 105-A01 Textiles—General Principles of Testing

ISO 105-A02 Gray Scale for Assessing Change in Colour

ISO 105-A03 Gray Scale for Assessing Staining

ISO 105-A05 Instrumental Assessment of Change In Colour for Determination of Grey Scale Rating

ISO 105-C06 Colour Fastness to Domestic and Commercial Laundering

ISO 105-C09:2001 Textiles—Tests for Colourfastness-Part C09: Colourfastness to DOMestic and Commercial

Laundering—Oxidative Bleach Response Using a Non-phosphate Reference Detergent Incorporating a Low Temperature Bleach Activator

ISO 105-D01 Colour Fastness to Dry Cleaning: Hydrocarbon

ISO 105-N01 Colour Fastness to Bleaching: Hypochlorite

ISO 105-X11 Colour Fastness to Hot Pressing

ISO 3578 Textiles—Care Labelling Code Using Symbols

ISO 3759 Preparation, Marking and Measuring of Fabric Specimens and Garments in Tests to Determine Dimensional Change

ISO 5077 Textiles— Determination of Dimensional Change in Washing and Drying

ISO 6330 Textiles—Domestic Washing and Drying Procedures for Textile Testing

ISO 7768 Method for Assessing the Smoothness Appearance of Fabrics after Cleansing

ISO 7769 Method for Assessing the Smoothness Appearance of Creases in Fabrics after Cleansing

ISO 7770 Method for Assessing the Smoothness Appearance of Seams in Fabrics after Cleansing

ISO 9867 Evaluation of the wrinkle recovery of fabrics - Appearance Method

ISO 13934-1: Tensile Properties of Fabrics-Part 1: Determination of Maximum Force and Elongation at Maximum Force using the Stripo Method

2.5 Other Documents:⁶

16 CFR Part 423 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. Amended 1 January 2011.

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. Amended 1 January 2011.

3. Terminology

3.1 Definitions:

3.1.1 For definitions of terms related to permanent care labeling, refer to Terminology **D3136** and AATCC Glossary. For definitions of other textiles terms used in this guide, refer to Terminology **D123**, CAN/CGSB-86.1-2003, 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).

⁵ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

⁶ Available from U.S. Government Printing Office Superintendent of Documents, 732 N. Capitol St., NW, Mail Stop: SDE, Washington, DC 20401, <http://www.access.gpo.gov>.

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 1-2003)* 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 [Table 1](#) and [Table 2](#).)

5. Summary of Guide

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

6. General Considerations

6.1 Wherever available AATCC, ASTM, CGSB, and ISO test methods have been listed to allow ease of comparison (see [Table 2](#)).

6.2 While AATCC, ASTM, CGSB, and ISO test methods may use similar conditions, it is important to note that the protocol may differ.

TABLE 2 Summary of the General Care Procedures, and the Related Care Symbols, and Standards



















Care Procedure	Reference Symbols	Color Fastness (Grey Scale)	Dimensional Change	Appearance	Strength Loss
Machine Wash	ASTM 	AATCC 61 CAN/CGSB 4.2-19 CAN/CGSB 4.2-58 ISO 105-C06	AATCC 96 AATCC 135/150 AATCC 179 CAN/CGSB 4.2-25.1 CAN/CGSB 4.2-29.2 CAN/CGSB 4.2-58 ISO 5077 ISO 6330	AATCC 88B AATCC 88C AATCC 124 AATCC 142 AATCC 143	
	CGSB/ASTM 			CAN/CGSB 4.2-59.1 CAN/CGSB 4.2-59.2 CAN/CGSB 4.2-59.3 CAN/CGSB 4.2-67 ISO 7768 ISO 7769 ISO 7770	
	ISO ^A 				
Hand Wash	ASTM 	AATCC 61 AATCC 143	AATCC 96 AATCC 135/150 AATCC 179 CAN/CGSB 4.2-25.1 CAN/CGSB 4.2-29.2 CAN/CGSB 4.2-58 ISO 5077 ISO 6330	AATCC 88B AATCC 88C AATCC 124 AATCC 142 AATCC 143	
	CGSB  (Number of dots indicate temperature)			CAN/CGSB 4.2-59.1 CAN/CGSB 4.2-59.2 CAN/CGSB 4.2-59.3 CAN/CGSB 4.2-67 ISO 7768 ISO 7769 ISO 7770	
	ASTM 				
	ISO ^A 				
Bleach	ASTM CGSB ISO ^A 	AATCC 61 AATCC 172 AATCC 188 CAN/CGSB 4.2-58 ISO 105-NO1		AATCC 92 AATCC 114 CAN/CGSB 4.2-58 CAN/CGSB 42.-65	

TABLE 2 Continued

Care Procedure	Reference Symbols	Color Fastness (Grey Scale)	Dimensional Change	Appearance	Strength Loss
Tumble Dry	ASTM CGSB ISO ^A		AATCC 96 AATCC 135/150 AATCC 179 CAN/CGSB 4.2-24.2 CAN/CGSB 4.2-58 ISO 5077 ISO 6330 AATCC 88B	AATCC 124 AATCC 142 AATCC 143 CAN/CGSB 4.2-59.1 CAN/CGSB 4.2-59.2 CAN/CGSB 4.2-59.3 CAN/CGSB 4.2-67	
					
Line Dry	ASTM CGSB		AATCC 88C	ISO 7768 ISO 7769 ISO 7770	
					
	ISO ^A				
					
Drip Dry	ASTM CGSB				
					
	ISO ^A				
					
Dry Flat	ASTM CGSB				
					
	ISO ^A				
					
Iron	ASTM ISO ^A	AATCC 133 CAN/CGSB 4.2-57 ISO 105-X11			
					
	CGSB				
					
	(Dots indicate temperature)				
Professional Textile Care	ASTM	AATCC 132	AATCC 158	AATCC 86	
	CGSB	AATCC 157	CAN/CGSB 4.2-25.1	CAN/CGSB 4.2-66	
	ISO ^A	CAN/CGSB 4.2-29.1 CAN/CGSB 4.2-20 ISO 105-CO6 ISO 105-DO1	ISO 3175		
					

^A ISO symbols adapted from ISO 3758:2012(E), with the permission of ANSI on behalf of ISO. ©ISO 2012–All rights reserved.

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** and **Table 2** summarize 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:

- (1) Terminology **D123**
- (2) Terminology **D3136**
- (3) Guide **D3938**
- (4) Guide **D5489**

7.2.2 CGSB Standards:

- (1) CAN/CGSB-2-M
- (2) CAN/CGSB-86.1-2003

7.2.3 ISO Standards:

- (1) ISO 105-A01
- (2) ISO 3758

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

7.3.1 AATCC Standards:

- (1) AATCC Evaluation Procedure 1
- (2) AATCC Evaluation Procedure 2
- (3) AATCC Evaluation Procedure 7
- (4) AATCC Evaluation Procedure 8
- (5) AATCC Evaluation Procedure 12 Instrumental Assessment of Degree of Staining

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

- (1) CAN/CGSB-46-M/ISO 105-A02
- (2) CAN/CGSB-47-M/ISO 105-A03

7.3.3 ISO Standards:

- (1) ISO 105-A02
- (2) ISO 105-A03 Gray Scale for Assessing Staining
- (3) ISO 105-A05 Instrumental Assessment of Change In Colour for Determination of Grey Scale Rating

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

7.4.1 AATCC Documents:

- (1) AATCC Monograph M1
- (2) AATCC Monograph M5
- (3) AATCC Monograph M6
- (4) AATCC Monograph M7

7.4.2 ISO Standards:

- (1) ISO 3759
- (2) ISO 6330

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:

- (1) AATCC Test Method 61
- (2) AATCC Test Method 96
- (3) AATCC Test Method 135

(4) AATCC Test Method 150

(5) AATCC Test Method 179

(6) AATCC Test Method 188

7.5.2 CGSB Standards:

(1) CAN/CGSB-18.3/ISO 105-B02: 1994

(2) CAN/CGSB-4.2

(3) CAN/CGSB-19.1

(4) CAN/CGSB-24

(5) CAN/CGSB-31-2004/ISO 105-X11: 1994

(6) CAN/CGSB-46/ISO 105-A02: 1993

(7) CAN/CGSB-47/ISO 105-A03: 1993

(8) CAN/CGSB-58

7.5.3 ISO Standards:

(1) ISO 5077

(2) ISO 105-C06

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:

- (1) AATCC Test Method 61
- (2) AATCC Test Method 114
- (3) AATCC Test Method 172
- (4) AATCC Test Method 188

7.6.2 CGSB Standards:

- (1) CAN/CGSB-4.2
- (2) CAN/CGSB-58

7.6.3 ISO Standards:

- (1) ISO 105-N01
- (2) ISO 105-C09:2001
- (3) ISO 13934-1

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

7.7.1 AATCC Standards:

(1) AATCC Test Method 133 Colorfastness to Heat: Hot Pressing

7.7.2 CGSB Standards:

- (1) CAN/CGSB-4.2

7.7.3 ISO Standards:

- (1) ISO 105-X11

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

7.8.1 AATCC Standards:

- (1) AATCC Test Method 86
- (2) AATCC Test Method 132
- (3) AATCC Test Method 157
- (4) AATCC Test Method 158

7.8.2 CGSB Standards:

- (1) CAN/CGSB-4.2
- (2) CAN/CGSB-20-M
- (3) CAN/CGSB-25.1
- (4) CAN/CGSB-29.1-M

7.8.3 ISO Standards:

- (1) ISO 105-C06
- (2) ISO 105-D01

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

7.9.1 *AATCC*:

- (1) AATCC Test Method 88B
- (2) AATCC Test Method 88C
- (3) AATCC Test Method 124
- (4) AATCC Test Method 142

7.9.2 *CGSB Standards*:

- (1) CAN/CGSB-4.2-M
- (2) CAN/CGSB-59.1
- (3) CAN/CGSB-59.2
- (4) CAN/CGSB-59.3
- (5) CAN/CGSB-65-M
- (6) CAN/CGSB-66-M
- (7) CAN/CGSB-67-M

7.9.3 *ISO Standards*:

- (1) ISO 7768
- (2) ISO 7769
- (3) ISO 7770

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*:

- (1) Practice **D4720**
- (2) Practice **D4721**
- (3) Test Method **D4720**
- (4) Test Method **D4721**

7.10.2 *AATCC Standards*:

- (1) AATCC Test Method 8
- (2) AATCC Test Method 86
- (3) AATCC Test Method 116
- (4) AATCC Test Method 128

7.10.3 *CGSB Standards*:

- (1) CAN/CGSB-4.2
- (2) CAN/CGSB-33
- (3) CAN/CGSB-46-M/ISO 105-A02:1987
- (4) CAN/CGSB-47-M/ISO 105-A03:1987

7.10.4 *ISO Standard*:

- (1) ISO 9867

8. Keywords

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

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