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Series 4

Série des 4

WITHDRAWAL

March 2019

Selected standards in the series Textiles

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RETRAIT

Mars 2019

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CAN/CGSB-4.2

Textile test methods

No. 0-2001

Moisture regain values, SI units used in CAN/CGSB-4.2 and fibre, yarn, fabric, garment and carpet properties (ICS 59.080.01)

No. 1-M87

Precision and accuracy of measurements (ICS 59.080.01)

No. 2-M88

Conditioning textile materials for testing (ICS 59.080.01)

No. 3-M88

Determination of moisture in textiles (ICS 59.080.01)

No. 5.1-M90

Unit mass of fabrics (ICS 59.080.30)

No. 9.1-M90

Breaking strength of fabrics — Strip method — Constant-time-to-break principle (ICS 59.080.30)

CAN/CGSB-4.2

Méthodes pour épreuves textiles

Nº 0-2001

Valeurs de reprise d'humidité, unités SI utilisées dans CAN/CGSB-4.2 et propriétés des fibres, fils, tissus, articles d'habillement et tapis (ICS 59.080.01)

Nº 1-M87

Précision et exactitude des mesures (ICS 59.080.01)

Nº 2-M88

Conditionnement des textiles pour fins d'essais (ICS 59.080.01)

Nº 3-M88

Détermination de l'humidité dans les textiles (ICS 59.080.01)

Nº 5.1-M90

Masse des tissus (ICS 59.080.30)

Nº 9.1-M90

Résistance à la rupture des tissus — Méthodes des bandes effilochées — Principe de rupture à temps constant (ICS 59.080.30)

No. 11.1-94

Bursting strength — Diaphragm pressure test (ICS 59.080.30)

Nº 11.1-94

Résistance à l'éclatement — Essai à l'éclatomètre à membrane (ICS 59.080.30)

No. 11.2-M89

Bursting strength — Ball burst test (ICS 59.080.30)

Nº 11.2-M89

Résistance à l'éclatement — Essai d'éclatement à la bille (ICS 59.080.30)

No. 15-2003

Non-fibrous materials on textiles (ICS 59.080.01)

Nº 15-2003

Matières non fibreuses sur les textiles (ICS 59.080.01)

No. 19.1-2004

Colourfastness to washing — Accelerated test — Launder-Ometer (ICS 59.080.01)

Nº 19.1-2004

Solidité de la couleur au lavage — Essai de vieillissement accéléré — Appareil Launder-Ometer (ICS 59.080.01)

No. 20-M89

Colourfastness to water (ICS 59.080.01)

Nº 20-M89

Solidité de la couleur à l'eau (ICS 59.080.01)

No. 21-M90

Colourfastness to sea water (ICS 59.080.01)

Nº 21-M90

Solidité de la couleur à l'eau de mer (ICS 59.080.01)

No. 22-2004

Colourfastness to rubbing (crocking) (ICS 59.080.01)

Nº 22-2004

Solidité de la couleur au frottement (Dégorgement par frottement) (ICS 59.080.01)

No. 24-2002

Colourfastness and dimensional change in commercial laundering (ICS 59.080.01)

Nº 24-2002

Solidité de la couleur et changement dimensionnel au blanchissage commercial (ICS 59.080.01)

No. 25.1-97

Dimensional change in wetting (ICS 59.080.01)

Nº 25.1-97

Variation dimensionnelle au trempage dans l'eau (ICS 59.080.01)

No. 33-94

Methods of pressing (ICS 59.080.30)

Nº 33-94

Méthodes de pressage (ICS 59.080.30)

No. 36-M89

Air permeability (ICS 59.080.01)

Nº 36-M89

Perméabilité à l'air (ICS 59.080.01)

No. 57-M90

Determination of maximum safe ironing temperature (ICS 59.080.01)

Nº 57-M90

Détermination de la température maximale de repassage (ICS 59.080.01)

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Textile test methods

Colourfastness to rubbing (Crocking)

ICS 59.080.01

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NATIONAL STANDARD OF CANADA

CAN/CGSB-4.2
No. 22-2004

Supersedes CAN/CGSB-4.2
No. 22-M90
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Textile test methods

Colourfastness to rubbing (Crocking)

CETTE NORME NATIONALE DU CANADA EST DISPONIBLE EN VERSIONS FRANÇAISE ET ANGLAISE.

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CAN/CGSB-4.2
No. 22-2004

Supersedes CAN/CGSB-4.2
No. 22-M90
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November 2013

Preface to the National Standard of Canada

This National Standard of Canada has been reaffirmed by the CGSB Committee on Textile Test Methods and Terminology. Editorial changes have been made by the correction of the following paragraph:

9.2.1 The publications referred to in par. 3.1.1 may be obtained from the Canadian General Standards Board, Sales Centre, Gatineau, Canada K1A 1G6. Telephone 819-956-0425 or 1-800-665-2472. Fax 819-956-5740. E-mail ncr.cgsb-ongc@tpsgc-pwgsc.gc.ca. Web site www.tpsgc-pwgsc.gc.ca/ongc-cgsb.

National Standard of Canada

CGSB Gatineau Canada K1A 1G6	TEXTILE TEST METHODS	CAN/CGSB-4.2
	Colourfastness to Rubbing (Crocking)	No. 22-2004

Supersedes CAN/CGSB-4.2
No. 22-M90
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FOREWORD

The dry and wet test portions of this method are similar to the International Standard ISO 105-X12:2001, Textiles — Tests for colour fastness — Part X12: Colour fastness to rubbing, except that the ISO standard provides two alternative sizes of rubbing finger, one for pile fabric and one for other textiles. The Canadian method uses only one size of rubbing finger. The portion requiring use of dry cleaning solvent is similar to ISO 105-D02:1993, Textiles — Tests for colour fastness — Part D02: Colour fastness to rubbing: Organic solvents, except that the Canadian method permits only one type of solvent.

1. PURPOSE AND SCOPE

1.1 This method assesses the resistance of the colour of textile materials to rubbing off in the dry state or in the presence of moisture or solvent. Such rubbing off of colour may result in fading or streaking, and/or staining of other materials.

1.2 This method is not recommended for the testing of carpets. A method assessing the colourfastness to crocking of carpets may be found in CAN/CGSB-4.161, Appendix B.

1.3 The testing and evaluation of a product against this method may require the use of materials and/or equipment that could be hazardous. This document does not purport to address all the safety aspects associated with its use. Anyone using this method has the responsibility to consult the appropriate authorities and to establish appropriate health and safety practices in conjunction with any applicable regulatory requirements prior to its use.

1.4 Washing, drycleaning, ironing, finishing, etc. may affect the degree of colour transfer from a material. The test may be done before, after, or before and after any such treatment.

2. PRINCIPLE

2.1 Specimens of the textile are rubbed with dry undyed cotton cloth and/or with undyed cotton cloth wetted with water or solvent. The staining of the undyed cloth is evaluated by reference to the Grey Scale for evaluating staining or to the AATCC Chromatic Transference Scale.

3. REFERENCED PUBLICATIONS

3.1 The following publications are referenced in this method:

3.1.1 Canadian General Standards Board (CGSB)

CAN/CGSB-4.2 — Textile Test Methods:

No. 2 — Conditioning Textile Materials for Testing

No. 47/ISO 105-A03 — Textiles — Tests for Colourfastness — Part A03: Grey Scale for Assessing Staining

No. 64 — Chromatic Transference Scale.

3.2 A dated reference in this method is to the issue specified. An undated reference in this method is to the latest issue, unless otherwise specified by the authority applying this method. The sources are given in the Notes section.

4. APPARATUS

4.1 **Device:** capable of applying, against a firmly held specimen of fabric, a force of 9 N through a cylindrical finger 16 mm in diameter,[1] while moving this finger back and forth along a line 100 mm in length. The AATCC "Crockmeter" provides this action and is shown in Figure 1.[2] This apparatus is provided with an abrasive paper surface on which the specimen is placed to hold it in position and prevent slipping during the test; it is also provided with a spiral wire clip to hold the undyed test cloth in place on the cylindrical finger.[3]

4.1.1 Accidental damage to the abrasive paper, spiral clip or rubbing finger should be repaired as follows: neatly renew the abrasive paper; bend the clip further open or shut over an inserted rod of the correct diameter, as required; resurface the finger by movement on an extra piece of fine emery cloth in a manner simulating regular use.

4.2 **Bleached undyed cotton cloth:** 50 mm squares free from starch or other finishes, having a mass and construction approximating that of cotton lawn.[4]

4.3 **Tetrachloroethylene (Perchloroethylene)**[5]

4.4 **Grey Scale:** for assessing staining in accordance with CAN/CGSB-4.2 No. 47/ISO 105-A03.

4.5 **AATCC Chromatic Transference Scale:**[6] for assessing the extent of transference of colour in accordance with CAN/CGSB-4.2 No. 64.

4.6 **Distilled** or **deionized water**.

5. TEST SPECIMENS

5.1 If the textile to be tested is fabric, two specimens not less than 50×150 mm shall be taken for dry rubbing and two for each type of wet rubbing. One specimen of each pair shall be cut lengthwise of the fabric and the other crosswise. Insofar as possible, the specimens shall be representative of all colours of multicolour fabric.

5.2 If the textile to be tested is a yarn or thread, it shall be knitted into cloth of suitable dimensions (par. 5.1) or a layer of parallel strands shall be formed by wrapping it lengthwise on a cardboard rectangle of suitable dimensions.

5.3 If the textile to be tested is in the form of loose fibres, a test specimen shall be prepared by laying tufts of fibres parallel to the long dimension of the specimen to make a pad 50×150 mm and 10 mm thick in the uncompressed state. The pad shall then be compressed and sewn with undyed cotton thread to a piece of undyed cotton fabric, with the seams parallel to the short dimension of the specimen and spaced approximately 20 mm apart.

6. PROCEDURE

6.1 **For Dry Rubbing** — Condition the specimens and the bleached undyed cloth in accordance with CAN/CGSB-4.2 No. 2. Place the test specimen in position on the abrasive paper surface with the face of the fabric up, unless

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[1] For use in the testing of yarns and thread, a yarn testing finger is available from R.B. Atlas Company, 9 Canso Drive, Rexdale, Ontario M9W 4L9. This finger was developed to avoid the tendency of the standard finger to dig into the sample and give erroneous results. The finger is acrylic, 25 mm *in diameter by* 51 mm *long. Positioned on its side and held in place by the standard finger, it provides a wider test area and presents the sample with rounded surfaces. The standard crocking cloth is used but is held in place by two spring loaded clips.*

[2] The Crockmeter may be obtained from the R.B. Atlas Company. It is described in Method 8 in the AATCC Technical Manual.

[3] The abrasive material currently supplied with the Crockmeter is Wet or Dry Trimite, Waterproof Silicon Carbide, W-320-A Soft Back, manufactured by 3M U.S.A. Inc. Replacement pieces are available from R.B. Atlas Company.

[4] Crockmeter Test Cloth (combed yarns), desized, bleached (no optical brightener or finishing material present) is available from Testfabrics Inc., PO Box 26, 415 Delaware Ave., West Pittston, PA 18643, U.S.A or from Textile Innovators Corp., PO Box 8, 101 Forest Street, Windsor, NC 27983, U.S.A.

[5] Tetrachloroethylene is toxic by inhalation, by prolonged or repeated contact with the skin or mucous membrane or when ingested. The liquid can cause injury to the eyes. Caution should be exercised when handling this solvent.

[6] The AATCC Chromatic Transference Scale is available from AATCC, PO Box 12215, Research Triangle Park, NC 27709, U.S.A.

otherwise specified.[7] Mount the dry undyed cloth in place over the end of the cylindrical finger; the finger shall be rubbed back and forth along the specimen 10 times in each direction.[8] Remove the undyed cloth, condition and evaluate in accordance with section 7.

6.2 **For Optional Wet Rubbing (Water)** — Repeat the test (par. 6.1) using a fresh dry specimen and undyed cloth that has been wetted with distilled or deionized water at room temperature to an add-on of approximately 100%. Allow the test cloth to dry at room temperature before evaluation.

6.3 **For Optional Solvent Rubbing** — Repeat the test (par. 6.1) using a fresh dry specimen and undyed cloth that has been wet with its own mass of solvent, allow excess to drip off. Test within 30 s. Uniformly drop onto the cloth its own mass of solvent. Allow the specimen and test cloth to dry at room temperature before evaluation.[5 and 9]

6.4 It is necessary to eliminate dyed fibres pulled out during rubbing and retained on the surface of the rubbing cotton cloth; this may be done by a light application of adhesive tape over the stained area. Consider only the colouration due to staining by the dyestuff.

7. EVALUATION

7.1 Back the test square with three layers of white test cloth while evaluating.

7.2 Assess staining of the undyed cloth using the Grey Scale referred to in CAN/CGSB-4.2 No. 47/ISO 105-A03, or by means of the AATCC Chromatic Transference Scale referred to in CAN/CGSB-4.2 No. 64.[7 and 10]

8. REPORT

Report the following information:

8.1 Any pretreatments (washing, drying, etc.)

8.2 The numerical ratings for the dry, the wet (water) and/or the solvent tests. In the case of fabrics, the rating shall indicate the staining caused by rubbing in the lengthwise or crosswise direction, whichever is the heavier.

8.3 The solvent used in the solvent crocking test.

8.4 The scale used to assess staining.

8.5 The number of this method: CAN/CGSB-4.2 No. 22-2004.

9. NOTES

9.1 Related Publication

9.1.1 American Association of Textile Chemists and Colorists (AATCC) Technical Manual.

9.2 Sources of Referenced Publications

9.2.1 The publications referred to in par. 3.1.1 may be obtained from the Canadian General Standards Board, Sales Centre, Gatineau, Canada K1A 1G6. Telephone (819) 956-0425 or 1-800-665-2472. Fax (819) 956-5644.

9.2.2 The publication referred to in par. 9.1.1 may be obtained from AATCC, PO Box 12215, Research Triangle Park, NC 27709, U.S.A. Telephone (919) 549-8141. Fax (919) 549-8933.

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[7] *Fabrics so constructed as to have a preponderance of warp or weft on the face (such as satins) should be tested on both the face and the back. This is especially important where dissimilar fibres have been used, e.g. an acetate warp with a cotton weft.*

[8] *Special care must be taken to orient the undyed cloth correctly. If it is placed on the bias, the results may not be a true indication of the resistance to rubbing of the test fabric.*

[9] *Organic solvents such as tetrachloroethylene may cause deterioration of the abrasive paper used to prevent the sampling from slipping.*

[10] *In the case of dispute, the Grey Scale method shall be the referee method.*

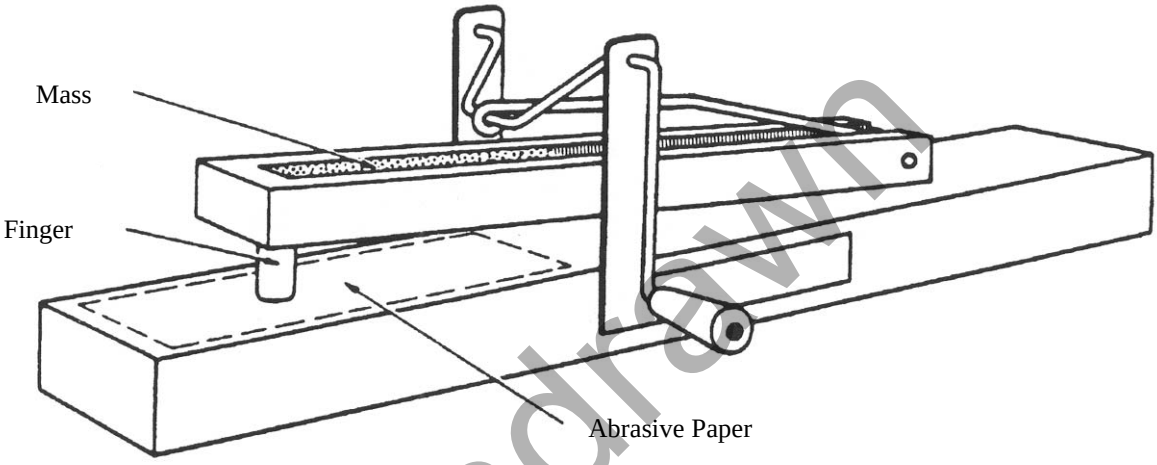

FIGURE 1

AATCC Crockmeter