



Association of Textile, Apparel & Materials Professionals

AATCC takes no position respecting the validity of any patent rights asserted in connection with any item mentioned in this test method. Users of this test method 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.

This test method is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reaffirmed or withdrawn. Your comments are invited either for revision of this test method or for additional procedures and should be addressed to the AATCC Technical Center. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing, you should make your views known to Diana A. Wyman, Technical Director, at the address shown below.

This test method is copyrighted by AATCC, PO Box 12215, Research Triangle Park, NC 27709 USA. Individual reprints (single or multiple copies) of this method may be obtained by contacting AATCC at the above address or tel: 919-549-3526; fax: 919-549-8933, or e-mail: orders@aatcc.org.

AATCC License Agreement: This test method is copyrighted by the American Association of Textile Chemists and Colorists (AATCC), PO Box 12215, 1 Davis Drive, Research Triangle Park, NC USA. All rights reserved.

AATCC grants you a license as follows: The right to download one electronic file of this AATCC test method for temporary storage on one computer for purposes of viewing, and/or printing one copy of the AATCC test method for individual use. Neither the electronic file nor the hard copy print may be reproduced in any way. In addition, the electronic file may not be distributed elsewhere over computer networks or otherwise. The hard copy print may only be distributed to other employees for their internal use within your organization.

This test method is not for resale.



Documents

Document Sharing Hub

Standardization of Home Laundry Test Conditions

Developed in 1984 by AATCC Committee RA88; revised 1986, 1992, 1995, 2003, 2005, 2010, 2011 (and numbered), 2012, 2013, 2016.

AATCC Committee RA88, Home Laundering Technology, was established to develop a consistent set of test conditions for all test methods involving home laundering. Based on the input of a number of AATCC and ASTM committees and a survey of actual consumer practice, a set of guidelines was developed for the standardization of laundering conditions in AATCC test methods. These guidelines have been approved by all AATCC committees involved in laundering test methods and are now presented in Tables I-VIII for the guidance of committees developing test methods that specify laundry procedures.

Laundering temperatures and other parameters listed in Monograph (M) 6 may not be the same as those listed in various test methods. Parameters in M6 are updated periodically to reflect consumer experience, taking into account current technology and regulations regarding home water heater temperatures, particularly in the United States.

Typically, test method committees pursue a deliberate effort to maintain the same test method conditions over a long period of time in order to produce comparable results over time. Additionally, significant changes may invalidate precision data developed using the original conditions.

Temperatures listed in AATCC test methods were established at the time the methods were developed or revised, and closely mirror the temperature ranges specified in 16 CFR Part 423 for care labels. It should also be noted that AATCC test methods were developed using traditional top loading washing machines. Specified water level, detergent, and other details are not applicable to high efficiency top loading or front loading machines. New, commercially available home laundering machines may have to be modified by the user to meet the specifications in various test methods. All test reports should indicate the exact testing conditions, and any modification of the standard method, including use of M6 parameters. **Results of tests performed with different conditions may not be comparable.**

The standard settings for traditional top loading washing machines in Table II and

tumble dryers in Table VII have been updated over the years as washing machines and dryers have become more energy efficient. Washing parameters for machines before 2000 are no longer included in Table II of this monograph but are available from AATCC. In response to the growing trend of high efficiency top loading washing machines in the United States, Table IV has been added to provide standardized machine parameters based on the most commonly available models in U.S. homes. The high efficiency front loading washing machine parameters in Table VI are also updated.

The prescribed models allow testing laboratories to keep AATCC test conditions nearly unchanged for longer periods of time or until a major change in platform occurs.

As regulations on energy and water usage in washing machines have become even more stringent, both top loading and front loading machine parameters will

need to be updated more frequently to reflect the changing machine designs. The wash temperatures listed in Tables I, III, and V are those associated with common settings on current consumer washing machines. Table VIII provides the US Federal Trade Commission (FTC) wash temperatures, as published in 16 CFR Part 423, Appendix A, for information purposes only. FTC does not define drying temperatures. AATCC is actively working with FTC to align wash temperatures. Updates on FTC alignment, and revisions to this monograph, can be found at www.aatcc.org as they become available.

RA88 worked with a machine manufacturer to develop programmed wash cycles on select models based on the 2013 monograph parameters. The details of the programmed cycle, and other washing machine and tumble dryer information are available at www.aatcc.org.

Table I—Water Temperatures used in Traditional Top Loading Machines

Machine Setting ¹	Wash	Rinse	US Care Label Term ²
Cold	16 ± 4.2°C (60 ± 7.5°F)	Tap cold ³	Not applicable
Warm	30 ± 4.2°C (86 ± 7.5°F)	Tap cold ³	Cold
Hot	44 ± 4.2°C (111 ± 7.5°F)	Tap cold ³	Warm
Extra Hot	54 ± 4.2°C (130 ± 7.5°F)	Tap cold ³	Hot ²

¹Settings may vary for models other than those listed on the AATCC website (www.aatcc.org). Some models may not include all setting options. It is important to use the prescribed wash water temperatures, regardless of setting names.

²Refer to Table VIII or 16 CFR Part 423, Appendix A for care label temperature ranges. Wash temperatures above the stated range for machine setting Extra Hot may require manual override of the standard washing machine fill procedure. This modification should be noted in the test report.

³Tap cold temperature for Rinse is not meant to be controlled. Tap cold is equivalent to the water temperature entering the home which is dependent on geography and time of year. In the extreme, water temperatures in consumer homes can vary from 4°C to 49°C (40°F to 120°F); however, on average, these temperatures will vary from 13°C to 24°C (55°F to 75°F).

Table IIA—Traditional Top Loading Washing Machine Parameters without Load 2000-2008

	Normal ¹	Permanent Press ¹	Delicate ¹
Water Level Medium ²	18 ± 1 gal	18 ± 1 gal	18 ± 1 gal
Agitation Speed	179 ± 2 spm ³	179 ± 2 spm	119 ± 2 spm
Washing Time	12 min	10 min	8 min
Final Spin Speed	645 ± 15 rpm ⁴	430 ± 15 rpm	430 ± 15 rpm
Final Spin Time	6 min	4 min	6 min

Table IIB—Traditional Top Loading Washing Machine Parameters without Load 2009-2010⁵

	Normal ¹	Permanent Press ¹	Delicate ¹
Water Level Medium ²	18 ± 1 gal	18 ± 1 gal	18 ± 1 gal
Agitation Speed	179/119 ± 2 spm ³	179/119 ± 2 spm	119 ± 2 spm
Washing Time	12 min total (6 min at stepdown agitation)	9 min total (3 min at stepdown agitation)	6 min
Final Spin Speed	645 ± 15 rpm ⁴	430 ± 15 rpm	430 ± 15 rpm
Final Spin Time	6 min	4 min	3 min