



Performance Evaluation Procedures for Household Clothes Washers

AHAM HLW-1-2013



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PREFACE

The Association of Home Appliance Manufacturers develops standards in accordance with AHAM's "Policy and Procedures Governing Technical Standards" which states:

"AHAM Standards shall be in the best interest, mutually, of consumers who use appliances, the industries which provide and service appliances, and other interested parties. They shall relate to actual use conditions, and be technically and scientifically sound."

Use or observance of AHAM standards is voluntary. AHAM standard procedures do not preclude other valid testing procedures, each of which should be evaluated based on its own merit.

AHAM standards are presented to the American National Standards Institute (ANSI) for recognition as American National Standards. This standard will be subjected to public scrutiny by use of the canvass method and submitted to ANSI for approval once it has been accepted as an AHAM standard. This standard contains test procedures which provide a practical means of measuring specific performance characteristics of any brand or model of automatic household electric clothes washers. When using any of the test procedures to determine performance rating status or to compare the performance of appliances, it is recommended that multiple test units (typically at least 3) be run to ensure that the results obtained are statistically valid.

With regard to safety, AHAM recommends that all appliance products--major and portable--manufactured or marketed in the United States be submitted to an appropriate Nationally Recognized Test Laboratory for inspection and listing in conformance with the safety standards and procedures followed by such laboratories. The relevant standard for clothes washers is ANSI/UL 2157, "Standard for Safety, Electric Home-Laundry Equipment".

AHAM welcomes comments and suggestions regarding this standard. Any standard may be reviewed and improved as needed. All standards must be updated or reconfirmed at least every five years. Any interested party, at any time, may request a change in an AHAM standard. Such request should be addressed to AHAM's President, and should be accompanied by a statement of reason for the request and a suggested alternate proposal.

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1. PURPOSE

The purpose of this standard is to establish a uniform, repeatable procedure for evaluating the performance of household clothes washers.

This standard provides technical means to compare and evaluate the performance of different brands and models of household clothes washers.

This standard is not intended to inhibit improvement and innovation in product testing, design or performance.

2. SCOPE

This standard applies to automatic household clothes washers and combination washer-dryer equipment. With respect to combination washer-dryer equipment, this standard covers the washing function only.

This standard includes definitions and test methods for evaluating the performance of various cycles of household clothes washers.

3. DEFINITIONS

- 3.1 Base Load:** The textile load without any additional test strips, test pieces or test materials.
- 3.2 Bone Dry:** A condition of a load that has been dried in an automatic clothes dryer or equivalent set at the maximum temperature for a minimum of 10 minutes, removed and weighed before cool-down, and then dried for additional 10 minute periods until the final weight change of the load is 1% or less.
- 3.3 Conditioning Cycle:** The cycle used to prepare a washer for test.
- 3.4 Cycle:** A complete washing process consisting of a series of different operations (wash, rinse, spin, etc.).
- 3.5 Horizontal Axis (HA) Washing Machine:** A washing machine in which textiles are placed in a horizontal or inclined (< 45deg from horizontal axis) drum where the spin extraction means is by rotation of the drum about its axis and the mechanical washing action being produced by rotation of the drum about its axis, the movement being either continuous or periodically reversed.
- 3.6 Normalization:** The process of removing residual detergent or other chemicals from the base load.
- 3.7 Pre-treatment:** The washing of new base load items prior to use.
- 3.8 Replication:** A repeat run of a test. For example, when three duplicate runs are required, each run is referred to as a replication.
- 3.9 Stuffer Load:** In procedures for evaluating washer performance, material used to bring the total weight of textiles to a specified amount (or weight).
- 3.10 Test Load:** The base load plus soil test strips, test pieces and/or test materials.
- 3.11 Vertical Axis (VA) Washing Machine:** A washing machine in which textiles are placed in a vertical or inclined (>45deg from vertical axis) drum where the spin extraction means is by rotation of the drum about its axis and the mechanical