

ICS 97.060

English Version

**Clothes washing machines for commercial use - Methods for
measuring the performance**

Waschmaschinen für den gewerblichen Gebrauch -
Verfahren zur Messung der Gebrauchseigenschaften

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CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (CLC/TS 50640:2015) has been prepared by CLC/TC 59X "Performance of household and similar electrical appliances".

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association.

This is a new Technical Specification, but it is based on portions from EN 60456:2011.

This Technical Specification is the main body of a forthcoming European Standard for measuring the performance of non-household washing machines. The content of this Technical Specification will be added with the Annex ZZ when the details regarding Ecodesign regulations are defined.

The procedures described in this Technical Specification are modified substantially compared to the procedures described in EN 60456. Therefore, results of tests according to this Technical Specification cannot and are bound not to be compared to results of similar procedures of EN 60456.

Significant technical differences from EN 60456 are:

- a) test procedures for washing machines of any size on the market;
- b) the method includes procedures for measuring steam heated and gas heated washing machines;
- c) the introduction of a new type of base load;
- d) a new reference programme.

NOTE CLC/TS 50640:2015 is planned to be a European Standard for the energy measurement of gas heated laundry equipment.

A bilingual version of this publication may be issued at a later date.

1 Scope

This Technical Specification specifies methods for measuring the performance of clothes **washing machines** for **commercial** use utilizing cold and/or hot water supply and without heating or with heating devices for electricity, steam or gas. It also deals with appliances for both washing and drying textiles (**washer-dryers**) with respect to their washing related functions. This Technical Specification covers top, front and side loaded non household **washing machines** with horizontal or vertical axis and with one or more wash compartments.

NOTE 1 Non household tumble dryer performance is assessed to CLC/TS 50594.

The object is to state and define the principal performance characteristics of non-household **washing machines** and to describe the test methods for measuring these characteristics.

NOTE 2 This Technical Specification does not apply to continuous batch **washing machines** (e.g. tunnel washers) or **washing machines** only possible to operate with automatic loading and unloading.

NOTE 3 This Technical Specification does not specify safety requirements for **non-household washing machines**. Safety requirements are specified in EN 50571 and the EN ISO 10472 series.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 12127, *Textiles — Fabrics — Determination of mass per unit area using small samples*

EN 12953-10, *Shell boilers — Part 10 : Requirements for feedwater and boiler water quality*

EN 50571, *Household and similar electrical appliances — Safety — Particular requirements for commercial electric washing machines*

EN 60734, *Household electrical appliances — Performance — Water for testing (IEC 60734)*

EN ISO 2060, *Textiles — Yarn from packages — Determination of linear density (mass per unit length) by the skein method (ISO 2060)*

EN ISO 2061, *Textiles — Determination of twist in yarns — Direct counting method (ISO 2061)*

EN ISO 3759, *Textiles — Preparation, marking and measuring of fabric specimens and garments in tests for determination of dimensional change (ISO 3759)*

EN ISO 11664-2, *Colorimetry — Part 2: CIE standard illuminants (ISO 11664-2)*

EN ISO 80000-1:2013, *Quantities and units — Part 1: General (ISO 80000-1:2009 + Cor 1:2011)*

IEC 60456, *Clothes washing machines for household use — Methods for measuring the performance*

DIN 53923, *Testing of textiles; determination of water absorption of textile fabrics*

CIE 015:2004¹⁾, *Colorimetry (3rd edition)*

1) Address (International Commission on Illumination):
The CIE Central Bureau
Kegelgasse 27, A-1030 Vienna, Austria
Tel: +43 (01) 714 31 87
Fax: +43 (01) 713 0838
E-mail: ciecb@ping.at
<http://www.cie.co.at/favicon.ico>

IAPWS-IF97, *IAPWS Industrial Formulation 1997 for the Thermodynamic Properties of Water and Steam* [International Association for the Properties of Water and Steam]

3 Terms, definitions and symbols

3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1.1

washing machine

appliance for cleaning and rinsing of textiles using water which may also have a means of extracting excess water from the textiles

3.1.2

test washing machine

washing machine that is subjected to part or all of the requirements in this Technical Specification in order to determine its performance

Note 1 to entry: **Test washing machine** may include **washing machines** according to 3.1.6, 3.1.7.

3.1.3

reference machine

specially constructed **washing machine** of known performance which is used to increase repeatability and reproducibility of results

Note 1 to entry: It may be used to provide a known performance level within a laboratory against which to compare selected performance parameters on **test washing machines** as defined in this Technical Specification – refer to 5.5.2.

3.1.4

washer-dryer

washing machine which includes both a **spin extraction** function and also a means for drying the textiles, usually by heating and tumbling

Note 1 to entry: This Technical Specification only covers the **operations** which relate to the **washing machine** function – see Clause 1.

3.1.5

spin extractor

separate water-extracting appliance in which water is removed from textiles by centrifugal action (**spin extraction**)

3.1.6

vertical axis washing machine

washing machine in which the load is placed in a drum which rotates around an axis which is vertical or close to vertical.

Note 1 to entry: For the purposes of this Technical Specification, vertical axis is where the angle of the axis of rotation is more than 45 ° to horizontal. Where the drum does not rotate, the **washing machine** will be classified as a **vertical axis washing machine**.

Note 2 to entry: The classification of vertical axis or horizontal axis in this Technical Specification is only used to define the placement of the load into the drum.

3.1.7

horizontal axis washing machine

washing machine in which the load is placed in a drum which rotates around an axis which is horizontal or close to horizontal