

Specifications for industrial laundry machines -
Definitions and testing of capacity and consumption
characteristics - Part 3: Continuous tunnel washer

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

| | |
|---|--|
| See Eesti standard EVS-EN 17116-3:2019 sisaldab Euroopa standardi EN 17116-3:2019 ingliskeelset teksti. | This Estonian standard EVS-EN 17116-3:2019 consists of the English text of the European standard EN 17116-3:2019. |
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Specifications for industrial laundry machines - Definitions
and testing of capacity and consumption characteristics -
Part 3: Continuous tunnel washer

Spécifications pour les machines de blanchisserie
industrielles - Définitions et contrôle des
caractéristiques de capacité et de consommation -
Partie 3: Tunnels de lavage

Festlegungen für Wäschereimaschinen - Definition und
Prüfung der Beladung und Verbrauchsmerkmale - Teil
3: Waschstraßen

This European Standard was approved by CEN on 17 September 2018.

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European foreword

This document (EN 17116-3:2019) has been prepared by Technical Committee CEN/TC 214 "Textile machinery and accessories", the secretariat of which is held by SNV.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by January 2020, and conflicting national standards shall be withdrawn at the latest by January 2020.

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

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

This document is based on ISO 9398-3 extended by the application of the state of the art methodology to measure performance and has been prepared by the EUP Lot 24 Working Group of VDMA — ETCT European Textile Care Technology and CEN/TC 214 in collaboration with wfk-Cleaning Technology Institute, Germany.

The standard testing procedure for continuous tunnel washer is based on ISO 9398-3. It includes among others the references EN ISO 10472-1 and EN ISO 10472-3.

EN 17116-3:2019 enhances the second edition of ISO 9398-3, i.e. ISO 9398-3:2003, to comply with European Standard requirements.

ISO 9398-3:2003 is extended by state of the art methodology to measure performance. Significant technical differences from ISO 9398-3:2003 are:

- a) more detailed description of testing procedure;
- b) changed test conditions under practical *in situ* laundry conditions;
- c) introduction of a new type of test load;
- d) implementation of energy consumption of various heat sources;
- e) implementation of air compressor energy consumption;
- f) implementation of detergent consumption;
- g) implementation of washing performance, as stain/soil removal, secondary wash performance and rinse performance;
- h) comparison of wash performance with reference washing machine.

Contrary to washer extractors, dewatering of the load is carried out in separate machines, like presses or centrifuges. Therefore, these machines are not content of this standard.

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

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria,

Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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1 Scope

This document defines the characteristics of continuous tunnel washer and gives the usual test methods for these characteristics with regard to machine capacity, power consumption and productivity. It is applicable for use as a reference in the drafting of purchasing orders for continuous tunnel washer. In addition it is recommended for determination of energy consumption and productivity according to Directive 2009/125 EC. This document excludes the energy consumption for dewatering of the load. Furthermore, the document describes standard methods for measuring principal performance characteristics of continuous tunnel washer. It does not cover safety requirements (see EN ISO 10472-3).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies

EN 676, *Automatic forced draught burners for gaseous fuels*

EN 1049-2, *Textiles — Woven fabrics — Construction — Methods of analysis — Part 2: Determination of number of threads per unit length (ISO 7211-2:1984 modified)*

EN 1773, *Textiles — Fabrics — Determination of width and length*

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

EN ISO 139, *Textiles — Standard atmospheres for conditioning and testing (ISO 139)*

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 13934-1, *Textiles — Tensile properties of fabrics — Part 1: Determination of maximum force and elongation at maximum force using the strip method (ISO 13934-1)*

EN ISO 15797:2018, *Textiles — Industrial washing and finishing procedures for testing of workwear (ISO 15797:2017)*

ISO 2267, *Surface active agents — Evaluation of certain effects of laundering — Methods of preparation and use of unsoiled cotton control cloth*

ISO 4312, *Surface active agents — Evaluation of certain effects of laundering — Methods of analysis and test for unsoiled cotton control cloth*

ISO 9398-1, *Specifications for industrial laundry machines — Definitions and testing of capacity and consumption characteristics — Part 1: Flatwork ironing machines*

ISO 9398-3, *Specifications for industrial laundry machines — Definitions and testing of capacity and consumption characteristics — Part 3: Washing tunnels*

DIN 4754 (all parts), *Heat transfer installations working with organic heat transfer fluids*

DIN 38409-23, *German standard methods for the examination of water, waste water and sludge — Parameters characterizing effects and substances (group H) — Part 23: Determination of bismut active substances (H 23)*

DIN 61101-1, *Weaves; general terms, basic weaves*

RAL-GZ 992/1, RAL-Gütezeichen 992 für sachgemäße Wäschepflege „Objekt- und Haushaltswäsche“

3 Terms, definitions and symbols

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 9398-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1.1

continuous tunnel washer

automatic washing system that processes laundry in continuous operation or in batches

3.1.2

compartment, cage

single unit in a continuous tunnel washer which contains the laundry batch

3.1.3

compartment, cage (basket) volume

net volume of the cage, expressed in cubic decimetres (litres), equivalent to the inside volume minus all the inwardly projecting volumes

3.1.4

zones of the continuous tunnel washer

one or more compartments used for different washing phases

3.1.5

pre-wash zone

one or more compartments of continuous tunnel washer zones used for pre-washing

3.1.6

main wash zone

one or more compartments of continuous tunnel washer used for main wash

3.1.7

rinsing zone

one or more compartments of continuous tunnel washer used for rinsing

3.1.8

conditioning/neutralization zone

one or more compartments of continuous tunnel washer used for conditioning which means neutralization and/or other final treatment like softening, starching