

IEC/TC OR SC: <b>TC 59</b>	SECRETARIAT: <b>Germany</b>	DATE: <b>2021-02-11</b>
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**A. STATE TITLE AND SCOPE OF TC**

Title of TC:

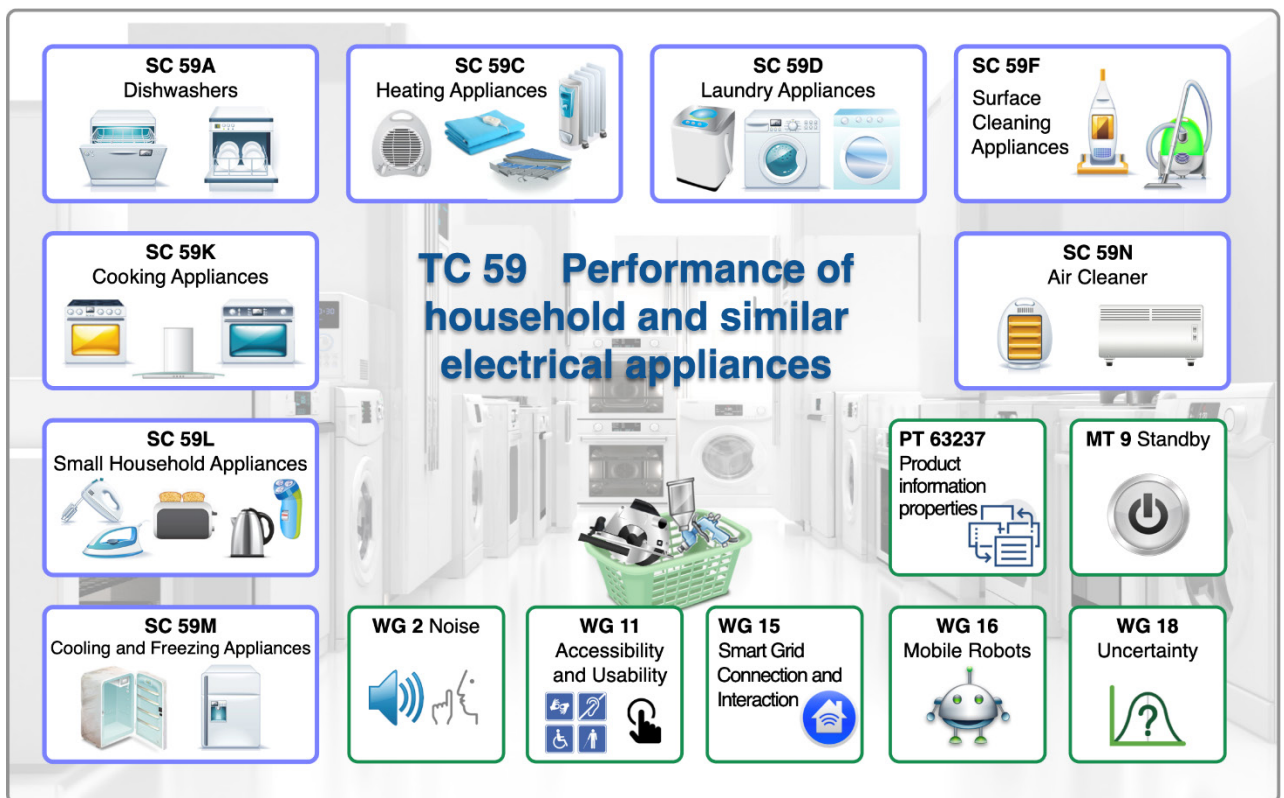
Performance of household and similar electrical appliances

Scope:

To prepare International Standards on methods of measurement of characteristics which are of importance to determine the performance of electrical appliances for household use or of electrical appliances for commercial use and that are of interest for the user. This may include associated aspects related to the use of the appliances and aspects such as the classification, accessibility and usability of appliances, ergonomic characteristics and conditions for the information provided at the point of sale.

**B. MANAGEMENT STRUCTURE OF THE TC**

The structure of TC 59 reflects the complexity of the products that are covered by the TC and SCs. The following graph illustrates the fields of activities of TC 59. Detailed information on the structure of TC 59 and the specific work assigned to WGs, MT and PT can be found on the IEC Webpage.



The wide variety of products covered by TC 59 and its SCs comprises so different appliances as e.g. spray toilet seats, hair care appliances, direct-acting room heater, dishwashers, washing machines, vacuum

cleaners, refrigerators, cooking fume extractors, air cleaner, hobs, etc. (the figure above shows only examples, not all covered products). The common elements are that all these products are used by consumers, and that they all use electricity. These commonalities result in certain common (horizontal) matters related to performance and consumption testing that can and should be dealt with in a uniform way for all these products. TC 59 is actively addressing respective tasks, e.g. general requirements for assessment of standby, noise, accessibility, network operability, product information properties, etc.

However, the huge variety of different appliances also means very different technologies built into the products and very different ways of application and usage. It is the task of TC 59 and its SCs to develop adequate test methods for assessing performance and consumption data. That requires product group specific expertise and technical skills at the level of the technical standard development. It also requires general product and market knowledge represented in the technical committees in charge to develop standards that serve market needs and to assure that the developed methods keep up with changing markets, new technological trends and regulatory demands.

TC 59 uses a chairman's advisory group (AG 14) for coordination of work and exchange of information between the committee and the SCs, WGs and MT.

TC 59 as the central entity in this structure is also in charge of liaisons to external stakeholders and interested parties for all topics related to household and similar appliances in general or multiple product groups.

## C. BUSINESS ENVIRONMENT

Household electrical appliances represent a global market of over 246 billion € per year in 2018 according to the German's electrical industry association ZVEI. All these appliances have in common that they use electric energy to serve the needs and desires of consumers, i.e. to do their job. The efficiency of household electrical appliances, i.e. the balance between delivered performance and required resources, and their environmental impact is getting rapidly increasing attention worldwide, driven by regulatory measures, mandatory or voluntary eco-labels, consumer testing etc. It is recognized as well that consumer relevance is a major driver for performance standards. This is reflected in political debates and developments notably within the context of legislation without compromising the repeatability and reproducibility of measurement results. That calls for reliable and relevant methods to assess performance as well as consumption of household and similar appliances. The example of laundry appliances indicates that the global demand for test methods can be adequately served with globally agreed and accepted standards even for diversified markets and that a range of different technologies can be covered in a uniform way in one single standard document.

The latest example for globally accepted standard is IEC 63086-1:2020 Household and similar electrical air cleaning appliances - Methods for measuring the performance - Part 1: General requirements.

Based on this recent experience TC 59 and its SCs will continue to strive for such global methods as well as their recognition and actual application for product testing, regulation etc. throughout the world.

Already today TC 59 standards are widely adopted by national and regional standardization bodies. Examples are that CENELEC adopts TC 59 standards via the "parallel procedure" (Frankfurt Agreement), SANS (South African National Standards) adopts IEC TC 59 standards and adds 'National Annexes', ESMA (Emirates Authority for Standardization and Metrology) adopts IEC TC 59 standards published as UAE.S IECXXXX, etc.

For SC 59D the new editions of IEC 60456, IEC 61121 and IEC 62512 will include inter alia a new test method for rinsing performance, new textile loads, new detergent type that all may be used as the basis for setting legal provisions and for verifying the products compliance.

SC 59A has the responsibility to develop standards to measure the performance, consumption data and other parameter of electrical dishwashers. The overall market of dishwasher has increasing relevance.

SC 59F has worked very closely with ASTM F11 Vacuum cleaners for years. In 2017 an IEC/ASTM Partner Standards Development Organization Cooperation Agreement was signed. This agreement covers the cooperation of experts from both organizations in Joint Working Groups and the development of IEC/ASTM Dual Logo Standards. A further dual logo standard with worldwide significance has been published in 2020, namely IEC/ASTM 62885-7 Dry-cleaning robots.

#### D. MARKET DEMAND

Likely users of TC 59 standards are manufacturers, suppliers, environmental and testing bodies, regulators, consumer organizations – all these stakeholders are also actively involved in developing TC 59 standards.

The term “Performance” in the title of TC 59 covers a wide range of parameters of interest for regulators, consumer testing bodies and other stakeholders that are requested for declaration of product efficiency, emissions, resource efficiency and compliance with market entrance limits.

- Primary function(s) of the appliances (e.g. cleaning, cooling, heating, etc.)
- Energy consumption including stand-by and other low power modes
- Consumption of other resources (e.g. water, time)
- Noise emission
- Accessibility and Usability
- Dynamic interactions between appliances and with the electricity supply system
- Classification/Product information properties

The first four items of the list have been covered by the TC 59 standards for many years.

One of the reasons for increased attention to accessibility and usability as performance aspect is the response to the demographic change in some regions of the world and the desire to serve the needs of elderly people and people with disabilities.

The activities related to interactions and information exchange between appliances and the electricity supply system (the “smart grid”) reflect and respond to current technological developments.

All stakeholders and potential users require the standards to deliver data and test results of maximum reproducibility, relevance and acceptance regarding derived product evaluation.

The global trend towards regulation concerning product efficiency leads to an increased demand for measurement methods. To avoid multiplication of efforts to serve national and regional regulation and testing demand, a common and accepted set of standards is the goal of the joint efforts in IEC as a global group of technical experts. The determination of measurement uncertainty is a key element of measurement methods. Also, a systematic consideration and prevention of circumvention in the development of test methods will support the acceptance, consumer relevance and credibility of standards. This includes domestic and similar appliances for commercial use that were recently included in the scope of TC 59. First projects in the commercial sector have been launched in several SCs.

A high degree of efficient exchange and cooperation between IEC groups, regional stakeholders and mirror committees is required to develop such global standards and to assure they are used worldwide.

#### E. TRENDS IN TECHNOLOGY AND IN THE MARKET

Existing and upcoming trends may be indicated by the following keywords: Robots, smart appliances / smart homes / smart cities, Internet of Things. Smart technologies, the interworking of appliances with networks and with home-based renewable energy production and storage will gain substantial importance and have a massive impact on how consumers use their appliances. In this regard an unambiguous electronic data exchange is required. TC 59 and its SCs will continue to focus on these and other technical challenges in order to find and measure the relevant performance criteria for these new properties.

Another consequence of the trend to smart and/or internet enabled appliances is the increasing difficulty to judge the performance of an appliance in isolation from its surroundings. Applying a System approach will be of growing importance, meaning cooperation with other technical groups working at IEC level and with other standardization bodies.

Microbiological aspects, which are becoming increasingly important in the public perception, play a role in the work of TC 59. Nevertheless, TC 59 does not cover any health care and medical aspects. More in-depth research is needed regarding a boundary for the scope of TC 59 on these subjects.

**F. SYSTEMS APPROACH ASPECTS (REFERENCE - AC/33/2013)**

Several liaisons within IEC and with ISO and other organizations illustrate the need and benefit of a systems approach. Examples: TC 59 works on accessibility aspects of appliances in close cooperation with the relevant ISO TC 159/SC 4. For Robot Technology a liaison with ISO TC 299 exists. The full list of liaisons may be found on TC 59 Dashboard.

**G. CONFORMITY ASSESSMENT**

All standards to measure performance published by TC 59 or its SCs include test methods which can be used and are fit for comparative testing as well as conformity assessment. Round Robin Testing is typically used to establish data about repeatability and reproducibility of the methods and to determine the overall uncertainty of the measurement system.

Guidance and support for a systematic consideration and prevention of circumvention is part in the development of standards for household and similar electric appliances.

**H. 3-5 YEAR PROJECTED STRATEGIC OBJECTIVES, ACTIONS, TARGET DATES**

STRATEGIC OBJECTIVES 3-5 YEARS	ACTIONS TO SUPPORT THE STRATEGIC OBJECTIVES	TARGET DATE(S) TO COMPLETE THE ACTIONS
Alignment of definitions across standards in TC 59 responsibility	Analyze and map IEC glossary and Electropedia to harmonize and simplify as far as possible the terminology	2022
Provide guidance and support document for a systematic consideration and prevention of circumvention	Development of appropriate guidance documents	ongoing
Acceptance of IEC standards worldwide  Including discussion on how to further improve consumer relevance of testing methods	Review and evaluate acceptance and actual application of IEC test methods for regional local purposes	ongoing
Support the transfer of the horizontal requirements on Smart Grids/Smart Appliance interactivity and testing to product level	Review and evaluate the impact on product level in close cooperation with the product related SC's	ongoing
Elaborate methods to assess and evaluate accessibility and usability of household appliances including new/innovative controls (e.g speech, gesture -, and interoperability control)	Working group 11 and dedicated experts on new and innovative controls; the involvement of SCs as needed	ongoing
Elaborate methods to assess and evaluate the performance of electrical air cleaner	Dedicated working groups in close cooperation with ISO TC 142	2022 and following years
SC 59D	Close cooperation between technical appliance experts,	2020 and following years

Refine laundry care standards with regard to global applicability and consumer relevance	regional stakeholders and consumer representatives	
SC 59A / SC 59D Extend the field of work to also include commercial laundry and dish washing appliances	Built upon the work on-going at European level	ongoing
SC 59A / SC 59D Develop a Technical Specification on method for measuring the microbial contamination in dishwasher and laundry appliances	Analysis of existing regional methods.	2022
SC 59C Extend the field of work to also include electrical water heaters.  Develop methods for measuring radiation factor and radiation efficiency of direct acting room heaters	Built upon recently published European standards.	2022
SC 59F Address the growing number of battery-operated appliances	Founding of a dedicated WG for battery-related topics (e.g. charging, discharging, running time, maintenance power) and monitoring similar activities in other ISO or IEC bodies.	2021
SC 59K Refine cooking appliances performance measurement methods in order to include portable ovens, steam ovens and hobs	Same measurement methods for same technology independent of size of appliance allows to benefit from synergies.	2022
SC 59K Refine cooking appliances methods for increased global acceptance, improved repeatability and reproducibility of consumer relevant tests and alignment with gas cooking appliances (as far as possible)	Liaison with ISO / TC291 Gas cooking appliances	2022
SC 59K Develop a specification of the product properties of a digital device for measuring the performance.	Maybe of interest as a horizontal standard (image processing).	2022 and following years
Note: The progress on the actions should be reported in the RSMB.		