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wfk Test Materials

Introduction to IEC

By Dr. Tom Hilgers, Chairman IEC SC 59D „Home Laundry Appliances“

Presentation

- Scope and organization of IEC
- Introduction of IEC SC 59D “Home Laundry Appliances”
- Since IEC 60456 3rd edition:
  Development of SC 59D and IEC 60456 towards global recognition and acceptance

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Scope and Organization of IEC

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History

On 15 September 1904, delegates to the International Electrical Congress, being held in St. Louis, USA, adopted a report that included the following words:

"…steps should be taken to secure the co-operation of the technical societies of the world, by the appointment of a representative Commission to consider the question of the standardization of the nomenclature and ratings of electrical apparatus and machinery.„

As a result, the IEC was officially founded in June 1906, in London, England, where its Central Office was set up.

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History

In 1930 the IEC established the following electrical units:

Hertz for the unit of frequency

Oersted for the unit of magnetic field strength

Gauss for the unit of magnetic flux density

Maxwell of the unit of magnetic flux

Gilbert for the unit of magnetomotive force

Var for designating the unit of reactive power

Weber for the practical unit of magnetic flux

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History

It was decided to extend the existing series of practical units into a comprehensive system of physical units, which became the "Giorgi system", named after Giovanni Giorgi (1871-1950) - an Italian scientist and engineer.

This system has been elaborated further and is now commonly known as the "**Système international**", or **SI** for short.

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Mission

Today the International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes international standards for all electrical, electronic and related technologies.

IEC standards serve as a basis for national standardization and as references when drafting international tenders and contracts.

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Mission

Through its members, the IEC promotes international cooperation on all questions of electrotechnical standardization and related matters, such as the assessment of conformity to standards, in the fields of electricity, electronics and related technologies.

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Mission

The IEC charter embraces all electrotechnologies including electronics, magnetics and electromagnetics, electroacoustics, multimedia, telecommunication, and energy production and distribution, as well as associated general disciplines such as terminology and symbols, electromagnetic compatibility, measurement and performance, dependability, design and development, safety and the environment.

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Mission

IEC is related to

International Organization for Standardization

and

International Telecommunications Union.

There is no duplication of standards coverage between these international standards bodies

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Objectives

IEC‘s objectives are to:

- meet the requirements of the global market efficiently
- ensure primacy and maximum world-wide use of its standards and conformity assessment schemes
- assess and improve the quality of products and services covered by
its standards
- establish the conditions for the interoperability of complex systems

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Objectives

IEC's objectives are to:

- increase the efficiency of industrial processes
- contribute to the improvement of human health and safety
- contribute to the protection of the environment.

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Standards

IEC's international standards facilitate world trade by removing technical barriers to trade, leading to new markets and economic growth.

Put simply, a component or system manufactured to IEC standards and manufactured in country A can be sold and used in countries B through to Z.

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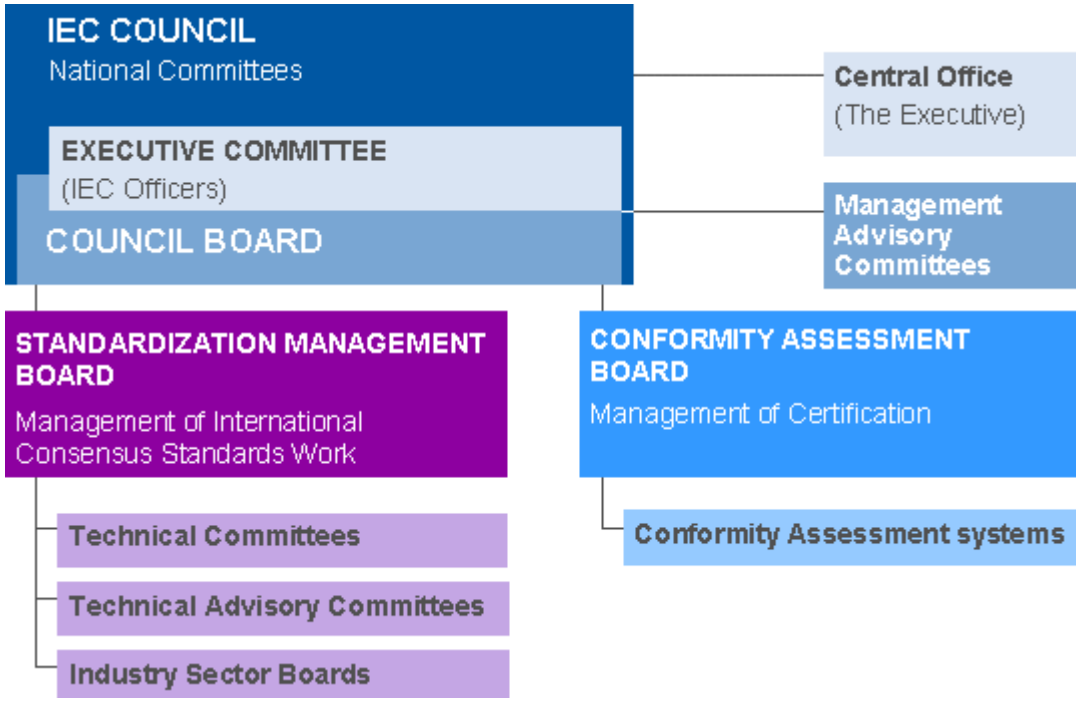
Structure



Each National Committee of the IEC is responsible for nominating technical experts of its country to carry out, support and communicate the work of

~ 179 technical committees (TCs) and subcommittees (SCs)

~ 700 project teams, maintenance teams or working groups (WGs)

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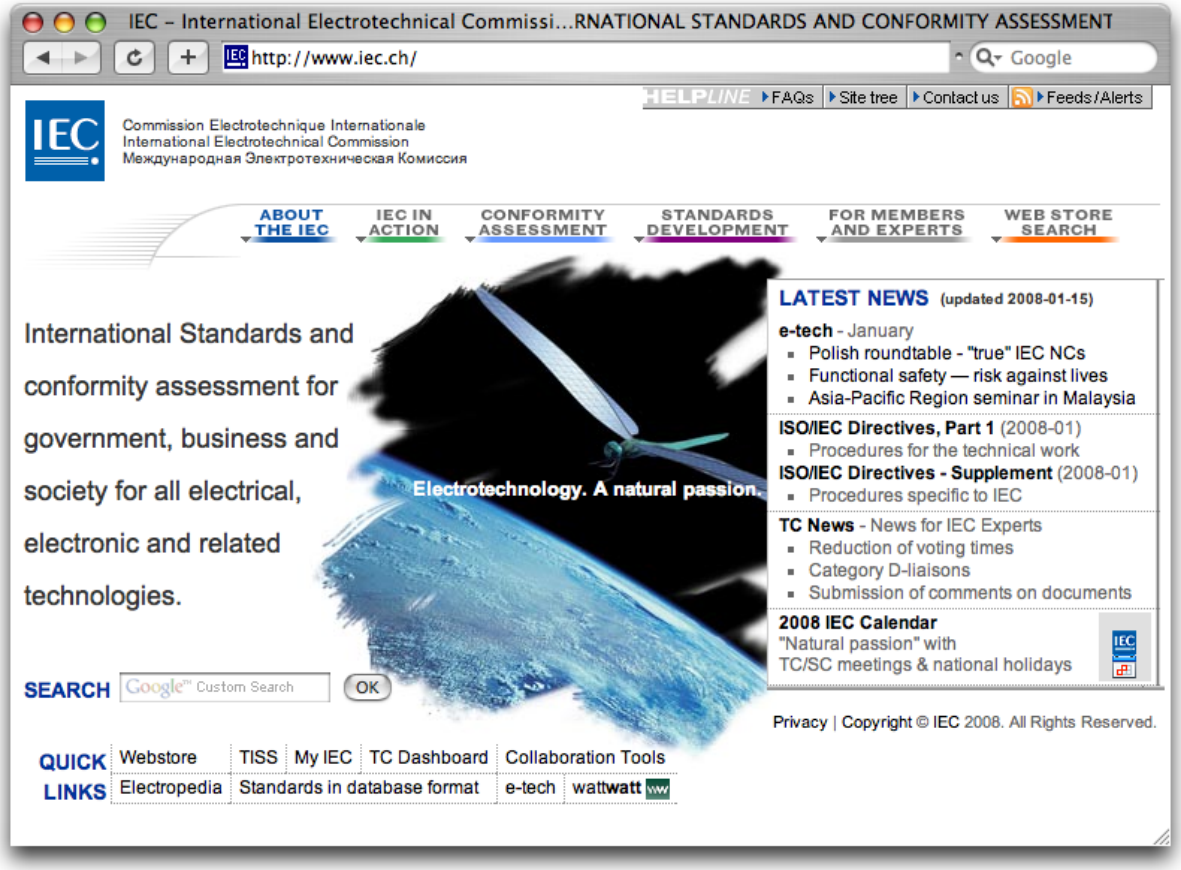
IEC on the Web

For more information please refer to

www.iec.ch



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Introduction of IEC SC 59D "Home Laundry Appliances"

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IEC SC 59D

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IEC SC 59D: Scope

"To prepare international standards on performance measurement methods for home laundry appliances."

Liaisons:

AISE	Association Internationale de la Savonnerie, de la Détergence et des Produits d'entretien (International Association of the Soap and Detergent Industry)
CI	Consumers international
ISO	ISO/TC 38/SC 1 - ISO/TC 38/SC 2 - ISO/TC 38/SC 11
IWS	Woolmark (former "International Wool Secretariat")

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IEC SC 59D: Standards

IEC 60456	**Clothes washing machines for household use - Methods for measuring the performance**
IEC 61121	Tumble dryers for household use – Methods for measuring the performance
IEC 60734	Household electrical appliances - Performance – Hard water for testing
IEC 60704-2-4	Household and similar electrical appliances - Test code for the determination of airborne acoustical noise – Part 2-4: Particular requirements for washing machines and spin extractors
IEC 60704-2-6	Household and similar electrical appliances - Test code for the determination of airborne acoustical noise – Part 2-6: Particular requirements for tumble dryers

Remark: Standard for washer-dryers in the pipeline

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IEC SC 59D: WGs

WG 13: Test materials

WG 16: Water to be used in testing the performance of some household electrical appliances

WG 17: Global application of test methods for home laundry appliances

WG 18: Uncertainty assessment of performance and consumption measurement for home laundry appliances

WG 19: Reference machine and programs

WG 20: Methods for rinsing-efficiency for household washing machines

Maintenance Teams:

MT 14: Maintenance Team for IEC 61121

MT 15: Maintenance Team for IEC 60456

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IEC SC 59D: Members

AUSTRALIA (AU)	Participating	MEXICO (MX)	Participating
AUSTRIA (AT)	Participating	NETHERLANDS (NL)	Participating
BELGIUM (BE)	Observer	NEW ZEALAND (NZ)	Participating
BRAZIL (BR)	Participating	NORWAY (NO)	Participating
BULGARIA (BG)	Observer	POLAND (PL)	Observer
CANADA (CA)	Observer	PORTUGAL (PT)	Observer
CHINA (CN)	Participating	ROMANIA (RO)	Participating
CZECH REPUBLIC (CZ)	Participating	RUSSIAN FEDERATION (RU)	Participating
DENMARK (DK)	Participating	SERBIA (RS)	Observer
FINLAND (FI)	Participating	SLOVAKIA (SK)	Observer
FRANCE (FR)	Participating	SLOVENIA (SI)	Observer
GERMANY (DE)	Participating	SOUTH AFRICA (ZA)	Observer
HUNGARY (HU)	Observer	SPAIN (ES)	Participating
INDIA (IN)	Participating	SWEDEN (SE)	Participating
IRELAND (IE)	Observer	SWITZERLAND (CH)	Participating
ITALY (IT)	Participating	TURKEY (TR)	Participating
JAPAN (JP)	Participating	UKRAINE (UA)	Participating
KOREA (REPUBLIC OF) (KR)	Participating	UNITED KINGDOM (GB)	Participating
MALAYSIA (MY)	Observer	UNITED STATES OF AMERICA (US)	Participating

Number of Participating countries: **26**
Number of Observer countries: **12**

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IEC SC 59D: Special affiliation

Dresden agreement (1996)

International
Electrotechnical
Commission

European Committee
for Electrotechnical
Standardization

IEC 60456 ▶▶▶ **EN 60456**

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IEC SC 59D: Special affiliation

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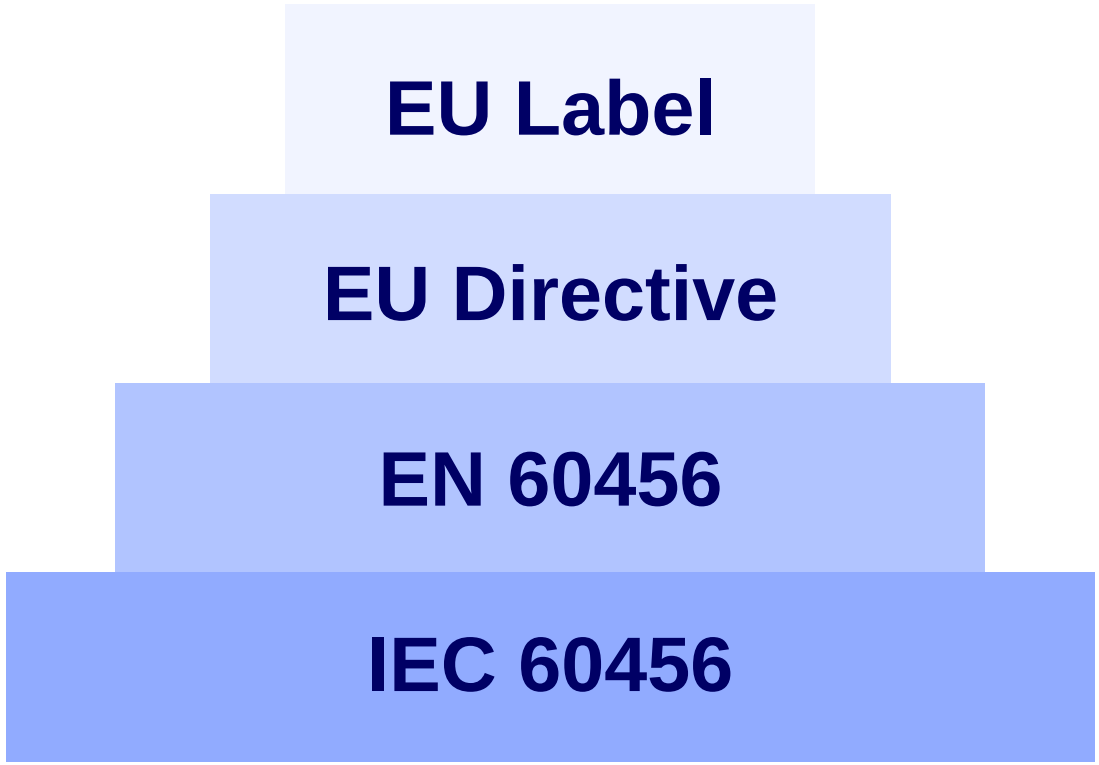
Connection IEC standard and EU energy label



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Since IEC 60456 3rd edition:

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IEC 60456 after ed. 3

IEC 60456 edition 3 was published in 1998.

Shortly after publication, IEC SC 59D started working on technical improvements concerning repeatability and reproducibility.

In the beginning of 2001, WG13 „Testmaterials“ discussed the relevance of reference detergent IEC Type A* for global testing and consequently launched sWG 13.2 „Global detergent“

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IEC 60456 after ed. 3

In October 2001, SC 59D discussed the issue of global applicability and acceptance in the plenary meeting in Florence, Italy.

As a result of that vivid discussion, SC 59D transformed sWG 13.2 into a full, new WG and established WG17 „Global application of IEC 60456“.

Since then WG 17 has become *THE* platform for

- introduction of new aspects into IEC 60456
- connecting with regional users worldwide for including their expectations and requirements.

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Washer test methods worldwide

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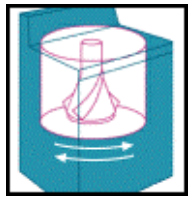

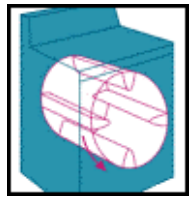


COUNTRY	STANDARD	% Soil Removal	Energy & Water	Water Extraction	Gentleness	Whiteness Retention	Tangling	Rinsing	Wool	Wrinkling	Vibration	Sand	Noise - Covered by another standard
Australian/NZ	AS/NZS 2040.1	Y	Y	Y	Y	Y	N	N	N	N	Y	N	N
Brazilian													
Canadian													
Chinese	GB 4288												
IEC/Europe	IEC 60456	Y	Y	Y	N	N	N	Y	Y	Y?	N	N	Y
Japanese	JIS 9606	Y	N	Y	N	N	N	Y	N	N	N	N	Y
Korean	KS C9608	Y	N	Y	N	N	N	Y	N	N	N	N	Y
Mexican	NMX-J-528												
South African	SABS 1422-1987												
USA	AHAM HLW-1	Y	N	Y	Y	Y	Y	Y	N	N	N	Y	N

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IEC 60456 after ed. 3

IEC 60456 edition 4 was published in 2003.

When IEC 60456 4th edition FDIS was voted on in 2003, a few countries with predominantly VA technology voted *NO* but at the same time indicated in their comments their appreciation for the enormeous effort already started with WG17 to transform IEC 60456 into a globally applicable and accepted standard.

WG17 created *THE* main input for the work towards IEC 60456 edition 5!
(Revised draft as CDV to be circulated to NCs within the next weeks).

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Guiding principles for edition 5

(Measures for success for 5th edition)

Two key elements:

- ☒ Global acceptance and application of the standard
- ☒ No serious adverse transitional impact to current users of the standard (HA systems)

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Unique approach towards global acceptance

Proactive approach to get feedback regarding issues in the current edition as well as proposed changes in the next edition to improve the global acceptance. → Global Liaison Team

WG and SWGs with global participation formed to research and address proposed changes and validation.

Structures Team within MT15 (standard maintenance team) with North American, European, Asian and Australian representation to guide the changes.

Leverage the research and testing work in progress within CECED, AHAM and JEMA.

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IEC 60456 edition 5 proposed changes

- **Stains strip:** New stain sebum and additionally aged red wine to improve both customer relevance and discrimination.
- **Reference machine:** Introduction of new reference machine Wascator CLS.
- **Reference programs:** New reference programs for VA application.
- **Detergent / dosage / water hardness:**
  Current standard detergent A* confirmed for next edition.
  Correlation with market detergents established.

  Ongoing discussion about dosage reduction, decision for lower dosage for VA systems to reflect realistic levels.

  Soft water option for all platforms.

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IEC 60456 edition 5 proposed changes

- **Loading and folding method:** Improved rule based method suitable for various wash systems.
- **Rinsing:** Refined alkalinity method with improved uncertainty levels.
- **Wool Shrinkage:** Improved shrinkage evaluation.
- **Mechanical action:** No change in edition 5, probably newly developed method in 6th edition.
- **Uncertainty:** Quantification of uncertainty levels of old and new elements.

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IEC 60456 edition 5: Next steps

First Draft for Comments was circulated to National Committees early 2007.

Global Liaison Team to contact stakeholders (NC representatives, industry organizations, ...) to communicate the agreed changes and supply explanations and promote the new draft.

Planned next document stages: CDV, FDIS

Publication expected in 2009.

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