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**Basic Safety  
Publications**

# Tools

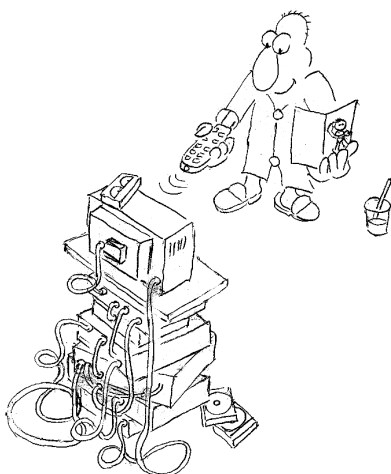
International Electrotechnical Commission

# Safety Publications

Industry uses standards to help create products and services. In this sense, standards help industry to save time and money, thus leading to greater efficiency. Standards serve other purposes as well, but their main use is as a tool for industry. Given this, to make a standard more valuable, it needs to fit into a global, coherent context.

Horizontal publications from the IEC (see definitions below) can cover a variety of subjects and they apply to a broad range of product committees. In general, they deal with fundamental principles, concepts, terminology or technical characteristics that are relevant to a number of technical committees. The goal of a horizontal publication is to ensure the consistency of IEC publications in areas common to a number of technical committees by avoiding duplication of work and contradictory requirements.

The focus of this brochure is safety publications.\* Because safety is a fundamental principle, these publications are horizontal in nature. Electrical and electronic equipment and



\* Please note: there is another similar IEC brochure dealing with electromagnetic compatibility.

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systems built to IEC International Standards can carry an inherent risk, given that electrical currents usually flow through them. Safety is thus an integral part of the thinking involving standards for such equipment and systems.


## Need to know

Experts who prepare IEC International Standards relating to products and systems are professional and conscientious and know they need to ensure the quality, accuracy and completeness of their work. When preparing standards for equipment or systems, experts need to know which safety aspects need to be included in their work. Often, they either need to refer to the right IEC publication in its entirety, or they need to refer to the appropriate sections, paragraphs and clauses in the text they are preparing. As a useful tool, this brochure will help technical committee and subcommittee experts to save time by providing a handy guide listing all IEC safety publications. If they cannot find the information they need in existing Basic or Group Safety Publications, the experts can ask, and work with, the committee with the horizontal or group safety function to develop what they need.

Three documents that are important are:

- IEC Guide 104 *The preparation of safety publications and the use of basic safety publications and group safety publications*
- IEC Guide 108 *The relationship between technical committees with horizontal functions and product committees and the use of basic publications.*
- IEC Administrative Circular 29/2002.

Some IEC publications apply to entire aspects of safety covering many products, and this category is known as Basic Safety Publications. An example is any IEC publication dealing with fire hazard testing. Others apply to a specific group of products within the scope of two or more product technical committees, and these are known as Group Safety Publications. An example is a standard covering aspects of laser radiation pertaining to human safety. A third category applies only to a particular



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kind of product and these are called Product Safety Standards. An example is safety of microwave ovens.

If an existing Group Safety Publication already applies to a product for which experts are preparing a standard, then most of the work is done. Experts preparing the product standard often only need to make reference to the existing Group Safety Publication. If no Group Safety Publication exists, but a Basic Safety Publication applies, then some of the work is already done and experts refer to the Basic Safety Publication. It is important to note that if a relevant Basic Safety Publication exists, experts are strongly recommended to use it and any decision not to do so should be approved by the IEC's Standardization Management Board. ( A horizontal committee in thorough con-



sultation with all product committees concerned develops Basic Safety Publications. Procedures are given in a standing document – the current version is Administrative Circular 29/2002 – and on the IEC website, where up-to-date lists of horizontal publications can also be found. The Standardization Management Board permanently oversees the process and SMB members and National Committees have specific responsibilities to aid the committees concerned.)

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## ACOS

The IEC's Advisory Committee on Safety (ACOS) provides overall guidance to IEC technical committees and subcommittees on questions of safety and a forum in which to discuss difficult issues involving several technical committees or differences in opinion among them.

The list of publications included here changes from time to time as the IEC keeps abreast of technological development. New publications appear and older ones are updated. While this list can serve as a starting point, readers are encouraged to use the "search" function on the IEC's website to find the most up-to-date information. Please click on the "Search for a publication" function and then in the "Text search" field, please type "basic safety publication" or "group safety publication".

### Definitions\*

**Basic Safety Publication:** a publication prepared by a technical committee with a horizontal safety function, containing general safety provisions.

**Group Safety Publication:** a publication covering all safety aspects of a specific group of products within the scope of two or more product technical committees.

**Basic publication (also referred to as a horizontal publication):** a publication prepared by a technical committee with a horizontal function, containing general provisions for one particular subject.

**Horizontal function:** a mandate given to a technical committee for treating subjects such as fundamental principles, concepts, terminology or technical characteristics, relevant to a number of technical committees (a technical committee with a horizontal function prepares basic publications).

**Horizontal safety function:** a mandate to issue safety publications covering a wide range of products (Basic Safety Publication).

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\*Note: when preparing IEC publications, experts should refer to the definitions given in IEC Guides 104 and 108.

**Product committee:** a technical committee having a scope which covers a specific product or group of related products.

**Horizontal technical committee:** a technical committee that prepares exclusively basic publications.

**Product publication:** a publication prepared by a product technical committee that is related to the scope of that committee.

**Publication:** a published IEC document that is a standard (including any amendments), a technical specification, a technical report, a guide, an IEC-PAS, an Industry Technical Agreement, or a Technology Trend Assessment.

**IEC-PAS:** IEC Publicly Available Specifications are normative documents from sources outside the IEC that have been brought into the work programme of a technical committee. They are intended, ultimately, to pass through the consensus procedure in the IEC to become International Standards.

## How can I find out more?

Please visit the IEC website at [www.iec.ch](http://www.iec.ch)

You may also contact the IEC at the co-ordinates given below.



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## Basic Safety Publications

# Tools

International Electrotechnical Commission

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|--------------------------|--|
| IEC 60068-2-6 (1995-03)  | Environmental testing - Part 2: Tests.<br>Test Fc: Vibration (sinusoidal)                                    |
| IEC 60068-2-7 (1983-01)  | Environmental testing. Part 2: Tests.<br>Test Ga: Acceleration, steady state                                 |
| IEC 60068-2-27 (1987-06) | Environmental testing. Part 2: Tests.<br>Test Ea and guidance: Shock   |
| IEC 60068-2-29 (1987-03) | Environmental testing. Part 2: Tests.<br>Test Eb and guidance: Bump  |
| IEC 60068-2-31 (1969-01) | Environmental testing. Part 2: Tests.<br>Test Ec: Drop and topple, primarily for<br>equipment-type specimens |
| IEC 60068-2-32 (1975-01) | Environmental testing. Part 2: Tests.<br>Test Ed: Free fall (Procedure 1)                                    |
| IEC 60068-2-55 (1987-11) | Environmental testing. Part 2: Tests.<br>Test Ee and guidance: Bounce  |
| IEC 60068-2-60 (1995-12) | Environmental testing - Part 2: Tests.<br>Test Ke: Flowing mixed gas corrosion<br>test                       |

- IEC 60068-2-64 (1993-05) Environmental testing - Part 2: Test methods - Test Fh: Vibration, broadband random (digital control) and guidance
- IEC 60068-2-66 (1994-06) Environmental testing - Part 2: Test methods - Test Cx: Damp heat, steady state (unsaturated pressurized vapour)
- IEC 60068-2-67 (1995-12) Environmental testing - Part 2: Tests - Test Cy: Damp heat, steady state, accelerated test primarily intended for components
- IEC 60068-2-75 (1997-08) Environmental testing - Part 2-75: Tests - Test Eh: Hammer tests
- IEC 60073 (1996-10) Basic and safety principles for man-machine interface, marking and identification - Coding principles for indication devices and actuators
- IEC 60112 (1979-01) Method for determining the comparative and the proof tracking indices of solid insulating materials under moist conditions
- IEC 60364-5-54 (1980-01) Electrical installations of buildings. Part 5: Selection and erection of electrical equipment. Chapter 54: Earthing arrangements and protective conductors
- IEC 60445 (1999-10) Basic and safety principles for man-machine interface, marking and identification - Identification of equipment terminals and of termination of certain designated conductors, including general rules for an alphanumeric system

- IEC 60446 (1999-02) Basic and safety principles for man-machine interface, marking and identification - Identification of conductors by colours or numerals
- IEC 60447 (1993-04) Man-machine-interface (MMI) - Actuating principles
- IEC 60449 (1973-01) Voltage bands for electrical installations of buildings
- IEC/TR2 60479-1 (1994-09) Effects of current on human beings and livestock - Part 1: General aspects
- IEC/TR 60479-2 (1987-03) Effects of current passing through the human body. Part 2: Special aspects - Chapter 4: Effects of alternating current with frequencies above 100 Hz - Chapter 5: Effects of special waveforms of current - Chapter 6: Effects of unidirectional single impulse currents of short duration
- IEC/TS 60479-3 (1998-09) Effects of current on human beings and livestock - Part 3: Effects of currents passing through the body of live stock
- IEC 60529 (2001-02) **Consolidated Edition**  
Degrees of protection provided by enclosures (IP Code)
- IEC 60587 (1984-01) Test method for evaluating resistance to tracking and erosion of electrical insulating materials used under severe ambient conditions
- IEC 60664-1 (2000-04) **Consolidated Edition**  
Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests

- IEC/TR3 60664-2-1 (1997-11)** Insulation coordination for equipment within low-voltage systems  
- Part 2-1: Application guide -  
Dimensioning procedure worksheets  
and dimensioning examples
- IEC 60664-3 (1992-10)** Insulation coordination for equipment within low-voltage systems - Part 3:  
Use of coatings to achieve insulation  
coordination of printed board  
assemblies
- IEC/TR3 60664-4 (1997-09)** Insulation coordination for equipment within low-voltage systems - Part 4:  
Consideration of high-frequency  
voltage stress
- IEC 60695-1-1 (1999-11)** Fire hazard testing - Part 1-1:  
Guidance for assessing the fire hazard  
of electrotechnical products - General  
guidelines
- IEC 60695-1-2 (1982-01)** Fire hazard testing. Part 1: Guidance  
for the preparation of requirements  
and test specifications for assessing  
fire hazard of electrotechnical  
products. Guidance for electronic  
components
- IEC 60695-1-3 (1986-09)** Fire hazard testing. Part 1: Guidance  
for the preparation of requirements  
and test specifications for assessing  
fire hazard of electrotechnical  
products. Guidance for use of  
preselection procedures
- IEC 60695-1-30 (2002-06)** Fire hazard testing. Part 1-30:  
Guidance for assessing the fire hazard  
of electrotechnical products - Use of  
preselection testing procedures
- IEC 60695-2-2 (1991-05)** Fire hazard testing - Part 2: Test  
methods - Section 2: Needle-flame  
test

- IEC 60695-2-3 (1984-01) Fire hazard testing. Part 2: Test methods. Bad-connection test with heaters
- IEC 60695-2-4/0 (1991-08) Fire hazard testing - Part 2: Test methods - Section 4/sheet 0: Diffusion type and premixed type flame test methods
- IEC 60695-2-4/1 (1991-04) Fire hazard testing - Part 2: Test methods - Section 4/Sheet 1: 1 kW nominal pre-mixed test flame and guidance
- IEC 60695-2-10 (2000-10) Fire Hazard testing - Part 2-10: Glowing/hot-wire based test methods - Glow-wire apparatus and common test procedure
- IEC 60695-2-11 (2000-10) Fire hazard testing - Part 2-11: Glowing/hot-wire based test methods - Glow-wire flammability test method for end-products
- IEC 60695-2-12 (2000-10) Fire hazard testing - Part 2-12: Glowing/hot-wire based test methods - Glow-wire flammability test method for materials
- IEC 60695-2-13 (2000-10) Fire hazard testing - Part 2-13: Glowing/hot-wire based test methods - Glow-wire ignitability test method for materials
- IEC 60695-2-20 (1995-08) Fire hazard testing - Part 2: Glowing/Hot wire based test methods - Section 20: Hot-wire coil ignitability test on materials
- IEC 60695-3-1 (1982-01) Fire hazard testing. Part 3: Examples of fire hazard assessment procedures and interpretation of results.

- Combustion characteristics and survey of test methods for their determination
- IEC 60695-4 (2001-07)** Fire hazard testing - Part 4: Terminology concerning fire tests
- IEC 60695-5-1 (1993-06)** Fire hazard testing - Part 5: Assessment of potential corrosion damage by fire effluent - Section 1: General guidance
- IEC TR/2 60695-5-2 (1994-12)** Fire hazard testing – Part 5: Assessment of potential corrosion damage by fire effluent - Section 2: Guidance on the selection and use of test methods
- IEC 60695-6-1 (2001-02)** Fire hazard testing - Part 6-1: Smoke opacity - General guidance
- IEC/TS 60695-6-2 (2001-02)** Fire hazard testing - Part 6-2: Smoke obscuration - Summary and relevance of test methods
- IEC/TR2 60695-6-30 (1996-10)** Fire hazard testing - Part 6: Guidance and test methods on the assessment of obscuration hazards of vision caused by smoke opacity from electrotechnical products involved in fires - Section 30: Small scale static method. Determination of smoke opacity. Description of the apparatus
- IEC/TS 60695-6-31 (1999-04)** Fire hazard testing - Part 6-31: Smoke obscuration - Small-scale static test - Materials
- IEC 60695-7-1 (1993-11)** Fire hazard testing - Part 7: Guidance on the minimization of toxic hazards due to fires involving electrotechnical products - Section 1: General

- IEC 60695-7-2 (2002-06) Fire hazard testing - Part 7-2 : Toxicity of fire effluent - Summary and relevance of test methods
- IEC/TS 60695-7-3 (1998-12) Fire hazard testing - Part 7-3: Toxicity of fire effluent - Use and interpretation of test results
- IEC/TR2 60695-7-4 (1995-05) Fire hazard testing - Part 7: Guidance on the minimization of toxic hazard due to fire involving electrotechnical products - Section 4: Unusual toxic effects in fires
- IEC 60695-7-51 (2002-03) Fire hazard testing - Part 7-51: Toxicity of fire effluent - Estimation of toxic potency: Calculation and interpretation of test results
- IEC 60695-8-1 (2001-01) Fire hazard testing - Part 8-1: Heat release - General guidance
- IEC/TS 60695-8-2 (2000-07) Fire hazard testing - Part 8-2: Heat release - Summary and relevance of test methods
- IEC 60695-9-1 (1998-12) Fire hazard testing - Part 9-1: Surface spread of flame - General guidance
- IEC/TS 60695-9-2 (2001-04) Fire hazard testing - Part 9-2: Surface spread of flame - Summary and relevance of test methods
- IEC 60695-10-2 (2001-11) **Consolidated Edition**  
Fire hazard testing - Part 10-2: Guidance and test methods for the minimization of the effects of abnormal heat on electrotechnical products involved in fires - Method for testing products made from non-metallic materials for resistance to heat using the ball pressure test

- IEC 60695-10-3 (2002-04) Fire hazard testing - Part 10-3: abnormal heat - Mould stress relief distortion test
- IEC/TS 60695-11-3 (2000-03) Fire hazard testing - Part 11-3: Test flames - 500 W flames - Apparatus and confirmational test methods
- IEC/TS 60695-11-4 (2000-02) Fire hazard testing - Part 11-4: Test flames - 50 W flames - Apparatus and confirmational test methods
- IEC 60695-11-10 (1999-03) Fire hazard testing - Part 11-10: Test flames - 50 W horizontal and vertical flame test methods
- IEC 60695-11-20 (1999-03) Fire hazard testing - Part 11-20: Test flames - 500 W flame test methods
- IEC 60695-11-40 (2002-02) Fire hazard testing - Part 11-40: Test flames - Confirmatory tests - Guidance
- IEC 60707 (1999-03) Flammability of solid non-metallic materials when exposed to flame sources - List of test methods
- IEC 60757 (1983-01) Code for designation of colours
- IEC 60990 (1999-08) Methods of measurement of touch current and protective conductor current
- IEC 61032 (1997-12) Protection of persons and equipment by enclosures - Probes for verification
- IEC 61140 (2001-10) Protection against electric shock - Common aspects for installation and equipment
- IEC 61293 (1994-06) Marking of electrical equipment with ratings related to electrical supply - Safety requirements

IEC 61508-1 (1998-12)	Functional safety of electrical/ electronic/programmable electronic safety-related systems - Part 1: General requirements
IEC 61508-3 (1998-12)	Functional safety of electrical/ electronic/programmable electronic safety-related systems - Part 3: Software requirements
IEC 61508-4 (1998-12)	Functional safety of electrical/ electronic/programmable electronic safety-related systems - Part 4: Definitions and abbreviations
IEC 62151 (2000-05)	Safety of equipment electrically connected to a telecommunication network

**For further information**

## How can I find out more?

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