

TECHNICAL SPECIFICATION



BASIC SAFETY PUBLICATION

**Effects of current on human beings and livestock –
Part 2: Special aspects**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

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CONTENTS

FOREWORD	5
1 Scope	7
2 Normative references	7
3 Terms and definitions	8
4 Effects of alternating currents with frequencies above 100 Hz	10
4.1 General	10
4.2 Effects of alternating current in the frequency range above 100 Hz up to and including 1 000 Hz	11
4.2.1 Threshold of perception	11
4.2.2 Threshold of let-go	11
4.2.3 Threshold of ventricular fibrillation	12
4.3 Effects of alternating current in the frequency range above 1 000 Hz up to and including 10 000 Hz	13
4.3.1 Threshold of perception	13
4.3.2 Threshold of let-go	13
4.3.3 Threshold of ventricular fibrillation	14
4.4 Effects of alternating current in the frequency range above 10 000 Hz	14
4.4.1 General	14
4.4.2 Threshold of perception	14
4.4.3 Threshold of let-go	14
4.4.4 Threshold of ventricular fibrillation	14
4.4.5 Other effects	15
5 Effects of special waveforms of current	15
5.1 General	15
5.2 Equivalent magnitude, frequency and threshold	16
5.3 Effects of alternating current with DC components	16
5.3.1 Waveforms and frequencies and current thresholds	16
5.3.2 Threshold of startle reaction	17
5.3.3 Threshold of let-go	18
5.3.4 Threshold of ventricular fibrillation	19
6 Effects of alternating current with phase control	22
6.1 Waveforms and frequencies and current thresholds	22
6.2 Threshold of startle reaction and threshold of let-go	23
6.3 Threshold of ventricular fibrillation	24
6.3.1 General	24
6.3.2 Symmetrical control	24
6.3.3 Asymmetrical control	24
7 Effects of alternating current with multicyle control	24
7.1 Waveforms and frequencies	24
7.2 Threshold of startle reaction and threshold of let-go	25
7.3 Threshold of ventricular fibrillation	25
7.3.1 General	25
7.3.2 Shock durations longer than 1,5 times the period of the cardiac cycle	26
7.3.3 Shock durations less than 0,75 times the period of the cardiac cycle	26
8 Estimation of the equivalent current threshold for mixed frequencies	26

8.1	Threshold of perception and let-go	26
8.2	Threshold of ventricular fibrillation	26
9	Effects of current pulse bursts and random complex irregular waveforms	27
9.1	Ventricular fibrillation threshold of multiple pulses of current separated by 300 ms or more	27
9.2	Ventricular fibrillation threshold of multiple pulses of current separated by less than 300 ms	27
9.2.1	General	27
9.2.2	Examples	28
9.2.3	Random complex irregular waveforms	30
10	Effects of electric current through the immersed human body	32
10.1	General	32
10.2	Resistivity of water solutions and of the human body	32
10.3	Conducted current through immersed body	33
10.4	Physiological effects of current through the immersed body	34
10.5	Threshold values of current	35
10.6	Intrinsically “safe” voltage values	35
11	Effects of unidirectional single impulse currents of short duration	35
11.1	General	35
11.2	Effects of unidirectional impulse currents of short duration	36
11.2.1	Waveforms	36
11.2.2	Determination of specific fibrillating energy F_e	37
11.3	Threshold of perception and threshold of pain for capacitor discharge	38
11.4	Threshold of ventricular fibrillation	39
11.4.1	General	39
11.4.2	Examples	40
Annex A (informative)	Random complex irregular waveform analysis	43
A.1	General	43
A.2	Formal theoretical statement of the method	43
A.3	Demonstration of the calculation	44
A.3.1	General	44
A.3.2	Choice of justified current	46
A.3.3	Choice of sampling step size	46
A.4	Examples 1 and 2	47
Bibliography		50
Figure 1	– Variation of the threshold of perception within the frequency range 50/60 Hz to 1 000 Hz	11
Figure 2	– Variation of the threshold of let-go within the frequency range 50/60 Hz to 1 000 Hz	12
Figure 3	– Variation of the threshold of ventricular fibrillation within the frequency range 50/60 Hz to 1 000 Hz, shock durations longer than one heart period and longitudinal current paths through the trunk of the body	12
Figure 4	– Variation of the threshold of perception within the frequency range 1 000 Hz to 10 000 Hz	13
Figure 5	– Variation of the threshold of let-go within the frequency range 1 000 Hz to 10 000 Hz	13
Figure 6	– Variation of the threshold of ventricular fibrillation for continuous sinusoidal current for use from 1 000 Hz to a maximum of 150 kHz	15
Figure 7	– Waveforms of currents	17

Figure 8 – Let-go thresholds for men, women and children	18
Figure 9 – 99,5 percentile let-go threshold for combinations of 50/60 Hz sinusoidal alternating current and direct current	19
Figure 10 – Composite alternating and direct current with equivalent likelihood of ventricular fibrillation.....	20
Figure 11 – Waveforms of rectified alternating currents	21
Figure 12 – Waveforms of alternating currents with phase control.....	23
Figure 13 – Waveforms of alternating currents with multicycle control.....	25
Figure 14 – Threshold of ventricular fibrillation (average value) for alternating current with multicycle control for various degrees of controls (results of experiments with young pigs).....	26
Figure 15 – Series of four rectangular pulses of unidirectional current	28
Figure 16 – Series of four rectangular pulses of unidirectional current	29
Figure 17 – Series of four rectangular pulses of unidirectional current	29
Figure 18 – Example of current versus elapsed time over a contaminated insulator	30
Figure 19 – PC plotted on the AC time current curves (Figure 20 of IEC TS 60479-1:2005)	31
Figure 20 – Forms of current for rectangular impulses, sinusoidal impulses and for capacitor discharges	37
Figure 21 – Rectangular impulse, sinusoidal impulse and capacitor discharge having the same specific fibrillating energy and the same shock-duration	38
Figure 22 – Threshold of perception and threshold of pain for the current resulting from the discharge of a capacitor (dry hands, large contact area)	39
Figure 23 – Probability of fibrillation risks for current flowing in the path left hand to feet.....	40
Figure A.1 – Definition of a segment of a random complex waveform	43
Figure A.2 – Definition of a duration within a sample.....	43
Figure A.3 – PC for demonstration example of the random complex waveform method plotted against time-current curves for RMS AC	46
Figure A.4 – Random complex waveform typical of those used in Example 1	47
Figure A.5 – Random complex waveform typical of those used in Example 2	48
Figure A.6 – PC for Examples 1 and 2 of the random complex waveform method plotted against time-current curves for RMS AC	49
Table 1 – Example of estimate for ventricular fibrillation threshold after each burst of current in a series of pulses each of which excited the heart tissue.....	28
Table 2 – Resistivity of water solutions [24], [25]	32
Table 3 – Resistivity of human body tissues.....	33
Table 4 – Relative interaction between the resistivity of water solution and the impedance characteristic of the electrical source	34
Table 5 – Effects of shocks.....	41
Table 6 – Effects of shocks.....	42

INTERNATIONAL ELECTROTECHNICAL COMMISSION

EFFECTS OF CURRENT ON HUMAN BEINGS AND LIVESTOCK –**Part 2: Special aspects****FOREWORD**

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- the subject is still under technical development or where, for any other reason, there is the future but no immediate possibility of an agreement on an International Standard.

Technical Specifications are subject to review within three years of publication to decide whether they can be transformed into International Standards.

IEC TS 60479-2, which is a Technical Specification, has been prepared by IEC technical committee 64: Electrical installations and protection against electric shock.

This fourth edition cancels and replaces the third edition, published in 2007. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- Changes reflecting the change in applicability of frequency from 1 kHz to 150 kHz have been added.
- The examination of random complex irregular waveforms has been added.
- The handling of successive DC pulses has been clarified.

The text of this Technical Specification is based on the following documents:

Draft TS	Report on voting
64/2143/DTS	64/2166/RVDTS

Full information on the voting for the approval of this Technical Specification can be found in the report on voting indicated in the above table.

This Technical Specification has the status of a basic safety publication in accordance with IEC Guide 104.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 60479 series, published under the general title *Effects of current on human beings and livestock*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- transformed into an International standard,
- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

EFFECTS OF CURRENT ON HUMAN BEINGS AND LIVESTOCK –

Part 2: Special aspects

1 Scope

This part of IEC 60479 describes the effects on the human body when a sinusoidal alternating current in the frequency range above 100 Hz passes through it.

The effects of current passing through the human body for:

- alternating sinusoidal current with DC components;
- alternating sinusoidal current with phase control;
- alternating sinusoidal current with multicycle control

are given but are only deemed applicable for alternating current frequencies from 15 Hz up to 100 Hz.

Means of extending the frequency of applicability of pure sinusoids to a frequency of 150 kHz are given, supplementing the data in IEC TS 60479-1.

Means of examining random complex irregular waveforms are given.

This document describes the effects of current passing through the human body in the form of single and multiple successive unidirectional rectangular impulses, sinusoidal impulses and impulses resulting from capacitor discharges.

The values specified are deemed to be applicable for impulse durations from 0,1 ms up to and including 10 ms.

This document only considers conducted current resulting from the direct application of a source of current to the body, as does IEC TS 60479-1 and IEC TS 60479-3. It does not consider current induced within the body caused by its exposure to an external electromagnetic field.

This basic safety publication is primarily intended for use by technical committees in the preparation of standards in accordance with the principles laid down in IEC Guide 104 and ISO/IEC Guide 51. It is not intended for use by manufacturers or certification bodies.

One of the responsibilities of a technical committee is, wherever applicable, to make use of basic safety publications in the preparation of its publications. The requirements, test methods or test conditions of this basic safety publication will not apply unless specifically referred to or included in the relevant publications.

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.

IEC TS 60479-1:2005, *Effects of current on human beings and livestock – Part 1: General aspects*

IEC TS 60479-1:2005/AMD1:2016

IEC 60990, *Methods of measurement of touch-current and protective conductor current*

ISO/IEC Guide 51, *Safety aspects – Guidelines for their inclusion in standards*

IEC Guide 104, *The preparation of safety publications and the use of basic safety publications and group safety publications*

Withdrawn