

# TECHNICAL REPORT

# IEC 61955

First edition  
1998-08

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## Primary batteries – Summary of research and actions limiting risks to reversed installation of primary batteries

*Piles –  
Résumé des recherches et des mesures  
de limitation des risques dus à l'installation de piles  
avec polarité inversée*

IEC TR 61955:1998

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## Terminology, graphical and letter symbols

For general terminology, readers are referred to IEC 60050: *International Electrotechnical Vocabulary (IEV)*.

For graphical symbols, and letter symbols and signs approved by the IEC for general use, readers are referred to publications IEC 60027: *Letter symbols to be used in electrical technology*, IEC 60417: *Graphical symbols for use on equipment. Index, survey and compilation of the single sheets* and IEC 60617: *Graphical symbols for diagrams*.

\* See web site address on title page.

# TECHNICAL REPORT – TYPE 3

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International Electrotechnical Commission  
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## CONTENTS

	Page
FOREWORD .....	3
Clause	
1 Scope .....	4
2 Reference documents .....	4
3 Background.....	4
4 General.....	5
4.1 Battery compartment guidelines .....	5
4.2 Clarification note to IEC 60086-1 .....	5
4.3 Consumer information .....	5
4.4 Concentricity of the positive terminal .....	5
4.5 IEC 60086-5 – Product safety standard for primary batteries.....	5
5 Conclusion .....	6
Annex A (informative) Consumer information leaflet.....	7
Annex B (informative) Battery compartment guidelines.....	9

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WITHDRAWN

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**PRIMARY BATTERIES –**  
**Summary of research and actions limiting risks to**  
**reversed installation of primary batteries**

## FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
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The main task of IEC technical committees is to prepare International Standards. In exceptional circumstances, a technical committee may propose the publication of a technical report of one of the following types:

- type 1, when the required support cannot be obtained for the publication of an International Standard, despite repeated efforts;
- type 2, when 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;
- type 3, when a technical committee has collected data of a different kind from that which is normally published as an International Standard, for example "state of the art".

Technical reports of types 1 and 2 are subject to review within three years of publication to decide whether they can be transformed into International Standards. Technical reports of type 3 do not necessarily have to be reviewed until the data they provide are considered to be no longer valid or useful.

IEC 61955, which is a technical report of type 3, has been prepared by technical committee 35: Primary cells and batteries.

The text of this technical report is based on the following documents:

Committee draft	Report on voting
35/1030/CDV	35/1045/RVC

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

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

## PRIMARY BATTERIES –

### Summary of research and actions limiting risks to reversed installation of primary batteries

#### 1 Scope

This technical report provides information relevant to the safe design of batteries and battery powered devices together with appropriate cautionary advice to consumers. This report is primarily intended to be used by

- battery manufacturers;
- equipment manufacturers;
- designers;
- standard writers;
- consumer organizations;
- charger manufacturers.

This report may also be of assistance to

- educational authorities;
- users;
- procurement personnel;
- regulatory authorities.

#### 2 Reference documents

IEC 60086-1:1996, *Primary batteries – Part 1: General*

IEC 60086-2:1997, *Primary batteries – Part 2: Specification sheets*

IEC Guide 104:1997, *The preparation of safety publications and the use of basic safety publications and group safety publications*

ISO/IEC Guide 51:1990, *Guidelines for the inclusion of safety aspects in standards*

#### 3 Background

Primary batteries have become more sophisticated in both chemistry and construction with both capacity and rate capability being increased to meet the ever-growing advances in battery-powered equipment technology. Resulting from these continuing developments and recognizing the need for safety, technical committee 35 investigated the common modes of failure resulting from consumer inadvertent misuse. Specific attention was given to researching solutions limiting risks due to reverse installation of batteries which is the most common mode of consumer misuse.

Statistical research:

- information coming from publicly available data relating to accidents involving batteries;
- industry-based statistics provided through trade associations;
- availability of independent statistics through the IEC Advisory Committee on Safety (ACOS).