

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Lead-acid batteries for propulsion power of lightweight vehicles – General requirements and methods of test

Batteries au plomb pour la puissance de propulsion des véhicules légers – Exigences générales et méthodes d'essai





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**LEAD-ACID BATTERIES FOR PROPULSION
POWER OF LIGHTWEIGHT VEHICLES –
GENERAL REQUIREMENTS AND METHODS OF TEST****FOREWORD**

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International Standard IEC 63193 has been prepared by IEC technical committee 21: Secondary cells and batteries.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
21/1056/FDIS	21/1066/RVD

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

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

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

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

LEAD-ACID BATTERIES FOR PROPULSION POWER OF LIGHTWEIGHT VEHICLES – GENERAL REQUIREMENTS AND METHODS OF TEST

1 Scope

This document is applicable to lead-acid batteries powering electric two-wheelers (mopeds) and three-wheelers (e-rickshaws and delivery vehicles), and also to golf cars and similar light utility and multi-passenger vehicles.



Figure 1 – Examples of vehicles covered by this document

Persons with a low level of technical skills as regards these vehicles and associated batteries, operate them most often in an environment with many bystanders who are unaware of the possible risks involved. The batteries have thus to be eminently reliable, consumer friendly and minimize risks of fire, explosions, electrical shocks and chemical burns.

These batteries are submitted to frequent and deep discharges with electrical power delivered to the propulsion system in short surges of high current when accelerating, followed by lower current levels when at cruising speed. The subsequent charge of the battery can also occur in areas accessible to the public.

The document specifies methods of tests tailored to batteries destined for the above-referenced types of vehicles so as to ensure satisfactory and safe battery performance in the intended application.

This document does not apply for example to lead acid cells and batteries used for:

- vehicle engine starting applications (IEC 60095 series);
- traction applications (IEC 60254 series);

- stationary applications (IEC 60896 series);
- general purpose applications (IEC 61056 series); or to
- motorized wheelchairs and similar personal assist vehicles.

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 60695-11-4:2011, *Fire hazard testing – Part 11-4: Test flames – 50 W flame – Apparatus and confirmational test method*

IEC 60695-11-10:2013, *Fire hazard testing – Part 11-10: Test flames – 50 W horizontal and vertical flame test methods*

IEC TR 61430:1997, *Secondary cells and batteries – Test methods for checking the performance of devices designed for reducing explosion hazards – Lead-acid starter batteries*

IEC 62902:2019, *Secondary cells and batteries – Marking symbols for identification of their chemistry*

ISO 1043-1:2011, *Plastics – Symbols and abbreviated terms – Part 1: Basic polymers and their special characteristics*

ISO 3864-1:2011, *Graphical symbols – Safety colours and safety signs – Part 1: Design principles for safety signs and safety markings*

ISO 3864-3:2012, *Graphical symbols – Safety colours and safety signs – Part 3: Design principles for graphical symbols for use in safety signs*

ISO 7000, *Graphical symbols for use on equipment – Registered symbols* (available at <http://www.graphical-symbols.info/equipment>)

ISO 7010, *Graphical symbols – Safety colours and safety signs – Registered safety signs* (available at <https://www.iso.org/obp>)

ISO 8608:2016, *Mechanical vibration – Road surface profiles – Reporting of measured data*

Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE)

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
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