

INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Safety requirements for secondary batteries and battery installations –
Part 6: Safe operation of lithium ion batteries in traction applications**

**Exigences de sécurité pour les batteries (accumulateurs) et les installations
de batteries –
Partie 6: Fonctionnement en toute sécurité des batteries ions-lithium dans
les applications de traction**



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CONTENTS

FOREWORD.....	4
1 Scope.....	6
2 Normative references	6
3 Terms and definitions	8
4 Protection against electric shock by the battery and charger.....	10
4.1 General.....	10
4.2 Basic protection and fault protection	10
4.3 Basic protection and fault protection when discharging the traction battery on the vehicle (battery disconnected from charger/mains).....	11
4.3.1 Batteries up to and including 60 V DC	11
4.3.2 For batteries exceeding 60 V DC up to and including 120 V DC.....	11
4.3.3 Batteries exceeding 120 V DC but not exceeding 1 500 V DC.....	11
4.4 Basic protection and fault protection when charging the traction battery.....	11
5 Prevention of short-circuits and protection from other effects of electric current.....	12
5.1 Cables and connectors	12
5.2 Protective measures during maintenance.....	12
5.3 Battery insulation	13
5.3.1 Insulation resistance.....	13
5.3.2 Insulation resistance measurement.....	13
6 Provisions against hazards.....	13
6.1 General.....	13
6.2 Charging modes.....	13
6.3 Temperature influence on the charge voltage and limiting of charge current	14
6.4 Overcharging or overdischarging under fault conditions	14
6.5 Prevention of electrostatic discharges when working with batteries	14
7 Provision against hazards by chemical substances.....	14
7.1 General.....	14
7.2 Initial actions in case of hazardous chemical release	14
7.3 Eye or skin contact.....	14
7.4 Swallowing.....	14
7.5 Respiratory tract.....	15
7.6 Burns.....	15
8 Battery containers and enclosures.....	15
9 Battery change	15
10 Battery peripheral equipment/accessories	15
10.1 Battery management system.....	15
10.2 Thermal management systems and series installation.....	16
10.3 Connectors (plugs/sockets).....	16
11 Charge current requirements	16
11.1 Peak voltage/current by charging	16
11.2 Superimposed ripple current	17
11.3 Maximum ripple current.....	17
12 Identification labels, warning notices and instructions for use, installation and maintenance.....	17
12.1 General.....	17
12.2 Warning labels	17

12.3	Identification label.....	18
12.4	Instructions	18
12.5	Other labels	18
13	Transportation, storage, disposal and environmental aspects	18
13.1	Packing and transport.....	18
13.2	Disassembly, disposal, and recycling of batteries.....	19
13.3	Storage.....	19
14	Inspection and monitoring.....	19
15	EMC for traction application.....	19
	Annex A (informative) Cell behaviour inside and outside of operating region.....	20
	Annex B (normative) Electromagnetic compatibility (EMC)	21
B.1	Case 1 – EMC requirements of battery systems depending of each end device application	21
B.2	Case 2 – EMC requirements for testing battery system as an end-device.....	21
	Bibliography.....	22
	Figure A.1 – An example for operating region of lithium ion cell	20

INTERNATIONAL ELECTROTECHNICAL COMMISSION

SAFETY REQUIREMENTS FOR SECONDARY BATTERIES AND BATTERY INSTALLATIONS –

Part 6: Safe operation of lithium ion batteries in traction applications

FOREWORD

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International Standard IEC 62485-6 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
21/1071/FDIS	21/1077/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.

A list of all parts in the IEC 62485 series, published under the general title *Safety requirements for secondary batteries and battery installations*, can be found on the IEC website.

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

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SAFETY REQUIREMENTS FOR SECONDARY BATTERIES AND BATTERY INSTALLATIONS –

Part 6: Safe operation of lithium ion batteries in traction applications

1 Scope

This part of IEC 62485 applies to battery installations used for electric off-road vehicles; it does not cover the design of such vehicles.

Examples of the main applications are:

- industrial
 - cleaning machines,
 - trucks for material handling, for example, lift trucks, tow trucks, automatic guided vehicles,
 - electrically propelled lifting platforms;
- other applications
 - electric powered boats and ships.

This document covers the safety aspects of battery installations in such applications. This document does not cover railway vehicles, for traction railway application, see IEC 62928.

This document does not cover batteries and battery installations for the propulsion of electric road vehicles. In the event of there being a variation of requirements between this document and those of a relevant product standard (e.g. goods vehicles, bicycles, wheel chairs, golf carts), then the product standard requirements take precedence.

Lithium ion cells and batteries used in traction industrial application are intended to fulfil safety requirements in accordance with IEC 62619.

The maximum voltages are limited to AC 1 000 V and to DC 1 500 V, and the principal measures for protection against hazards, generally from electricity, gas emission and electrolyte to prevent fire and explosion are described.

This document provides requirements on safety aspects associated with the installation, use, inspection, maintenance and disposal of lithium ion batteries. Batteries containing lithium metal are not covered by this document.

In general, the safety requirements for secondary batteries and battery installations – General safety information and definitions are specified for lead-acid, nickel-cadmium and nickel-metal hybrid batteries in accordance with IEC 62485-1.

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 60204-1, *Safety of machinery – Electrical equipment of machines – Part 1: General requirements*