

INTERNATIONAL STANDARD

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**Railway applications – Rolling stock –
Batteries for auxiliary power supply systems –
Part 1: General requirements**

**Applications ferroviaires – Matériel roulant –
Batteries pour systèmes d'alimentation auxiliaire –
Partie 1: Exigences générales**



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CONTENTS

FOREWORD.....	5
INTRODUCTION.....	7
1 Scope.....	8
2 Normative references	8
3 Terms, definitions and abbreviated terms	9
3.1 Terms and definitions.....	9
3.2 Abbreviated terms.....	11
4 General requirements	12
4.1 Definitions of components of a battery system, see Figure 1 (images are examples)	12
4.2 Definitions of battery type	12
4.3 Environmental conditions	12
4.4 System requirements	13
4.4.1 System voltage.....	13
4.4.2 Charging requirements	15
4.4.3 Discharging requirements	16
4.4.4 Charge retention (self-discharge).....	18
4.4.5 Requirements for battery capacity sizing.....	18
4.5 Safety and protection requirements.....	19
4.5.1 General	19
4.5.2 Deep discharge of batteries	19
4.5.3 Temperature compensation during charging	19
4.6 Fire protection	20
4.7 Maintenance	20
4.8 Charging characteristics	20
5 Mechanical design of battery system	20
5.1 General.....	20
5.2 Interface mechanism.....	20
5.2.1 General	20
5.2.2 Fixed type.....	20
5.2.3 Roller type.....	21
5.2.4 Slide type	23
5.3 Location of battery system on the vehicle.....	24
5.4 Accessibility to the battery	24
5.5 Ventilation of battery box	24
6 Electrical interface.....	25
6.1 General.....	25
6.2 External electrical connections interface	25
7 Markings.....	26
7.1 Safety signs	26
7.1.1 Outside the box	26
7.1.2 Tray, crate or other places inside the box	26
7.1.3 Cells or monoblocs	26
7.2 Nameplate	26
7.2.1 Battery box	26
7.2.2 Nameplates on tray, crate, module or other nameplates inside the box.....	27

7.2.3	Cells or monoblocs	27
8	Storage and transportation conditions.....	27
8.1	Transportation	27
8.2	Storage of batteries	27
9	Testing	27
9.1	General.....	27
9.2	Type test.....	28
9.2.1	General	28
9.2.2	Electrical characteristic tests	28
9.2.3	Dielectric test	28
9.2.4	Load profile test.....	28
9.2.5	Shock and vibration test	28
9.3	Routine test	29
9.3.1	General	29
9.3.2	Visual checks	29
9.3.3	Dielectric test	29
9.3.4	Electrical characteristics tests	29
Annex A (informative)	Examples of typical load profiles for emergency operation.....	30
A.1	Example of load profile – High speed train (Figure A.1)	30
A.2	Example of load profile – Regional train / EMU (Figure A.2).....	30
Annex B (normative)	Load profile verification	31
B.1	General.....	31
B.2	General methodology.....	31
B.3	Battery sizing documentation	32
B.4	Operational verification (load profile test).....	32
B.5	Test report	32
Annex C (informative)	Example of functions during load profile	34
Bibliography		35
Figure 1	– Definition of cell(s), monobloc battery, crate, tray, and box	12
Figure 2	– Example of discharge curves at various constant discharge currents based on percentage of capacity	14
Figure 3	– Examples of charge curves	14
Figure 4	– Interfaces between battery and battery charging system	15
Figure 5	– Example of load profile for emergency back-up for auxiliaries (train not moving).....	17
Figure 6	– Example of load profile during normal operation such as rail gaps (driving without battery charging).....	17
Figure 7	– Example of fixed solution without tray	21
Figure 8	– Example of fixed solution with tray	21
Figure 9	– Example of roller solution with folding beams	22
Figure 10	– Example of roller solution with roller bearings	23
Figure 11	– Example of slide solution.....	24
Figure 12	– Typical schematic of an electrical interface of a battery system	25
Figure A.1	– Example of load profile for high speed train (without starting up segment)	30
Figure A.2	– Example of load profile for regional train / EMU (without starting up segment)	30

Table 1 – Operating range of the equipment supplied by the battery system	13
Table 2 – Requirements of the charging characteristics	15
Table 3 – Parameters and responsibility for battery capacity sizing	19
Table C.1 – Examples of functions during different steps of load profile	34

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**RAILWAY APPLICATIONS – ROLLING STOCK –
BATTERIES FOR AUXILIARY POWER SUPPLY SYSTEMS –****Part 1: General requirements****FOREWORD**

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

FDIS	Report on voting
9/2362/FDIS	9/2386/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 62973 series, published under the general title *Railway applications – Rolling stock – Batteries for auxiliary power supply systems*, 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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INTRODUCTION

This document considers general requirements for all rechargeable battery technologies.

Details of each battery technology are described in other parts as follows:

Part 2: Nickel Cadmium (NiCd) batteries

Part 3: Lead Acid (LA) batteries

Future parts: Other battery technologies, such as Nickel metal hydride (NiMH), Lithium ion (Li-ion), etc.

In this document the interface with a battery charger is specified and the battery charger itself is out of scope.

RAILWAY APPLICATIONS – ROLLING STOCK – BATTERIES FOR AUXILIARY POWER SUPPLY SYSTEMS –

Part 1: General requirements

1 Scope

This part of IEC 62973 applies to various rechargeable battery technologies for auxiliary power supply systems used on rolling stock.

This document applies to any rolling stock types (e.g. light rail vehicles, tramways, streetcars, metros, commuter trains, regional trains, high speed trains, locomotives, etc.).

This document focuses on:

- the description of electrical interfaces for the following battery nominal voltages: 24 V, 32 V, 36 V, 48 V, 64 V, 72 V, 87 V, 96 V, 110 V;
- the description of electrical interfaces: considering battery load profile and battery capacity sizing parameters (e.g. operating voltage range and charging characteristics).

This document with the other parts of the standard is used in conjunction with other related IEC standards for auxiliary equipment used for railway rolling stock applications.

The main objective of this document is to achieve standardization of the electrical interfaces by considering various battery parameters in order to allow for calculating the battery capacity required for a specific load profile for the various battery technologies as detailed in the other parts of the standard.

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 60077-1, *Railway applications – Electric equipment for rolling stock – Part 1: General service conditions and general rules*

IEC 61373:2010, *Railway applications – Rolling stock equipment – Shock and vibration test*

IEC 62485-2, *Safety requirements for secondary batteries and battery installations – Part 2: Stationary batteries*

IEC 62498-1:2010, *Railway applications – Environmental conditions for equipment – Part 1: Equipment on board rolling stock*

IEC 62847, *Railway applications – Rolling stock – Electrical connectors – Requirements and test methods*

ISO 7010, *Graphical symbols – Safety colours and safety signs – Registered safety signs*