IEC 63330-1

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Repurposing of secondary batteries – Part 1: General requirements

Réaffectation des batteries d'accumulateurs – Partie 1: Exigences générales

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COMMISSION ELECTROTECHNIQUE INTERNATIONALE

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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FOREWORD

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IEC 63330-1 has been prepared by IEC technical committee 21: Secondary cells and batteries. It is an International Standard.

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

Draft	Report on voting
21/1193/FDIS	21/1202/RVD

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

A list of all parts in the IEC 63330 series, published under the general title *Repurposing of secondary batteries*, 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 webstore.iec.ch in the data related to the specific document. At this date, the document will be

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- withdrawn, or
- revised.

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INTRODUCTION

Increasing concerns about global warming, air quality and energy saving have been encouraging the utilization of rechargeable energy storage systems for different applications such as electric mobility. In parallel, technical advances in secondary batteries, especially in lithium-ion batteries, provide the market with the practical option to repurpose used batteries and battery systems that can maintain substantial performance even after the end of use of the original equipment such as electric vehicles.

In order to foster such new business and to accelerate effective and safe utilization of energy source, it is indispensable to establish a basic International Standard for evaluation of safety and performance of used batteries and battery systems, which derive from different equipment with different histories, and will be repurposed for different applications.

This document intends to provide basic requirements and a procedure to evaluate the performance and safety of used batteries and battery systems, and also provide general requirements for application of repurposed batteries.

Figure 1 contains an overview of different standards on reuse and repurposing of batteries and battery-based energy storage systems (BESS) developed by IEC TC 21 *Secondary cells and batteries* and IEC TC 120 *Electrical Energy Storage (EES) systems*. The purpose of Figure 1 is to inform users of these standards about the existence of the other standards listed in Figure 1 and give a concise overview of those standards. It also identifies areas of possible overlap and informs users in these cases which of the standards takes precedence.

		IEC 63338		IEC 63330-1		IEC 62933-4-4		IEC 62933-5-3	
Title		**General guidance on reuse and repurposing of secondary cells and batteries –**		**Repurposing of secondary cells and batteries – Part 1: General requirements**		**Electrical energy storage (EES) systems – Part 4-4: Environmental requirements for battery-based energy storage systems (BESS) with reused batteries**		**Electrical energy storage (EES) systems – Part 5-3: Safety requirements for grid-integrated EES systems – Performing unplanned modification of electrochemical based system**	
Scope		Secondary lithium ion and Ni-MH		Repurposing of secondary batteries and systems (excluding redox flow/ Ni-Metal Hydride batteries)		BESS using reused batteries		Energy storage systems	
		Battery	System	Battery	System	Battery	System	Battery	System
Requirements	**General**			✔ Clause 4/5/6					
	Environment					✔ Annex A (info)	✔ Clause 4/5/6/7 Annex B (info)		
	Safety			✔ Clause 4/5/6	✔ Clause 6 (ESS) Clause 6 (other)			✔ Annex A (info)	✔ Clause 5/6/7/8 ✔ Clause 9
	Assessment			✔ Clause 5	✔ Clause 6 (ESS) Clause 6 (other)				
Guidance	**General**	✔ Clause 4							
	Environment	✔ Clause 9							
	Safety	✔ Clause 5/6 ✔ Clause 7/8							

■ = Priority ■ = No overlap
■ = Support

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Figure 1 – Standards on reuse and repurposing of batteries and battery-based energy storage systems (BESS)

REPURPOSING OF SECONDARY BATTERIES –

Part 1: General requirements

1 Scope

This part of IEC 63330 provides general requirements for repurposing of secondary cells, modules, battery packs and battery systems, herein also referred to as "PRODUCT", that are originally manufactured for other applications such as electric vehicles.

This document specifies the procedure to evaluate the performance and safety of used PRODUCT for repurposing.

This document also provides basic requirements for application of repurposed PRODUCT.

This document targets secondary lithium ion PRODUCT and battery technologies with data traceability.

The redox flow, Ni-MH and Pb-acid batteries are not covered by this document.

NOTE 1 General guidance on reuse and repurposing of secondary cells and batteries is provided in IEC 63338 (under development).

NOTE 2 Transportation is out of the scope of this document.

2 Normative references

There are no normative references in this document.

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/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1
repurposing
operation that results in PRODUCT being used for a different purpose or application than the one that PRODUCT was originally designed for

Note 1 to entry: In this document, PRODUCT is cell, battery, module, battery pack and battery system.

Note 2 to entry: The repurposing in this document includes usage of used battery for the same type of purpose as original equipment, with change of battery pack composition.

Note 3 to entry: Alternative common terms for repurposing include "second use" and "second life".