

BUREAU OF INDIAN STANDARDS

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भारतीय मानक मसौदा

व्हीलचेयर

**भाग 25 विद्युत संचालित व्हीलचेयर के लिए लेड-एसिड बैटरी और चार्जर -
आवश्यकताएँ और परीक्षण विधियाँ**

Draft Indian Standard

Wheelchairs

**Part 25 Lead-acid batteries and chargers for powered wheelchairs –
Requirements and test methods**

[ICS 11.180.10]

Artificial Limbs, Rehabilitation Appliances and Equipment for
the Persons with Disability Sectional Committee, MHD 09

Last date for comments:
5 June, 2024

NATIONAL FOREWORD

(Adoption clause will be added later)

The text of ISO Standard has been approved as suitable for publication as an Indian Standard Without deviations. Certain conventions are however not identical to those used in Indian Standards. Attention is particularly drawn to the following:

- Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'
- Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

In this adopted standard, reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards which are to be substituted in their respective places are listed below along with their degree of equivalence for the editions indicated:

<i>International Standard</i>	<i>Corresponding Indian Standard</i>	<i>Degree of Equivalence</i>
ISO 7176-8 Wheelchairs - Part 8: Requirements and test methods for static, impact and fatigue strengths.	IS 18651 (Part 8) : 2024/ 2014 Wheelchairs Part 8 Requirements and test methods for static impact and fatigue strengths	Identical

ISO 7176-21: 2009, Wheelchairs — Part 21: Requirements and test methods for electromagnetic compatibility of electrically powered wheelchairs and scooters, and battery chargers	IS 18651 (Part 21): 2024/ISO 7176-21: 2009 Wheelchairs Part 21 Requirements and test methods for electromagnetic compatibility of electrically powered wheelchairs and scooters and battery chargers	Identical
ISO 7176-26, Wheelchairs — Part 26: Vocabulary	IS/ISO 7176-26: 2007 Wheelchairs Part 26 Vocabulary	Identical
ISO 14971, Medical devices — Application of risk management to medical devices	IS/ISO 14971: 2019 Medical devices - Application of risk management to medical devices (<i>First Revision</i>)	Identical
IEC 60254-1:2005, Lead-acid traction batteries — Part 1: General requirements and methods of tests	IS 5154 (Part 1): 2013 Lead-acid traction batteries Part 1 General requirements and methods of test (<i>second revision</i>)	Identical
IEC 60254-2, Lead-acid traction batteries — Part 2: Dimensions of cells and terminals and marking of polarity on cells	IS 5154 (Part 2): 2013 Lead-acid traction batteries Part 2 Dimensions of cells and terminals and marking of polarity on cells (<i>second revision</i>)	Identical
IEC 60529, Degrees of protection provided by enclosures (IP Code)	IS/IEC 60529: 2001 Degrees of protection provided by enclosures (IP Code)	Identical

The technical committee has reviewed the provisions of the following International Standards referred in this adopted standard and has decided that they are acceptable for use in conjunction with this standard:

International Standard Title

IEC 60335-2-29:2016+Amd1:2019	Household and similar electrical appliances — Safety — Part 2-29: Particular requirements for battery chargers
IEC 61076-2-103	Connectors for electronic equipment — Part 2-103: Circular connectors — Detail specification for a range of multipole connectors (type ‘XLR’)
IEC/TS 61430	Secondary cells and batteries — Test methods for checking the performance of devices designed for reducing explosion hazards — Lead-acid starter batteries
SAE J1495	Test procedure for battery flame retardant venting systems

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test shall be rounded off in accordance with **IS 2: 2022** 'Rules for rounding off numerical values (*second revision*)'. The number of significant places retained in the rounded off value should be same as that of the specified value in this standard.

Introduction

Since the reliability and performance of an electrically-powered wheelchair depends on the operation, performance and reliability of the battery set and the battery charger, it is important to ensure that wheelchair batteries and chargers are suitable for their purpose and that the wheelchair, batteries and charger are compatible. It is also important to ensure that risks arising from the use of wheelchair batteries and their chargers are eliminated or reduced as far as is practicable. Consequently, it is essential that performance requirements and safety requirements for wheelchair batteries and battery chargers be available.

Battery chargers are divided into three types: off-board, carry-on and on-board. Operating, transport and storage situations can differ for these types, so it is appropriate to apply different requirements to them.

Scope

This document specifies requirements and test methods for lead-acid batteries and their chargers intended for use with electrically-powered wheelchairs and scooters. Requirements for chargers are applicable to those with a rated input voltage not greater than 250 V AC and a nominal output voltage not greater than 36 V.

NATIONAL ANNEX A
(National Foreword)

A-1 BIS CERTIFICATION MARKING

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the Bureau of Indian Standards Act, 2016 and the Rules and Regulations framed thereunder, and the product(s) may be marked with the Standard Mark.

The technical content of the document has not been enclosed as it is identical with the corresponding ISO standard. For details, please refer to ISO 7176-25:2022 or kindly contact:

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