First edition 2017-04

Electrically propelled mopeds and motorcycles — Test specifications and safety requirements for lithium-ion battery systems

Cyclomoteurs et motocycles à propulsion électrique — Spécifications d'essai et exigences de sécurité pour les systèmes de batterie au lithium-ion



Reference number ISO 18243:2017(E)

ISO 18243:2017(E)

This is a preview of "ISO 18243:2017". Click here to purchase the full version from the ANSI store.



COPYRIGHT PROTECTED DOCUMENT

© ISO 2017, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office Ch. de Blandonnet 8 • CP 401 CH-1214 Vernier, Geneva, Switzerland Tel. +41 22 749 01 11 Fax +41 22 749 09 47 copyright@iso.org www.iso.org

Contents				
Fore	eword		v	
Intr	oductio	n	vi	
1	Scop	e	1	
2	-			
3	Normative references Terms and definitions			
4	Symbols and abbreviated terms			
5		eral requirements		
	5.1 5.2	General conditions		
	5.2 5.3	Tests Test procedure		
	5.3 5.4	Preparation of the DUT for testing		
	3.4	5.4.1 Preparation of battery pack		
		5.4.2 Preparation of battery system		
6	Conc			
O	General test methods 6.1 Pre-conditioning cycles			
	0.1	6.1.1 Purpose		
		6.1.2 Test procedure		
	6.2	Standard cycle (SC)		
		6.2.1 Purpose		
		6.2.2 Test procedure		
7	Perf	ormance test	9	
•	7.1	Energy and capacity at RT		
		7.1.1 Purpose		
		7.1.2 Test procedure		
		7.1.3 Requirement	10	
	7.2	Energy and capacity at different temperature and discharge rates		
		7.2.1 Purpose		
		7.2.2 Test procedure		
		7.2.3 Requirements		
	7.3	Power and internal resistance		
		7.3.1 Purpose		
		7.3.2 Pulse power characterization profile		
		7.3.3 Test procedure 7.3.4 Requirements		
	7.4	No load SOC loss		
	7.4	7.4.1 Purpose		
		7.4.2 Test procedure		
		7.4.3 Test sequence		
		7.4.4 Requirement		
	7.5	SOC loss at storage		
		7.5.1 Purpose		
		7.5.2 Test procedure	21	
		7.5.3 Test sequence		
		7.5.4 Requirement		
	7.6	Cycle life		
		7.6.1 Purpose		
		7.6.2 Test procedure		
		7.6.3 Requirements	22	
8	Safety and reliability test			
	8.1	Vibration		
		8.1.1 Purpose	23	

		'est procedure	
0.2		Requirements	
8.2		al shock	
		Ourpose	
		est procedure	
0.2		Requirements	
8.3	-	N	
		Ourpose	
		lest procedure	
8.4		shock	
0.4		Purpose	
		'est procedure	
		Requirements	
8.5		mersion	
0.5		Purpose	
		est procedure	
		Requirements	
8.6		equirements.	
0.0		Purpose	
		est procedure	
		Requirements	
8.7		perature condition	
0.7		Purpose	
		est procedure	
		Requirements	
8.8		ruit protection	
		Purpose	
		est procedure	
		Requirements	
8.9		ge protection	
		Purpose	
		est procedure	
		Requirements	
8.10	Over disc	harge protection	28
	8.10.1 P	Purpose	28
		'est procedure	
	8.10.3 R	Requirements	28
8.11			
		Purpose	
		est procedure	
		Requirements	
8.12		T	
		Purpose	
		est procedure	
	8.12.3 R	Requirements	31
Annex A (in	formative) E	Battery pack and system	32
Annex B (in	formative) I	Description of the screen referenced in <u>8.6</u>	36
Ribliograph	187		27

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 38, *Motorcycles and mopeds*.

ISO 18243:2017(E)

This is a preview of "ISO 18243:2017". Click here to purchase the full version from the ANSI store.

Introduction

Lithium-ion based battery systems are an efficient alternative energy storage system for electrically propelled mopeds and motorcycles. The requirements for lithium-ion based battery systems to be used as power source for the propulsion of electrically propelled mopeds and motorcycles are significantly different to those batteries used for consumer electronics or stationary usage.

This document provides specific test procedures for lithium-ion battery packs and systems specifically developed for propulsion of mopeds and motorcycles. This document specifies such tests and related requirements to ensure that a battery pack or system is able to meet the specific needs of the mopeds and motorcycles industry.

It enables mopeds and motorcycles manufacturers to choose test procedures to evaluate the characteristics of a battery pack or system for their specific requirements.