

ISBN 978-0-626-34354-5

SANS 60439-2:2006

Edition 2.1

IEC 60439-2:2005

Edition 3.1

Any reference to SABS IEC 60439-2 is deemed
to be a reference to this standard
(Government Notice No. 1373 of 8 November 2002)

SOUTH AFRICAN NATIONAL STANDARD

Low-voltage switchgear and controlgear assemblies

Part 2: Particular requirements for busbar trunking systems (busways)

This national standard is the identical implementation of IEC 60439-2:2005, and is adopted with the permission of the International Electrotechnical Commission.

**WARNING — Can only be used
in conjunction with
SANS 60439-1.**

Published by SABS Standards Division
1 Dr Lategan Road Groenkloof ☒ Private Bag X191 Pretoria 0001
Tel: +27 12 428 7911 Fax: +27 12 344 1568
www.sabs.co.za
© SABS

SABS

SANS 60439-2:2006

Edition 2.1

IEC 60439-2:2005

Edition 3.1

Table of changes

Change No.	Date	Scope
Amdt 1	2005	Amended to update referenced standards, to add a special service condition and EMC tests to the list of type tests, to change the requirements for the resistance of insulating materials to abnormal heat, the temperature-rise test, the thermal cycling test, and the verification of short-circuit withstand strength.

National foreword

This South African standard was prepared by National Committee SABS/TC 067/SC 02, *Electricity distribution systems and components – Low-voltage switchgear*, in accordance with procedures of the SABS, in compliance with annex 3 of the WTO/TBT agreement.

This part of SANS 60439 was published in November 2006. This SANS edition cancels and replaces SABS edition 2 (SABS IEC 60439-2:2000).

This document, by reference, forms part of the electrical installation regulations promulgated in the occupational health and safety act, (Act No. 85 of 1993), as published by Government Notice No. R. 242 (Government Gazette 31975) of 6 March 2009.

Compliance with this document cannot confer immunity from legal obligations.

<p>Reaffirmed and reprinted in March 2017. This document will be reviewed every five years and be reaffirmed, amended, revised or withdrawn.</p>

**NORME
INTERNATIONALE
INTERNATIONAL
STANDARD**

**CEI
IEC
60439-2**

Edition 3.1

2005-10

Edition 3:2000 consolidée par l'amendement 1:2005
Edition 3:2000 consolidated with amendment 1:2005

Ensembles d'appareillage à basse tension –

**Partie 2:
Règles particulières pour les
canalisations préfabriquées**

**Low-voltage switchgear and
controlgear assemblies –**

**Part 2:
Particular requirements for
busbar trunking systems (busways)**

© IEC 2005 Droits de reproduction réservés — Copyright - all rights reserved

Aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'éditeur.

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

International Electrotechnical Commission, 3, rue de Varembe, PO Box 131, CH-1211 Geneva 20, Switzerland
Telephone: +41 22 919 02 11 Telefax: +41 22 919 03 00 E-mail: inmail@iec.ch Web: www.iec.ch



Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE

V

*Pour prix, voir catalogue en vigueur
For price, see current catalogue*

CONTENTS

FOREWORD	5
1 General	9
2 Definitions	11
3 Classification of ASSEMBLIES	13
4 Electrical characteristics of ASSEMBLIES	15
5 Information to be given regarding the ASSEMBLIES	19
6 Service conditions	19
7 Design and construction	21
8 Test specifications	27
Annex J (informative) Voltage drop of the system	49
Annex K (informative) Method of determination of the magnetic field in the vicinity of busbar trunking system	51
Annex L (informative) Verification of maintenance circuit integrity under fire conditions	53
Annex M (informative) Test arrangement (see IEC 60332-3)	55
Annex N (informative) Method of determination of the electrical characteristics of busbar trunking systems by calculations from measurements	59
Figure K.1 – Test arrangement	51
Figure K.2 – Measurements and calculations	51
Figure M.1 – Example of a test chamber	55
Figure M.3 – Test floor for verification of the fire-proofing	57
Figure N.1 – Test arrangement for 3-phase a.c.	59
Figure N.2 – Test arrangement – Method of symmetrical components	63
Figure N.3 – Test arrangement – Method of impedances	65
Table 1A – Number of cycles of insertion and removal	33

INTERNATIONAL ELECTROTECHNICAL COMMISSION

LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR ASSEMBLIES –

Part 2: Particular requirements for busbar trunking systems (busways)

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with an IEC Publication.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60439-2 has been prepared by subcommittee 17D: Low-voltage switchgear and controlgear assemblies, of IEC technical committee 17: Switchgear and controlgear.

This consolidated version of IEC 60439-2 is based on the third edition (2000) [documents 17D/225/FDIS and 17D/228/RVD] and its amendment 1 (2005) [documents 17D/324/FDIS and 17D/330/RVD].

It bears the edition number 3.1.

A vertical line in the margin shows where the base publication has been modified by amendment 1.

Annexes J, K, L, M and N are for information only.

Busbar trunking systems (busways) shall comply with all requirements of IEC 60439-1, if not otherwise indicated hereinafter and shall also comply with the particular requirements contained in this standard.