

ISBN 978-0-626-34490-0

SANS 60660:1999

Edition 1 and nat. amdt 1

IEC 60660:1999

Edition 2

Any reference to SABS IEC 60660 is deemed
to be a reference to this standard
(Government Notice No. 1373 of 8 November 2002)

SOUTH AFRICAN NATIONAL STANDARD

Insulators — Tests on indoor post insulators of organic material for systems with nominal voltages greater than 1 000 V up to but not including 300 kV

This national standard is the identical implementation of IEC 60660:1999, and is adopted with the permission of the International Electrotechnical Commission.

SANS 60660:1999
Edition 1 and nat. amdt 1
IEC 60660:1999
Edition 2

Table of changes

Change No.	Date	Scope
Nat. amdt 1	2007	Amended to change the designation from SABS to SANS, with no technical changes.

National foreword

This South African standard was approved by National Committee SABS/TC 067/SC 04, *Electricity distribution systems and components – Insulators*, in accordance with procedures of the SABS Standards Division, in compliance with annex 3 of the WTO/TBT agreement.

This SANS document was published in June 2007.

This SANS document supersedes SABS IEC 60660:1999 (edition 1).

Compliance with this document cannot confer immunity from legal obligations.

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and be reaffirmed, amended, revised or withdrawn.**

**NORME
INTERNATIONALE
INTERNATIONAL
STANDARD**

**CEI
IEC
60660**

Deuxième édition
Second edition
1999-10

**Isolateurs –
Essais des supports isolants d'intérieur en matière
organique destinés à des installations de tension
nominale supérieure à 1 000 V jusqu'à 300 kV
non compris**

**Insulators –
Tests on indoor post insulators of organic material
for systems with nominal voltages greater than
1 000 V up to but not including 300 kV**

© IEC 1999 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 photo-copie 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
Telefax: +41 22 919 0300

e-mail: inmail@iec.ch

3, rue de Varembe Geneva, Switzerland
IEC web site <http://www.iec.ch>



Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE

U

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

CONTENTS

	Page
FOREWORD	5
Clause	
1 General.....	9
1.1 Scope and object	9
1.2 Normative references	9
1.3 Definitions.....	11
1.4 Values which characterise a post insulator of organic material	15
1.5 Documentation.....	17
1.6 Normal service conditions	17
2 General requirements for tests	17
2.1 Classification of tests	17
2.2 Quality assurance	19
2.3 General requirements for electrical tests	19
2.4 Lightning impulse voltage tests.....	21
2.5 Power-frequency voltage tests.....	21
2.6 Standard reference atmospheric conditions for tests.....	21
2.7 Correction factors for atmospheric conditions	21
3 Type tests	21
3.1 General.....	21
3.2 General requirements for electrical type tests	25
3.3 Dry lightning impulse withstand voltage test.....	27
3.4 Dry power-frequency withstand voltage test	29
3.5 Partial discharge extinction voltage test.....	29
3.6 Lightning impulse puncture test	29
3.7 Mechanical failing load test	31
3.8 Test for deflection under load at normal ambient temperature conditions	33
3.9 Test for mechanical bending strength as a function of temperature	33
3.10 Water absorption test.....	37
3.11 Ageing and humidity test	37
3.12 Flammability test.....	37
3.13 Temperature cycle test.....	37
4 Sample tests	39
4.1 General.....	39
4.2 Verification of dimensions	41
4.3 Re-test procedure	41
5 Routine tests	43
5.1 General.....	43
5.2 Visual examination	43
5.3 Mechanical routine test	43
5.4 Electrical routine test and partial discharge measurement.....	45
Annex A (informative) Tolerances of form and position.....	47

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**INSULATORS – TESTS ON INDOOR POST INSULATORS OF
ORGANIC MATERIAL FOR SYSTEMS WITH NOMINAL
VOLTAGES GREATER THAN 1 000 V UP TO BUT
NOT INCLUDING 300 kV**

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The 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 the 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 National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60660 has been prepared by subcommittee 36C: Insulators for substations, of IEC technical committee 36: Insulators.

This second edition cancels and replaces the first edition published in 1979 and constitutes a technical revision.

The text of this standard is based on the following documents:

FDIS	Report on voting
36C/111/FDIS	36C/114/RVD

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 3.

Annex A is for information only.