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**SANS 61089:1991**

Edition 1 and IEC amdt 1, nat. amdt 1

**IEC 61089:1991**

Edition 1 and amdt 1

Any reference to SABS IEC 61089 is deemed  
to be a reference to this standard  
(Government Notice No. 1373 of 8 November 2002)

## **SOUTH AFRICAN NATIONAL STANDARD**

### **Round wire concentric lay overhead electrical stranded conductors**

This national standard is the identical implementation of IEC 61089:1991 and IEC amendment 1, and is adopted with the permission of the International Electrotechnical Commission.

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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](http://www.sabs.co.za)

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## **SANS 61089:1991**

Edition 1 and IEC amdt 1, nat. amdt 1

## **IEC 61089:1991**

Edition 1 and amdt 1

### **Table of changes**

<b>Change No.</b>	<b>Date</b>	<b>Scope</b>
IEC amdt 1	1997	Amended to include aluminium-clad steel wires.
Nat. amdt 1	2008	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 066, *Electric cables*, 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 2008

This SANS document supersedes SABS IEC 61089:1991 (first edition as modified by IEC amdt 1:1997).

**Reaffirmed and reprinted in August 2013.  
This document will be reviewed every five years  
and be reaffirmed, amended, revised or withdrawn.**

**NORME  
INTERNATIONALE  
INTERNATIONAL  
STANDARD**

**CEI  
IEC  
61089**

1991

AMENDEMENT 1  
AMENDMENT 1

1997-05

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Amendement 1

**Conducteurs pour lignes aériennes  
à brins circulaires, câblés en couches  
concentriques**

Amendment 1

**Round wire concentric lay overhead  
electrical stranded conductors**

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International Electrotechnical Commission 3, rue de Varembé Geneva, Switzerland  
Telefax: +41 22 919 0300 e-mail: inmail@iec.ch IEC web site <http://www.iec.ch>



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## FOREWORD

This amendment has been prepared by IEC technical committee 7: Overhead electrical conductors.

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

FDIS	Report on voting
7/502/FDIS	7/506/RVD

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

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### 1 Scope

*Amend as follows:*

1.1 This International Standard specifies the electrical and mechanical characteristics of round wire, concentric lay, overhead, electrical and stranded conductors made of combinations of any of the following metal wires:

- a) Aluminium wires
  - hard drawn aluminium as per IEC 60889 designated A1\*;
  - aluminium alloy type B as per IEC 60104, designated A2\*;
  - aluminium alloy type A as per IEC 60104, designated A3\*.
- b) Zinc coated steel wires (as per IEC 60888):
  - regular strength steel, designated S1A or S1B, where A and B are zinc coating classes, corresponding respectively to classes 1 and 2;
  - high strength steel, designated S2A or S2B,
  - extra high strength steel, designated S3A.
- c) Aluminium-clad steel wires (as per IEC 61232):
  - class 20SA, types A and B, designated respectively SA1A and SA1B;
  - class 27SA, designated as SA2.

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\* The resistivity of these metals is as follows (in increasing order):

A1: 28,264 nΩm (corresponding to 61 % IACS),

A2: 32,530 nΩm (corresponding to 53 % IACS),

A3: 32,840 nΩm (corresponding to 52,5 % IACS).

1.2 The conductor designations included in this standard are:

A1, A2, A3,  
A1/S1A, A1/S1B, A1/S2A, A1/S2B, A1/S3A,  
A2/S1A, A2/S1B, A2/S3A,  
A3/S1A, A3/S1B, A3/S3A,  
A1/A2, A1/A3,  
A1/SA1A, A2/SA1A, A3/SA1A,  
S1A, S1B, S2A, S3A,  
SA1A, SA1B, SA2.

NOTE – Conductors made of the same wire designation are called homogeneous conductors (e.g. A1, A2, S1A, SA2, etc.). Furthermore, whenever reference is made to steel wires or conductors, these can either be aluminium-clad or zinc-coated (Sx or SAx).

## 2 Normative references

*Add, to the list, the title of the following standard:*

IEC 61232: 1993, *Aluminium-clad steel wires for electrical purposes*

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## 3 Designation system

*Add the following paragraphs at the end of 3.2:*

Homogeneous conductors made of zinc-coated steel wires are designated S1A, S1B, S2A, S3A.

Homogeneous conductors made of aluminium-clad steel wires are designated SA1A, SA1B or SA2.

*Add the following paragraph at the end of 3.4:*

When aluminium-clad steel wires SA1A are used in a composite conductor instead of zinc-coated wires, the designation becomes Ax/SA1A.

*Add the following paragraphs at the end of 3.5:*

500-A1/SA1A-54/7: Conductor made of 54 wires of A1 aluminium and 7 wires of aluminium-clad steel class 20SA wires, type A (SA1A). The area of the A1 aluminium wires is equal to 484 mm<sup>2</sup> and 62,8 mm<sup>2</sup> for the aluminium-clad steel wires which can be found in the tables of annex D.

40-SA1A-19: Conductor made of 19 wires of aluminium-clad steel wires class 20SA, type A (SA1A). The area of aluminium-clad steel wires is 120 mm<sup>2</sup> which has the same conductivity as 40 mm<sup>2</sup> of A1 aluminium wires.

40-S1A-19: Conductor made of 19 wires of regular strength steel wires, with a zinc coating type A (S1A). The area of steel wires is 271,1 mm<sup>2</sup> which has the same conductivity as 40 mm<sup>2</sup> of A1 aluminium wires.