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SANS 1903:2007

Edition 1.1

Any reference to SABS 1903 is deemed
to be a reference to this standard
(Government Notice No. 1373 of 8 November 2002)

SOUTH AFRICAN NATIONAL STANDARD

Safety requirements on suspended access equipment — Design calculations, stability criteria, construction — Tests

**WARNING — Front-end standard.
Can only be used in conjunction with
SANS 51808/EN 1808.**

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Table of changes

Change No.	Date	Scope
Amdt 1	2007	Amended to change the designation of SABS standards to SANS standards, with no technical changes.

Foreword

This South African standard was approved by National Committee SABS TC 214, *Access equipment*, in accordance with procedures of the SABS Standards Division, in compliance with annex 3 of the WTO/TBT agreement.

This standard was published in February 2007. This edition is technically identical to edition 1 (SABS 1903:2001).

This document is referenced in the Regulations of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993).

The front-end standard was written to make provision for revised specific information regarding safety requirements on suspended access equipment as given in the following (sub)clauses:

- Clause 2 : two notes about referenced standards and other documents have been introduced;
- 3.2 : a reference has been made (at the end of the note to 3.2) to a new requirement for TSPs;
- 3.6.100 : a definition for type tests has been inserted;
- 3.7.100 : a definition for the average mass of a person has been inserted;
- 6.3.3.100 : requirements for wind uplift forces on platforms have been included;
- 6.3.4 : requirements for the forces exerted by persons have been modified;
- 6.5.100 : a new subclause on the calculation of platform stability has been introduced;
- 7.3.100 : a requirement for TSPs has been included;
- 7.7.1 : an additional requirement for restraint systems has been included; and
- 12.1.2 : an additional requirement for type tests has been included.

NOTE With the exception of the above (sub)clauses, the text of this front-end specification is the same as that of SANS 51808.

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and be reaffirmed, amended, revised or withdrawn.**

Safety requirements on suspended access equipment — Design calculations, stability criteria, construction — Tests

1 Scope

This standard specifies additional and modified safety requirements for suspended access equipment (SAE).

SAE is applicable to both permanent and temporary equipment, which may be powered or hand operated.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this standard. All standards are subject to revision and, since any reference to a standard is deemed to be a reference to the latest edition of that standard, parties to agreements based on this standard are encouraged to take steps to ensure the use of the most recent edition of the standard indicated below. Information on currently valid national and international standards can be obtained from the SABS Standards Division.

SANS 51808/EN 1808, *Safety requirements on suspended access equipment – Design calculations, stability criteria, construction – Tests.*

3 Definitions

For the purposes of this standard, the definitions given in SANS 51808 apply, with the exceptions listed in clause 5.

4 Requirements

All SAE equipment (both permanent and temporary) shall comply with the requirements of SANS 51808, except where specifically modified by clause 5 of this standard.

5 Modifications

5.1 Normative references (2 of SANS 51808)

Add the following notes (after the heading to the existing clause 2 Normative references):

NOTE 1 The user of this standard is referred to the latest paragraph in the national foreword to SANS 51808. This paragraph encourages the reader to investigate the possibility of using an equivalent adopted standard, should one exist, instead of using any international (or regional) standard referred to.

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NOTE 2 SANS 51808 references FEM booklets (for example, in 6.1, 6.2.1). The reader is advised that these booklets can be obtained either from the SABS Standards Division or, to save time, directly from the

Institute of Materials Handling
Kircherweg 4
CH-8032 Zurich
Switzerland

5.2 Definitions (3 of SANS 51808)

5.2.1 At the end of the note to 3.2, add the following:

See 7.3.100 for suspension systems of a BMU and a TSP.

5.2.2 Add the following new subclause (after the existing 3.6.7):

3.6.100 Type test

A test conducted on a component or on a complete assembly of a particular model type, to prove its capacity to sustain the working load limit (WLL); this WLL is then marked on the building maintenance unit (BMU), or, if applicable, is marked on (or attached to) a piece of equipment of the BMU. (See also 12.1.2.)

5.2.3 Add the following new subclause (after the existing 3.7.6):

3.7.100 Average mass of a person

The average mass of a person is, in all calculations, 80 kg.

5.3 Wind loads (6.3.3 of SANS 51808)

Add the following new subclause (after the existing 6.3.3.6):

6.3.3.100 Wind uplift forces on platforms shall be considered on TSPs and BMUs as follows:

- a) Under 'in-service conditions', the operating wind pressures given in table 6 shall be applied under the platform deck, acting upwards.
- b) Under 'out-of-service conditions', the storm wind pressures given in table 7 shall be applied under the platform deck, acting upwards.

5.4 Forces exerted by persons (6.3.4 of SANS 51808)

Modify the subclause to read as follows:

6.3.4.1 The minimum value for the forces exerted by persons on the guard rails or top edge of a rigid side is assumed to be 500 N for each of the first two persons on the platform, and 200 N for each additional person acting in the horizontal direction at 500 mm intervals.

6.3.4.2 The guard rail or top edge of a rigid side shall be able to resist, without permanent deflection, a vertical load of 1 kN located in the most unfavourable position. Where applicable, the platform shall be tilted 30° about its longitudinal axis when the effects of this load are being considered.

6.3.4.3 A platform surrounded by open meshed or sheeted sides shall not fracture when a point load of 200 N is applied at any location.

5.5 Calculation for suspension rig (6.5 of SANS 51808)

Add the following new subclause (after the existing 6.5.3.6):

6.5.100 Platform stability calculation

Platform stability shall be ensured against excessive sway and uplift for both in-service and out-of-service conditions. The load factors in table 9A shall apply.

Table 9A — Load cases for stability of working platform (SWP)

1	2	3	4
Load case	Weight of platform (SWP) N	Rated load on the platform (RL) N	Wind force ^a N
Load case 1	$0,9 \times \text{SWP}$	$0,6 \times \text{Mp}^{\text{b}}$	$1,25 \times \text{Fw1}^{\text{c}}$
Load case 2	$0,9 \times \text{SWP}$	0	$1,25 \times \text{Fw2}^{\text{d}}$

^a Horizontal and vertical wind forces shall be considered.
^b Mp is the mass of a person (80 kg).
^c Fw1 is the in-service wind force.
^d Fw2 is the out-of-service wind force.

5.6 BMU platform (7.3 of SANS 51808)

Add the following new subclause (after the existing 7.3.2):

7.3.100 Where a TSP is used in conjunction with the suspension system of a BMU, the TSP shall comply with the specific requirements of the BMU.

5.7 Restraint systems (7.7 of SANS 51808)

Add the following new paragraph (after the text in the existing 7.7.1):

Notwithstanding the above, if there is a chance that the platform might be subjected to uplift or excessive sway, restraint systems shall be provided.

5.8 Type tests (12.1.2 of SANS 51808)

Add the following new paragraph (after the text in the existing 12.1.2):

When a unique one-off suspended access system is built for a particular job, the complete system shall be tested in accordance with annexes A, B and C. (See also 3.6.100.) However, in such a case, the load factor on the platform (A.5) may be reduced to $2 \times \text{RL}$.