NAMS 1545-5: 2022

Edition 1.1

SANS 1545-5: 2007

NAMIBIAN STANDARD

Safety rules for the construction and installation of lifts

Part 5: Electric and Hydraulic access, goods only lifts

This Namibian standard is the identical implementation of SANS 1545-5:2007 and is adopted with the permission of the South African Bureau of Standards

Published by the Namibian Standards Institution (NSI)
Established by section 2 of the Standards Act, 2005 (Act No 18 of 2005)
37 Feld Street
P.O. Box 26364 Windhoek, Namibia
Tel +264-61386400, Fax +264-61-386454
Website: wwwnsi.com.na

NAMIBIAN STANDARDS INSTITUTION

NAMS 1545-5: 2022
Edition 1.3
SANS 1545-5: 2007

National foreword

This Namibian Standard (NAMS) is identical to South African Standard SANS 1545-5:2007 Safety rules for the construction and installation of lifts, Part 5: Electric and Hydraulic access, goods only lifts, and was approved for adoptions by the Namibian Standards Institution CEO.

Namibian standards are developed based on NSI Standards development procedures in accordance with the rules given in the International Organisation for Standardisation/ International Electrotechnical Commission (ISO/IEC) Directives 1, ISO/IEC Guide 21-1 Adoption of international standards as regional or national standards and WTO – TBT World Trade Organisation code of Good Practice (which is published as Annex 3 in the TBT Agreement)

The NSI Management Technical Committee responsible for the standard is NSI TC 8/SC 1, Lifts and Escalators.

This SANS 1545-5: 2007 NAMS 1545-5: 2022 was published in February 2022.

ISBN 978-0-626-19482-6

SANS 1545-5:2007

Edition 1.1

Any reference to SABS 1545-5 is deemed
to be a reference to this standard
(Government Notice No. 1373 of 8 November 2002)

SOUTH AFRICAN NATIONAL STANDARD

Safety rules for the construction and installation of lifts

Part 5: Electric and hydraulic access, goods only lifts

Published by Standards South Africa
1 dr lategan road groenkloof private bag x191 pretoria 0001
tel: 012 428 7911 fax: 012 344 1568 international code +27 12
www.stansa.co.za

standards SouthAfrica (a division of SABS)

SANS 1545-5:2007
Edition 1.1

Table of changes

Change No.	Date	Scope
Amdt 1	2007	Amended to change the designation from SABS to SANS, to update referenced standards, to delete reference to South African legislation in the body of the text, to change the annex on list of electric safety devices to be checked (annex A), to replace the annex on technical dossier (annex C), and to add a new annex on comprehensive report for access goods only lifts (annex K).

Foreword

This South African standard was approved by National Committee StanSA SC 5120.50B, *Lifts, escalators and passenger conveyors – Lifts other that domestic lifts*, in accordance with procedures of Standards South Africa, in compliance with annex 3 of the WTO/TBT agreement.

The technical committee responsible for this part of SANS 1545 has accepted the text of EN 81-3, *Safety rules for the construction and installation of lifts – Part 3: Electric and hydraulic service lifts*, as adapted.

This document was published in May 2007. This document supersedes SABS 1545-5:2000 (edition 1).

In 5.3 reference is made to the "relevant national legislation". In South Africa this means the National building regulations and building standards Act, 1977 (Act No. 103 of 1977). **Amdt 1**

SANS 1545 comprises the following parts, under the general title *Safety rules for the construction and installation of lifts*:

Part 1: Electric lifts.

Part 2: Hydraulic lifts.

Part 3: Lifts for persons with disabilities (stairlifting platforms). **Amdt 1**

Part 4: Lifts for persons with disabilities (vertical lifting platforms). **Amdt 1**

Part 5: Electric and hydraulic access, goods only lifts.

Part 6: Rack-and-pinion lifts.

Part 7: Electric and hydraulic service lifts (dumb waiters).

Part 8: To be allocated.

Part 9: Lift landing doors – Fire resistance testing.

A vertical line in the margin shows where the text has been technically modified by amendment No. 1.

Annexes A, B, D, J and K form an integral part of this part of SANS 1545. Annexes C, E, F, G, H and ZA are for information only. **Amdt 1**

0 Introduction

0.1 General

0.1.1 This part of SANS 1545 defines safety rules related to access, goods only lifts with a view to safeguarding persons and objects against the risk of accidents associated with the use, maintenance and emergency operation of access, goods only lifts.

0.1.2 A study has been made of the various aspects of incidents possible with access, goods only lifts in the following areas:

0.1.2.1 Risks possible due to:

a) shearing;

b) crushing;

c) falling;

d) impact;

e) trapping;

f) fire;

g) electric shock; and

h) failure of material due to

   1) mechanical damage,

   2) wear,

   3) corrosion.

0.1.2.2 Persons to be safeguarded:

a) users;

b) maintenance and inspection personnel; and

c) persons outside the access, goods only lift well and the machine room (if any).

0.1.2.3 Objects to be safeguarded are

a) loads in car,

b) components of the access, goods only lift installation, and

c) the building in which the access, goods only lift is installed.

0.2 Principles

In drawing up this part of SANS 1545, the following have been used.

0.2.1 This part of SANS 1545 does not repeat all the general technical rules applicable to every electrical, mechanical, or building construction, including the protection of building elements against fire.

It was, however, deemed necessary to establish certain requirements of good construction, either because they are peculiar to access, goods only lift manufacture or because in the case of access, goods only lift utilization, the requirements may be more stringent than elsewhere.

0.2.2 This part of SANS 1545 does not only address the essential safety requirements of the Machinery Directive, but additionally states minimum rules for the installation of access, goods only lifts into buildings/constructions. In some countries there might be regulations for the construction of buildings, etc. which cannot be ignored.

Typical clauses affected by this are those that define minimum values for the height of the machine and pulley rooms and for the dimensions of their access doors.

0.2.3 When the weight, size or shape (or both) of components prevent them from being moved by hand, they are

a) either fitted with attachments for lifting gear, or

b) designed so that they can be fitted with such attachments (for example by means of threaded holes), or

c) shaped in such a way that standard lifting gear can easily be attached.

0.2.4 As far as possible the standard sets out only the requirements that materials and equipment have to meet in the interests of safe operation of access, goods only lifts.

0.2.5 Negotiations will have been made between the customer and the supplier about

a) the intended use of the access, goods only lift,

b) environmental conditions,

c) civil engineering problems, and

d) other aspects related to the place of installation.

0.2.6 This part of SANS 1545 only addresses the health and safety of human beings and not that of domestic animals.

0.3 Assumptions

Possible risks have been considered for each component that may be incorporated in a complete access, goods only lift installation. Rules have been drawn up accordingly.

0.3.1 Components are:

a) designed in accordance with usual engineering practice and calculation codes, including all failure modes;

b) of sound mechanical and electrical construction;

c) made of materials with adequate strength and of suitable quality; and

d) free of defects, and harmful materials, such as asbestos, are not used.

0.3.2 Components are kept in good repair and working order, so that the required dimensions remain fulfilled despite wear.

0.3.3 Components will be so selected and installed that foreseeable environmental influences and special working conditions do not affect the safe operation of the access, goods only lift.

0.3.4 By design of the load bearing elements, a safe operation of the access, goods only lift is assured for loads ranging from zero to 100 % of the rated load.

0.3.5 The requirements of this part of SANS 1545 regarding electric safety devices are such that the possibility of a failure of an electric safety device that complies with all the requirements of the standard needs not to be taken into consideration.

0.3.6 Users have to be safeguarded against their own negligence and unwitting carelessness when loading the access, goods only lift in the intended way.

0.3.7 The car is not used to move persons inside the well.

0.3.8 If, in the course of maintenance work, a safety device, normally not accessible to the users, is deliberately neutralized, safe operation of the access, goods only lift is no longer assured, but compensatory measures will be taken to ensure the safety of users in conformity with maintenance instructions.

It is assumed that maintenance personnel are instructed and that they work according to the instructions.

0.3.9 In the case of horizontal forces, the following have been used:

a) static force: 300 N; and

b) force resulting from impact: 1 000 N (reflecting the values that one person can exert).

0.3.10 With the exception of the items listed below, a mechanical device built according to good practice and the requirements of this standard will not deteriorate to a point of creating a hazard without the possibility of detection. The following mechanical failures are considered:

a) breakage of the suspension;

b) uncontrolled slipping of the ropes on the traction sheave;

c) breakage and slackening of all linkage by auxiliary ropes, chains and belts;

d) failure of one of the mechanical components of the electromechanical brake, which is used in the application of the braking action on the drum or disk;

e) failure of a component associated with the main drive elements and the traction sheave (rupture in the hydraulic system, jack excluded); and

f) small leakage in the hydraulic system (jack included).

0.3.11 In the case of access, goods only lifts provided with devices against free fall or descent with excessive speed which stop the access, goods only lift car completely (i.e. safety gear, rupture valve), the possibility of the car striking the buffer(s) with a speed exceeding 115 % of the rated speed downwards does not need to be taken into consideration.

0.3.12 When the speed of the car is linked to the electrical frequency of the mains up to the moment of application of the mechanical brake, the speed is assumed not to exceed 115 % of the rated speed or a corresponding fractional speed.

0.3.13 From the definition (see 3.1), access, goods only lifts are regarded as permanent lifts that do not transport people.

0.3.13.1 For the purpose of maintenance, the well is regarded as inaccessible to maintenance personnel if any opening giving access to the well has dimensions which do not exceed 0,3 m or if, regardless of its dimensions:

a) the depth of the well exceeds 1 m;

b) the area of the well exceeds 1 m^2; and

c) provisions are taken (if possible) to enable easy maintenance from outside.

0.3.13.2 The machine room (if used) is regarded as accessible to maintenance personnel if:

a) the openings giving access have a minimum size of 0,60 m × 0,60 m; and

b) the height of the machine room is at least 1,80 m.

0.3.14 Means of access is to be provided to move heavy equipment (see 0.2.5).

0.3.15 To ensure the correct functioning of the equipment in the machine room, i.e. taking into account the heat dissipated by the equipment, the ambient temperature in the machine room (or lift shaft) is assumed to be maintained between +5 °C and +35 °C.

0.4 Essential requirements and directives

Essential requirements and directives applicable to South Africa are given in annex ZA of this part of SANS 1545.

0.5 Deleted by amendment No. 1.

Contents