

**DRAFT SOUTH AFRICAN STANDARD (DSS):  
PUBLIC ENQUIRY STAGE****Document number** SANS 10400-A**Reference** 7114/10400-A/SP**Date of circulation** 2010-06-01**Closing date** 2010-07-30**Number and title:**SANS 10400-A: THE APPLICATION OF THE NATIONAL BUILDING REGULATIONS — PART A:  
GENERAL PRINCIPLES AND REQUIREMENTS**Remarks:****PLEASE NOTE:**

- The technical committee, SABS TC 59: Construction Standards responsible for the preparation of this standard has reached consensus that the attached document should become a South African standard. It is now made available by way of public enquiry to all interested and affected parties for public comment, and to the technical committee members for record purposes. Any comments should be sent by the indicated closing date, either by mail, or by fax, or by e-mail to

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**SANS 10400-A:2010**

Edition 3

## **SOUTH AFRICAN NATIONAL STANDARD**

### **The application of the National Building Regulations**

#### **Part A: General principles and requirements**

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**SANS 10400-A:2010**  
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**Table of changes**

<b>Change No.</b>	<b>Date</b>	<b>Scope</b>

**Acknowledgement**

The SABS Standards Division wishes to acknowledge the work of the South African Institution of Civil Engineering, and other industry bodies and associations who participated in reinterpreting many of the functional regulations and updating many of the deemed-to-satisfy requirements of this document.

**Foreword**

This South African standard was approved by National Committee SABS TC 59, *Construction standards*, in accordance with procedures of the SABS Standards Division, in compliance with annex 3 of the WTO/TBT agreement.

This document was published in XXXX 2010.

This document supersedes the corresponding parts of SABS 0400:1990 (first revision).

Compliance with the requirements of this document will be deemed to be compliance with the requirements of part A of the National Building Regulations, issued in terms of the National Building Regulations and Building Standards Act, 1977 (Act No. 103 of 1977).

SANS 10400 consists of the following parts, under the general title *The application of the National Building Regulations*:

*Part A: General principles and requirements.*

*Part B: Structural design.*

*Part C: Dimensions.*

*Part D: Public safety.*

*Part F: Site operations.*

*Part G: Excavations.*

*Part H: Foundations.*

*Part J: Floors.*

*Part K: Walls.*

*Part L: Roofs.*

*Part M: Stairways.*

*Part N: Glazing.*

**Foreword** *(concluded)*

*Part O: Lighting and ventilation.*

*Part P: Drainage.*

*Part Q: Non-water-borne means of sanitary disposal.*

*Part R: Stormwater disposal.*

*Part S: Facilities for persons with disabilities.*

*Part T: Fire protection.*

*Part V: Space heating.*

*Part W: Fire installation.*

Annex A forms an integral part of this document. Annexes B and C are for information only.

**Introduction**

Development in the building industry is a continuous process. With the passage of time, new materials become available, design methods are refined and innovative building systems are introduced. Political change also results in the development of new policies and approaches to various aspects of building and construction that might impact on regulatory requirements. It is therefore obvious that building regulations and the interpretation thereof cannot remain static if they are to accommodate such policy changes and allow for the early use of innovation in construction.

The Bill of Rights contained in the Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996), contains rights relating to the environment. Section 24 reads as follows:

*Everyone has the right*

- a. to an environment that is not harmful to their health or well-being; and*
- b. to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that*
  - i. prevent pollution and ecological degradation;*
  - ii. promote conservation; and*
  - iii. secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.*

The major non-tariff trade barriers that inhibit building and the construction trade are prescriptive or deemed-to-comply building codes and standards. To address this issue, the World Trade Organization (WTO) has included Clause 2.8 in the Agreement on Technical Barriers to Trade (WTO 1997), which states that *“Wherever appropriate, Members shall specify technical regulations based on product requirements in terms of performance rather than design or descriptive characteristics.”*

## **Introduction** *(continued)*

Cognizance of the constitutional imperatives and World Trade Organization requirements have been taken into account in the revision of SANS 10400.

The National Building Regulations do not purport, and were never intended, to be a handbook on good building practice. They set out, in the simplest and shortest way possible, requirements to ensure that buildings will be designed and built in such a way that persons can live and work in a healthy and safe environment. There are other aspects of a building that might affect only the comfort or convenience of people, but these are not controlled by the National Building Regulations. Market and economic considerations will obviously also limit the degree to which these matters can be considered in the design of a building. It is important, therefore, that entrepreneurs, designers and building owners should be aware that the mere fact that a building complies with the National Building Regulations does not necessarily indicate that it is a desirable building.

There are many aspects to be considered and the relative economic worth of each should be related to the final cost of the building. Professional designers are trained to take these matters into account and can be expected to do so without any obstructive and possibly inhibiting and inappropriate control by the Regulations. In the case where the designer of a building is not professionally qualified, there is a wealth of information on good building practice available in textbooks and from organizations such as the CSIR, the South African Bureau of Standards, the National Home Builders Registration Council, the South African Institution of Civil Engineering and various trade associations.

In order to understand and interpret the National Building Regulations correctly, it is important to understand the philosophy and intent behind the Regulations. One aim of the drafters of the Regulations was to keep the number of Regulations to a minimum. It was therefore decided that, as far as possible, the Regulations should be concerned only with the health and safety of persons in a building, that all technical aspects should be covered by functional regulations and that the Regulations should be written in such a way that they assist rather than impede the use of innovative building systems and designs. This philosophy was taken a step further in the current amendment of the interpretation of the regulations by introducing the concept of two different types of buildings to cater for different user needs and expectations.

A new category of buildings (category 1 buildings) has been introduced in certain classes of buildings that have a floor area not exceeding 80 m<sup>2</sup> to make buildings affordable to poorer communities. The revised SANS 10400 allows choices to be made in the performance requirements of certain attributes for buildings falling within this category. Such buildings have comparable safety standards with buildings not so categorized, but may, depending upon the choices exercised in respect of particular attributes, have different resistances to rain penetration, deflection limits, maintenance requirements, lower levels of natural lighting, etc. It should, however, be stressed that choices exercised in respect of these buildings relate only to the performance of some of the attributes of such buildings. The nature of developments is determined by environmental and town planning processes which are independent of such choices. This should be kept in mind by any local authority when assessing a building in terms of these revised functional regulations.

In applying the National Building Regulations it will be found that, in certain instances, there is an overlap with the requirements of regulations made in terms of other Acts. Some of these anomalies have been overcome by suitable amendments to other regulations, but there are some regulations made in terms of local town planning schemes that it might be desirable to retain. In particular, this refers to requirements for building lines and for materials which are permitted as exterior finishings for buildings. The requirements in the National Building Regulations are there for technical reasons, but what is technically acceptable might not necessarily be acceptable for other reasons.

**Introduction** *(concluded)*

This part of SANS 10400 sets out the different possible ways of demonstrating compliance with functional regulations, including a range of prescriptive provisions that are “deemed to satisfy” the requirements of the National Building Regulations.

Parts A, E and U of the National Building Regulations, issued in terms of the National Building Regulations and Building Standards Act, 1977 (Act No. 103 of 1977), and for which there are no deemed-to-satisfy requirements, are reproduced in Annex A. All other parts of the National Building Regulations are reproduced in a normative annex in the part of SANS 10400 dealing with the subject matter of such regulation.

Annex B provides commentary on the National Building Regulations.

Annex C discusses the philosophy behind the National Building Regulations.

Draft SA Standard

**Contents**

	Page
Acknowledgement	
Foreword	
Introduction .....	1
<b>1</b> Scope .....	5
<b>2</b> Normative references .....	6
<b>3</b> Definitions .....	7
<b>4</b> Requirements .....	9
<b>4.1</b> General .....	9
<b>4.2</b> Deemed-to-satisfy requirements .....	9
<b>4.3</b> Category 1 buildings .....	10
<b>Annex A</b> (normative) National Building Regulations for which there are no deemed-to-satisfy requirements .....	11
<b>Annex B</b> (informative) Commentary on the National Building Regulations .....	63
<b>Annex C</b> (informative) Performance-based building regulations and their usage in South Africa .....	78
<b>Bibliography</b> .....	85

## **The application of the National Building Regulations**

### **Part A:**

#### **General principles and requirements**

### **1 Scope**

This part of SANS 10400 establishes general requirements for satisfying the National Building Regulations issued in terms of the National Building Regulations and Building Standards Act, 1977 (Act No. 103 of 1977), and requirements that are deemed to satisfy the following parts of such Regulations:

Part B: Structural design

Part C: Dimensions

Part D: Public safety

Part F: Site operations

Part G: Excavations

Part H: Foundations

Part J: Floors

Part K: Walls

Part L: Roofs

Part M: Stairways

Part N: Glazing

Part O: Lighting and ventilation

Part P: Drainage

Part Q: Non-water-borne means of sanitary disposal

Part R: Stormwater disposal

Part S: Facilities for persons with disabilities

# **SANS 10400-A:2010**

Edition 3

Part T: Fire protection

Part V: Space heating

Part W: Fire installation

This part of SANS 10400 is intended to enable

- a) designers to design buildings that comply with the requirements of the National Building Regulations,
- b) contractors to construct buildings and their subsystems using conventional materials and construction techniques in accordance with practices which are deemed to satisfy such regulations, and
- c) local authorities to establish compliance with the Regulations in a uniform and consistent manner.

## **2 Normative references**

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies. Information on currently valid national and international standards can be obtained from the SABS Standards Division.

SANS 1936-2, *Development of dolomite land – Part 2: Geotechnical investigations and determinations.*

SANS 1936-4, *Development of dolomite land – Part 4: Risk management.*

SANS 10005, *The preservative treatment of timber.*

SANS 10082, *Timber frame buildings.*

SANS 10137 (SABS 0137), *The installation of glazing in buildings.*

SANS 10177-2, *Fire testing of materials, components and elements used in buildings – Part 2: Fire resistance test for building elements.*

SANS 10400-B, *The application of the National Building Regulations – Part B: Structural design.*

SANS 10400-C, *The application of the National Building Regulations – Part C: Dimensions.*

SANS 10400-D, *The application of the National Building Regulations – Part D: Public safety.*

SANS 10400-F, *The application of the National Building Regulations – Part F: Site operations.*

SANS 10400-G, *The application of the National Building Regulations – Part G: Excavations.*

SANS 10400-H, *The application of the National Building Regulations – Part H: Foundations.*

SANS 10400-J, *The application of the National Building Regulations – Part J: Floors.*

SANS 10400-K, *The application of the National Building Regulations – Part K: Walls.*

SANS 10400-L, *The application of the National Building Regulations – Part L: Roofs*

SANS 10400-M, *The application of the National Building Regulations – Part M: Stairways.*

SANS 10400-N, *The application of the National Building Regulations – Part N: Glazing.*

SANS 10400-O, *The application of the National Building Regulations – Part O: Lighting and ventilation.*

SANS 10400-P, *The application of the National Building Regulations – Part P: Drainage.*

SANS 10400-Q, *The application of the National Building Regulations – Part Q: Non-water-borne means of sanitary disposal.*

SANS 10400-R, *The application of the National Building Regulations – Part R: Stormwater disposal.*

SANS 10400-S, *The application of the National Building Regulations – Part S: Facilities for persons with disabilities.*

SANS 10400-T, *The application of the National Building Regulations – Part T: Fire protection.*

SANS 10400-V, *The application of the National Building Regulations – Part V: Space heating.*

SANS 10400-W, *The application of the National Building Regulations – Part W: Fire installation.*

### **3 Definitions**

For the purposes of this document, the following definitions apply.

#### **3.1**

##### **Agrément certificate**

certificate that confirms fitness-for-purpose of a non-standardized product, material or component or the acceptability of the related non-standardized design and the conditions pertaining thereto (or both) issued by the Board of Agrément South Africa

#### **3.2**

##### **Board of Agrément South Africa**

body that operates under the delegation of authority of the Minister of Public Works

#### **3.3**

##### **building**

includes

- a) any structure, whether of a temporary or permanent nature, and irrespective of the materials used in the erection thereof, erected or used in connection with
  - 1) the accommodation or convenience of human beings and animals;
  - 2) the manufacture, processing, storage, display or sale of goods;
  - 3) the rendering of a service;
  - 4) the destruction or treatment of refuse or other waste materials; and
  - 5) the cultivation or growing of plants or crops;
- b) a wall, swimming bath, swimming pool, reservoir or bridge or any structure connected therewith;
- c) a fuel pump or tank used in connection therewith;
- d) any part of a building, including a building as defined in (a), (b) or (c); and

## **SANS 10400-A:2010**

Edition 3

e) any facilities or system, or portion thereof, within or outside but incidental to a building, for the provision of a water supply, drainage, sewerage, stormwater disposal, electricity supply or other similar service in respect of the building

### **3.4**

#### **building component**

part of a building other than a building element

### **3.5**

#### **building element**

wall, floor, foundation or roof of a building

### **3.6**

#### **category 1 building**

building which

a) is designated as being of class A3, A4, F2, G1, H2, H3, or H4 occupancy (see Regulation **A20** in annex A),

b) has no basements,

c) has a maximum length of 6,0 m between intersecting walls or members providing lateral support, and

d) has a floor area that does not exceed 80 m<sup>2</sup>

NOTE 1 Table C.1 outlines the difference in performance between category 1 buildings and other buildings that have the same occupancy designation in respect of a number of building attributes.

NOTE 2 A building may be classified as a category 1 building for the purposes of one or more parts of SANS 10400. Additional limitations may accordingly be imposed on category 1 buildings. For example, a category 1 building in terms of SANS 10400-T (Fire protection) will be restricted to a single storey.

NOTE 3 Fire requirements for category 1 buildings are based on occupants escaping quickly from buildings. The design population for occupancies as set out in table 2 of part A of the Regulations (see annex A) should therefore not be exceeded.

### **3.7**

#### **competent person**

person who is qualified by virtue of his education, training, experience and contextual knowledge to make a determination regarding the performance of a building or part thereof in relation to a functional regulation or to undertake such duties as may be assigned to him in terms of the National Building Regulations

NOTE This is a generic definition, to be used where no other definition is given, or no references are made to other standards. Other parts of SANS 10400 contain definitions of a more specific nature relevant to their disciplines.

### **3.8**

#### **deemed-to-satisfy requirement**

non-mandatory requirement, the compliance with which ensures compliance with a functional regulation

### **3.9**

#### **functional regulation**

regulation that sets out in qualitative terms what is required of a building or building element or building component in respect of a particular characteristic, without specifying the method of construction, dimensions or materials to be used

### **3.10**

#### **performance**

behaviour of a building as a whole or any part of it related to use

**3.11****prescriptive regulation**

regulation which describes in some detail an operation to be performed, or the dimensions of a building, building element or building component and the materials and method of construction to be used in such building, building element or building component

**3.12****rational assessment**

assessment by a competent person of the adequacy of the performance of a solution in relation to requirements including as necessary, a process of reasoning, calculation and consideration of accepted analytical principles, based on a combination of deductions from available information, research and data, appropriate testing and service experience

**3.13****rational design**

design by a competent person involving a process of reasoning and calculation and which may include a design based on the use of a standard or other suitable document

**3.14****Regulation****NBR**

National Building Regulation

**3.15****the Act**

National Building Regulations and Building Standards Act, 1977 (Act No. 103 of 1977)

**4 Requirements****4.1 General**

**4.1.1** The requirements of the National Building Regulations contained in annex A of each part of SANS 10400 shall be complied with by

- a) adhering to the requirements of all the prescriptive regulations, and
- b) satisfying all functional regulations by

- 1) adopting building solutions that comply with the requirements of 4.2, or

- 2) reliably demonstrating, or predicting with certainty, to the satisfaction of the appropriate local authority, that an adopted building solution has an equivalent or superior performance to a solution that complies with the requirements of 4.2.

**4.1.2** A competent person shall prepare a rational design or rational assessment where functional regulations are satisfied by means of 4.1.1(b)(2). (See Regulation **AZ4** in annex A.)

**4.2 Deemed-to-satisfy requirements**

**4.2.1** The functional regulations contained in the National Building Regulations listed in table 1 shall be deemed to be satisfied where the requirements of the corresponding part(s) of SANS 10400 are complied with.

**4.2.2** The deemed-to-satisfy requirements contained in the parts of SANS 10400 listed in table 1 provide performance requirements (i.e. the qualitative performance criteria which enable the functional requirements to be complied with for a nominated level) and the verification method by which it may be confirmed that the nominated performance is achieved (see C.6 and figure C.2).

## SANS 10400-A:2010

Edition 3

These deemed-to-satisfy requirements presume that if the owner adopts one or more of the following methods, the functional regulations will be satisfied:

- a) adherence to prescriptive requirements;
- b) appointment of a competent person to prepare a rational design or rational assessment in accordance with a prescribed framework; or
- c) erecting a building or part thereof in terms of an Agrément certificate.

**Table 1 — Location of deemed-to-satisfy requirements for the different parts of the National Building Regulations**

1	2
Part of National Building Regulations	Location of deemed-to-satisfy requirements
B: Structural Design	SANS 10400-B, <i>Structural design</i>
C: Dimensions	SANS 10400-C, <i>Dimensions</i>
D: Public Safety	SANS 10400-D, <i>Public safety</i>
F: Site Operations	SANS 10400-F, <i>Site operations</i>
G: Excavations	SANS 10400-G, <i>Excavations</i>
H: Foundations	SANS 10400-H, <i>Foundations</i>
J: Floors	SANS 10400-J, <i>Floors</i>
K: Walls	SANS 10400-K, <i>Walls</i>
L: Roofs	SANS 10400-L, <i>Roofs</i>
M: Stairways	SANS 10400-M, <i>Stairways</i>
N: Glazing	SANS 10400-N, <i>Glazing</i>
O: Lighting and Ventilation	SANS 10400-O, <i>Lighting and ventilation</i>
P: Drainage	SANS 10400-P, <i>Drainage</i>
Q: Non-water-borne Means of Sanitary Disposal	SANS 10400-Q, <i>Non-water-borne means of sanitary disposal</i>
R: Stormwater Disposal	SANS 10400-R, <i>Stormwater disposal</i>
S: Facilities for Persons with Disabilities	SANS 10400-S, <i>Facilities for persons with disabilities.</i>
T: Fire Protection	SANS 10400-T, <i>Fire protection</i>
U: Refuse Disposal	SANS 10400-U, <i>Refuse disposal</i>
V: Space Heating	SANS 10400-V, <i>Space heating</i>
W: Fire Installation	SANS 10400-W, <i>Fire installation</i>

### 4.3 Category 1 buildings

Plans prepared in respect of category 1 buildings shall be annotated with the wording "Category 1 building" immediately above the title block, followed by the part, in brackets, of the functional regulations satisfied in respect of such a class of building, e.g. Category 1 building (structural design and fire protection).

NOTE The following parts of the National Building Regulations make reference to category 1 buildings:

- Part B: Structural Design
- Part C: Dimensions
- Part K: Walls
- Part O: Lighting and Ventilation
- Part T: Fire Protection

## Annex A

(normative)

### National Building Regulations for which there are no deemed-to-satisfy requirements

#### AZ1 Coming into operation

In terms of section 17(3) of the Act, these amended regulations came into operation on 1 October 2008.

#### AZ2 Definitions

NOTE The National Building Regulations and Building Standards Act, 1977 (Act No. 103 of 1977), previously defined the terms “bureau” and “council” in terms of the Standards Act, 1993 (Act No. 29 of 1993). The said Standards Act has, however, been repealed and has been replaced with the Standards Act, 2008 (Act No. 8 of 2008). These terms have now been replaced with the following terms in a schedule to the Standards Act, 2008 (Act No. 8 of 2008):

- a) the word “bureau” has been replaced with “National Regulator”, which means “the National Regulator as defined in section 1 of the National Regulator for Compulsory Specifications Act, 2008 (Act No. 5 of 2008)”; and
- b) the word “council” has been replaced with “Board”, which means “the Board as defined in section 1 of the National Regulator for Compulsory Specifications Act, 2008 (Act No. 5 of 2008)”.

#### **acceptable**

acceptable

- a) in the opinion of any local authority, or
- b) in relation to any document issued by the council, in the opinion of the council

#### **action**

assembly of concentrated or distributed mechanical forces acting on a building or the cause of deformations imposed on the building or constrained in it

#### **adequate**

adequate

- a) in the opinion of any local authority, or
- b) in relation to any document issued by the council, in the opinion of the council

#### **Agrément certificate**

certificate that confirms fitness-for-purpose of a non-standardised product, material or component or the acceptability of the related non-standardised design and the conditions pertaining thereto (or both) issued by the Board of Agrément South Africa

#### **air duct**

pipe, tube, conduit or enclosed space used or to be used in any building for the transmission of air in an artificial ventilation system

#### **applicant**

person who makes an application

## **SANS 10400-A:2010**

Edition 3

### **application**

application contemplated in section 4 of the Act

### **approval**

approval

a) by any local authority, including approval contemplated in section 7(7)(b) of the Act, or

b) by the Review Board on appeal to the review board in terms of the Act

### **approved**

approved

a) by any local authority, or

b) by the Review Board on appeal to the Review Board in terms of the Act

### **Board of Agrément South Africa**

body that operates under the delegation of authority of the Minister of Public Works

### **building line**

line prescribed in any town planning scheme or any other law designating the boundaries of the area of the site outside of which the erection above ground of any building is prohibited

### **capacity**

volume of a storage tank between the operating level of the water contained in such tank and the invert of the outlet from the tank

### **chimney**

that part of a building which forms part of a flue, but does not include a flue pipe

### **cleaning eye**

access opening to the interior of a discharge pipe or trap provided for the purposes of internal cleaning, and which remains permanently accessible after completion of the drainage installation

### **communication pipe**

pipe in a water supply system to which a water installation is connected

### **competent person**

person who is qualified by virtue of his education, training, experience and contextual knowledge to make a determination regarding the performance of a building or part thereof in relation to a functional regulation or to undertake such duties as may be assigned to him in terms of these regulations

### **conservancy tank**

covered tank used for the reception and temporary retention of sewage, and which requires emptying at intervals

### **contaminated land**

any land that, due to substances contained within or under it, is in a condition that presents an unacceptable risk to the health and safety of occupants of buildings constructed on such land

### **deemed-to-satisfy provision**

non-mandatory requirement, the compliance with which ensures compliance with a functional regulation

### **dolomite land**

land underlain by dolomite or limestone rock directly or at a shallow depth less than:

a) 60 m in areas underlain by limestone;

- b) 60 m in areas underlain by dolomite where no de-watering has taken place and the local authority has jurisdiction, is monitoring and has control over the groundwater levels over the areas under consideration; or
- c) 100 m in areas underlain by dolomite where de-watering has taken place or where the local authority has no jurisdiction or control over groundwater levels

**drain**

that part of any drainage installation outside a building and which is below ground, but shall not include the following:

- a) any discharge pipe;
- b) that portion of a discharge stack which is below ground level;
- c) the bend at the foot of the discharge stack

**drainage installation**

installation vested in the owner of a site and which is situated on such site and is intended for the reception, conveyance, storage or treatment of sewage, and may include sanitary fixtures, traps, discharge pipes, drains, ventilating pipes, septic tanks, conservancy tanks, sewage treatment works, or mechanical appliances associated therewith

**dwelling house**

single dwelling unit and any garage and other domestic outbuildings thereto, situated on its own site

**dwelling unit**

unit containing one or more habitable rooms and provided with adequate sanitary and cooking facilities

**emergency route**

that part of an escape route which provides fire protection to the occupants of any building and which leads to an escape door

**escape door**

that door in an escape route which, at ground level, leads directly to a street or public place or to any approved open space which leads to a street or public place

**escape route**

entire path of travel from the furthest point in any room in a building to the nearest escape door and may include an emergency route

**exit door**

door that is a component of an escape route from any room

**fire installation**

water installation which conveys water solely for the purpose of fire-fighting

**fire resistance**

shortest period for which a building element or building component will comply with the requirements for stability, integrity and insulation when tested in accordance with the relevant provisions of SANS 10177-2

**flammable**

having a closed cup flash point lower than 90 °C

## **SANS 10400-A:2010**

Edition 3

### **floor area**

total area of a building, or a storey thereof, enclosed within its external walls, exclusive of the area occupied by any lift shaft

### **foundation**

that part of a building which is in direct contact with, and is intended to transmit loads to, the ground

### **french drain**

trench filled with suitable material which is used for the disposal of liquid effluent from a septic tank or waste water

### **functional regulation**

regulation that sets out in qualitative terms what is required of a building or building element or building component in respect of a particular characteristic without specifying the method of construction, dimensions or material to be used

### **garage**

enclosed area which is used or intended to be used for the parking, storing, servicing or repairing of motor vehicles

### **geotechnical site investigation**

process of evaluating the geotechnical character of a site in the context of existing or proposed works or land usage, which may include one or more of the following:

- a) evaluation of the geology and hydrogeology of the site;
- b) examination of existing geotechnical information pertaining to the site;
- c) excavating or boring in soil or rock and the systematic description of the soil and rock profiles;
- d) determining the depth of any fill that may be present;
- e) in-situ assessment of geotechnical properties of materials;
- f) recovery of samples of soil or rock for examination, identification, recording, testing or display;
- g) testing of soil or rock samples to quantify properties relevant to the purpose of the investigation;
- h) evaluation of geotechnical properties of tested soils; and
- i) reporting the results

### **gully**

pipe fitting incorporating a trap into which waste water is discharged

### **industrial effluent**

liquid which might or might not contain matter in solution or suspension which is given off in the course of, or as a result of any industrial, trade, manufacturing, mining or chemical process or any laboratory, research or agricultural activity, and includes any liquid other than soil water, waste water or stormwater

### **inspection**

general inspection by a competent person of a system or measure or installation of a building, or part thereof, at such intervals as might be necessary in accordance with accepted professional practice to enable such competent person to be satisfied that the design assumptions are valid, the design is being correctly interpreted and the work is being executed generally in accordance with the designs, appropriate construction techniques and good practice but shall exclude detailed supervision and day-to-day inspection

**inspection chamber**

chamber not deeper than 750 mm and of such dimensions that access can be obtained to a drain without requiring a person to enter into such chamber

**inspection eye**

access opening to the interior of any pipe or pipe fitting in a drainage installation provided solely for the purpose of inspection and testing, and to which permanent access after completion of the drainage installation need not be provided

**load**

value of a force corresponding to an action

**manhole**

chamber of a depth greater than 750 mm and of such dimensions that it allows entry of a person into such chamber for the purpose of providing access to a drain

**minor building work**

as contemplated in section 13 of the Act means

- a) the erection of any
  - i) poultry house not exceeding 10 m<sup>2</sup> in area,
  - ii) aviary not exceeding 20 m<sup>2</sup> in area,
  - iii) solid fuel store not exceeding 10 m<sup>2</sup> in area and 2 m in height,
  - iv) tool shed not exceeding 10 m<sup>2</sup> in area,
  - v) child's playhouse not exceeding 5 m<sup>2</sup> in area,
  - vi) cycle shed not exceeding 5 m<sup>2</sup> in area,
  - vii) greenhouse not exceeding 15 m<sup>2</sup> in area,
  - viii) open-sided car, caravan or boat shelter or a carport where such shelter or carport does not exceed 40 m<sup>2</sup> in area,
  - ix) any free-standing wall constructed of masonry, concrete, steel, aluminium or timber or any wire fence where such wall or fence does not exceed 1,8 m in height at any point above ground level and does not retain soil,
  - x) pergola,
  - xi) private swimming pool,
  - xii) change room, not exceeding 10 m<sup>2</sup> in area, at a private swimming pool,
- b) the replacement of a roof or part thereof with the same or similar material,
- c) the conversion of a door into a window or a window into a door without increasing the width of the opening,
- d) the making of an opening in a wall which does not affect the structural safety of the building concerned,
- e) the partitioning or the enlarging of any room by the erection or demolition of an internal wall if such erection or demolition does not affect the structural safety of the building concerned,
- f) the erection of any solar water heater not exceeding 6 m<sup>2</sup> in area on any roof, or 12 m<sup>2</sup> when erected other than on any roof, and

## **SANS 10400-A:2010**

Edition 3

- g) the erection of any other building where the nature of the erection is such that in the opinion of the building control officer it is not necessary for the applicant to submit, with his application, plans prepared in full conformity with the Regulations

### **occupancy**

particular use or the type of use to which a building or portion thereof is normally put or intended to be put

NOTE Regulation **A20** classifies and designates occupancies (see table 1 in annex A).

### **persons with disabilities**

those persons who have long-term physical, mental, intellectual or sensory impairments which, in interaction with various barriers, might hinder their full and effective participation in society on an equal basis with others

### **population**

population determined in accordance with Regulation **A21**

### **prescriptive regulation**

regulation which describes in some detail an operation to be performed, or the dimensions of a building, building element or building component and the materials and method of construction to be used in such building, building element or building component

### **public place**

square, park, recreation ground or open space which

- a) is vested in the local authority, or
- b) the public has the right to use, or
- c) is shown on a general plan of a township filed in a deeds registry or a Surveyor-General's office and has been provided or reserved for the use of the public or the owners of erven in such township

### **rational assessment**

assessment by a competent person of the adequacy of the performance of a solution in relation to requirements including, as necessary, a process of reasoning, calculation and consideration of accepted analytical principles, based on a combination of deductions from available information, research and data, appropriate testing and service experience

### **rational design**

any design by a competent person involving a process of reasoning and calculation and which may include a design based on a standard or other suitable document

### **rodding eye**

access opening in a drainage installation provided for the purposes of gaining full-bore access to the interior of a drain for internal cleaning, and which remains permanently accessible after completion of the installation, but does not include an inspection chamber or manhole

### **sanitary fixture**

receptacle to which water is permanently supplied, and from which waste water or soil water is discharged

### **satisfactory**

satisfactory

- a) in the opinion of any local authority, or
- b) in relation to a document issued by the council, in the opinion of the council

**septic tank**

tank designed to receive sewage and to retain it for such a time and in such a manner as to secure adequate decomposition

**sewage**

waste water, soil water, industrial effluent and other liquid waste, either separately or in combination, but does not include stormwater

**sewer**

pipe or conduit which is the property of, or is vested in, the local authority and which is used or intended to be used for the conveyance of sewage

**site**

erf, lot, plot, stand or other piece of land on which a building has been, is being or is to be erected

**soil pipe**

discharge pipe which conveys soil water

**sprinkler system**

approved system of piping and sprinkler heads connected to a water supply which when actuated by the effect of fire automatically releases water

**storage tank**

tank, other than a tank used for storage of hot water or a cistern serving a toilet pan or a urinal, which forms part of a water installation and is used for the storage of water

**storey**

that part of a building which is situated between the top of any floor and the top of the floor next above it or, if there is no floor above it, that portion between such floor and the ceiling above it (any open work floor, catwalk or gallery taken to be part of the storey in which it is situated); and in relation to a building

- a) the ground storey is taken as the storey in which there is an entrance to the building from the level of the adjoining ground or, if there is more than one such storey, the lower or lowest of these,
- b) a basement is taken to be any part of the building which is below the level of the ground storey,
- c) an upper storey is taken to be any storey of the building which is above the level of the ground storey, and
- d) the height expressed in storeys is taken to be that number of storeys which includes all storeys other than a basement

**stormwater**

water resulting from natural precipitation or accumulation and includes rainwater, surface water, subsoil water or spring water

**stormwater drain**

pipe, conduit or surface channel situated on a site, and which is used to convey stormwater to a suitable point of discharge

**street**

street, road, thoroughfare, lane, footpath, sidewalk, subway or bridge which

- a) is vested in the local authority, or
- b) the public has the right to use, or

## SANS 10400-A:2010

Edition 3

c) is shown on a general plan of a township filed in a deeds registry or a Surveyor-General's office and has been provided, or reserved the use of the public or the owners of erven in such township

### **structural**

relating to or forming part of any structural system

### **suitable**

capable of fulfilling or having fulfilled the intended function, or fit for its intended purpose

### **temporary building**

building (excluding a builder's shed) that is so declared by the owner and that is being used, or is to be used, for a specified purpose for a specified limited period of time

### **the Act**

National Building Regulations and Building Standards Act, 1977 (Act No. 103 of 1977)

### **trained plumber**

person who in the trade of plumbing has, in terms of the Manpower Training Act, 1981 (Act No. 56 of 1981), passed a qualifying trade test or has been issued with a certificate of proficiency or has obtained a National Certificate in Construction Plumbing, National Qualification Framework level 3

### **trap**

pipe fitting or a part of a sanitary fixture which is designed to retain a water seal

### **ventilating pipe**

pipe which leads to the open air at its highest point and which provides ventilation throughout a drainage installation for the purpose of preventing the destruction of water seals, but does not include a discharge pipe

### **waste pipe**

discharge pipe which conveys waste water only

### **water supply system**

system of structures, aqueducts, pipes, valves, pumps, meters or other appurtenances relating thereto which are vested in the local authority and are used or intended to be used in connection with the supply of water

## AZ3 Standards

Where in these Regulations reference is made to a SANS number, such reference shall relate to the latest edition of the national standard having the number and title given in the following table:

1	2
SANS No.	Title
1125	Room air conditioners
10005	Preservative treatment of timber
10082	Timber buildings
10105	The classification, use, and maintenance of portable fire extinguishers
10124	Application of certain soil insecticides for the protection of buildings
10177	Fire testing of materials, components, and elements used in buildings Part 1 Part 2 Part 3 Part 4
10400	The application of the National Building Regulations

## AZ4 Complying with the requirements of the National Building Regulations

- (1) The requirements of the National Building Regulations shall be complied with by:
  - (a) adhering to the requirements of all the prescriptive regulations; and
  - (b) satisfying all functional regulations by:
    - (i) adopting building solutions that comply with the requirements of the relevant part of SANS 10400; or
    - (ii) reliably demonstrating, or predicting with certainty, to the satisfaction of the appropriate local authority, that an adopted building solution has an equivalent or superior performance to a solution that complies with the requirements of the relevant part of SANS 10400.
- (2) A competent person who is registered in an appropriate category of registration in terms of the Architectural Profession Act, 2000 (Act No. 44 of 2000), the Engineering Profession Act, 2000 (Act No. 46 of 2000), the Natural Scientific Professions Act, 2003 (Act No. 27 of 2003) or any other relevant Act and, in accordance with the requirements of Regulation **A19**, shall prepare and submit to the local authority a rational design or rational assessment where compliance with the requirements of subregulation (1) is to be satisfied in terms of subregulation (1)(b)(ii).
- (3) An approved competent persons who satisfies the requirements of subregulation (1) in terms of subregulation (1)(b)(ii) in respect of a system, measure, facility, parameter or installations shall inspect and certify upon completion, in accordance with the requirements of Regulation **A19**, the construction, erection or installation thereof.

## Regulations

### Part A: Administration

#### A1 Application

- (1) The designing, planning and the supervision of the erection of any building or structure or the performance of any function in connection therewith in terms of these Regulations is subject to the provisions of any law in terms of which the person undertaking such work or performing such function is required to be registered in terms of the Architectural Profession Act, 2000 (Act No. 44 of 2000), Engineering Profession Act, 2000 (Act No. 46 of 2000), Natural Scientific Professions Act, 2003 (Act No. 27 of 2003), or Professional and Technical Surveyors' Act, 1984 (Act No. 40 of 1984), or any other relevant Act.
- (2) The plans and particulars in respect of any building to be erected by or on behalf of the State shall be accompanied by a certificate, signed by the head of the State Department concerned or an officer designated by him, setting out in full details as to the respect in which such erection will not comply with the requirements of these Regulations.
- (3) (a) No person shall erect any building which is to be structurally supported by an existing building or extend an existing building unless an approved competent person has judged the existing building to be capable of carrying any additional load arising from such erection or extension and has, in writing, so informed the local authority.

## SANS 10400-A:2010

Edition 3

- (b) Such notification shall accompany the application for approval of the erection of the building in terms of Section 4 of the Act.
  - (c) For the purposes of this Regulation “existing building” shall include a partly erected building.
  - (d) Any structural support provided by the existing building shall be deemed to be part of the structural system of the building to be erected.
  - (e) The local authority may require that the above notification be accompanied by a documented rational assessment of the adequacy of the structural support.
- (4) No plans, particulars or approval shall be required for any repair which has become necessary as a result of ordinary wear and tear or which is undertaken in the normal course of maintenance or upkeep of any building: Provided that where such repair will affect the structural loading or is a repair of any part of the structural system the local authority may require drawings or specifications to be submitted.
- (5) An application shall be made to the building control officer for authorization to erect any building defined as minor building work or to carry out any work falling within the ambit of such definition, and any such erection or work shall not be commenced before such authorization has been granted: Provided that such application and such authorization shall not be required for minor building work for which, in terms of the proviso to Regulation **A2(1)**, no plans are required.
- (6) Minor building work shall comply with any National Building Regulations specified as a condition of the authorization granted by the building control officer.
- (7) (a) Where in any application the owner of any building has declared such building to be a temporary building, the local authority shall, before granting provisional authorization in terms of Regulation **A23**, assess such building in relation to –
- (i) the intended use and life of the building;
  - (ii) the area in which it is to be erected; and
  - (iii) the availability of suitable materials from which it may be constructed.
- (b) Any stall or other similar building to be erected as part of an exhibition shall be deemed to be a temporary building: Provided that where such stall is to be erected inside any exhibition hall the owner of such hall shall not be required to submit to the local authority any details of such stall: Provided further that such owner shall submit to the local authority a layout plan of all stalls within such hall, showing the location of each individual stall and all aisles, passageways, escape routes and fire-fighting equipment.
- (c) Where any building contemplated in paragraph (a) is intended to be used for experimental, demonstration, testing or assessment purposes, the local authority –
- (i) shall grant authorization for a period of time sufficient for the erection of such building and for the performance of any experiment, or for the demonstration, testing or assessment of such building; and
  - (ii) shall grant authorization for the erection of such building where testing or assessment of the completed building is the only way to ascertain whether such building complies with the requirements of these Regulations.

- (8) Where an application is made to make an alteration or addition to any building, approval for the erection of which was granted before the date of commencement of the Act –
- (a) such alteration shall comply with the requirements of the Act, but consequent changes to any other part of the building which would be necessary in order to make such other part comply with the requirements of the Act shall not be required unless in the opinion of the local authority such consequent changes are necessary to ensure the health or safety of persons using the building in the altered form;
  - (b) such addition shall comply with the requirements of the Act but no changes to the original building shall be required unless the addition –
    - (i) will affect the structural strength or stability of the original building;
    - (ii) will render any existing escape route from the original building less effective; or
    - (iii) will affect the health of persons using the original building.
- (9) Where in terms of these Regulations an obligation is imposed or may be imposed on the owner of any building or land to do or refrain from doing any particular act or thing, and –
- (a) such owner and some other person have lawfully agreed, in writing, that such other person shall accept such obligation on behalf of such owner; and
  - (b) such owner has, where required by the local authority, furnished the local authority with written proof of the fact contemplated in paragraph (a) and with the name and address of such other person,

any reference in any such Regulation to such owner shall be construed as a reference to such other person: Provided that such owner shall not be relieved of such obligation where such other person does not adhere to the agreement contemplated in paragraph (a).

## **A2 Plans and particulars to be furnished**

- (1) Any person intending to erect any building shall submit to the local authority the following plans and particulars, together with the application:
- (a) A site plan;
  - (b) layout drawings;
  - (c) a fire installation drawing;
  - (d) drainage installation drawing;
  - (e) particulars of any existing building which is to be demolished and details of the method of demolition to be used;
  - (f) such plans and particulars as may be required by the local authority in respect of –
    - (i) general structural arrangements, subject to any requirement contained in these Regulations with regard to design of the structural system;
    - (ii) general arrangement of artificial ventilation;
    - (iii) a fire protection plan;

## **SANS 10400-A:2010**

Edition 3

- (iv) any certificate contemplated in these Regulations, including any applicable Agrément Certificate; and
- (v) particulars required in terms of any applicable legislation, by-laws, or part of SANS 10400

Provided that –

- (aa) such plans and particulars shall not be submitted where –
    - (i) as a result of any exemption contemplated in paragraph (a) or (b) of the proviso section 2(4) of the Act, it is not necessary to do so;
    - (ii) an exemption has been granted by a building control officer in terms of section 13 of the Act; or
    - (iii) any minor building work is a building having an area of not more than 5 m<sup>2</sup> or is a pergola, wire fence or an open-sided fabric covered shelter for a car, caravan or boat;
  - (bb) in the case of any temporary building, only such plans and particulars as are contemplated in Regulation **A23** shall be submitted.
  - (g) a declaration by a person registered in a professional category of registration in terms of one of the councils for the professions identified in the Council for the Built Environment Act, 2000 (Act No. 43 of 2000) in the relevant portion of Form 1 contained in SANS 10400-A as to show the applicable functional regulations shall be satisfied.
- (2) The owner of a building shall appoint and retain the services of the person responsible for submitting the declaration required in subregulation (1)(g) and shall advise such person after such declaration has been submitted to the local authority of any changes made in the manner in which any functional regulation shall be satisfied or if the services of the competent person are for whatever reason terminated prior to the conclusion of his obligations in terms of these Regulations, or the appointment of any other competent person. Such person shall within one month of being notified by the owner or becoming aware of any change submit an amended declaration to the local authority.
- (3) Where it is not possible for the person appointed by the owner of a building in subregulation (2) to fulfil his or her duties, the owner of such building shall appoint and retain another suitably qualified person to take over and perform the duties and responsibilities assigned to such person in subregulation (2).
- (4) The names of all approved competent persons shall be entered into the appropriate schedule of Form 1 contained in SANS 10400-A before local authority approval may be granted.
- (5) A certified copy of any approved plans and particulars contemplated in subregulation (1) shall be available at the site where any building is being erected until a certificate of occupancy has been issued by the local authority.
- (6) (a) Where design work for the proposed erection of any building was commenced before the date of coming into effect of any amendment to these Regulations or within 6 months of the publication of an edition of any part of SANS 10400 or a by-law and an application in respect of such erection has not been made prior to such date, the owner of the building, or a person authorized by the owner, may notify the local authority that such design work was so commenced and has so progressed.

- (b) Subject to the provisions of this subregulation, an application in respect of an erection which has been the subject of a notification contemplated in paragraph (a) shall if so requested by the owner be dealt with by the local authority in accordance with the provisions of the building regulations, by-laws or edition of SANS 10400 in force immediately before such date.
- (c) Any notification contemplated in paragraph (a) shall –
  - (i) be submitted by registered post within 6 months of the coming into effect of any new regulation, by-law or publication of a new edition of any part of SANS 10400; and
  - (ii) contain the name and address of the owner, the address of the site of the building concerned, the date of commencement of such design work and a description of the proposed erection and its intended use.
- (d) The local authority shall, in writing, inform the owner concerned of acceptance of such notification.
- (e) The provisions of paragraph (b) shall not apply in respect of any application which is made to the local authority more than 12 months after the date that the local authority informs the owner that it is so satisfied: Provided that the local authority may extend such period if it thinks it reasonable or necessary.
- (f) Any person who gives false or misleading information in a notification in terms of this subregulation shall be guilty of an offence and such notification is null and void.

### **A3 Preliminary plans and enquiries**

- (1) Any person who intends to erect a building may, before submitting an application in accordance with the Act, request the local authority –
  - (a) to examine any preliminary sketch plans of the building proposed to be erected and to, in writing, furnish its comments on such plans or on any particular features thereof specified by such person; or
  - (b) to furnish, in writing, its opinion as to whether any material or method or form of construction intended to be used in the erection of such building will comply with these Regulations.
- (2) Where the local authority is unable to comply with any request contemplated in subregulation (1) it shall furnish, in writing, its reasons for its inability to do so.

### **A4 Local authority may require additional documents and information**

- (1) Where the local authority requires the applicant in terms of Regulation **A2(1)(f)(i)** or **(ii)** to submit structural details or artificial ventilation details such applicant shall, to the extent required by the local authority –
  - (a) furnish the local authority with a structural arrangement drawing which shall show the position, level and size of every structural member;
  - (b) furnish the local authority with such structural drawings and artificial ventilation details as required in terms of subregulations **(2), (3), (4), (5), (6), (7)** and **(8)**: Provided that where the structural system or artificial ventilation system, as the case may be, is designed by an approved competent person –

## **SANS 10400-A:2010**

Edition 3

- (i) the local authority shall permit the applicant to omit from his application any or all of the details required in subregulations **(2)**, **(3)**, **(4)**, **(5)**, **(6)**, **(7)** and **(8)** on condition that the required details shall be submitted to the local authority at least three days, exclusive of a Saturday, Sunday or public holiday, prior to the commencement of the erection of the structural system of the building or the artificial ventilation system, as the case may be; and
    - (ii) such details shall thereafter form part of the relevant application for approval;
  - (c) show on structural drawings the imposed floor loads which such building has been designed to withstand;
  - (d) furnish for inspection the calculations employed in the design of the building proposed to be erected;
  - (e) furnish adequate information regarding the subsoil of the site on which the building is proposed to be erected;
  - (f) show the fire resistance ratings of the various structural members of the building and, where special protection for such members is necessary, details relating to such protection;
  - (g) furnish information regarding structural materials to be used in the construction of the proposed building, including the grade, strength, classification, temper or treatment;
  - (h) if the design or part thereof has been carried out in accordance with any standard contemplated in these Regulations, furnish the name and number of such standard;
  - (i) if the design or part thereof has been carried out in accordance with a document other than a standard contemplated in these Regulations, furnish identification of such document together with the reasons for utilizing such document in preference to such standard;
  - (j) if the design or part thereof has not been carried out in accordance with any standard or document contemplated in paragraph **(h)** or **(i)**, furnish the basis and method on which such design was prepared and any further evidence of the adequacy of such basis and method; and
  - (k) if the structural design or part thereof has been carried out in accordance with any standard, document or other method contemplated in paragraph **(h)**, **(i)**, or **(j)**, furnish, in addition to the loads contemplated in paragraph **(c)**, details of other loads which such building has been designed to withstand.
- (2)** The documentation for the structural concrete used in a building shall, to the extent required by the local authority, show –
- (a) the reinforcement in each member;
  - (b) the various grades of concrete to be used;
  - (c) the type of reinforcement or prestressing tendon;
  - (d) the amount of concrete cover to be provided to the reinforcement;
  - (e) the details of all joints between members; and

- (f) the details of anchorage of prestressing steel.
- (3) The documentation for structural steelwork shall, to the extent required by the local authority, show –
- (a) the grades of steel of all members;
  - (b) details of connections between members; and
  - (c) details of the corrosion protection to be provided to the steel structure.
- (4) The documentation for structural timber shall, to the extent required by the local authority, show –
- (a) the grade and type of timber to be used in such construction;
  - (b) whether the sizes of timber members are nominal or finished sizes;
  - (c) the method of connection of all timber members and the connection of any timber members to a foundation or other parts of the building not constructed of timber;
  - (d) in the case of any roof construction, the details of the method of bracing to resist wind actions and other lateral actions, member spacing and sizes and details of connections;
  - (e) details of treatment applied or to be applied in terms of these Regulations, to the structural timber members; and
  - (f) details of drainage for condensation or wind driven water from any cavity and the details of any ventilation openings provided to such cavity.
- (5) The documentation for structural masonry shall, to the extent required by the local authority, show –
- (a) the class of mortar to be used, together with the strength of the masonry units;
  - (b) the details of all joints in masonry and between masonry and other members, including dimensions and materials from which bearing pads and load spreading devices are made; and
  - (c) details of all reinforcement, wall ties and anchors.
- (6) The documentation for foundations shall, to the extent required by the local authority, show –
- (a) the type and condition of the soil; and
  - (b) the design loads to be applied to the foundations, except where such foundation is constructed in accordance with any relevant empirical rule and such construction is deemed to satisfy these Regulations.
- (7) The documentation for other structural materials shall, to the extent required by the local authority, show –
- (a) the overall size of every structural member together with its location;
  - (b) the grade of material of all members;

## **SANS 10400-A:2010**

Edition 3

- (c) the details of all connections between members;
  - (d) the details of the corrosion protection to be provided; and
  - (e) the details of reinforcement provided, including its strength and composition.
- (8) (a) Where the local authority requires any particulars with regard to the artificial ventilation of any building by a mechanical apparatus not being a room air conditioner contemplated in SANS 1125, or any portable electric fan, the following information shall, to the extent required by the local authority and subject to the requirement of paragraph (b), be submitted:
- (i) the location and size of any plant room;
  - (ii) the location and size of principal air ducts, plenums, inlets and outlets;
  - (iii) the proposed rates of air supply or extraction; and
  - (iv) details of any water recirculation system, cooling tower and storage tank.
- (b) Any documentation contemplated in paragraph (a) shall be accompanied by a certificate signed by an approved competent person in which he shall certify that any apparatus to be installed has been designed to provide a standard of ventilation which complies with these Regulations.
- (9) (a) Where a local authority is not satisfied as to the adequacy or safety in use of any construction system, method, material, article or product which is proposed to be used in the erection of any building the local authority may require a test report or evaluation certificate in respect thereof.
- (b) On submission to such local authority of –
- (i) an applicable report issued by the council or the CSIR; or
  - (ii) any current Agrément certificate,
- the adequacy or safety of such system, method, material, article or product covered by such report or certificate shall be deemed to satisfy any relevant requirement for adequacy or safety prescribed in these Regulations, to the extent and under the conditions set out in such report or certificate.
- (c) A report or certificate contemplated in paragraph (a), issued on or after the date of coming into operation of these Regulations, shall contain the number of the Regulation which prescribes such requirement.

### **A5 Application forms and materials, scales and sizes of plans**

- (1) Any application form shall be dated and signed in black ink by the owner.
- (2) Any application shall be accompanied by at least one set of plans, drawings and diagrams which shall –
- (a) be clear and legible;
  - (b) be drawn on any suitable material or be provided in a medium acceptable to the local authority;



## SANS 10400-A:2010

Edition 3

- |       |  |              |
|-------|--|--------------|
| (c)   | Drainage installation contemplated in Regulation <b>A2(1)(d)</b> | Colour       |
| (i)   | Drains and soil pipes  | Brown        |
| (ii)  | Waste pipes  | Green        |
| (iii) | Soil and combined vents  | Red          |
| (iv)  | Waste vents  | Blue         |
| (v)   | Pipes for the conveyance of industrial effluent                  | Orange       |
| (vi)  | Existing drains  | Black        |
| (vii) | Stormwater drains  | Not coloured |
- (7) The escape route drawn on any fire protection plan shall be coloured green and the direction of travel to a safe area shall be indicated by arrows drawn at short intervals along the plan route.
- (8) In all cases the scales employed shall be stated on the plans and drawings, and the letters and symbols used on such plans and drawings shall be not less than 2,5 mm in size in the case of upper case letters.

### A6 Site plans

Any site plan contemplated in Regulation **A2(1)(a)** shall fully and clearly contain the following information, where applicable:

- (a) (i) the dimensions of the site on which the building is to be erected;
- (ii) the boundaries of such site;
- (iii) the dimensioned position of any building line; and
- (iv) the position and width of any servitude or right of way to which such site is subject;
- (b) the registered number or other designation of such site;
- (c) the direction of true north, and if required by the local authority, the natural ground contours at suitable vertical intervals or spot levels at each corner of such site;
- (d) the name of the street upon which such site abuts;
- (e) the location of –
- (i) any municipal service and any connection point thereto; and
- (ii) any drain, stormwater drain, or surface channel existing upon such site;
- (f) the location of –
- (i) the proposed building;
- (ii) any existing building; and

- (iii) any building proposed to be demolished;
- (g) (i) any existing and intended point of access from any public street; and
- (ii) the location of any street tree, street furniture, apparatus or equipment relative to such access.

## A7 Layout drawing

Any layout drawing contemplated in Regulation **A2(1)(b)** shall indicate the occupancy classification and shall consist of as many plans, sections, elevations and such other details as may be necessary to show –

- (a) foundations, floors, walls, fixed and openable windows, fanlights, louvres and other ventilating devices, artificial ventilation systems including any cooling tower or plantroom, doors, stairs, roofs and chimneys;
- (b) sanitary fixtures;
- (c) structural members required in terms of Regulation **A4(1)(a)**;
- (d) the intended use and horizontal and vertical dimensions of rooms or other spaces;
- (e) all details relating to the facilities provided for persons with disabilities;
- (f) where fixed seating is provided –
  - (i) the layout of all rows, seats and aisles;
  - (ii) the position of all exit doors; and
  - (iii) the total number of seats;
- (g) details of the position, dimensions and materials of damp-proofing;
- (h) the location, levels and size of any paved areas adjacent to the building;
- (i) where required by the local authority, contours of the site and the levels of any adjoining verge of any roadway, together with a section along the length of any vehicle driveway, which shall show the relative levels and gradients;
- (j) where required by the local authority, the levels of the floors relative to one another and to –
  - (i) the existing ground surface;
  - (ii) the proposed finished ground surface;
  - (iii) the surface of any public place or public street at the boundary of the site; and
  - (iv) all street levels supplied in terms of Regulation **A12**;
- (k) stormwater drainage on the site, where such drainage is required by the local authority; and
- (l) details of any special provisions, required in terms of these Regulations, for persons with disabilities.

## **A8 Plumbing installation drawings and particulars**

- (1) (a) the provisions of Regulation **A2(1)(c)** and **A2(1)(d)** shall not be construed as preventing the details contemplated in subregulations **(2)**, **(3)**, **(4)** and **(5)** being clearly indicated on any layout drawing required in terms of Regulation **A2(1)(b)**.

(b) Where such details on more than one floor of any building are identical they may be indicated on the drawings of one such floor only: Provided that where such details are so indicated the drawings of other floors concerned shall be suitably annotated to indicate where such details may be found.
- (2) Any drawing of a fire installation as contemplated in Regulation **A2(1)(c)** shall contain as many plans, sections and elevations as may be necessary to show, where relevant, the following:

  - (a) the location and size of any existing or proposed communication pipe serving or intended to serve any building or site;
  - (b) the location of any pipe, the size of such pipe and the material of which it is manufactured;
  - (c) the location and capacity of any storage tank;
  - (d) the location of any overflow;
  - (e) the location of any pump; and
  - (f) the pressure for which the installation has been designed.
- (3) Any drawing of a drainage installation as contemplated in Regulation **A2(1)(d)** shall contain as many plans, sections and elevations as may be necessary to show, where relevant, the following:

  - (a) the location, size and gradient of any drain and any connecting point to such drain, in relation to a datum established on the site and the level of the ground relative thereto;
  - (b) the location of any point of access to the interior of any drain;
  - (c) the location of any trapped gully;
  - (d) the location and details of any septic tank, conservancy tank, private sewage treatment plant or sewage pump;
  - (e) the location of any percolation test hole excavated on the site and of any french drain;
  - (f) the location and arrangement of any sanitary fixture served by the drainage installation;
  - (g) the location and size of any soil pipe, waste pipe and ventilating pipe or device;
  - (h) the location of all openings in the building such as chimneys, skylights, doors, windows, ventilation openings and air intakes which could permit the entry of foul air or gas into such building from any ventilating pipe or device; and
  - (i) the location of any well, borehole or watercourse on the site.
- (4) The local authority may require the owner to submit –

  - (a) drainage design calculations which shall clearly indicate the basis for such design;

- (b) an estimate of the composition and quantity of any industrial effluent proposed to be discharged into any sewer; and
- (c) where approval has been given in terms of the local authority's industrial effluent by-laws or regulations for the discharge into a sewer of industrial effluent from the site, plans and particulars of any drainage works and installations required by the local authority in terms of its conditions of approval for such discharge.
- (5) Where symbols are used to signify details on drainage installation drawings, they shall be as indicated in the following list: Provided that where there may be a possibility of misunderstanding, the description shall be written in full:

Access opening	AO
Bath	B
Bidet	BT
Cast iron	CI
Cleaning eye	CE
Concrete	CONC
Copper	COP
Cover level	CL
Fibre cement	FC
Galvanized mild steel	GMS
Grease trap	GT
Ground level	GL
Gully	G
Inspection chamber	IC
Inspection eye	IE
Invert level	IL
Manhole	MH
Pitch-impregnated fibre	PF
Rainwater pipe	RWP
Reinforced concrete	RC
Rodding eye	RE
Shower	SW
Sink	S
Slop hopper	SH
Soil pipe	SP
Stainless steel	SS
Storm water channel	SC
Storm water pipe	SWP
Two way vent valve	2WVV
Unplasticized polyvinyl chloride	uPVC
Urinal	U
Vent or ventilating pipe	VP
Vitrified clay	VC
Wash-basin	WB
Wash-trough	WT
Waste pipe	WP
Toilet pan	WC

## A9 Fire protection plan

- (1) Where so required by the local authority, any application in respect of the erection of any building not being a dwelling house, shall be accompanied by a fire protection plan which shall clearly show any fire protection measures provided in terms of these Regulations.

## SANS 10400-A:2010

Edition 3

- (2) The provisions of subregulation (1) shall not be construed as preventing details of such fire protection measures being clearly indicated on a layout drawing required in terms of Regulation A2(1)(b).

### A10 Symbols on fire protection plans

Where symbols are used to signify details on fire protection plans they shall be as indicated in the following list: Provided that where the possibility of a misunderstanding exists, the description shall be written in full:

Escape door	ED
Escape route	ER
Feeder route	FR
Fire extinguisher	FE
Fire hydrant	FH
Foam inlet	FI
Fire main	FM
Fire-pump connection	FPC
Fire stopping	FS
Heat detectors	HD
Hose reel	HR
Rising main	RM
Reflux valve	RV
Smoke detectors	SD
Sprinkler system	SS
Smoke extractor	SX
Valve	V

### A11 Pointing out of boundary beacons

- (1) Where, in the opinion of the local authority, the location of any boundary of a site has not been accurately determined such local authority may require the owner, at his own cost, to engage a professional land surveyor and to submit to the local authority a certificate, in an approved form and signed by such professional land surveyor –
- (a) identifying the boundary pegs or beacons of such site; and
  - (b) stating the name of the nearest cross street and the approximate distance of the nearest boundary of the site from such street.
- (2) Where such owner fails to engage a professional land surveyor as contemplated in subregulation (1) the local authority may engage a professional land surveyor to establish and point out the location of such pegs or beacons, and the local authority may recover the costs of such establishing and pointing out from such owner.

### A12 Street levels

- (1) Where any building is to be erected on a site abutting a constructed street the owner of such building shall, subject to the requirements of subregulation (3), erect such building in accordance with the levels of such street.
- (2) (a) Where any portion of any street abutting the site on which any building is to be erected has not been constructed the owner of such building shall request, in writing, from the local authority the levels at which such portion of the street is intended to be constructed.

- (b) The local authority shall, where in its opinion it is practicable for it so to do and within 21 days after receipt of a request contemplated in paragraph (a), supply the required levels.
  - (c) If the local authority is unable to comply with the provisions of paragraph (b) it shall notify such owner, in writing, to that effect.
- (3) Where any street has been constructed, but in the opinion of the local authority is likely to be reconstructed at levels different from its existing levels, the local authority shall give notice of such fact to such owner, and in such notice it shall, if possible, supply the levels at which such portion of such street will be reconstructed.

### **A13 Building materials and tests**

- (1) (a) Material used in the erection of a building shall be suitable for the purpose for which it is to be used.
  - (b) All timber used in the erection of a building shall be treated against termite and wood borer attack and fungal decay in accordance with the requirements of SANS 10005 and shall bear the product certification mark of a body certified by the South African National Accreditation System.
  - (c) The requirements of subregulation (1)(a) shall be deemed to be satisfied if such material complies with and is incorporated into buildings in accordance with the requirements of SANS 10400.
- (2) The local authority may test or cause to be tested any material or component used or to be used in the erection of any building in order to determine whether such material or component complies with the requirements of these Regulations, and any officer of such local authority duly authorized for that purpose may, at any time after consultation with the person erecting such building, remove from the building site concerned so much of such material or component as is reasonably necessary to serve as a sample for the purpose of such test: Provided that the authorized officer may not exercise his powers in such a way that work of such erection is stopped when such material or component is being so removed and tested.
- (3) If any material or component tested in terms of subregulation (2) does not comply with these Regulations the local authority may serve a notice on such person, stating the respects in which such material or component does not comply and prohibiting such person from making further use of such material or component for the purpose for which it was or is to be used in the erection of such building.
- (4) Except in the case where in such notice the local authority permits the use of such material or component in the erection of such building for some different purpose permitted in terms of these Regulations, such person shall forthwith on receipt of such notice remove such material or component from such building or building site or from both, as the case may be.
- (5) If any material or component contemplated in subregulation (2) is tested and has failed to comply with these Regulations the local authority may recover the cost of such test from the owner of the building concerned.
- (6) Where the owner of any building desires to use for a particular purpose any material or component which is not deemed to satisfy by these Regulations to be used for that purpose, and he satisfies the local authority that such material or component is at least as suitable for that purpose as the material or component permitted or prescribed to be used by these Regulations, then the local authority shall permit the use of such material or component for the purpose concerned.

## **A14 Construction**

- (1) (a) The construction of any building or element shall be such that the building or element as constructed does not compromise the design intent of any design solution that satisfies the requirements of a functional regulation.
- (b) The requirements of subregulation (1)(a) shall be deemed to be satisfied if such construction satisfies the requirements of SANS 10400.
- (2) Precautions shall be taken during all stages of construction of any building to ensure that the structural system is not damaged or distorted during the course of erection of such building.

## **A15 Maintenance and operation**

- (1) (a) The owner of any building shall ensure that any mechanical equipment, facility or any service installation provided in or in connection with such building, pursuant to these Regulations or pursuant to any building by-law which was in operation prior to the coming into operation of the Act, shall be maintained in a safe and functional condition.
- (b) Such owner or any person appointed by such owner to be in control of such building shall ensure that where such equipment, facility or installation is designed to be kept operating during the times of normal occupancy of the building, it is kept operating in such a manner as to attain any standard of performance prescribed in these Regulations or in any by-law for such equipment or installation.
- (2) The owner of any building shall ensure that pursuant to these Regulations or pursuant to any building by-law that was in operation prior to the coming into operation of the Act, the following is maintained in accordance with the requirements of the relevant functional regulations contained in Regulations **B, H, J, K** and **L**:
  - (i) the structural safety performance (behaviour of buildings under all actions that can be reasonably expected to occur);
  - (ii) the measures taken to resist the penetration of rain water and the passage of moisture into the interior of a building.
- (3) The local authority may serve a notice on such owner or person requiring him to comply with subregulation (1) or (2) within the time specified in such notice.
- (4) The local authority may, by notice in writing to the owner, order the evacuation of such building where the state of such building, equipment, installation or facility will cause conditions which in the opinion of the local authority may be detrimental to the safety or health of the occupiers or users of such building.
- (5) Any owner or person who contravenes the requirements of subregulation (1) or (2) or fails to comply with any notice served in terms of subregulation (3) or (4), shall be guilty of an offence.

## **A16 Qualifications of a building control officer**

The minimum qualification of any building control officer appointed in terms of section 5 of the Act shall be of a standard equivalent to a senior certificate plus 3 years tertiary education, at an accredited educational institution in one of the following building disciplines:

- (a) civil engineering;

- (b) structural engineering;
- (c) architecture;
- (d) building management;
- (e) building science;
- (f) building surveying; or
- (g) quantity surveying.

### **A17 Certificate of identity of a building control officer**

- (1) Any building control officer or any officer contemplated in section 6(4) of the Act shall when so requested, produce his certificate of identity, which shall contain the following information:
  - (a) the number of the Act in terms of which the certificate is issued;
  - (b) the name of the local authority in question;
  - (c) the name of the officer;
  - (d) the signature of the officer;
  - (e) the signature of the municipal manager of the local authority concerned;
  - (f) the date of issue; and
  - (g) a photograph of the officer.
- (2) Subregulation (1) shall be deemed to be satisfied where the certificate is in accordance with that provided in SANS 10400-A.
- (3) The certificate contemplated in subregulation (1) shall be valid only during the period that the officer so identified occupies the post of building control officer or during the period for which any power of a building control officer is delegated to him, as the case may be, and it may at any time be withdrawn by the local authority.
- (4) Any person who produces a certificate of identity which has not been lawfully issued to him or which has been lawfully withdrawn, shall be guilty of an offence.

### **A18 Control of plumbers and plumbing work**

- (1) No person shall perform the trade of plumbing as contemplated in Government Notice No. R 1875 of 31 August 1979 unless he is a trained plumber or works under the adequate control of a trained plumber or approved competent person.
- (2) Where any person who is not a trained plumber has been practising the trade of plumbing and was required in terms of any local authority by-law to register with it before so practising in its area of jurisdiction, he may, if he is so registered, continue to practise in such area or the area of any other local authority if such registration is acceptable to such other local authority.
- (3) No local authority shall, for the purposes of these Regulations, register any person to practise the trade of plumbing after the coming into operation of the Act.

## **SANS 10400-A:2010**

Edition 3

- (4) Any person not being a trained plumber or not being a person contemplated in subregulation (2), who practises the trade of plumbing shall be guilty of an offence.
- (5) Any trained plumber who causes or permits any person who is not a trained plumber or is not a person contemplated in subregulation (2), to practise the trade of plumbing without adequately controlling the work done by such person, shall be guilty of an offence.

### **A19 Appointment of persons responsible for design, inspection and assessment duties**

- (1) Where in terms of these Regulations and in respect of the erection of any building:
  - (a) a rational design or rational assessment, is required in terms of:
    - (i) Regulations **AZ4(1)(b)(ii)**, **A1(3)**, **A23(4)**, **G1(3)**, **O4**, **P2(2)**, **Q3**, **R3**, **T1(2)**, or **W4** in respect of a system, measure, facility, parameter, or installation, as relevant, or
    - (ii) a part of SANS 10400; or
  - (b) a geotechnical investigation is required in terms of Regulation **F3**

the owner of the building shall subject to the provisions of subregulations (4) and (5) appoint and retain one or more approved competent persons to undertake responsibility for the work associated with such Regulations including any inspections and certifications that may be required.
- (2) Where it is not possible for such person to fulfil his or her duties as contemplated in subregulation (1), the owner of such building shall appoint and retain another approved competent person to take over and fulfil such duties and responsibilities both in respect of the work already designed or erected or installed and in respect of the balance of such work still to be undertaken to complete the project.
- (3) The local authority may exempt from the requirements of this Regulation any building classified in these Regulations as minor building work or foundations to an addition or extension to a single storey building where the applicant has satisfied himself that the existing foundations are in accordance with the rules contained in SANS 10400-H and any local damage (including cracking) and deformation in the existing building are within tolerable limits.
- (4) The owner of any building who is required by these Regulations to appoint an approved competent person shall state in the terms of the appointment for the competent person that such person undertake all duties and responsibilities required by these Regulations. Such persons shall declare his or her acceptance of such responsibilities in the relevant portion of Form 2 contained in SANS 10400-A.
- (5) Notwithstanding the provisions of subregulation (1) or (2), a person may be appointed to undertake the relevant responsibilities and duties in respect of more than one of the systems, measures, facilities, parameters or installations provided for in subregulation (1) if the local authority accepts in terms of these Regulations that he or she is competent to do so.
- (6) (a) Where any building is to be extended, the local authority may on receipt of the application for such extension and before granting approval require that the approved competent persons who have accepted responsibility for such work timeously prepare and submit rational assessments as to the adequacy of the existing systems and installations in combination with the contemplated extensions to comply with the relevant requirements of these Regulations for the whole building including the extensions.

- (b) If the local authority is satisfied that any such rational assessment meets the requirement of these Regulations and in particular of subregulation **6(a)** it shall accept such assessment which shall be deemed to be part of the application submitted.
- (c) If the local authority is not so satisfied it may after first consulting with the competent person who has submitted such assessment and subject to appeal to the Review Board decline to accept the assessment for reasons which it shall furnish in writing to such competent person and require him or her to submit a revised assessment to the satisfaction of the local authority.
- (7) Where in a building any element of the structural, fire protection, artificial ventilation, stormwater disposal or non-water-borne sanitary disposal, fire installation or drainage installation system as provided for in subregulation **(1)** is or is required to be the subject of a rational design or rational assessment, the person appointed as an approved competent person shall assume responsibility for satisfying the functional regulation relating to that particular system in its entirety.
- (8) (a) Where an approved competent person is required in terms of subregulation **(7)** to assume responsibility for the system in its entirety and where parts of the system are to be undertaken by other competent persons, the approved competent person shall assume overall responsibility for the design of such system and shall ensure that:
- (i) the component designs are generally in accordance with the approved application and in accordance with the requirements of these Regulations.
  - (ii) the component designs will achieve the necessary co-ordination and interaction of the different elements so as to achieve the objectives of the systems.
  - (iii) in the case of the structural system, the interaction of the various component elements will be such that the structural adequacy of all the parts of the building and the overall stability of the building is assured

but in all cases excluding responsibility for the detailed design of elements carried out by the other competent persons, provided that such exclusion shall not preclude the approved competent person from taking any action which he or she considers necessary in terms of subregulation **(8)(b)**.

- (b) (i) For the purpose of satisfying him or herself of the adequacy of any design or designs contemplated in subregulation **(8)(a)** and of their compatibility with any system, measure or installation in its entirety, the approved competent person may at any time after his or her appointment, require the designer or designers of the different elements of the system referred to in subregulation **(8)(a)** to complete Form 3 contained in SANS 10400-A as he or she may deem necessary, and return it timeously, or in any event before building construction or installation proceeds. Each such designer shall, when called upon so to do, provide the information and documents concerned in respect of the work he or she has designed.
- (ii) The person appointed as approved competent person may further require, after consultation with the designer concerned, modifications to the relevant designs, plans and specifications, if in his or her opinion they do not comply with the provisions of these Regulations.
  - (iii) Copies of designs, plans and specifications accepted by the approved competent person shall be submitted if so required to the local authority counter-signed by the approved competent person.



- (ii) the declaration of competence provided by such person in terms of subregulation (9), considers that such person does not possess the degree of competence necessary to undertake the relevant duties, it may decline to accept the appointment of such person, who may appeal to the Review Board.
  - (b) If the appeal is upheld, the local authority shall accept the appointment of the appellant as a person competent to undertake such duties or any part thereof in respect of such building as the Review Board may decide.
- (11) Where the local authority is satisfied with an application in respect of the matters specified in subregulations (10)(a)(i) and (ii) it shall indicate acceptance of the application in the manner specified in Form 2 as contained in SANS 10400-A.
- (12) (a) On completion of the structural, fire protection or fire installation system for which an approved competent person has been appointed in terms of subregulations (1) or (2), such competent person shall complete and submit to the local authority a fully completed Form 4 as contained in SANS 10400-A in respect of each such system for which such person has accepted responsibility in terms of Section 14(2A) of the Act 103.
- (b) The local authority may require from the owner that an approved competent person submit a copy of the certification of the specific work, other than the structural, fire protection or fire installation, for which he has been appointed on completion of the building.
- (13) Where any person provides any information or certificate required in terms of this Regulation or which he or she knows to be incomplete or false, such person shall be guilty of an offence.

## **A20 Classification and designation of occupancies**

- (1) The occupancy of any building shall be classified and designated according to the appropriate occupancy class given in column 1 of table 1 and such classification shall reflect the primary function of such building: Provided that, in any building divided into two or more areas not having the same primary function, the occupancy of each such area shall be separately classified.
- (2) Notwithstanding the requirements of subregulation (1), any area in any building which is used for any purpose ancillary to that of any occupancy classification contemplated in subregulation (1) shall, subject to adequate facilities and safety measures being provided, not be classified as a separate occupancy.
- (3) Any room or space used for the storage or processing of flammable liquids shall not be deemed to be a J1 occupancy as herein defined if –
- (a) such liquid is stored in the fuel tank of any engine, motor vehicle, boat or lawnmower;
  - (b) the quantity of liquid to be stored or handled in such room does not exceed 40 litres; or
  - (c) the quantity contemplated in paragraph (b) exceeds 40 litres but does not exceed 200 litres and the closed cup flash point of such liquid is above 40 °C.

Table 1 — Occupancy or building classification

1	2
Class of occupancy or building	Occupancy
<p>A1</p> <p>A2</p> <p>A3</p> <p>A4</p> <p>A5</p>	<p><b>Entertainment and public assembly</b> Occupancy where persons gather to eat, drink, dance or participate in other recreation</p> <p><b>Theatrical and indoor sport</b> Occupancy where persons gather for the viewing of theatrical, operatic, orchestral, choral, cinematographical or sport performances.</p> <p><b>Places of instruction</b> Occupancy where school children, students or other persons assemble for the purpose of tuition or learning.</p> <p><b>Worship</b> Occupancy where persons assemble for the purpose of worshipping.</p> <p><b>Outdoor sport</b> Occupancy where persons view outdoor sports events.</p>
<p>B1</p> <p>B2</p> <p>B3</p>	<p><b>High risk commercial service</b> Occupancy where a non-industrial process is carried out and where either the material handled or the process carried out is liable, in the event of fire, to cause combustion with extreme rapidity or give rise to poisonous fumes, or cause explosions.</p> <p><b>Moderate risk commercial service</b> Occupancy where a non-industrial process is carried out and where either the material handled or the process carried out is liable, in the event of fire, to cause combustion with moderate rapidity but is not likely to give rise to poisonous fumes, or cause explosions.</p> <p><b>Low risk commercial service</b> Occupancy where a non-industrial process is carried out and where neither the material handled nor the process carried out falls into the high or moderate risk category.</p>
<p>C1</p> <p>C2</p>	<p><b>Exhibition hall</b> Occupancy where goods are displayed primarily for viewing by the public.</p> <p><b>Museum</b> Occupancy comprising a museum, art gallery or library.</p>
<p>D1</p> <p>D2</p> <p>D3</p> <p>D4</p>	<p><b>High risk industrial</b> Occupancy where an industrial process is carried out and where either the material handled or the process carried out is liable, in the event of fire, to cause combustion with extreme rapidity or give rise to poisonous fumes, or cause explosions.</p> <p><b>Moderate risk industrial</b> Occupancy where an industrial process is carried out and where either the material handled or the process carried out is liable, in the event of fire, to cause combustion with moderate rapidity but is not likely to give rise to poisonous fumes, or cause explosions.</p> <p><b>Low risk industrial</b> Occupancy where an industrial process is carried out and where neither the material handled nor the process carried out falls into the high or moderate risk category.</p> <p><b>Plant room</b> Occupancy comprising usually unattended mechanical or electrical services necessary for the running of a building.</p>
<p>E1</p> <p>E2</p> <p>E3</p>	<p><b>Place of detention</b> Occupancy where people are detained for punitive or corrective reasons or because of their mental condition.</p> <p><b>Hospital</b> Occupancy where people are cared for or treated because of physical or mental disabilities and where they are generally bed-ridden.</p> <p><b>Other institutional (residential)</b> Occupancy where groups of people who either are not fully fit, or who are restricted in their movements or their ability to make decisions, reside and are cared for.</p>

Table 1 (concluded)

1	2
Class of occupancy or building	Occupancy
E4	<b>Health care</b> Occupancy which is a common place of long term or transient living for a number of unrelated persons consisting of a single unit on its own site who, due to varying degrees of incapacity, are provided with personal care services or are undergoing medical treatment.
F1	<b>Large shop</b> Occupancy where merchandise is displayed and offered for sale to the public and the floor area exceeds 250 m <sup>2</sup> .
F2	<b>Small shop</b> Occupancy where merchandise is displayed and offered for sale to the public and the floor area does not exceed 250 m <sup>2</sup> .
F3	<b>Wholesalers' store</b> Occupancy where goods are displayed and stored and where only a limited selected group of persons is present at any one time.
G1	<b>Offices</b> Occupancy comprising offices, banks, consulting rooms and other similar usage.
H1	<b>Hotel</b> Occupancy where persons rent furnished rooms, not being dwelling units.
H2	<b>Dormitory</b> Occupancy where groups of people are accommodated in one room.
H3	<b>Domestic residence</b> Occupancy consisting of two or more dwelling units on a single site.
H4	<b>Dwelling house</b> Occupancy consisting of a dwelling unit on its own site, including a garage and other domestic outbuildings, if any.
H5	<b>Hospitality</b> Occupancy where unrelated persons rent furnished rooms on a transient basis within a dwelling house or domestic residence with sleeping accommodation for not more than 16 persons within a dwelling unit.
J1	<b>High risk storage</b> Occupancy where material is stored and where the stored material is liable, in the event of fire, to cause combustion with extreme rapidity or give rise to poisonous fumes, or cause explosions.
J2	<b>Moderate risk storage</b> Occupancy where material is stored and where the stored material is liable, in the event of fire, to cause combustion with moderate rapidity but is not likely to give rise to poisonous fumes, or cause explosions.
J3	<b>Low risk storage</b> Occupancy where the material stored does not fall into the high or moderate risk category.
J4	<b>Parking garage</b> Occupancy used for storing or parking of more than 10 motor vehicles.

## A21 Population

- (1) The population of any room or storey or portion thereof shall be taken as the actual population of such room, storey or portion thereof where such population is known or, where such population is not known, the population shall be calculated from the criteria given in table 2.

## SANS 10400-A:2010

Edition 3

- (2) In the case of any occupancy classified as F1, where the total floor area is more than 500 m<sup>2</sup>, that portion of the floor area that is in excess of 500 m<sup>2</sup> shall, for the purposes of calculation of the population, be reduced by an amount of 20 %.

**Table 2 — Design population**

1	2
Class of occupancy of room or storey or portion thereof	Population
A1, A2, A4, A5	Number of fixed seats or 1 person per m <sup>2</sup> if there are no fixed seats
E1, E3, H1, H3, H4	2 persons per bedroom
E4	16 persons provided that the total number of persons per room is not more than 4
H5	16 persons per dwelling unit provided that the total number of persons per room is not more than 4
G1	1 person per 15 m <sup>2</sup>
J1, J2, J3, J4	1 person per 50 m <sup>2</sup>
C1, E2, F1, F2	1 person per 10 m <sup>2</sup>
B1, B2, B3, D1, D2, D3	1 person per 15 m <sup>2</sup>
C2, F3	1 person per 20 m <sup>2</sup>
A3, H2	1 person per 5 m <sup>2</sup>

### **A22 Notice of intention to commence erection or demolition of a building, and notices of inspection**

- (1) (a) No work in connection with the erection or demolition of any building shall be commenced on the site unless notice, in the form required by the local authority, has been given to such local authority by the owner of such building, stating the date on which such erection or demolition will commence.
- (b) Such notice shall in the case of the erection of a building be given at least 4 days, exclusive of a Saturday, Sunday or public holiday, and in the case of the demolition of a building, at least 10 days, exclusive of a Saturday, Sunday or public holiday, before such work commences.
- (2) Notice in the form required by the local authority shall be given by the owner to such local authority of a date which shall be at least 2 working days from the date of receipt by it of such notice on which, as the case may be –
- (a) any fire installation will be connected to any communication pipe;
- (b) trenches or excavations will be ready for inspection prior to the placing of concrete for any foundation;
- (c) any drainage installation will be ready for inspection and testing; or
- (d) the building will be completed.
- (3) No owner shall construct any foundation until the trenches or excavations have been inspected and approved by the local authority, and such owner shall not backfill or enclose a

drainage installation until such installation has been inspected, tested and approved by the local authority: Provided that this requirement shall not apply if such inspection and testing has not been carried out by the end of the working day which has the first date mentioned in subregulation (2).

- (4) Any owner who fails to comply with the requirements of this Regulation shall be guilty of an offence.

### **A23 Temporary buildings**

- (1) On receipt of any application to erect a building which the applicant has declared to be a temporary building, the local authority may, subject to the provisions of subregulations (2), (3) and (4), grant provisional authorization to the applicant to proceed with the erection of such building in accordance with any conditions or directions specified in such authorization.
- (2) Before granting such authorization the local authority may require the submission of –
- (a) a statement of the period for which authorization is required;
  - (b) a site plan;
  - (c) layout drawings in sufficient detail to enable the local authority to determine the general size, form, materials of construction and use of the proposed building; and
  - (d) any structural detail required by the local authority to determine the structural safety of the proposed building.
- (3) The local authority shall grant the authorization contemplated in subregulation (1) for a limited period, to be determined with regard to the period specified by the applicant.
- (4) The local authority may at the request of the owner grant approval for one or more extensions of the period contemplated in subregulation (3): Provided that where it is intended that the public should have access to such building each such request shall be accompanied by a certificate signed by an approved competent person, indicating that the condition of the structural system is satisfactory.
- (5) The owner of such building may, not later than the last day of the period contemplated in subregulation (3), submit to the local authority such additional plans and details as required by the local authority in order to consider an application in terms of section 4 of the Act.
- (6) Where such local authority has granted approval in respect of an application contemplated in subregulation (5) the owner shall submit to the local authority an affidavit stating that any part of such building erected in terms of the provisional authorization has been erected in accordance with the plans and details contemplated in subregulation (5).
- (7) If any plans and details contemplated in subregulation (5) have not been submitted to such local authority or if such local authority has refused to grant approval in respect thereof, the owner shall forthwith remove or demolish such building.

### **A24 Standardization of interpretation**

- (1) Where so requested, in writing, by any local authority, the owner of any building or any person with an interest in such building, the council may examine the plans, specifications or other documents which accompanied or which are intended to accompany any application to the local authority in question, perform any tests that it considers necessary and inspect the site on which such building is to be erected, and issue a report in connection therewith.

- (2) Where the council finds that the proposed building complies with all the relevant requirements of these Regulations it shall report accordingly, and any application for approval to erect such building, where accompanied by such report, shall be deemed to satisfy the requirements of the Act: Provided that such report shall clearly identify any plans, specifications or other documents which have been examined by the council.

## **A25 General enforcement**

- (1) No person shall use any building or cause or permit any building to be used for a purpose other than the purpose shown on the approved plans of such building, or for a purpose which causes a change in the class of occupancy as contemplated in these Regulations, whether such plans were approved in terms of the Act or in terms of any law in force at any time before the date of commencement of the Act, unless such building is suitable, having regard to the requirements of these Regulations, for such first-mentioned purpose or for such changed class of occupancy.
- (2) Any person who contravenes a provision of subregulation (1) shall be guilty of an offence, and the local authority may serve a notice on such person calling upon him forthwith to cease such contravention.
- (3) Where the erection of any building was completed before the date of commencement of the Act and such erection was in contravention of the provisions of any law in force before such date, the local authority may take any action it may have been competent to take in terms of such law.
- (4) Where any building was being erected before the date of commencement of the Act in contravention of the provisions of any law in force before such date and the erection of such building is continued on or after such date in contravention of such provisions or of the provisions of the Act, the person who continues so to erect such building shall be guilty of an offence.
- (5) Any person who, having obtained approval in terms of the Act for the erection of any building, deviates to any material degree from any plan, drawing or particulars approved by the local authority shall, except where such deviation has been approved, be guilty of an offence.
- (6) The local authority may serve a notice on any person contemplated in section 4(4) of the Act or subregulation (4) or (5), ordering such person forthwith to stop the erection of the building concerned or to comply with such approval, as the case may be: Provided that where any deviation is found to be necessary during the course of construction of such building, the local authority may authorize the work to continue but shall require that an amended plan, drawing or particulars to cover such deviation is submitted and approved before a certificate of occupancy is issued.
- (7) Whether or not a notice contemplated in subregulation (6) has been served the local authority may serve a notice on the owner of any building contemplated in subregulation (4) or (5), ordering such owner to rectify or demolish the building in question by a date specified in such notice.
- (8) If, before the date specified for the rectification or demolition contemplated in subregulation (7), the owner satisfies the local authority that he has complied with the requirements contained in these Regulations the notice contemplated in subregulation (7) shall be deemed to have been withdrawn.
- (9) Where any building is being or has been erected and any contravention of these Regulations other than those relating to matters referred to in subregulation (4) or (5) has been committed, the local authority shall serve a notice on the owner of such building and in such notice shall

specify a date by which such owner shall have complied with the Regulations, cite the Regulations contravened and specify the steps to be taken in order to comply with such Regulations.

- (10) Where any building, excluding a temporary building, is being or has been erected without the prior approval contemplated in section 4(1) of the Act, the local authority shall serve a notice on the owner of such building, calling upon him to obtain the approval, in writing, as required by the Act, by a date specified in such notice.
- (11) Any person who fails to comply with any notice contemplated in this Regulation shall be guilty of an offence.

## **Part E: Demolition Work**

### **E1 Demolition of any building**

- (1) No owner of any site shall demolish or cause or permit to be demolished any building without the prior written permission of the local authority.
- (2) The local authority may, in granting such permission, impose any condition or requirement contemplated in subregulations **F1(4)** and **(5)** and Regulation **F2** for the safety, health and convenience of the public, and for the safety of any other building or installation which in its opinion may be affected by such demolition.
- (3) No person shall at any time during the course of or after the demolition of a building leave it in a condition dangerous to the public or any adjoining property.
- (4) Where a condition contemplated in subregulation **(3)** arises the local authority may serve a notice on such person requiring him to make the site safe, and if he fails so to do, the local authority may itself carry out the necessary work and recover the costs thereof from such person.

### **E2 Safeguarding of basements**

Where any building is demolished to the level of the ground and such building contained a basement, the owner of such building shall provide or cause to be provided safe lateral support to the sides of such basement.

### **E3 Prohibition of dangerous methods**

The local authority may prohibit the use of any method to be applied in the demolition of any building where in its opinion such method will create or cause to be created any danger to any person or other building or property, and where it so prohibits it shall, on the request of the owner of such building, give its reasons, in writing, for such prohibition.

### **E4 General penalty**

Any person who contravenes any requirement of the Regulations of this Part or fails to comply with any notice, condition or order issued thereunder, shall be guilty of an offence.

## **Part U: Refuse Disposal**

### **U1 Provision of areas**

Any building, excluding a dwelling house, in which refuse is or will be generated shall be provided with an adequate storage area for refuse containers.

### **U2 Access to areas**

The location of any area contemplated in Regulation **U1** shall be such that access thereto from any street for the purpose of removing the refuse, is to the satisfaction of the local authority.

### **U3 Refuse chutes**

Where any refuse container receives refuse from any chute such chute shall be designed and erected so as to be safe in operation.

Draft SA Standard

### Certificate and specimen forms

An example of a certificate (see Regulation **A17(2)**) for use by building control officers is shown below:

ART 5 ACT 103/1977

Photo

.....  
Local Authority

Name .....

Signature .....

Signature .....  
Town Clerk  
Secretary

Date .....

\*Includes officer contemplated in section 6(4) of Act.

Drg.480e

Forms relating to work performed by competent persons:

- Form 1: Declaration by person responsible for preparing an application for approval of the erection of the building in terms of section 4 of the Act.
- Form 2: Application for acceptance as an approved competent person in terms of Regulation **A19**
- Form 3: Declaration by a competent person appointed to design a component or an element of a system
- Form 4: Certificate of completion of the structural, fire protection or fire installation system in terms of section 14(2)(a) of the Act

**NATIONAL BUILDING REGULATIONS AND  
BUILDING STANDARDS ACT, 1977 (Act No. 103 of 1977), AS AMENDED**

<b>FORM 1</b>	<b>DECLARATION BY PERSON RESPONSIBLE FOR PREPARING AN APPLICATION FOR APPROVAL OF THE ERECTION OF THE BUILDING IN TERMS OF SECTION 4 OF THE ACT</b>
<i>(To be completed and submitted for all applications prepared in accordance with the provisions of Regulation A2)</i>	
To: ..... (Name of Local Authority) *Erf/Holding/Portion No.: ..... *Township/Agricultural holding/Farm name: ..... Street address: ..... ..... Nature of project: ..... <i>(Insert proposed new building(s), or building alteration, building addition, re-erection of building, refurbishment of building or structural repair to existing building, as relevant.)</i>	
<b>SECTION 1: DECLARATION BY OWNER</b>	
*I / We ..... (Name of owner) of ..... ..... (Address) Tel. No.: ..... hereby confirm that *I / We have appointed ..... <i>(Name of person registered in a professional category of registration in terms of one of the councils for the professions identified in the Council for the Built Environment Act, 2000 (Act No. 43 of 2000))</i> Registration number: ..... Category of registration: ..... <i>(Insert Professional Architect / Professional Senior Architectural Technologist / Professional Architectural Technologist / Professional Architectural Draughtsperson / Professional Engineer, etc.)</i> to declare in terms of Regulation <b>A2(1)(g)</b> how the applicable functional regulations are to be satisfied, and *I / we understand and accept that the onus is on *me / us to:-	
i) inform the above-named professional when the work is due to start on site and if any changes are made as to how the functional regulations are to be satisfied or any changes in the appointment of competent persons are made before the completion of the building; and ii) extend the above appointment to meet the requirements of Regulations <b>A19(8)</b> and <b>A19(9)</b> where applicable.	
Signature of owner ..... Date: ..... <i>(* Delete that which does not apply)</i>	

**SECTION 2: DECLARATION BY APPOINTED PROFESSIONAL PERSON**

I, ..... (Name)

Address .....

Tel. No.: ..... Fax. No.: .....

Email: .....

of .....

*(If representing a partnership, association, company or incorporated body, the name thereof)*

accept the appointment made in section 1 and declare to the best of my knowledge that the functional regulations are to be satisfied as set out in Schedule A, with the assistance of the competent persons, if any, named in Schedule B, and undertake to update this schedule whenever a change in approach to satisfying these Regulations arises.

I confirm the following:

**a) Complexity of the project**

<b>Categorization</b>	<b>Characteristics of project</b>	<b>Tick the row<sup>a</sup> which best describes the project</b>
<b>Low complexity projects</b> simple buildings or groups of buildings in an uncomplicated grouping with low impact on its environs	Structures with low performance requirements, of simple utilitarian character, design and detail, and constructed utilizing standard low technology building methods. They require a minimum of mechanical and electrical services or equipment, and basic civil or structural works infrastructure.	
<b>Medium complexity projects</b> buildings or groups of buildings in a relatively uncomplicated grouping with a medium impact on its environs	Structures with medium performance requirements, of average character and design or detail, up to three storeys high, which require non-complex structural and civil works and an average level of mechanical or electrical equipment as could normally be handled by design-supply specialist contractors.	
<b>High complexity projects</b> a building or buildings in a large or complicated grouping with a significant impact on its environs	Structures with high performance requirements and demanding a sophisticated level of design and detail content to respond to specialized requirements. Complex buildings will usually incorporate comparatively large or specialized mechanical, electrical and other specialist installations, or be of complex structural or civil design	

<sup>a</sup> Tick **one** row only.

**b) Site sensitivity**

Classification <sup>a</sup>	Tick the row <sup>b</sup> which best describes the project
<p><b>Low sensitivity site</b> A site that is neither identified as, nor exhibits, any evidence of environmental or heritage significance and does not require Environmental Impact Assessment (EIA), Heritage Impact Assessment (HIA) or Social Impact Assessment (SIA) studies to be undertaken before development. Low sensitivity sites are normally, but not exclusively, within already developed urban areas.</p>	<input type="checkbox"/>
<p><b>Medium sensitivity site</b> A site which exhibits some evidence of environmental or heritage significance for which EIA, HIA or SIA studies are not required by the government agencies involved.</p>	<input type="checkbox"/>
<p><b>High sensitivity site</b> A site identified as of special environmental or heritage significance and which will require EIA, HIA or SIA studies to be undertaken to define the parameters for development, for example, declared protected areas and urban conservation areas.</p>	<input type="checkbox"/>
<p><sup>a</sup> The inherent importance of the site in environmental or heritage terms, as defined by the National Heritage Resources Act, 1999 (Act No. 25 of 1999), the National Environmental Management Act, 1998 (Act No. 107 of 1998), and the Local Government: Municipal Systems Act, 2000 (Act No. 32 of 2000).</p>	
<p><sup>b</sup> Tick <b>one</b> row only.</p>	

Signature of professional person ..... Date: .....

Registration number: .....

Category of registration: .....

*(Insert Professional Architect/Professional Senior Architectural Technologist/Professional Architectural Technologist/Professional Architectural Draughtsperson/Professional Engineer, etc.)*

<b>SCHEDULE A: MEANS BY WHICH REGULATION AZ4 IS TO BE SATISFIED</b>				
Occupancy/Building classification . . . . . (see Regulation A20)				
1	2	3	4	5
<b>Applicability to application</b> (tick column 2 or 3)			<b>Means of satisfying requirements of functional regulations</b> (tick relevant boxes in columns 4 or 5)	
<b>Regulation</b>	<b>Yes</b>	<b>No</b>	<b>Deemed to satisfy requirements contained in the relevant parts of SANS 10400</b>	<b>Regulation AZ4(1)(b)(ii)</b>
<b>B: Structural design</b>			The structural system of the building <input type="checkbox"/> complies with the requirements of parts H, J, K, L, M or N of SANS 10400, or in the case of timber buildings with the requirements of SANS 10082 <input type="checkbox"/> is the subject of a rational design or a rational assessment <input type="checkbox"/> is the subject of an Agrément certificate or The following competent persons are to be appointed: <input type="checkbox"/> competent person (structures) to design and inspect the structures <input type="checkbox"/> competent person (civil engineering) to design and inspect the services in dolomite land <input type="checkbox"/> competent person (dolomite land) to categorize dolomite land	<input type="checkbox"/>
<b>C: Dimensions</b>			<input type="checkbox"/> The dimensions of any room or space are in accordance with the detailed requirements of SANS 10400-C	<input type="checkbox"/>
<b>D: Public safety</b>			<input type="checkbox"/> A change in level, the design of ramps and driveways, or access to swimming pools and swimming baths is in accordance with the detailed requirements of SANS 10400-D	<input type="checkbox"/>
<b>F: Site operations</b>			<input type="checkbox"/> The provision of sanitary facilities is in accordance with the detailed requirements of SANS 10400-F	<input type="checkbox"/>
<b>G: Excavations</b>			The excavation relating to a building <input type="checkbox"/> is less than 3,0 m deep and is in accordance with the detailed requirements of SANS 10400-G <input type="checkbox"/> is the subject of a rational design or a rational assessment (or both)	<input type="checkbox"/>
<b>H: Foundations</b>			A geotechnical investigation in accordance with the rules <input type="checkbox"/> is to be carried out <input type="checkbox"/> has been carried out and is available for use	<input type="checkbox"/>
			The foundations for the building are in accordance with <input type="checkbox"/> SANS 10400-B <input type="checkbox"/> the detailed requirements of SANS 10400-H	<input type="checkbox"/>
			<input type="checkbox"/> The foundations to the extension/addition to an existing building are the same as the existing foundations, which have performed satisfactorily	<input type="checkbox"/>
			The following competent persons are to be appointed: <input type="checkbox"/> competent person (civil engineering) in respect of deep footings, soil rafts, compaction of in-situ soil or sub-surface drainage <input type="checkbox"/> competent person (geotechnical) in respect of geotechnical solutions or soil improvements that are required	<input type="checkbox"/>

# SANS 10400-A:2010

Edition 3

1	2	3	4	5
Applicability to application (tick column 2 or 3)			Means of satisfying requirements of functional regulations (tick relevant boxes in columns 4 or 5)	
Regulation	Yes	No	Deemed to satisfy requirements contained in the relevant parts of SANS 10400	Regulation AZ4(1)(b)(ii)
<b>J: Floors</b>			<input type="checkbox"/> Floors in any laundry, kitchen, shower room, bathroom or room containing a toilet pan or urinal are in accordance with the detailed requirements of SANS 10400-J	<input type="checkbox"/>
			Suspended floors are in accordance with <ul style="list-style-type: none"> <li><input type="checkbox"/> the requirements of SANS 10400-B and SANS 10400-T</li> <li><input type="checkbox"/> the requirements of SANS 10082</li> <li><input type="checkbox"/> the detailed requirements of SANS 10400-J</li> </ul>	<input type="checkbox"/>
			Slabs supported on the ground are in accordance with <ul style="list-style-type: none"> <li><input type="checkbox"/> SANS 10400-B</li> <li><input type="checkbox"/> SANS 10400-H</li> <li><input type="checkbox"/> the detailed requirements of SANS 10400-J</li> <li><input type="checkbox"/> a competent person (civil engineering) is to be appointed in respect of the slabs or fills</li> </ul>	<input type="checkbox"/>
<b>K: Walls</b>			The structural strength and stability of a wall is in accordance with <ul style="list-style-type: none"> <li><input type="checkbox"/> SANS 10400-B and SANS 10400-T</li> <li><input type="checkbox"/> the detailed requirements of SANS 10400-K</li> </ul>	<input type="checkbox"/>
			The roof fixing is in accordance with <ul style="list-style-type: none"> <li><input type="checkbox"/> SANS 10400-B</li> <li><input type="checkbox"/> the detailed requirements of SANS 10400-K</li> </ul>	<input type="checkbox"/>
			<input type="checkbox"/> The water penetration through a wall is in accordance with the detailed requirements of SANS 10400-K	<input type="checkbox"/>
<b>L: Roofs</b>			<input type="checkbox"/> Roof coverings and waterproofing systems are in accordance with the detailed requirements of SANS 10400-L	<input type="checkbox"/>
			Flat roofs or related gutters are <ul style="list-style-type: none"> <li><input type="checkbox"/> in accordance with the detailed requirements of SANS 10400-L; or</li> <li><input type="checkbox"/> the subject of a rational design or rational assessment (or both)</li> </ul>	<input type="checkbox"/>
			The roof assembly and any ceiling assembly, in addition to complying with the requirements of SANS 10400-C, are <ul style="list-style-type: none"> <li><input type="checkbox"/> in accordance with the detailed requirements of SANS 10400-L and the roof assembly is supported on walls that comply with the requirements of SANS 10400-K</li> <li><input type="checkbox"/> in accordance with SANS 10400-B and SANS 10400-L</li> </ul>	<input type="checkbox"/>
			<input type="checkbox"/> Gutters and down pipes, if any, are sized in accordance with the requirements of SANS 10400-R	<input type="checkbox"/>
			The fire resistance and combustibility of the roof assembly or any ceiling assembly are in accordance with <ul style="list-style-type: none"> <li><input type="checkbox"/> the detailed requirements of SANS 10400-L</li> <li><input type="checkbox"/> SANS 10400-T</li> </ul>	<input type="checkbox"/>
<b>M: Stairways</b>			Stairways are in accordance with <ul style="list-style-type: none"> <li><input type="checkbox"/> SANS 10400-B and SANS 10400-T</li> <li><input type="checkbox"/> the detailed requirements of SANS 10400-M</li> </ul>	<input type="checkbox"/>
			Walls, screens, railings or balustrades to such stairway are in accordance with the requirements of <ul style="list-style-type: none"> <li><input type="checkbox"/> SANS 10400-B and SANS 10400-T</li> <li><input type="checkbox"/> SANS 10400-K and SANS 10400-T</li> </ul>	<input type="checkbox"/>

1	2	3	4	5
Applicability to application (tick column 2 or 3)			Means of satisfying requirements of functional regulations (tick relevant boxes in columns 4 or 5)	
Regulation	Yes	No	Deemed to satisfy requirements contained in the relevant parts of SANS 10400	Regulation AZ4(1)(b)(ii)
<b>N: Glazing</b>			The type and fixing of glazing is in accordance with <input type="checkbox"/> SANS 10400-B <input type="checkbox"/> the detailed requirements of SANS 10400-N	<input type="checkbox"/>
			<input type="checkbox"/> The selection of the glazing is in accordance with the detailed requirements of SANS 10400-N	<input type="checkbox"/>
<b>O: Lighting and ventilation</b>			<input type="checkbox"/> The lighting in a habitable room, bathroom, shower room and room containing a toilet pan complies with the requirements of SANS 10400-T and the detailed requirements of SANS 10400-O	<input type="checkbox"/>
			The ventilation is in accordance with the requirements of SANS 10400-T and <input type="checkbox"/> is in accordance with the detailed requirements of SANS 10400-O <input type="checkbox"/> is the subject of a rational design	<input type="checkbox"/>
<b>P: Drainage</b>			The design of the drainage system is <input type="checkbox"/> in accordance with the detailed requirements of SANS 10400-P <input type="checkbox"/> the subject of a rational design or rational assessment (or both) <input type="checkbox"/> the subject of an Agrément certificate	<input type="checkbox"/>
<b>Q: Non-water-borne means of sanitary disposal</b>			The means of sewage disposal where water-borne sewerage disposal is not available <input type="checkbox"/> is in accordance with the detailed requirements of SANS 10400-Q <input type="checkbox"/> is the subject of a rational design or rational assessment (or both) <input type="checkbox"/> is the subject of an Agrément certificate <input type="checkbox"/> comprises pail closets which are emptied by or on behalf of a local authority	<input type="checkbox"/>
<b>R: Stormwater disposal</b>			The means for the control and disposal of stormwater is <input type="checkbox"/> in accordance with the detailed requirements of SANS 10400-R <input type="checkbox"/> the subject of a rational design	<input type="checkbox"/>
			<input type="checkbox"/> The means for the control and disposal of stormwater in interconnected complexes is the subject of a rational design	<input type="checkbox"/>
<b>S: Persons with disabilities</b>			The means for providing facilities for persons with disabilities is <input type="checkbox"/> in accordance with the detailed requirements of SANS 10400-S <input type="checkbox"/> the subject of a rational design	<input type="checkbox"/>
<b>T: Fire protection</b>			The fire protection measures provided are <input type="checkbox"/> in accordance with the detailed requirements of SANS 10400-T <input type="checkbox"/> the subject of a rational design or rational assessment	<input type="checkbox"/>
<b>V: Space heating</b>			<input type="checkbox"/> The provision of space heating is in accordance with the detailed requirements of SANS 10400-V	<input type="checkbox"/>
<b>W: Fire installation</b>			<input type="checkbox"/> The fire installations comply with the detailed requirements of SANS 10400-W	<input type="checkbox"/>
			The supply of water is <input type="checkbox"/> in accordance with the detailed requirements of SANS 10400-W <input type="checkbox"/> the subject of a rational design	<input type="checkbox"/>

## SANS 10400-A:2010

Edition 3

<b>SCHEDULE B: APPROVED COMPETENT PERSON APPOINTMENTS</b>		
<i>(Attach duly completed Form 2 to this Form. Schedule B is to be completed before plan approval.)</i>		
1	2	3
Category of competent person	Nature of duties	Name of person
<b>Competent person registered as a professional architect or professional engineer</b>		
Competent person	<b>Duty 1:</b> Demonstrating compliance with the requirements of the National Building Regulations in terms of Regulation <b>AZ4(1)(b)(ii)</b>	
<b>Competent person satisfying the definitions provided in SANS 10400 in relation to the duties that are to be performed in terms of a specific part of SANS 10400</b>		
Competent person (built environment)	<b>Duty 2:</b> Rational design and rational assessment of flat roofs and related gutters	
Competent person (civil engineering)	<b>Duty 3:</b> Design and inspection of services in dolomite land in terms of SANS 10400-B	
	<b>Duty 4:</b> Specify and inspect, as relevant, deep footings, soil rafts, compaction of in-situ soil or sub-surface drains in terms of SANS 10400-H	
	<b>Duty 5:</b> Design and inspect slabs and fills in terms of SANS 10400-J	
	<b>Duty 6:</b> Rational design of control and disposal of stormwater in terms of SANS 10400-R or Regulation <b>R1(3)</b>	
	<b>Duty 7:</b> Rational design of control and disposal of stormwater in interconnected complexes in terms of SANS 10400-R	
Competent person (dolomite land)	<b>Duty 8:</b> Categorization of dolomite land in terms of SANS 10400-B or Regulation <b>F3</b>	
Competent person (engineering geology) or Competent person (civil engineering)	<b>Duty 9:</b> Rational design or assessment of excavations in terms of SANS 10400-G or Regulation <b>G1(3)</b>	
Competent person (fire protection)	<b>Duty 10:</b> Rational design or rational assessment of fire protection system in terms of SANS 10400-P or Regulation <b>T1(2)</b>	
Competent person (geotechnical)	<b>Duty 11:</b> Undertake geotechnical investigation in accordance with the requirements of SANS 10400-H or Regulation <b>F3</b>	
	<b>Duty 12:</b> Design and inspect geotechnical solutions or soil improvements in terms of SANS 10400-H	
Competent person (mechanical engineering)	<b>Duty 13:</b> Rational design of ventilation system in terms of SANS 10400-O and Regulation <b>O4</b>	
Competent person (sanitation)	<b>Duty 14:</b> Rational design or rational assessment of drainage system in terms of SANS 10400-P or Regulation <b>P2(2)</b>	
	<b>Duty 15:</b> Rational design or rational assessment of sewage disposal in terms of SANS 10400-Q or Regulation <b>Q3</b>	

1	2	3
Category of competent person	Nature of duties	Name of person
Competent person (structures)	<b>Duty 16:</b> Rational design or rational assessment of structural system in terms of SANS 10400-B taking account of parts H, J, K, L, M, N of SANS 10400 or Regulations <b>A1(3)(e)</b> and <b>A23(4)</b>	
	<b>Duty 17:</b> Rational design of roof in terms of parts B and L of SANS 10400 where the foundations, floors and walls are in accordance with the rules provided in parts H, J and K of SANS 10400	
Competent person (wet services)	<b>Duty 18:</b> Rational design of supply of water to fire installations in terms of SANS 10400-W or Regulation <b>W4</b>	
<b>Competent person not satisfying the definitions provided in SANS 10400 in relation to the duties that are to be performed in terms of a specific part of SANS 10400*</b>		
* Insert data in columns 1 to 3, state duty number and attach more pages, if necessary.		

**NATIONAL BUILDING REGULATIONS AND  
BUILDING STANDARDS ACT, 1977 (Act No. 103 of 1977), AS AMENDED**

<b>FORM 2</b>	<b>APPLICATION FOR ACCEPTANCE AS AN APPROVED COMPETENT PERSON IN TERMS OF REGULATION A19</b>
<i>(To be completed and submitted for all appointments in terms of Regulation A19)</i>	
To: ..... <i>(Name of Local Authority)</i>	
*Erf/Holding/Portion No.: .....	
*Township/Agricultural holding/Farm name: .....	
Street address: .....	
.....	
Nature of project: .....	
<i>(Insert proposed new building(s), or building alteration, building addition, re-erection of building, refurbishment of building or structural repair to existing building, as relevant.)</i>	
<b>SECTION 1: DECLARATION BY OWNER</b>	
*I / We ..... <i>(Name of owner)</i>	
of .....	
..... <i>(Address)</i>	
Tel. No.: .....	
hereby confirm that *I / We have appointed	
..... <i>(Name of Competent Person)</i>	
Professional registration number: .....	
Registration council: .....	
<i>(Insert number and Engineering Council of South Africa (ECSA)/ South African Council for Natural Scientific Professions (SACNSP) / South African Council for the Architectural Professions (SACAP))</i>	
in terms of Regulation <b>A19(1)</b> as the Competent Person for the work, duties and responsibilities set out herein, and *I / we understand and accept that the onus is on *me / us to:-	
i) inform the Competent Person when the work is due to start on site; and	
ii) notify the local authority in writing should the appointment be terminated before the work for which this person was appointed is completed, and to make another appointment in terms of Regulation <b>A19(2)</b> ;	
iii) extend the above appointment to meet the requirements of Regulations <b>A19(7)</b> and <b>A19(8)</b> where applicable	
Signature of Owner .....	Date: .....
<i>(* Delete that which does not apply)</i>	

**SECTION 2: DECLARATION BY APPOINTED COMPETENT PERSON**

I, ..... (Name)

Address .....

Tel. No.: ..... Fax. No.: .....

Email: .....

of .....

*(If representing a partnership, association, company or incorporated body, the name thereof)*

accept the appointment made in section 1 and undertake and accept full responsibility for

- i) \*The rational design/rational assessment/geotechnical investigation in respect of the above project and in accordance with the \*rational design/rational assessment/geotechnical investigation requirements of the National Building Regulations for the applicable work described herein, and, where relevant, for the inspection, in respect of work contemplated in Section 3 of this Form, and accept that the provisions of Regulations **A19(6)**, **(7)** and **(8)**, and, where applicable, Regulation **A14** shall apply to the duties and responsibilities of any appointment;
- ii) providing the local authority with such drawings, details and particulars as are and may be required by the National Building Regulations;
- iii) notifying the local authority in writing should:
  - a) it appear that any work is being carried out in a manner which may endanger the strength, stability or serviceability of the building or any adjoining building, structure or property; and
  - b) my appointment be terminated before the work for which I was appointed is complete;
- iv) submitting to the local authority in terms of Section 14(2)(a) of the National Building Regulations and Standards Act, Form 4 on completion of the relevant work, where required, and
- v) maintaining contact with the owner of the project as to when my services may be required,

and declare that:-

- i) I am competent to undertake the \*rational design/rational assessment/geotechnical investigation and any associated inspection work in relation to the applicable work(s) contemplated in Section 3 of this Form and in support of my declaration of competence submit that (tick appropriate option)
  - I satisfy the relevant definition for competent person contained SANS 10400 in all respects in relation to the works contemplated; or
  - I have the necessary qualifications, experience and contextual knowledge to undertake such work as set out in the attached declaration\*\*;
- ii) I shall satisfy Regulation **AZ4** by (tick appropriate option):
  - complying with all the relevant requirements of SANS 10400; or
  - reliably demonstrating, or predicting with certainty, to the satisfaction of the appropriate local authority, that an adopted building solution has an equivalent or superior performance to a solution that complies with the relevant requirements of SANS 10400;
- iii) I am/am not\* an employee of the owner and have/do not have\* professional indemnity cover;
- iv) my professional registration is current and is not suspended or terminated and is appropriate in relation to the services required; and
- v) all the information given is to the best of my knowledge and belief, true and correct.

Signature of Competent Person ..... Date .....

Professional registration number: ..... Registration council: .....

*(Insert number)**(Insert ECSA, SACAP or SACNSP)**(\* Delete that which does not apply.)**(\*\* Attach declaration setting out qualifications, experience and contextual knowledge relating to the work contemplated.)*

**SANS 10400-A:2010**

Edition 3

<b>SECTION 3: DESCRIPTION OF APPLICABLE WORK</b>			
Tick if applicable	Nature of duties	Initials of:	
		Owner	Competent person
<input type="checkbox"/>	<b>Duty 1:</b> Demonstrating compliance with the requirements of National Building Regulations in terms of Regulation <b>AZ4(1)(b)(ii)</b>		
<input type="checkbox"/>	<b>Duty 2:</b> Rational design and rational assessment of flat roofs and related gutters		
<input type="checkbox"/>	<b>Duty 3:</b> Design and inspection of services in dolomite land in terms of SANS 10400-B		
<input type="checkbox"/>	<b>Duty 4:</b> Specify and inspect, as relevant, deep footings, soil rafts, compaction of in-situ soil or sub-surface drains in terms of SANS 10400-H		
<input type="checkbox"/>	<b>Duty 5:</b> Design and inspect slabs and fills in terms of SANS 10400-J		
<input type="checkbox"/>	<b>Duty 6:</b> Rational design of control and disposal of stormwater in terms of SANS 10400-R or Regulation <b>R1(3)</b>		
<input type="checkbox"/>	<b>Duty 7:</b> Rational design of control and disposal of stormwater in interconnected complexes in terms of SANS 10400-R		
<input type="checkbox"/>	<b>Duty 8:</b> Categorization of dolomite land in terms of SANS 10400-B or Regulation <b>F3</b>		
<input type="checkbox"/>	<b>Duty 9:</b> Rational design or assessment of excavations in terms of SANS 10400-G or Regulation <b>G1(3)</b>		
<input type="checkbox"/>	<b>Duty 10:</b> Rational design or rational assessment of fire protection system in terms of SANS 10400-P or Regulation <b>T1(2)</b>		
<input type="checkbox"/>	<b>Duty 11:</b> Undertake geotechnical investigation in accordance with requirements of SANS 10400-H or Regulation <b>F3</b>		
<input type="checkbox"/>	<b>Duty 12:</b> Design and inspect geotechnical solutions or soil improvements in terms of SANS 10400-H		
<input type="checkbox"/>	<b>Duty 13:</b> Rational design of ventilation system in terms of SANS 10400-O and Regulation <b>O4</b>		
<input type="checkbox"/>	<b>Duty 14:</b> Rational design or rational assessment of drainage system in terms of SANS 10400-P or Regulation <b>P2(2)</b>		
<input type="checkbox"/>	<b>Duty 15:</b> Rational design or rational assessment of sewage disposal in terms of SANS 10400-Q or Regulation <b>Q3</b>		
<input type="checkbox"/>	<b>Duty 16:</b> Rational design or rational assessment of the structural system in terms of SANS 10400-B taking account of parts H, J, K, L, M, N of SANS 10400 or Regulations <b>A1(3)(e)</b> , and <b>A23(4)</b>		
<input type="checkbox"/>	<b>Duty 17:</b> Rational design of roof in terms of parts B and L of SANS 10400 where the foundations, floors and walls are in accordance with the rules provided in parts H, J and K of SANS 10400.		
<input type="checkbox"/>	<b>Duty 18:</b> Rational design of supply of water to fire installations in terms of SANS 10400-W or Regulation <b>W4</b> .		

**SECTION 4: ACCEPTANCE OF APPOINTED COMPETENT PERSON BY LOCAL AUTHORITY**

Based on the information and undertakings provided, the appointment in terms of Regulation **A19(1)** is

- approved for this project.
- not approved for this project.

For and on behalf of the Local Authority: ..... (Name of official )

Signature.....

Date.....

**NATIONAL BUILDING REGULATIONS AND  
BUILDING STANDARDS ACT, 1977 (Act No. 103 of 1977), AS AMENDED**

<b>FORM 3</b>	<b>DECLARATION BY A COMPETENT PERSON APPOINTED TO DESIGN A COMPONENT OR AN ELEMENT OF A SYSTEM</b>
<p><i>(This form is to be completed:</i></p> <ul style="list-style-type: none"> <li>• <i>by those persons who are not appointed in terms of Form 2; and</i></li> <li>• <i>before the commencement of any construction or installation activities.</i></li> </ul> <p><i>This form must be submitted to the approved competent person, i.e. the person who assumes overall responsibility for the system)</i></p>	
<p><b>TO: APPROVED COMPETENT PERSON:</b> .....</p> <p>.....<i>(Name of competent person approved in terms of Form 2)</i></p> <p>*Erf/Holding/Portion No.: .....</p> <p>*Township/Agricultural holding/Farm name: .....</p> <p>Street address: .....</p> <p>.....</p> <p>Nature of project: .....</p> <p align="center"><i>(Insert proposed new building(s), or building alteration, building addition, re-erection of building, refurbishment of building or structural repair to existing building, as relevant.)</i></p>	
<p><b>SECTION 1: DECLARATION BY APPOINTED COMPETENT PERSON</b></p> <p>I, ..... <i>(Name)</i></p> <p>Address .....</p> <p>.....</p> <p>Tel. No.: ..... Fax. No.: .....</p> <p>Email: .....</p> <p>of .....</p> <p align="center"><i>(If representing a partnership, association, company or incorporated body, the name thereof)</i></p> <p>undertake and accept full responsibility for:-</p> <p>i) *the rational design/rational assessment in respect of:</p> <p>.....</p> <p>..... <i>(Describe scope of work)</i></p> <p>in accordance with the *rational design/rational assessment requirements of the National Building Regulations, and for the inspection, where relevant.</p> <p>ii) providing the Approved Competent Person with such drawings, details and particulars as are and may be required for such person to discharge his obligations in terms of the National Building Regulations;</p>	

**SANS 10400-A:2010**

Edition 3

iii) notifying the approved competent person in writing should:-

- a) it appear that any work is being carried out in a manner which may endanger the strength, stability or serviceability of the building or any adjoining building, structure or property; and
- b) my appointment be terminated before the work for which I was appointed is complete;

iv) informing the approved competent person when the work is due to start on site and when the work is completed; and

v) completing and submitting Section 3 to the Approved Competent Person, where the work relates to the structural fire protection or fire installation system and when requested to do so on completion of the relevant work for which I am responsible, where relevant.

and declare that:-

i) I am competent to undertake the \*rational design/rational assessment and any associated inspection work in relation to the applicable work(s) contemplated in this Form and in support of my declaration of competence submit that (tick appropriate option):

- I satisfy the relevant definition for competent person contained SANS 10400 in all respects in relation to the works contemplated; or
- I have the necessary qualifications, experience and contextual knowledge to undertake such work as set out in the attached declaration\*\*;

ii) I shall satisfy Regulation **AZ4** by (tick appropriate option):

- complying with all the relevant requirements of SANS 10400; or
- reliably demonstrating, or predicting with certainty, to the satisfaction of the appropriate local authority, that an adopted building solution has an equivalent or superior performance to a solution that complies with the relevant requirements of SANS 10400;

iii) I am/am not\* an employee of the owner and have/do not have\* professional indemnity cover; and

iv) my professional registration is current and is not suspended or terminated and is appropriate in relation to the services required; and

v) all the information given is, to the best of my knowledge and belief, true and correct.

Signature of Competent Person ..... Date .....

Professional registration number: ..... Registration council: .....  
(Insert number and Engineering Council of South Africa (ECSA)/ South African Council for the Architectural Professions (SACAP) / South African Council for Natural Scientific Professions (SACNSP))

(\* Delete that which does not apply.)

(\*\* Attach declaration setting out qualifications, experience and contextual knowledge relating to the work contemplated.)

**SECTION 2: CRITICAL DESIGN INFORMATION**

*(Competent person to complete section or attach information to this form)*

Design assumptions and criteria: .....

Specifications for materials: .....

Drawings prepared to communicate design to constructor or installer: .....

Nature and extent of inspections during construction: .....

Features requiring special attention: .....

**SECTION 3: CERTIFICATE OF COMPLETION OF THE STRUCTURAL OR FIRE PROTECTION OR FIRE INSTALLATION SYSTEM**

I, .....

*(Name of approved competent person)*

hereby certify that for the above project, the portion of \*the structural system / the fire protection system / the fire installation system for which I have taken responsibility has to the best of my knowledge been designed and \*constructed / erected / installed in accordance with the application in respect of which approval was granted in terms of Section 7 of the Act and that it satisfies the requirements of the National Building Regulations.

Signature of Competent Person ..... Date .....

Professional registration number: ..... Registration council: ECSA  
*(Insert number)*

*(\* Delete that which does not apply)*

**NATIONAL BUILDING REGULATIONS AND  
BUILDING STANDARDS ACT, 1977 (Act No. 103 of 1977), AS AMENDED**

<b>FORM 4</b>	<b>CERTIFICATE OF COMPLETION OF THE STRUCTURAL OR FIRE PROTECTION OR FIRE INSTALLATION SYSTEM IN TERMS OF SECTION 14(2)(a) OF THE ACT</b>
<i>(This form is to be completed upon the completion of the construction, erection or installation of the structural system, the fire protection system or the fire installation system)</i>	
To: ..... (Name of Local Authority)	
*Erf/Holding/Portion No.: .....	
*Township/Agricultural holding/Farm name: .....	
Street address: .....	
.....	
Nature of project: .....	
<i>(Insert proposed new building(s), or building alteration, building addition, re-erection of building, refurbishment of building or structural repair to existing building, as relevant.)</i>	
I, .....	
<i>(Name of approved competent person)</i>	
Address .....	
.....	
Tel. No.: ..... Fax No.: .....	
email: .....	
of .....	
<i>(If representing a partnership, association, company or incorporated body, the name thereof)</i>	
hereby certify as required by Section 14(2)(a) of the National Building Regulations and Building Standards Act, 1977 (Act No. 103 of 1977, as amended) that for the above project *the structural system/the fire protection system / the fire installation system for which I am responsible has to the best of my knowledge been designed and *constructed / erected / installed in accordance with the application in respect of which approval was granted in terms of Section 7 of the Act and that it satisfies the requirements of the National Building Regulations.	
Signature of Approved Competent Person. .... Date .....	
Professional registration number: ..... Registration council: ECSA <i>(Insert number)</i>	
<i>(* Delete that which does not apply)</i>	

## **Annex B**

(informative)

### **Commentary on the National Building Regulations**

#### **B.1 General**

In terms of section 7 of the National Building Regulations and Building Standards Act, 1977 (Act No. 103 of 1977), a local authority is required to be satisfied that any application to erect a building complies not only with the requirements of the Act but also with any other applicable law. Where there is conflict between Regulations made in terms of the Act and regulations made in terms of any other Act the more stringent requirement would prevail.

#### **B.2 The Act and the Regulations**

The National Building Regulations and Building Standards Act is the enabling Act under which the National Building Regulations are made. There are three points in particular which should be borne in mind when considering the relationship between the Act and the Regulations made under the Act:

- a) the word "council" is defined and means the Board as defined in section 1 of the National Regulator for Compulsory Specifications Act, 2008 (Act No. 5 of 2008)
- b) the Act contains certain sections which, in the past, would have been contained in local authority building by-laws; and
- c) not all the old by-laws have been replaced by the National Building Regulations.

Because the Act is more than just enabling legislation, it is important to realize that the Act and the Regulations should be read together.

Section 29 of the Act states that all previous building by-laws, other than those which have not been replaced by or are not repugnant to the National Building Regulations, have been superseded. Because the National Building Regulations contain the technical requirements in functional form, it will be found in most cases that a single Regulation has replaced a number of old by-laws. Where the old by-law is repugnant to a National Building Regulation the position is clear, but this is not necessarily so where the by-law has been replaced by a National Building Regulation or where reference has been made to the subject in a "deemed-to-satisfy" requirement. In many cases there is no direct equivalent of a particular by-law in the National Building Regulations or in the deemed-to-satisfy requirements, usually because the committee concerned considered that such a regulation or provision was unnecessary and it was therefore deliberately omitted. This does not necessarily mean that the old by-law can still be enforced. In such cases it would seem that the deciding factor would be whether or not the general subject, of which it was part, has been covered. Where this subject has been covered it should be assumed that what appears in the National Building Regulations or in the "deemed-to-satisfy" requirements is all that the legislators intended to be said on the subject.

A good example of this is the use of airbricks. Most of the older sets of building by-laws had a requirement for airbricks to be placed in the walls of all rooms. In the National Building Regulations all reference to airbricks was deliberately omitted because research shows that they do not serve any useful purpose. However, the intention of airbricks was to provide ventilation and the subject of ventilation is covered in the National Building Regulations. It should therefore be assumed that what is contained in the Regulations is all with which it is necessary to comply in respect of ventilation.

### **B.3 Local authority powers under the Act**

Most of the powers required by a local authority in the process of enforcing the Regulations are contained in the Act. These include:

- a) section 4, which contains the primary requirement which prohibits the erection of any building without prior approval of the local authority. This section should be read in conjunction with section 7, which deals with the powers and duties of the local authority with regard to an application for approval;
- b) section 10, which enables a local authority to take action in cases where it considers any building or earthworks to be objectionable in some way;
- c) section 11, which outlines the action a local authority may take when no work has been done in a period of more than three months on a building under construction;
- d) section 12, which may be regarded as an extension of section 10 since it allows a local authority to take suitable action not only when a building becomes dilapidated but also when any building or earthworks becomes dangerous in any way. It is of interest that not only does this section contain the usual provisions for rendering the building safe or, in the extreme case, for demolishing the building, but it also allows for compulsory evacuation in certain instances;
- e) section 13, which gives to the local authority's building control officer the power to authorize an applicant to erect any building defined in the National Building Regulations as minor building work while exempting him from the obligation to submit a plan to the local authority, i.e. without his being required to comply with the National Building Regulations. In so authorizing the applicant, the building control officer may set conditions or give directions which are not specified but which, presumably, would have to be within the terms of the Act;
- f) section 14, which imposes a duty on the local authority to issue a "certificate of occupancy" if it is satisfied that the completed building has been erected in accordance with the Regulations;
- g) section 15, which gives the power to a person authorized by the local authority to enter any building or land at any reasonable time in connection with the consideration of any application submitted in terms of section 4 of the Act or to determine whether the owner of the building or land complies with any provision of the Act or any condition imposed by the local authority in terms of the Act;
- h) section 18, which makes provision for the local authority to permit a deviation or grant an exemption from any Regulation except one which might concern the strength and stability of the building;
- i) section 21, which allows a local authority to obtain a court order to stop work on any building where such work is unauthorized or does not comply with the provisions of the Act;
- j) section 22, which, indirectly, allows a local authority to charge rates, taxes, fees or other monies in respect of any building or land or the examination of plans, etc., in terms of the Act;
- k) section 23, which does not give any power but does provide protection to the local authority in the sense that it indemnifies the local authority against any loss, damage, injury or death resulting from the way a building is erected, altered or demolished;
- l) section 29, which restrains the power of a local authority to make building by-laws and indicates that any existing by-law, which has been replaced by or which is repugnant to any National Building Regulation, is repealed. It should be noted that this section also stipulates that any proposed new building by-law should be submitted to the Minister of Trade and Industry for approval before it is promulgated and that any new by-law not so approved is void.

## B.4 The Housing Consumers Protection Measures Act

With the promulgation of the Housing Consumers Protection Measures Act, 1998 (Act No. 95 of 1998) it has become a legal requirement that, with the exception of houses built by owner builders (as defined in the Act), only registered builders may construct houses and all houses shall be enrolled with the National Home Builders Registration Council (NHBRC). The NHBRC in turn provides five years' warranty protection against major structural defects in new homes. In order for the NHBRC to be able to manage the risk involved in providing such a warranty it has been empowered by the Act to require home builders to adhere to a range of construction requirements aimed at ensuring acceptable levels of structural performance. The primary requirement is that all houses shall comply with the National Building Regulations but there are also a number of other requirements that go beyond the scope of the NBRs. These requirements, which are published in its Home Building Manual, prescribe, inter alia, quantified performance criteria that augment functional regulations, specific procedures for classification of sites and foundation design, serviceability requirements, quality of materials and details of construction that relate to generally accepted good building practice. In revising SANS 10400 it has been deemed desirable to incorporate these requirements, in the form of a set of design and construction requirements which, if adhered to, will ensure compliance with both the functional NBRs and the technical requirements of the NHBRC.

## B.5 Local authority options

In considering an application for approval of a building plan the following points are important:

- a) The requirement contained in Regulation **A2** for an owner to appoint a person registered in an appropriate category of registration in terms of one of the councils for the professions identified in the Council for the Built Environment Act, 2000 (Act No. 43 of 2000), to make a declaration in the relevant portion of Form 1 (see annex A) allows the local authority to understand precisely how the applicant intends complying with the requirements of all functional regulations, i.e. by means of one or more of the following:
  - 1) adhering to the prescriptive deemed-to-satisfy requirements provided in the relevant parts of SANS 10400;
  - 2) appointing a competent person to undertake a rational design or rational assessment in terms of a relevant part of SANS 10400;
  - 3) adhering to the requirements of an Agrément certificate; or
  - 4) appointing a competent person to reliably demonstrate, or predict with certainty, to the satisfaction of the appropriate local authority, that an adopted building solution has an equivalent or superior performance to a solution that complies with the requirements of the relevant parts of SANS 10400 (Regulation **AZ4**).
- b) Where any part of a building is in accordance with the deemed-to-satisfy requirements of SANS 10400 and the appointment of all required competent persons complies with the requirements of Regulation **A19**, the application shall be approved in so far as the relevant part of the Regulations is concerned. Applications made in terms of Regulation **AZ4** shall be judged in relation to the functional regulations using the requirements of the relevant parts of SANS 10400 as a benchmark.
- c) It is a requirement of the Regulations dealing with rational designs and rational assessments that such work be done by or under the supervision of an approved competent person. Since "approved" is defined as meaning "approved by the local authority" it is the local authority that is responsible for checking whether or not such a person has the necessary qualifications, experience and contextual knowledge to assume responsibility for satisfying a particular functional regulation or part thereof. Regulation **A19(9)** establishes the grounds upon which a local authority may decline to approve a competent person. Competent persons who satisfy the definitions contained in the various parts of SANS 10400 are deemed to be competent to perform the work associated with such definitions.

## **SANS 10400-A:2010**

Edition 3

d) Where there is doubt as to the efficiency of any design or method of construction proposed, the local authority may call for further information, which would normally take the form of one or more of the following:

- 1) a test report from the SABS;
- 2) a test report from the CSIR;
- 3) an Agrément certificate;

The calling for test reports or Agrément certificates involves additional expenses and it is therefore important that this sort of information should only be required where it is really necessary and that, where it is required, it has been established that it will in fact give sufficient information to enable the local authority to decide whether or not to approve an application. In this connection it should always be remembered that where doubt exists, it is the building owner (or the designer appointed by him) who is responsible for proving to the satisfaction of the local authority that an application complies with the Regulations. It is not the local authority's responsibility to prove that it does not comply.

However, where an applicant claims that the proposed building is to be erected in accordance with a South African national standard (SANS 10082, for instance) it is the duty of the local authority to check the application against the requirements of that standard and only where there is doubt whether the requirements of the standard have been complied with should the local authority require the applicant to obtain a test report from the SABS or ratification of the proposal by a competent person.

- e) It should always be borne in mind that the Act only requires that the local authority should be satisfied that an application complies with the requirements of the Act and hence with the Regulations. Since the technical regulations are functional in nature, the local authority can be "satisfied" simply on the basis that, from its own knowledge and experience, buildings similar to that proposed, sited in similar conditions have performed satisfactorily in the past. It may not, therefore, be necessary to call for any further information.
- f) The SABS is at all times available to give local authorities any help and advice in the application of these Regulations but neither it nor any other organization, save for the Review Board (see B.7), can give approval of an application. Only the local authority has the power to do this.
- g) Where an application is not approved, section 7 of the Act makes it clear that reasons for such rejection should be given to the applicant in writing. In the case of an application not being approved due to non-compliance with the functional regulations, it is important to note that such reasons would have to be good technical reasons why the proposed building would not comply with the Regulations, and these should be provided in sufficient detail to enable the designer to amend his design accordingly.

### **B.6 Test reports and certificates**

The test reports and certificates referred to in item B.5(d) contain different degrees of information and serve different purposes. The following notes are intended to provide guidance in their choice and use:

- a) An SABS test report is, in most cases, a factual report indicating the result of tests performed to ascertain the behaviour of the building or building component in respect of one or more specific characteristics. In relation to the National Building Regulations, the report may also take the form of an assessment or evaluation based on test results. It does not in any way imply approval of the item tested and the local authority should decide, in light of the test results, whether it can approve the application.

A further important point is the date of the test report. SABS reports apply only to the items actually tested and manufactured items might be changed over a period of time. An old test report might therefore not be relevant in respect of current production. In considering one or more reports covering a number of different characteristics of the material it is also important to ascertain that the samples tested were all from the same batch. If this is not the case, the results might not be relevant.

Where an SABS report indicates that the performance of the building or building components is such that it may be deemed to satisfy one or more specific Regulations, this shall be accepted by the local authority in making its decision on the application (see **A4(9)**).

- b) A CSIR report is similar in many ways to an SABS report but, because the CSIR is a research organization, its reports can be wider ranging and can include reference to research which has bearing on the proposed design or construction. As in an SABS report, where items are indicated as being deemed to satisfy any particular Regulation, this shall be accepted by the local authority.
- c) Agrément certificates represent an entirely different approach. The original intent of the Agrément certificate was to present as complete an assessment as possible of any new building system, building component or building material, in addition to indicating whether it was considered suitable for use. The certificates also state which of the National Building Regulations, if any, the system or component may be deemed to satisfy.

It should be noted that although test reports may be adequate to supply the information that a local authority might need to assess an application, the Agrément certificate serves an additional, very important, purpose in that it provides more information of a type which might be useful to anyone buying or promoting a new building system or building component. In addition, the Agrément certification process requires that certificate-holders have an acceptable and functioning quality management system in place, thereby providing assurance of consistency of quality of the end product.

Nothing, of course, precludes a local authority from considering favourable test reports from other sources, such as universities or independent laboratories run by private enterprise but it should be stressed that such reports are not automatically deemed to satisfy the Regulations as are the reports from the SABS or CSIR.

The validity of each report would have to be checked before the test results could be used in the assessment of an application in terms of the Act.

## **B.7 Review Board**

**B.7.1** The Review Board, consisting of a chairman appointed by the Minister, and two independent nominated assessors, acts as a court of appeal. It has the power to consider an appeal when

- a) an application has not been approved by a local authority,
- b) any person disputes a notice of prohibition issued in terms of section 10 of the Act, or
- c) any person disputes the interpretation or application by a local authority of any National Building Regulation or any other building regulation or by-law.

**B.7.2** The procedure to be followed by an applicant is as follows:

- a) On receipt from the local authority of a notice of refusal to grant approval, the applicant should decide whether, in light of the reasons given for the rejection, he is going to amend his plans or whether he wishes to appeal to the Review Board for relief.

## **SANS 10400-A:2010**

Edition 3

- b) In the case of a dispute in connection with any notice of prohibition issued in terms of section 10 of the Act or a dispute in connection with the interpretation or application of any Regulation, the applicant should follow the same procedure as would be required in the case of an application for which approval has not been granted.
- c) Where an appeal is to be made to the Review Board, the applicant should address a request for consideration of his appeal, setting out the grounds on which the appeal is based, to the Chief Executive Officer (CEO) of the SABS for transmission to the chairman of the Review Board.
- d) Simultaneously with the lodgement of notice of appeal with the CEO, the applicant should lodge a copy of the notice of appeal with the local authority in question.
- e) The notice of appeal should be accompanied by such plans, specifications and documents, and any other information required by the Review Board, as will enable the Review Board to effectively deal with the appeal, and an identical set of information should be forwarded to the local authority concerned.
- f) A fee should be paid by the applicant before an appeal will be considered. The Review Board has the power to call any witness it feels might be able to help it reach a decision and it may, at its own discretion, either hold a hearing or come to a decision based on the evidence without any formal hearing.
- g) Such decision can be either
  - 1) to dismiss the appeal and confirm the local authority's decision to refuse to grant approval, its prohibition in terms of section 10 of the Act or its interpretation or application of the Regulation, as the case may be; or
  - 2) to uphold the appeal in whole or in part.
- h) When an appeal has been upheld, the local authority should then
  - 1) approve the application;
  - 2) withdraw the provisions of the notice of prohibition; or
  - 3) adopt the decision of the Review Board with regard to the interpretation or application of the Regulation in question, whichever course of action is appropriate in the circumstances.

**B.7.3** The Review Board regulations may be found in Government Gazette No. 9927 of 13 September 1985.

## **B.8 Giving effect to the rights provided for in the Bill of Rights**

The Bill of Rights, in Section 33 of the Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996), gives everyone the right to administrative action that is lawful, reasonable and fair and makes provisions for written reasons to be given where anyone's rights have been adversely affected by administrative action. The Constitution, however, also provides for the review of administrative action by a court, or where appropriate, an impartial tribunal, and imposes a duty on the state to give effect to the rights provided for.

The Promotion of Administrative Justice Act, 2000 (Act No. 3 of 2000), gives effect to these rights as required by the Constitution. Most decisions taken, or failure to make decisions, by organs of state exercising a public power or performing a public function in terms of any legislation are considered to be administrative actions if they adversely affect the rights of any person and have a direct, external legal effect. Decisions, or failure to make decisions, by a natural or juristic person when exercising a public power or performing a public function in terms of a law, a rule of common law, customary law, or an agreement, instrument or other document, are also considered to be administrative actions.

The said Promotion of Administrative Justice Act establishes procedurally fair administrative procedures, permits those affected by unfair administrative action to request reasons for such administrative action within 90 days of, or when they became aware of, such actions and requires administrators to respond within 90 days of receipt of such requests. Administrative actions are presumed to have been taken without good cause where an administrator fails to respond within the prescribed period. The Act also provides for procedures for the judicial review of administrative actions and remedies in proceedings for judicial review, including the prohibition of an administrator from acting in a particular manner, setting aside the administrative action, correcting the defective action and ordering the administrator to pay compensation.

Local authorities and competent persons are required in terms of the National Building Regulations and Building Standards Act to take administrative actions in the implementation of the Act. Adverse administrative actions might affect a person's rights. Those involved in administering the Act should structure their dealings with owners in a manner which facilitates communication in keeping with the move from a secretive and unresponsive culture to one of openness and transparency.

The Bill of Rights, in Section 32 of the Constitution, gives everyone the right of access to information held by the State and any information that is held by another person that is required for the exercise or protection of any rights. The Constitution, however, requires that national legislation give effect to this right and that such legislation may provide for reasonable measures to alleviate the administrative and financial burden on the State. The Promotion of Access to Information Act, 2000 (Act No. 2 of 2000), applies to records of both public and private bodies, regardless of when they came into effect, and sets out the procedures pertaining to the obtaining of records in both the public and private sector, the grounds for refusal of access to information, mandatory disclosures in the public interest, and appeals against decisions of information officers of certain public bodies. The said Promotion of Access to Information Act places restrictions on the use of information obtained in civil and criminal proceedings and makes reference to the resolution of disputes relating to the operation or administration by the Public Protector, by means of mediation, conciliation or negotiation. The regulations to this Act set out the fees payable for searching for and copying information requested and for providing copies of the documents associated with such requests that require completion.

Sections 46 and 70 of the said Promotion of Access to Information Act make provision for mandatory disclosures in the public interest, by information officers in public service and heads of private bodies, respectively, where the disclosure of the records would reveal evidence of

- a) a substantial contravention of, or failure to comply with, the law, or
- b) imminent and serious public safety or environmental risk, and

the public interest in the disclosure of the record clearly outweighs the harm contemplated in the provision in question.

Local authorities and competent persons should be mindful of the provisions of the Promotion of Access to Information Act and should accordingly maintain records in connection with the implementation of the National Building Regulations and Building Standards Act in such a manner that such information, when requested, can be readily furnished.

## **B.9 Controlling of risks relating to structural safety**

The Standing Committee on Structural Safety (SCOSS) (United Kingdom), in their report on structural safety (2000-01), have arrived at the following conclusions regarding the control of risks to structural safety:

- a) *Structural safety can be placed at risk by active errors by designers, site personnel and the like and by latent errors introduced through inadequate procurement procedures, codes, standards and regulations.*

- b) *Codes and standards provide a core means of controlling risks to structural safety. Identified shortcomings should be addressed with urgency. It must be recognised that there may be gaps in codes and they may not cover recent innovation.*
- c) *The control of risks to structural safety depends primarily on the competence and integrity of individuals and organisations. The possibility that individuals or organisations might not be competent, or that their competence might be affected by commercial or other pressures is a risk to structural safety and needs to be controlled.*
- d) *Supervision and management systems used to control risks to structural safety should include appropriately independent arrangements for checking safety-critical elements. There is doubt as to whether systems conforming with ISO 9000 are adequate for this purpose.*
- e) *The certification of structural safety-related work should be entrusted only to appropriately qualified and experienced engineers.*
- f) *Certification by the work originator of the design and construction of structures whose failure would not have high consequences can give adequate assurance of structural safety provided there are appropriate systems in place for ensuring competence.*
- g) *For safety-critical aspects of design and construction of structures whose failure would have high consequences, third party independent certification is needed to give adequate assurance of structural safety.*
- h) *For structures whose failure would have high consequences and for structures that are innovative or unfamiliar in relation to the experience of the project team, an explicit process of risk management should be used. The process should include the systematic identification of hazards and assessment of risks to structural safety, followed by the selection of critical situations for design.*

Both local authorities and competent persons need to take cognizance of these conclusions when implementing the National Building Regulations.

## **B.10 Minor building work**

The term "minor building work" was intended to cover certain building work which, because of either its nature or magnitude (or both), was such that it would not be necessary to submit full plans or, in certain cases, where no plans or any other documents would be required. The implication is that where no plans are required, the building does not have to comply with the National Building Regulations since, without plans, there is no means of assessing an application. It is, however, necessary in all cases that an application be submitted to the local authority so that it is aware that the work is proposed and it can set conditions in those cases where it is considered necessary to invoke at least some of the National Building Regulations to control the proposed building work.

Certain examples of minor building work mentioned in part A of the Regulations have been exempted from the requirement that plans and other particulars shall be submitted with any application. The fact that specific examples of minor building work are listed in the definition thereof would seem to indicate that it was the intention that in these cases also, authorization should be granted without submission of plans wherever such plans are not absolutely essential. Carports and swimming pools may in some instances be an exception since, where servitudes are involved, the siting might be important and hence a site plan might be required. In the case of carports to be erected in areas subject to strong winds, it might also be necessary to consider structural aspects.

For any other building of a nature similar to those listed in the definition, it is left to the discretion of the building control officer to decide whether or not it should be classified as minor building work and if so, what plans or other documents should be submitted with the application, i.e. with which

Regulations the building should comply. The intention should be clear that for this type of building, which does not involve eating, sleeping, living or working areas for any person, there should be an absolute minimum of control placed on any reasonable structure.

### B.11 Alterations and additions to existing buildings

Although in general the National Building Regulations are not retroactive in application, a problem might arise when alterations or additions are carried out on buildings that have been erected in compliance with earlier building by-laws.

In the case of an addition it might be possible to treat the new portion as an entirely separate part which can be designed to comply with the National Building Regulations without having any effect on the original portion of the building. In the case of an alteration, this will seldom be so and it therefore becomes necessary to ask to what extent that part of the building which is not to be altered should comply with the National Building Regulations. This might be particularly pertinent in the application of fire regulations where escape route requirements, for instance, tend to be more stringent.

It is obvious that a pragmatic and essentially practical approach is necessary. In terms of the functional regulations every attempt shall be made to ensure the safety and health of the occupants of the building, but this should be within the context of what might be practical and economically sound in an old building. If an owner or entrepreneur cannot alter a building to suit his purpose at a cost which will enable him to have a reasonable economic return, he will probably not alter the building at all. This could lead to the perpetuation of a situation which might be dangerous but one which is in compliance with old by-laws and is thus perfectly legal. Such a situation could often be considerably improved by making certain changes that are practical and economically sound even though they would not provide the same standard as would be expected in a new building.

Both the owner and the local authority will have to consider what they are trying to achieve with the Regulations and the answer should be tempered by the knowledge of what is reasonable and practical to require of an existing building.

### B.12 Water installations in buildings

The Water Services Act, 1997 (Act No. 108 of 1997) enables the Minister of Water Affairs to prescribe compulsory national standards relating to consumer installations. In this regard it defines:

- **a consumer** as any end user who receives water services from a water services institution, including an end user in an informal settlement; and
- **a consumer installation** as a pipeline, fitting, or apparatus installed or used by a consumer to gain access to water services and includes a meter attached to such pipeline, fitting or apparatus.

Regulation 14 of R 509 (8 June, 2001), issued in terms of the said Water Services Act, reads as follows (references updated):

*Consumer installations other than meters*

- 14** *Every consumer installation must comply with SABS 0252-1 (SANS 10252-1), Water supply and drainage for buildings and SABS 0254 (SANS 10254), The installation, maintenance, replacement and repair of fixed electric storage water heating systems, or any other similar substituting re-enactment or amendment thereof if the consumer installation is of a type regulated by either standard.*

## **SANS 10400-A:2010**

Edition 3

The National Building Regulations do not contain any provisions that relate to water installations in buildings other than those pertaining to fire installations (see part W: Fire Installations). Therefore, consumer installations are regulated by SANS 10252-1 and SANS 10254.

SANS 10252-1 establishes general principles for the design, installation and testing of water installations.

### **B.13 The use of asbestos building products**

**B.13.1** Some of the older buildings in South Africa contain asbestos components. Asbestos is only a risk to health if asbestos fibres are released into the air and breathed in. There is usually a long delay between first exposure to asbestos and the onset of disease. This can vary from 15 to 60 years. Only by preventing or minimizing these exposures now, will asbestos-related disease eventually be wiped out.

**B.13.2** There are three main types of asbestos used in buildings. These are commonly called blue asbestos (crocidolite), brown asbestos (amosite) and white asbestos (chrysotile). All of them are dangerous, but blue and brown asbestos are more hazardous than white.

Asbestos cannot affect human health unless large numbers of fibres are released into the air and inhaled. Provided asbestos-cement products used in the construction of buildings are not being disturbed or abraded, the health of the occupants of the building is not at risk. Any procedure that might potentially produce asbestos dust, e.g. demolition, renovation, cutting or drilling of asbestos-containing materials, should only be undertaken using appropriate measures and techniques to prevent human exposure.

Asbestos has typically been used in buildings, both locally and internationally, in the following areas, in approximate order of ease of fibre release (with the highest potential fibre release first):

- a) sprayed asbestos and asbestos loose packing – generally used as firebreaks in ceiling voids;
- b) moulded or preformed lagging – generally used in thermal insulation of pipes and boilers;
- c) sprayed asbestos – generally used as fire protection in ducts, firebreaks, panels, partitions, soffit boards, ceiling panels and around structural steel work;
- d) insulating boards – used for fire protection, thermal insulation, partitioning and ducts;
- e) some ceiling tiles;
- f) millboard, paper and paper products – used for insulation of electrical equipment and fire-proof facing on wood fibreboard;
- g) asbestos cement products, which can be fully or semi-compressed into flat or corrugated sheets – used in roofing and wall cladding, gutters, rainwater pipes and water tanks, etc.;
- h) certain textured coatings;
- i) bitumen roofing material; and
- j) vinyl or thermoplastic floor tiles.

Some asbestos applications are more vulnerable to damage and more likely to give off fibres than others. In general, materials that contain a high percentage of asbestos are more easily damaged. Sprayed coatings, lagging and insulating board are more likely to contain blue or brown asbestos. Asbestos insulation and lagging can contain up to 85 % asbestos and are most likely to give off

fibres. Work with asbestos insulating board can result in equally high fibre release if power tools are used. On the other hand, asbestos cement contains only 10 % – 15 % asbestos. The asbestos is tightly bound into the cement and the material will only give off fibres if it is badly damaged or broken.

**B.13.3** Frequent or prolonged exposure to asbestos fibres might present health risks. This can happen with the release of fibres into the air when asbestos-containing products break down, either through deterioration as they age, or when they are cut. People can put themselves at risk – often without realizing it – if they do not take proper precautions when repairs or renovations disturb asbestos-containing materials. This may typically occur in a number of situations when

- a) disturbing loose-fill vermiculite insulation which might contain asbestos;
- b) removing deteriorating roofing shingles and siding containing asbestos, or tampering with roofing felt that contains asbestos;
- c) ripping away old asbestos insulation from around a hot water tank;
- d) sanding or scraping vinyl asbestos floor tiles;
- e) breaking apart acoustical ceiling tiles containing asbestos;
- f) sanding plaster containing asbestos, or sanding or disturbing acoustical plaster that gives ceilings and walls a soft, textured look;
- g) sanding or scraping older water-based asbestos coatings, such as roofing compounds, spackling, sealants, paint, putty, caulking or drywall; and
- h) sawing, drilling or smoothing rough edges of new or old asbestos materials.

**B.13.4** The Occupational Health and Safety (OHS) Act, 1993 (Act No. 85 of 1993) places the duty on the employer to ensure, as far as is reasonably practicable, that the workplace under his or her control is free from risk to health and safety. The Asbestos Regulations were promulgated on 10 April 1987 under the Machinery and Occupational Safety Act that has since been replaced by the Occupational Health and Safety Act. The aim of the Asbestos Regulations is to protect workers who fall under the jurisdiction of the OHS Act, against health risks posed by exposure to asbestos.

These workers are

- a) factory workers who use or process asbestos in raw mineral form, or process materials containing asbestos;
- b) construction workers who cut, saw, rework, clean, remove or strip materials containing asbestos (e.g. asbestos cement products);
- c) workers engaged in the demolition or alteration of structures containing asbestos;
- d) office workers, teachers, public servants, etc. who are exposed to asbestos;
- e) transport workers, stevedores, etc. who are involved in the loading and transportation of asbestos; and
- f) workers who dig trenches, work on railway tracks or build roads in areas where the soil is contaminated with asbestos.

## **SANS 10400-A:2010**

Edition 3

In terms of the Asbestos Regulations, any person who intends to carry out demolishing of asbestos work shall be registered as a registered asbestos contractor before commencing with the demolition work.

If the asbestos is in good condition, is not likely to be damaged and is not likely to be worked on or disturbed, it is usually safer to leave it in place and manage it. If the asbestos is in poor condition or is likely to be damaged or disturbed, it should be repaired, sealed, enclosed or removed.

**B.13.5** In November 1998, the multi-stakeholder National Asbestos Summit issued a declaration that asbestos should be phased out in favour of suitable alternatives and called upon the South African Parliament to take the lead in the process of making a law. On 26 February 2003, countries attending the Southern African Development Community (SADC) meeting in Johannesburg took the regional position that all forms of asbestos are potentially harmful and committed themselves to minimize adverse health affects relating to the use of asbestos. On 19 March 2003, the South African Cabinet took a decision to prohibit the use of asbestos products and substances. Draft Regulations were issued during October 2005 in terms of Section 24B of the Environment Conservation Act, 1989 (Act No. 73 of 1989). These draft regulations prohibit the importation and exportation of asbestos or asbestos-containing materials, unless the purpose of such importation or exportation is solely for use in analysis or research which is not intended to develop a new use for asbestos or asbestos-containing material.

The National Building Regulations do not prohibit the use of asbestos in building products. However, in light of the above, it is recommended that designers, specifiers and builders make use of building products that are free of asbestos.

## Annex C

(informative)

### Performance-based building regulations and their usage in South Africa

#### C.1 Introduction

A building standard or regulation is a document used internationally by a local, state or national government body to control building practice through a set of acceptable minimum requirements of building performance. Acceptable requirements are typically established on the basis of socio-political considerations or community considerations (or both). Building standards, on the other hand, are essentially technical documents that standardize (generally in terms of quality or performance, but sometimes in terms of size or procedure) some activity in relation to building and construction. They serve as a form of benchmark.

Building regulatory systems can be described as being

- a) Prescriptive, in terms of which a collection of standards is used to describe how buildings should be designed, built, protected and maintained with regard to the health and safety of the public.
- b) Functional, in terms of which qualitative functional statements are made, but no quantitative user requirements or technical performance requirements are prescribed.
- c) Performance based, in terms of which
  - qualitative functional requirements are established,
  - quantitative user requirements and technical performance criteria are provided, and
  - acceptable solutions and evaluation and design tools are offered.

In the prescriptive approach, the building parts are described, specified and procured, resulting in a building with a unique, but implicit set of attributes. In the functional approach, the high level requirements are stated but the detail is not specified, nor the means of verification. In the performance approach, the building attributes are described and specified, and many combinations of different building parts can be procured for which it can be demonstrated that the specified attributes will be satisfied.

The performance-based concept is driven by nominated requirements which are intended to satisfy a society's needs and expectations. Its key objective is to articulate societal needs and expectations by properly capturing these requirements, translating them into required building attributes and performance criteria and providing the means by which nominated performance requirements can be verified. Societal needs differ from one nation to another and can even differ significantly within a nation, particularly where there are great disparities in incomes.

#### C.2 Performance-based building regulations

Performance-based building regulations have their origins in the Nordic five-level structure, which is shown in figure C.1. The Nordic five-level structure consists of a hierarchy of five levels. Objectives or goals are located at level 1, i.e. at the top. The objectives presented at this level represent broad statements of what the building regulations are intended to provide, e.g. the need to safeguard people and protect adjoining buildings and property. Other examples of objectives include health and accessibility.

## **SANS 10400-A:2010**

Edition 3

Functional requirements, which set out how a building can be expected to achieve objectives, can be found in the next level (level 2). Functional requirements are stated in qualitative terms that set out what is required without specifying the method of construction techniques, dimensions or materials to be used. They indicate what steps need to be taken to achieve stated objectives or community expectations.

Performance requirements are located at level 3. Performance requirements outline a quantitative level of performance which should be met by building materials, components, design factors and construction methods in order for a building to comply with the relevant functional requirements and, in turn, the relevant objectives.

Performance requirements (i.e. quantitative performance criteria which enable functional requirements to be complied with in relation to nominated values) cannot be formulated in isolation from the needs and expectations of the people whom the performance-based regulations are intended to serve. Accordingly, technical performance criteria need to be established and satisfied for a given user performance level, i.e. for nominated performance parameters that are deemed acceptable to a particular category of user.

In developed countries, a single user performance level is usually used to set technical performance criteria with a result that such performance levels are based on low maintenance, no penetration of water into interiors, deflections which are not discernible, negligible levels of cracking, etc. However, where capital is scarce and labour is in abundance, as is the case in developing countries, more than one user performance level is required to establish technical performance levels to make buildings more affordable and to regulate indigenous construction. If this is not done, only buildings within the "formal" sector can be regulated.

Levels 4 and 5 at the bottom, contain the means by which performance requirements for a given technical and user performance level can be complied with, i.e. by analysis, testing, service experience or a combination thereof (level 4) and deemed-to-satisfy requirements (level 5).

Deemed-to-satisfy design and construction requirements typically include examples of materials, components, geometric configurations and construction methods which, if complied with, provide satisfactory evidence that the applicable performance requirements have been complied with. Such provisions are essentially prescriptive in that they explain step-by-step what is necessary to demonstrate compliance. Put in another way, they are a recipe for minimum construction that complies with all requirements and constitute one option for verifying that applicable performance requirements have been complied with. Unavoidably, deemed-to-satisfy requirements are conservative in their formulation and only cover the most common forms of construction.

On the other hand, assessments by competent persons can be applied to any form of construction to provide satisfactory evidence that a performance requirement has been complied with for the nominated performance requirements. Such assessments are likely to be less conservative. Competent persons can be either natural or juristic persons, e.g. registered engineers who are competent by virtue of their experience and training, or certification agencies such as Agrément South Africa that engage technical experts to evaluate building systems comprising materials and elements the properties, characteristics and behaviour of which are not well known.

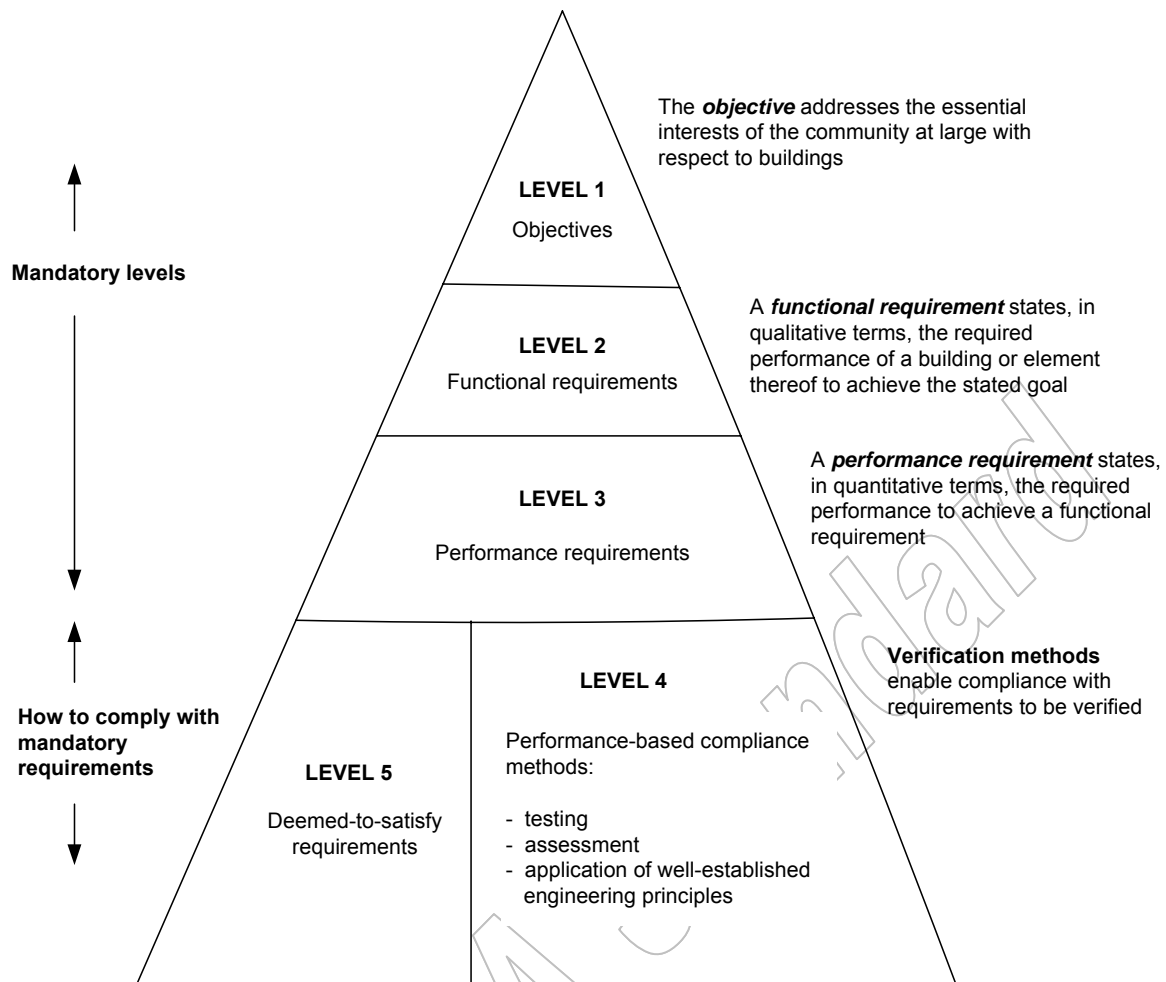


Figure C.1 — Nordic five-level structure for performance-based codes

### C.3 ISO requirements for performance-based standards

ISO 6240 requires that each performance requirement be defined in terms of a function which is to be fulfilled, together with the properties on which verification and assessment will be based, and that each requirement should have specified methods of assessment or verification of performance values, namely

- the means (measurement, calculation, test or method of examination) by which the achieved performance of the component or assembly will be assessed or verified; and
- the means of predicting the performance of the component or assembly over time.

ISO 6241 suggests that the method of assessment or verification of each performance requirement may be made by means of a test, calculation or judgement.

### C.4 The prescriptive approach versus the performance approach

The prescriptive approach only requires a simple check to verify whether or not the product or design matches the deemed-to-satisfy requirements of the standard. In the performance approach, testing, calculation, or combined testing and calculation can evaluate proposed solutions. The prescriptive and performance-based solutions are intended to produce the same in-service

## **SANS 10400-A:2010**

Edition 3

performance as specified in the performance criteria. It is obvious that without acceptable performance evaluation tools and methods, the performance concept cannot be satisfactorily implemented.

### **C.5 International trade requirements**

The major non-tariff trade barriers that inhibit building and construction trade are prescriptive or deemed-to-comply building codes and standards. To address this issue, the World Trade Organization (WTO) has included Clause 2.8 of the Agreement on Technical Barriers to Trade (WTO 1997), which states that *“Wherever appropriate, Members shall specify technical regulations based on product requirements in terms of performance rather than design or descriptive characteristics”*.

This clause requires signatories to the WTO General Agreement on Tariffs and Trade to use performance requirements in evaluating a product’s fitness for purpose and in accepting new or innovative products (or both) in their markets. Performance-based building standards, i.e. standards that describe the target performance rather than the solution (as is the case with deemed-to-comply provisions), free the building regulatory system from unnecessary trade barriers.

### **C.6 The South African National Building Regulations**

The South African National Building Regulations are generally functional in nature but contain elements of performance-based regulations. Objectives (level 1) (see figure C.1) are captured in Section 24 of the Bill of Rights of the Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996), functional statements (level 2) and some qualitative aspects of the performance requirements (level 3) are provided in the National Building Regulations issued in terms of the National Building Regulations and Building Standards Act. SANS 10400 does not contain quantitative performance requirements (level 3) and only provides performance-based methods (level 4) and deemed-to-satisfy requirements (level 5) for the design of elements.

SANS 10400 addresses the aforementioned shortcomings in addition to providing deemed-to-satisfy construction requirements. Two user performance levels are also introduced in a limited number of building occupancies as given in table C.1. (The introduction of category 1 buildings allows different user performance levels to be nominated for a limited range of building occupancies for specific attributes). (Refer to the Joint Structural Division of the South African Institution of Civil Engineering and the Institution of Structural Engineer’s code of practice for the Assessment of the Performance of Housing Units in South Africa.) The revised interpretation contained in SANS 10400, when read in conjunction with the National Building Regulations, provide a performance-based four-level regulatory system for building control in South Africa as set out in figure C.2.

**Table C.1 — Principal differences between category 1 buildings and non-category 1 buildings**

Technical aspect	Differences between user performance levels
Size and type of building	Category 1 buildings are restricted to those which have no basements, have floor areas of less than 80 m <sup>2</sup> and have a maximum length of 6,0 m between intersecting walls or members providing lateral support.
Maintenance cycles	Category 1 buildings might require more frequent maintenance.
Earthquakes	Not applicable
Windstorms	Not applicable
Deflection and deviation from the horizontal and vertical	Deflections and deviation from the horizontal and vertical are greater in category 1 buildings than those associated with non-category 1 buildings and might be visible/noticeable to a trained eye, although structural performance and safety is not impaired.
Expected damage in walls and floors	The degree of expected damage will generally be greater in category 1 buildings; such damage will nevertheless be of a minor nature and be repairable during the course of normal redecoration.
Behaviour in fire	Restrictions will be placed on the size and layout of the building in category 1 buildings.
Severe condensation and consequential mould growth	No prohibition is placed on the use of category 1 buildings with poor thermal performance in areas with high winter rainfall and humidity such as the Southern Cape Condensation Problem Area, provided that it can be demonstrated that the building is upgradable to a non-category 1 building without having to rebuild the structure.
Attack by biological agents	Not applicable
Rising damp	Not applicable
Resistance of walls and roofs to rain penetration	Minor ingress might be experienced in infrequent major storms but not to the extent that any permanent damage might be caused.
Hail resistance	Elements other than normal glazing in category 1 buildings might be more susceptible to hail damage in severe hail storms.
Resistance to local damage/soft body impact	The resistance to local damage when struck by sharp-edged objects and the ability to hold fittings and the impact resistance to soft body impacts will be lower in the case of category 1 buildings than that for non-category 1 buildings. The reduction in performance does not compromise the safety of the structure in any way under all normal circumstances of use.
Accuracy of construction	Tolerances will be greater (i.e. relaxed) in category 1 buildings
Lighting and ventilation	Reduction in category 1 buildings in size of openings for occupancy classes E3, H3 and H4 only.

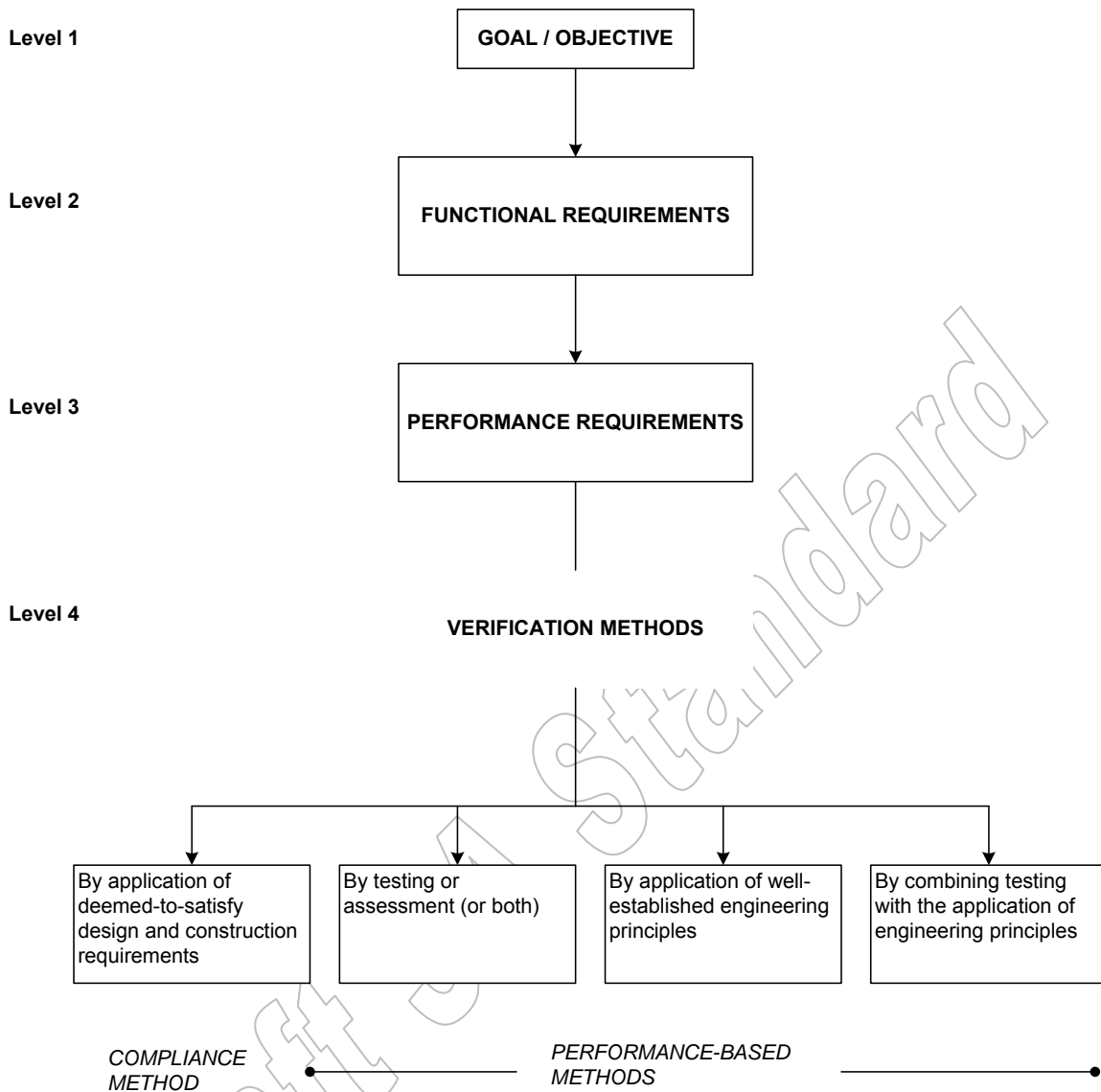


Figure C.2 — A four-level regulatory system

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