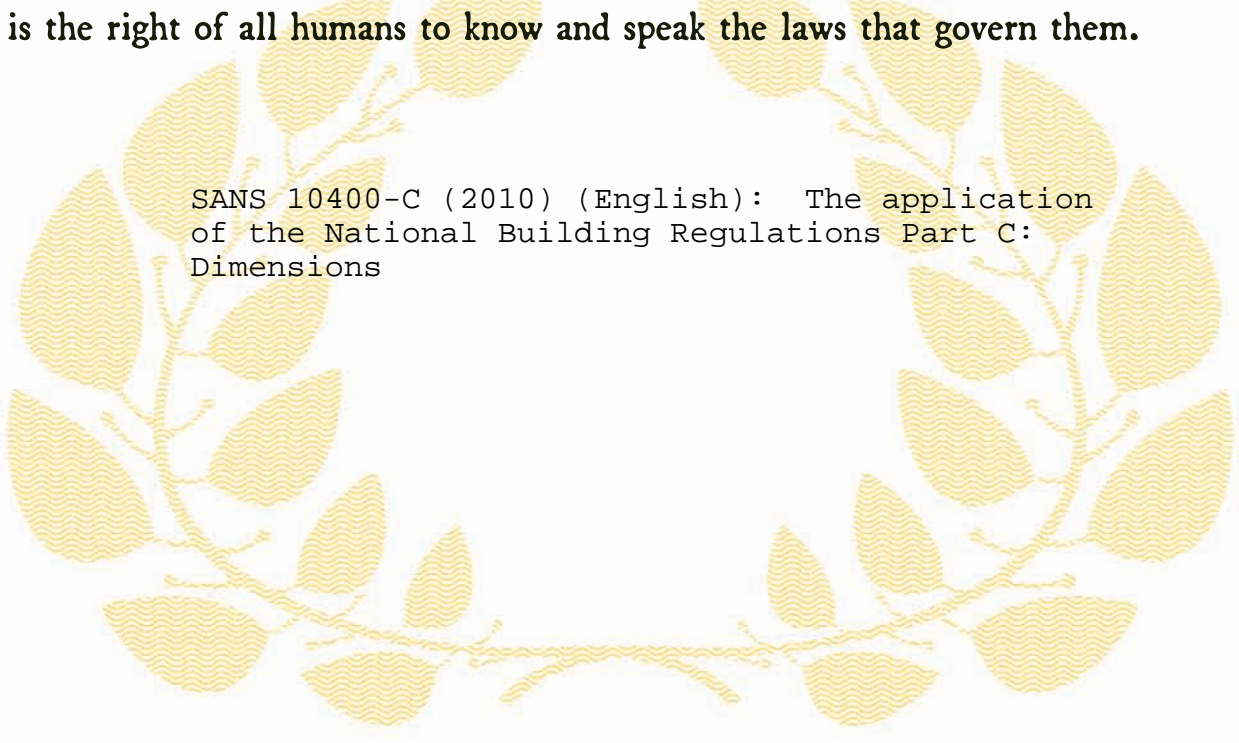




Republic of South Africa

EDICT OF GOVERNMENT

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SANS 10400-C (2010) (English): The application
of the National Building Regulations Part C:
Dimensions



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Edition 3

SOUTH AFRICAN NATIONAL STANDARD

The application of the National Building Regulations

Part C: Dimensions

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Edition 3

Table of changes

Change No.	Date	Scope

Acknowledgement

The SABS Standards Division wishes to acknowledge the work of the South African Institution of Civil Engineering in updating this document.

Foreword

This South African standard was approved by National Committee SABS SC 59I, *Construction standards – Basis for the design of structures*, in accordance with procedures of the SABS Standards Division, in compliance with annex 3 of the WTO/TBT agreement.

This document was published in October 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 C 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.

Part O: Lighting and ventilation.

Foreword (*concluded*)

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.

This document should be read in conjunction with SANS 10400-A.

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

Contents

	Page
Acknowledgement	
Foreword	
1 Scope	3
2 Normative references	3
3 Definitions	3
4 Requirements	4
4.1 General	4
4.2 Plan dimensions	5
4.3 Room height	6
4.4 Floor area	7
Annex A (normative) National Building Regulations – Part C: Dimensions.....	8
Annex B (informative) Commentary on this part of SANS 10400	8
Annex C (informative) Differences in performance between category 1 buildings and other buildings	9
Bibliography	10

The application of the National Building Regulations

Part C: Dimensions

1 Scope

This part of SANS 10400 provides deemed-to-satisfy requirements for compliance with part C (Dimensions) of the National Building Regulations.

NOTE Part C of the National Building Regulations, issued in terms of the National Building Regulations and Building Standards Act, 1977 (Act No. 103 of 1977), is reproduced in annex A. Annex B contains a commentary on this part of SANS 10400.

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 10400-A (SABS 0400-A), The application of the National Building Regulations – Part A: General principles and requirements.

3 Definitions

For the purposes of this document, the definitions given in SANS 10400-A (some of which are repeated for convenience) and the following apply.

3.1

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 SANS 10400-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 m²

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.

SANS 10400-C:2010

Edition 3

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 SANS 10400-A) should therefore not be exceeded.

3.2

deemed-to-satisfy requirement

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

3.3

dwelling house

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

3.4

dwelling unit

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

3.5

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

3.6

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

3.7

habitable room

room used or designed, erected, adapted or intended to be used by persons for sleeping in, living in, the preparation or consumption of food or drink, the transaction of business, the rendering of professional services, the manufacture, processing or sale of goods, the performance of work, the gathering together of persons, or for recreational purposes

3.8

partition

interior construction less than one storey in height, and which is generally of a light construction and demountable

3.9

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

4 Requirements

4.1 General

The functional regulation contained in part C of the National Building Regulations (see annex A) shall be deemed to be satisfied where the dimensions of any room or space comply with the requirements of 4.2, 4.3 and 4.4.

4.2 Plan dimensions

4.2.1 The plan dimensions of a room or space shall be the horizontal dimensions between unplastered wall surfaces.

4.2.2 A floor area shall be based upon the plan dimensions but shall not include any area occupied by a built-in cabinet or cupboard or any dividing wall or partition erected in terms of 4.2.4 (see figure 1).

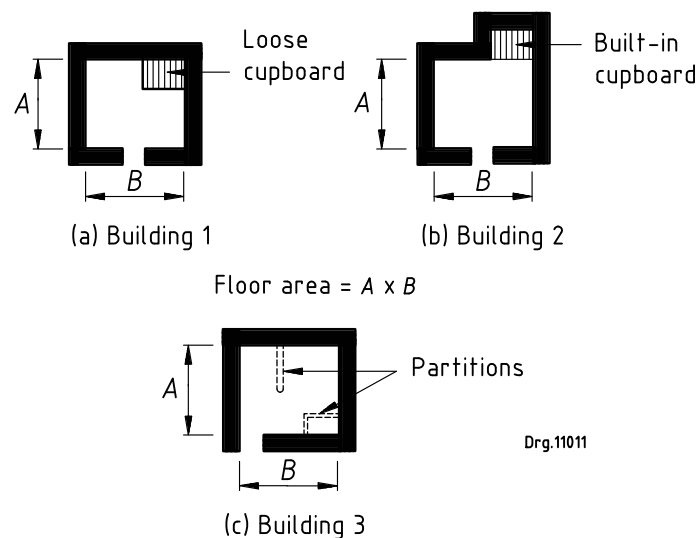


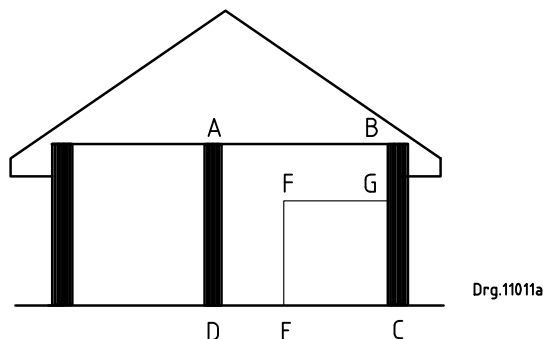
Figure 1 — Measurement of floor plan area

4.2.3 The floor area of a room contemplated in column 2 of table 1 shall be not less than that prescribed for such room in column 3 of table 1.

Table 1 — Room area

1	2	3
Type of occupancy	Room	Minimum plan area
All occupancies	Any habitable room other than a kitchen, scullery or laundry	6 m ² with no linear dimension less than 2 m
B, D or J	Change rooms and dining rooms	Population 1-15: 0,8 m ² per person but not less than 6 m ² Population 16-100: 0,6 m ² per person but not less than 12 m ² Population over 100: 0,5 m ² per person but not less than 60 m ²

4.2.4 Two or more spaces shall be deemed to be one room if any dividing wall or partition, including any door, erected between such spaces occupies less than 60 % of the area of the separating plane (see figure 2).



The area of wall E, F, G, C shall be less than 60 % of the area of the plane A, B, C, D.

Figure 2 — Dividing walls in single rooms

4.3 Room height

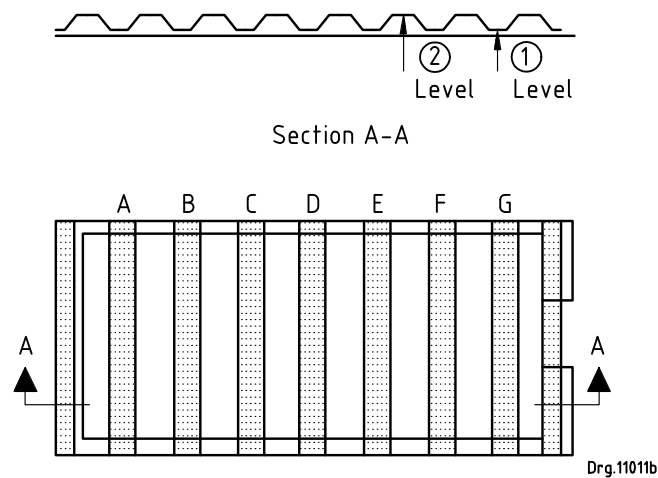
4.3.1 The height of any room or space contemplated in column 1 of table 2 shall be not less than that prescribed for such room or space in column 2 of table 2 and shall be the vertical dimension from the top of the finished floor to

- the underside of the ceiling,
- the underside of the roof covering where there is no ceiling, or
- the underside of any structural members where such structural members project below such a ceiling or roof covering and the plan area of such projections exceeds 30 % of the plan area of the room.

4.3.2 Notwithstanding the requirements contained in table 2, where any structural member projects below the level of the ceiling or, where there is no ceiling, below the level of the roof covering, the height of such projection shall be not less than 2,1 m (see figure 3).

Table 2 — Rooms and their dimensions

1	2
Room or space	Minimum height
Bedroom	2,4 m above a floor area of at least 6 m ² with a clear height of at least 1,8 m at any point more than 0,75 m from the edge of the floor space
Any other habitable room in a dwelling house or a dwelling unit	2,4 m above a minimum of 70 % of the floor area, and not less than 2,1 m above the remaining floor area
All habitable rooms other than those listed above	2,4 m
Passage or entrance hall	2,1 m
Bathroom, shower-room, laundry or room containing a toilet pan	2,1 m above any area where a person would normally be in a standing position
Open mezzanine floor which has an area not exceeding 25 % of the area of the floor immediately below it	2,1 m above and below the mezzanine floor



NOTE This height would normally be taken at level 2, but if the sum of the plan areas of ribs A, B, C, D, E, F and G is greater than 30 % of the total area of the room, the ceiling height should be measured to level 1.

Figure 3 — Interpretation of minimum floor to ceiling height (see 4.3.2)

4.4 Floor area

The overall plan area of any dwelling house shall be not less than

- a) 15 m² in the case of a temporary building,
- b) 27 m² in the case of permanent category 1 buildings, or
- c) 30 m² in the case of any other permanent building.

NOTE With the present tendency towards smaller sites it is likely that many more houses of a size much smaller than has been common in the past will be built. In considering the very small permanent building it should be remembered that size cannot be equated to quality and a small house will not therefore automatically detract from the value of surrounding larger houses.

Annex A

(normative)

**National Building Regulations
Part C: Dimensions**

C1 Rooms and Buildings

- (1) Any room or space shall have dimensions that will ensure that such room or space is fit for the purpose for which it is intended.
- (2) The floor area of any dwelling unit shall not be less than that necessary to provide one habitable room and a separate room containing toilet facilities.
- (3) The requirements of subregulations (1) and (2) shall be deemed to be satisfied where the area and plan dimensions of any room or space, the room heights and, in the case of any dwelling house, the floor area comply with SANS 10400-C.

Annex B

(informative)

Commentary on this part of SANS 10400

The plan areas given are very small but this is necessary in the interests of providing affordable housing. In the case of certain types of self-help housing, such as the "core house", the first stage will, by definition, be small and will seldom consist of more than a single room plus toilet facilities. The fact that such a building would be regarded as a temporary building should ensure that it will eventually progress to something more reasonable in size.

Since a minimum size for habitable rooms is specified in 4.2.3, the number of rooms in a dwelling house will, to some extent, influence the overall area of the building. In this context, the deemed-to-satisfy requirements do not indicate whether a habitable room should be of greater size than the minimum given if such a room is to be used for multiple purposes. For practical, if not legal, reasons this would obviously be desirable. In the case of a temporary house that consists of one habitable room it is assumed that this will be used for eating, sleeping and cooking, as well as being a general living room.

Annex C
(informative)

**Differences in performance between category 1 buildings
and other buildings**

**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 ² , 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.

Bibliography

SANS 10400-T (SABS 0400-T), *The application of the National Building Regulations – Part T: Fire protection.*

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