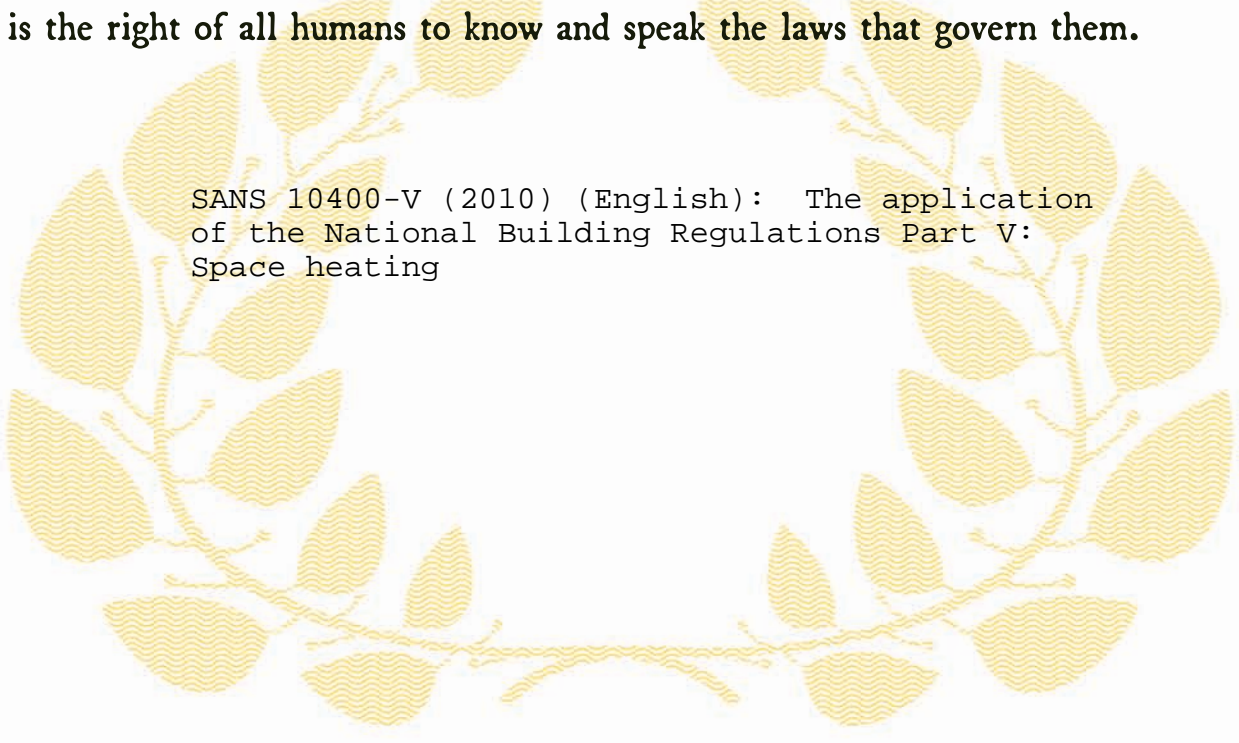




Republic of South Africa

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SANS 10400-V (2010) (English): The application
of the National Building Regulations Part V:
Space heating



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Edition 3

SOUTH AFRICAN NATIONAL STANDARD

The application of the National Building Regulations

Part V: Space heating

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SANS 10400-V:2010
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 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 June 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 V 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.

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The application of the National Building Regulations

Part V:

Space heating

1 Scope

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

NOTE Part V 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.

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 10177-5, *Fire testing of materials, components and elements used in buildings – Part 5: Non-combustibility at 750 °C of building materials*.

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

SANS 10400-B (SABS 0400-B), *The application of the National Building Regulations – Part B: Structural design*.

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

chimney

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

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

flue

passage which conveys the discharge of a heat-generating appliance to the external air

3.6

flue pipe

pipe forming a flue, but does not include a pipe built as a lining into a chimney

3.7

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

3.8

non-combustible

classified as non-combustible when tested in accordance with SANS 10177-5

4 Requirements

4.1 General

The functional regulation contained in part V of the National Building Regulations (see annex A) shall be deemed to be satisfied where the design and construction of any flue pipe, chimney, hearth or fireplace comply with the requirements of 4.2 to 4.4.

4.2 Flue pipes

4.2.1 No flue pipe shall be designed and installed in such a manner that it will cause a fire hazard to adjacent material.

4.2.2 No flue pipe shall be connected to a shaft or duct which forms part of a ventilation system.

4.2.3 No flue pipe shall be installed in a shaft or duct in which services which might be adversely affected by heat are to be situated.

4.3 Chimneys

4.3.1 A chimney which is within or is attached to a building shall comply with the following requirements:

- a) It shall be designed and erected from non-combustible materials and in such a manner that it will not cause a fire hazard to adjacent material.
- b) It shall not be installed in a shaft or duct in which services which might be adversely affected by heat are to be situated.

- c) Combustible material, such as a timber floor joist, trimmer or roof truss, shall not be built within 200 mm of the inside of a chimney.

4.3.2 Where in a dwelling house or dwelling unit the walls of a chimney are made of masonry units, such walls shall be of solid masonry, and where such walls are less than 190 mm thick, such chimney shall be lined in accordance with 4.3.4, provided that such walls shall not be reduced to less than 90 mm in thickness.

4.3.3 Notwithstanding the requirements of 4.3.2, the thickness of a chimney wall in a building covered by a combustible roof shall be not less than 190 mm.

4.3.4 Where a chimney is provided with a flue lining, such lining shall be made of material which will withstand any action of the flue gases and will resist, without cracking or softening, the temperatures to which it might be subjected, and it shall extend throughout the full height of such chimney.

4.3.5 Where a chimney has either a laterally unsupported height greater than 4 m or a laterally unsupported height greater than four and a half times its minimum lateral dimension, it shall be designed in accordance with the requirements of SANS 10400-B.

4.3.6 The height of a chimney outlet shall be not less than (see figure 1)

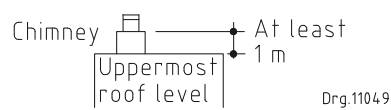
- a) 1 m above the highest point of contact between such chimney and the roof, provided that where a roof has an angle of slope on both sides of a ridge of not less than 10° from the horizontal and the centre line of the flue of the chimney is not more than 600 mm from the ridge, the height of such chimney outlet shall be not less than 600 mm above such ridge;
- b) 1 m above the highest point of a window or roof light capable of being opened or a ventilation inlet situated in a roof or external wall where the horizontal distance from the nearest point of such window, roof light or opening to a vertical line through the centre of such chimney outlet is less than 2,3 m; and
- c) 1 m above the eaves level in the case of a chimney which does not pass through the roof of a building but is within 1,5 m of the nearest wall of such building, provided that at a gable end of such building, such chimney shall extend not less than 600 mm above the highest point of such gable end.

4.4 Hearths and fireplaces

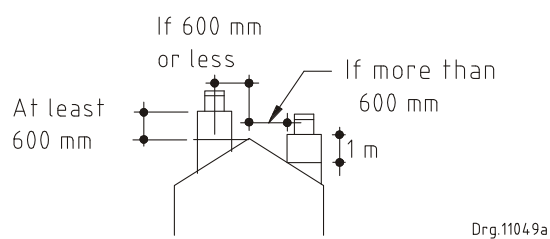
4.4.1 Every fireplace used for the burning of solid fuel shall have a hearth made of non-combustible material of adequate thickness.

4.4.2 Such hearth shall extend not less than 500 mm in front of the grate or fire basket and not less than 300 mm beyond each side of such grate or fire basket.

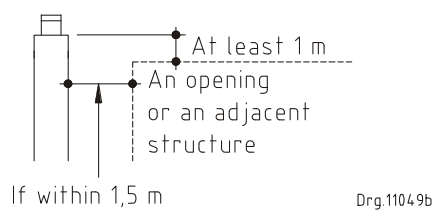
4.4.3 No timber floor joist or trimmer or any other combustible material shall be built into a hearth.



a) Roof pitch less than 10°



b) Roof pitch 10° or more



c) Opening or adjacent structure

Figure 1 — Chimney positions

Annex A

(normative)

National Building Regulations

Part V: Space Heating

V1 Design, Construction and Installation

- (1)** Any system of space heating in any building shall be so designed, constructed and installed as to operate safely and any flue, flue pipe or chimney used in such system shall be so designed as to safely remove any smoke or noxious gases produced by such system.
- (2)** The requirements of subregulation **(1)** shall be deemed to be satisfied where the design and construction of any flue pipe, chimney, hearth or fireplace complies with SANS 10400-V.

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