

NHBRC Practice Questions: Free Sample

10 questions with answers, reasons and SANS references

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Checked against the published standards on 6 September 2026.

Answer Part 1 first and keep Part 2 covered. Then mark yourself against the answer key and read the reason behind any you missed: each one names the clause, table or figure that settles it.

Part 1: The questions

Question 1

Who is the most competent person that should design the Geotechnical solution

- A. A Civil Engineer
- B. A Geotechnical Engineer
- C. An NHBRC Inspector
- D. None of the above

Question 2

A dolomite feature that manifests as a hole in the ground is referred to as

- A. A sink hole
- B. A mine
- C. A shaft
- D. All of the above

Question 3

What is the purpose of a geotechnical site investigation in the home building sector

- A. To create more work for engineering geologists & geotechnical engineers
- B. To document the parameters upon which the design of the foundation is to be based
- C. Help council of geoscience and NHBRC collect information
- D. Increase the cost of the house

Question 4

Which one of the following soils expands considerably when water is added

- A. Clay soil site classification "H"
- B. Rocks site classification "R"
- C. Dolomitic areas site classification "P"
- D. None of the above

Question 5

In terms of the NHBRC soil class classification, what is a "P" soil type classification

- A. Rock
- B. Clays
- C. Sand
- D. Contaminated soil, fill & marshes

Question 6

What types of soil are good for construction

- A. Rock soil
- B. Peat
- C. Clay
- D. Sand and gravel

Question 7

What is the minimum founding depth for slab on the ground foundation type

- A. 500mm
- B. 1500mm
- C. 300mm
- D. 400mm

Question 8

Except founded on rock, the minimum founding depth for a strip footing below natural ground level shall not be less than

- A. 150mm
- B. 400mm
- C. 600mm
- D. 300mm

Question 9

The minimum width of a strip foundation for a single storey building with a tiled or sheeted roof in stable soil conditions for an external & internal wall shall be respectively

- A. 200mm for the external wall & 400mm for the internal wall
- B. 400mm for the external wall & 200mm for the internal wall
- C. 500mm for the external wall & 400mm for the internal wall
- D. 400mm for the external wall & 500mm for the internal wall

Question 10

What is the minimum slab thickness of a strip foundation

- A. 150mm
- B. 200mm
- C. 400mm
- D. 600mm

Part 2: Answers and reasons

Answer key: 1 B 2 A 3 B 4 A 5 D 6 A 7 C 8 B 9 C 10 B

1. Answer B: A Geotechnical Engineer

The standard reserves this work for a “competent person (geotechnical)”. Definition 3.10 asks for more than registration: suitable experience in geotechnical site investigations or foundation design. A general civil engineer does not automatically hold that experience, and an inspector checks work rather than designs it.

Reference: SANS10400-H Foundation: Page 5

2. Answer A: A sink hole

Definition 3.40 states that a sinkhole is a feature that occurs suddenly and manifests itself as a hole in the ground. The suddenness is the point: subsidence is the slower settlement that happens when sinkhole formation stops early or the overburden consolidates.

Reference: SANS10400-H Foundation: Page 9, Par 3.40

3. Answer B: To document the parameters upon which the design of the foundation is to be based

Clause 4.2.1 sets out the purpose of the investigation: to document and form an opinion on the parameters the foundation design will rest on, and to classify the site against table 1. It is the input to a design decision, not paperwork produced for its own sake.

Reference: SANS10400-H Foundation: Page 11, par 4.2.1

4. Answer A: Clay soil site classification 'H'

Table 1 groups fine-grained soils of moderate to very high plasticity (clays, silty clays, clayey silts and sandy clays) as expansive soils, designated H. They take up water and swell, then shrink as they dry, and that cycle is what cracks the masonry above them. Rock is class R and dolomite land falls under P.

Reference: SANS10400-H Foundation: Page 11, Table 1

5. Answer D: Contaminated soil, fill & marshes

Class P is table 1's designation for ground whose behaviour the usual descriptors cannot predict: contaminated soils, controlled and uncontrolled fill, dolomite land, landslip, landfill, marshy areas, mine waste and mining subsidence. Rock, clay and sand each have classes of their own.

Reference: SANS10400-H Foundation: Page 11, Table 1

6. Answer A: Rock soil

Table 1 ranks founding materials by how much they move. Rock is the only entry listed as stable with negligible movement, site class R. Clays are expansive, and sands and gravels are compressible or potentially collapsible, so every other option brings movement the design has to absorb.

Reference: SANS10400-H Foundation: Page 11, Table 1

7. Answer C: 300mm

Figures 3 and 4 dimension the slab-on-the-ground option at 300 mm minimum, against 400 mm for a strip footing in the same drawings. A slab spreads load across its whole area instead of concentrating it in a trench, so it does not have to reach as deep.

Reference: SANS10400-H Foundation: Page 16, Fig.a

8. Answer B: 400mm

Figure 5 marks the strip footing “400 min.”, with rock called out as the exception. Rock is excepted because it is already a stable founding material; everything else has to get below the zone where seasonal moisture moves the soil.

Reference: SANS10400-H Foundation: Page 16 Fig.b or Page 17 Table 3

9. Answer C: 500mm for the external wall & 400mm for the internal wall

Table 3 splits the width by wall and by roof. For soil under a tiled or sheeted roof it asks 500 mm on the external wall and 400 mm internally. The external wall takes the roof load down one side, so it needs the wider spread. On rock both drop to 400 mm.

Reference: SANS10400-H Foundation: Page 17, Table 3

10. Answer B: 200mm

Clause 4.3.2.2.1(c) sets the thickness at not less than 200 mm, with one exception: bearing straight onto solid rock, where it need only be thick enough to give a level surface. Width comes from table 3. Thickness is specified separately.

Reference: SANS10400-H Foundation: Page 17, Par 4.3.2.2.1ac

Where to next

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