higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)

MASONRY
NQF LEVEL 2

(12020152)

2 December 2020 (X-paper)
09:00–12:00

This question paper consists of 5 pages.

211Q1N2002

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TIME: 3 HOURS
MARKS: 100

INSTRUCTIONS AND INFORMATION

1. Answer all the questions.
2. Number the answers according to the numbering system used in this question paper.
3. Start each section on a new page.
4. Use only a black or blue pen.
5. Write neatly and legibly.

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QUESTION 1: INTRODUCTION AND BACKGROUND

1.1 Complete the following sentences by choosing a word or words from the list below. Write only the answer next to the question number (1.1.1–1.1.6) in the ANSWER BOOK

cavity wall; block; bed-joint; cement; brick; perpend joint; mud; collar-jointed wall

1.1.1 The old or rural houses were built from …

1.1.2 A … usually has a length of 220 mm.

1.1.3 A … is the horizontal joint between two courses.

1.1.4 A … usually has a length of 390 mm.

1.1.5 A …has two leaves parallel to each other with no gap.

1.1.6 A … has two leaves parallel to each other with a gap in between.

(6 × 1) (6)

1.2 List FOUR standard wall thicknesses as specified in the national standards. (4)

[10]

QUESTION 2: SETTING OUT MASONRY WALLs

2.1 Bricklayers' tools used in brickwork projects can be divided into four main groups.

2.1.1 Name the FOUR main groups in which bricklayers' tools can be divided. (4)

2.1.2 List THREE tools in each group named in QUESTION 2.1.1. (12)

2.2 Explain how a spirit level and straight edge can be used to check that the foundation footings are level. (6)

2.3 List THREE ways that can be used to check whether a corner is at a right angle. (3)

[25]

QUESTION 3: BASIC CONSTRUCTION OF MASONRY WALLS

3.1 Indicate whether the following statements are TRUE or FALSE by writing only 'True' or 'False' next to the question number (3.1.1–3.1.6) in the ANSWER BOOK.

3.1.1 Concave and vee joints are good because moisture cannot collect anywhere.

3.1.2 DPC is also known as damp proof membrane.

3.1.3 Brick force should be inserted for a minimum of three consecutive courses above all openings.

3.1.4 Masonry units of different types cannot be mixed randomly.

3.1.5 DPC is not required in cavity wall construction.

3.1.6 Modular planning is based on a nominal joint thickness of 10 mm.

(6 × 1) (6)

3.2 State TWO circumstances in which concrete and clay units may be used in the same wall and regarded as satisfactory. (2)

3.3 List FOUR types of bonds in which a double leaf wall can be constructed. (4)

3.4 Damp proof course and brick force are two very important materials used in construction.

3.4.1 List the main purpose of using a damp-proof course in construction. (2)

3.4.2 List THREE advantages of using brick force in construction. (3)

3.4.3 Explain how damp-proof course is generally installed above foundation walls. (8)

3.4.4 Explain why it is not advisable to use DPC below free-standing garden walls. (5)

[30]

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QUESTION 4: ADVANCED CONSTRUCTION OF MASONRY WALLS

4.1 Choose a term from COLUMN B that matches a description in COLUMN A. Write only the letter (A–J) next to the question number (4.1.1–4.1.8) in the ANSWER BOOK.

COLUMN A		COLUMN B	
4.1.1	A wall that intersects another wall	A	weep holes
4.1.2	Controls cracking or movement	B	arches
4.1.3	Ties the wall to the roof trusses	C	control joints
4.1.4	The central brick or stone at the top of an arch that locks the arch together	D	lintel
4.1.5	A piece of timber or stone over a door or window	E	roof anchors
4.1.6	Can be built in a variety of forms	F	keystone
4.1.7	Holes in a wall designed to drain moisture	G	cross wall
4.1.8	Does not carry the load and are usually internal walls	H	non-structural wall
		I	structural walls
		J	composite beam

(8 × 1) (8)

4.2 Three main methods are used to join new brickwork to existing brickwork namely raking, toothing and block bonding.

Show by means of simple neat drawings the difference between *racking* and *toothing.*

Note: Stopped ends must be shown on the left-hand side of both diagrams. (8)

4.3 Give TWO requirements to ensure that the straps of a window frame are built into the wall. (2)

4.4 Give THREE procedures to follow to ensure that the DPC is placed correctly below windowsills. (3)

4.5 Explain the difference between a *lintel* and a *beam*. (4)

4.6 List FOUR advantages of a contractor using a detailed drawing when building a lintel into a wall. (4)

4.7 What is the minimum period of days in which a lintel should be left propped after installation? (2)

4.8 Roof anchors can be purchased in different types and are used to tie the roof structure to the superstructure of a building.

Name FOUR types of roof anchors. (4)

[35]

TOTAL: 100

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