



**higher education
& training**

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE (VOCATIONAL)

NOVEMBER 2010

**CARPENTRY AND ROOF WORK
NQF LEVEL 3**

23 NOVEMBER 2010

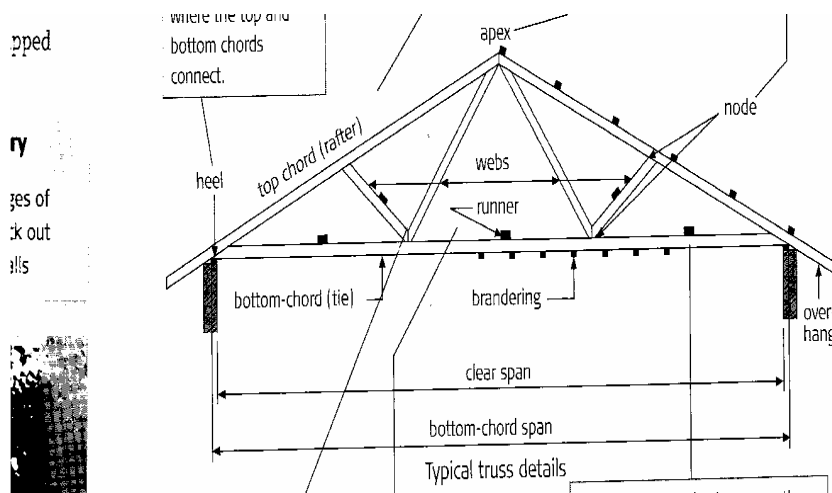
This marking guideline consists of 6 pages.

QUESTION 1: BUILD A SIMPLE HIPPED ROOF

- 1.1 a. The regulations exist to ensure safe construction
b. The regulations help different parties to communicate and aim for similar goals. (2)
- 1.2 A building or part of a building cannot be certified or approved as structural sound if it does not meet the standards (2)
- 1.3 a. The shape of the roof
b. The size of the roof
c. The materials used to erect the roof
d. The load that the roof has to support
e. The quality of the craftsmanship
f. Wind conditions in the area (6)
- 1.4 a. Architectural design
b. Rational design
c. Materials manufacture
d. Erecting the roof
e. Inspecting the roof (5)

(Recognised alternative answer is also acceptable for 1.4)

1.5



(15)
[30]

Roof Truss drawn correctly	5
Parts of truss correctly	5
Labelling	5
TOTAL	15

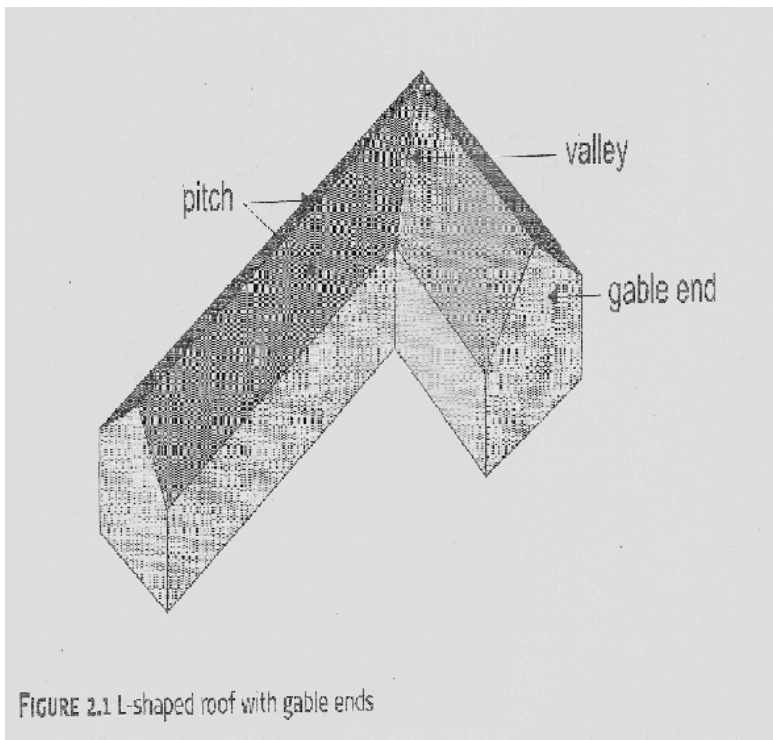
Howe truss is also acceptable. Examiner did not specify which truss is wanted.

QUESTION 2: BUILD A VALLEY ROOF INTERSECTION WITH INTERNAL VALLEY GUTTER

Complete the following sentences/paragraph(s) by filling in the missing word(s). Write only the word(s) next to the question number (2.1.1 – 2.1.5) in the ANSWER BOOK.

- 2.1.1 Two slope (2)
- 2.1.2 Carries water (2)
- 2.1.3 Rafter (1)
- 2.1.4 Tie beam (2)
- 2.1.5 Stop Rafter Splaying (3)

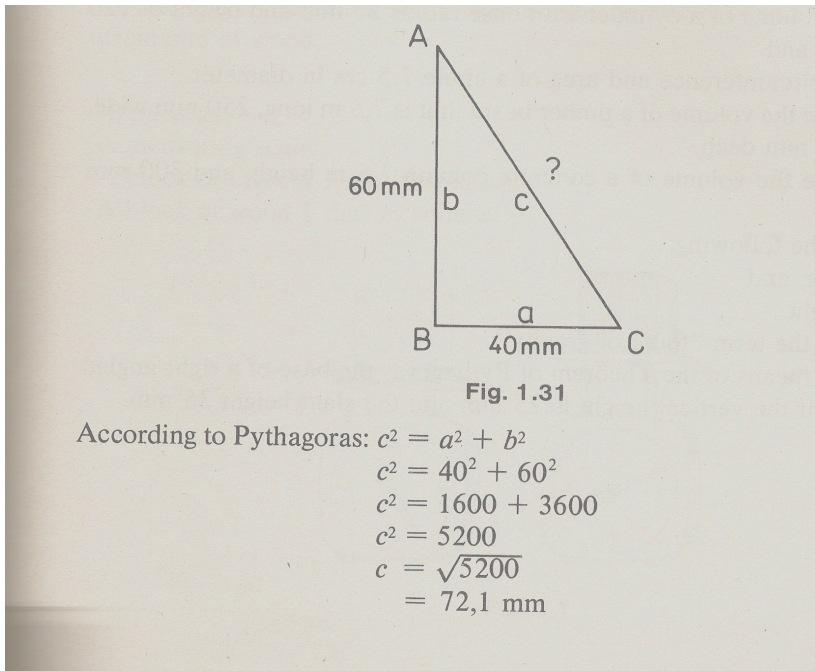
2.2



(5)

Plan view is also acceptable. Examiner did not specify which view. (5)

2.3



(6)

- 2.4
- Assemble the four-ply girder by nailing and bolting on the ground (1)
 - Raise the girder (1)
 - Move it into its final position (1)
 - Tack and straighten the girder (1)
 - Once the girder is straight and plumb, fit the 45 degree hangers to carry the jacks on the girder s bottom chord. (1)
- 2.5
- 2.5.1 Result from the intersection of two roof planes on an internal corner of a building
- 2.5.2 Is a standard position or level that measurements are taken from.
- 2.5.3 Means to hammer a nail into something only part of the way so that a part of the nail still sticks out.
- 2.5.4 Rubbish or remains such as leaves and twigs. (4)

[30]

QUESTION 3: INSPECT A ROOF STRUCTURE FOR STABILITY AND COMPLIANCE WITH NATIONAL STANDARDS

- 3.1 3.1.1 A person who is registered in terms of section 19(2)(a) (1)
- 3.1.2 A person who is qualified by virtue of his training and experience to design, erect, manufacture or inspect a roof structure (1)
- 3.1.3 A person who takes responsibility for designing, erecting, manufacturing or inspecting a roof structure (1)
- 3.1.4 A person who has been specifically trained by a recognised authority and covered by professional indemnity insurance under a professional engineer (1)
(Recognised alternative answer is also acceptable for 3.1)
- 3.2
- It must be inspected to ensure that it is structurally sound and able to support a load. (1)
 - It is easier to inspect the roof frame thoroughly when you can move around the roof frame freely. (1)
 - If the roof structure is found to be faulty in any way, it would be a waste. Time and money to take off the load and fix the roof frame, and then reload the roof. (1)
 - If the roof structure is faulty, it may be unsafe to load the roof. (1)
- 3.3
- The cutting of slates and tiles is minimised (1)
 - The horizontal lines of the courses are regular and true. (1)
 - The perpendicular lines of the states (slates) or tile edges will be to a (1)
 - Truss alignment (1)
- 3.4
- Deflection over time (1)
 - Due to under-designed trusses (1)
 - Due to the use of non-SABS approved timber (1)
 - Leaks, which can cause damage to ceiling, paint and furniture (1)
- [15]**

QUESTION 4: GLAD A TIMBER ROOF STRUCTURE WITH HEAVYWEIGHT OR LIGHTWEIGHT CLADDING

4.1	ADVANTAGES OF VALLEY FASTENER	DISADVANTAGES OF VALLEY FASTENER	
	1) Shorter fasteners	1) Debris accumulation	
	2) When fastening, less chance of denting	2) Corrosion could happen more easily at the point of fastening	
	3) Does not stress a plastic sheet/DPM	3) Water could run into hole	(6)
4.2	<ul style="list-style-type: none"> • The type of building • The roof pitch • The terrain category • The basic design wind speed • The height of the roof from ground to eaves • The length of the roof slope 		(6)
4.3	<ul style="list-style-type: none"> • Eaves • Verges • Ridges • Downwind slope/planes 		(4)
4.4	<ul style="list-style-type: none"> • Roof member sizing • Timber grade • Batten/purlin size and spacing • Roof member span • Number of bolts and connectors 		(5)
4.5	4.5.1	Is a thick waterproof plastic sheeting which is place on top of the rafter (on a tiled roof) immediately prior to fixing the battens	(1)
	4.5.2	Is where the tiles stick over the edge a little	(1)
	4.5.3	Is the slope that faces the wind	(1)
	4.5.4	Damp proof coarse	(1)
			[25]

TOTAL: 100