

higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE

NOVEMBER EXAMINATION

WOODWORERS'THEORY

11 NOVEMBER 2014

This marking guideline consists of 6 pages.

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QUESTION 1: INTRODUCTION TO THE BUILDING INDUSTRY AND PRODUCTIVITY

1.1 1.1.1 foundations (1)

1.1.2 wood machinist (1)

1.1.3 painter (1)

1.1.4 shop fronts (1)

1.1.5 roofer (1)

1.2 building sector: single√ and double - storey houses√
civil sector: roads√ and dams√ (4)

1.3 Human factors
- Ability
- Knowledge
- Motivation
- Individual education
- Experience level of aspiration
- Work schedules
- Training
- Organizational grouping
- Personal policies
- Leadership work satisfaction
- Pay practices (Any (3 × 1) (3)

Technological factors
- Product or service design
- Plant and equipment
- Mechanization
- Process layout and methods
- Conditions of material
- Extent of power used (Any 3 × 1) (3)

[15]

QUESTION 2: SAFETY AND HOUSEKEEPING

2.1 Is an unplanned, uncontrolled event√ that results in damage to persons, plant, equipment√ or the environment.√? (3)

2.2 It is to control the working conditions in workplaces√ and thus to eliminate accidents and industrial illnesses.√ It also aims to protect workers against health risks.√ (3)

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2.3
- Employees should be taught the correct techniques. Any back pain should be reported immediately to avoid long term damage.
- Load size and shape should be assessed and the method determined to handle it appropriately i. e. by hand or mechanically
- Work station design should be assessed and wide range lifting be engineered out of process
- Large loads or high volume manual lifting per shift should be avoided.
- Lifting and twisting must be avoided. Lift , more feet, face drop area and lower.
- Objects required to be lifted repetitively should be located in the reach area between the shoulders and the knee.
- Man–jobs specifications must be utilized for employees doing manual lifting task.
- Appropriate safety attire (PPE) must be worn
- Pushing and pulling loads can also place excessive strain on the back and correct technique and equipment should be used after training has been given.
- Drop and pick-up area should be designed to accommodate unrestricted work flow without excessive handling

(Any 3 ×1) (3)

2.4
- Check that the equipment has three core wiring, unless its of double insulated design.
- Check that the earth wire is connected to the earth pin of the plug, and that the sufficient slack is allowed
- Ensure that, should the wires be pulled from the plug that the earth wire will be the last to be disconnected.
- Check that the live (positive) wire is connected to the correct terminal of the plug.
- Check that the earth wire makes full contact with the body of the appliance. (Any 3 × 1) (3)

2.5
- hard hats
- goggles, glasses, face shields, helmet mask
- ear plugs
- face mask
- overall, apron, jackets, suits
- spats, leggings
- gloves, mittens, quantlets
- boots (Any 3 × 1) (3)

[15]

QUESTION 3: TIMBER, TIMBER PRODUCTS, METAL AND GLASS

3.1 3.1.1
- has broad leaves
- is closed seeded (angiosperm)
- is evergreen or deciduous
- is fruit bearing (Any 3 x 1) (3)

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3.1.2
- has needle-like leaves
- is naked seeded (gymnosperm)
- is evergreen
- is cone bearing (Any 3 x 1) (3)

3.2
- brushing
- dipping
- spraying (3)

3.3 Is the cutting up of logs into planks and beams. (1)

3.4 3.4.1 Heart shake

3.4.2 Star shake

3.4.3 Waney edges

3.4.4 Cup shakes

3.4.5 Common cracks

3.4.6 Knots

(6 × 1) (6)

3.5
- it must deflect the direct rays of sunlight.
- keep it out of the rain.
- stack of the ground.
- allow free circulation of air. (Any 2 × 1) (2)

3.6
- it is safe and secure.
- it does not shatter under impact.
- laminated glass will crack and break under impact but the pieces of glass tend to adhere to the plastic.
- this reduces the safety hazard associated with shattered glass fragments.
- it offers some degree of security. (Any 2 × 1) (2)

[20]

QUESTION 4: TOOLS AND MACHINES

4.1. 4.1.1 Frame

4.1.2 Wing nut

4.1.3 Screw

4.1.4 Swivel shoe

(4 x 1) (4)

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4.2
- make sure that the cutter is properly secured.
- when cutting move slowly into the wood.
- set the cutter to take of small quantities at a time.
- hold the machine with both hands.
- work at a safe speed. (Any 3 × 1) (3)

4.3. 4.3.1 jack plane:√ is used for general planning and for planning wood straight.√

4.3.2 firmer chisel:√ is used for general chiseling,√

4.3.3 sash clamp:√ is used for cramping framework and boards.√

4.3.4 coping saw:√ is used for cutting curves.√

(4 × 2) (8)
[15]

QUESTION 5: FIXATIVES, GLUE AND FITTINGS

5.1. 5.1.1 true

5.1.2 false

5.1.3 true

5.1.4 true

5.1.5 false

(5 × 1) (5)

5.2 A round head screw is used for fitting hardware√ without countersunk holes.√ A raised head screw is used to fix door handle plates√ and decorative hardware.√ (4)

5.3
- uses are not restricted
- bonding is strong and permanent
- resists weather conditions, heat, acids, hot water, alkaline, bacteria
- excellent filter (Any 3 x 1) (3)

5.4 Adhesives are a material usually in liquid√ or semi liquid state√ that adheres or bonds items together.√ (3)
[15]

QUESTION 6: JOINTS

6.1
- plain/through housing joint
- stopped housing joint (2)

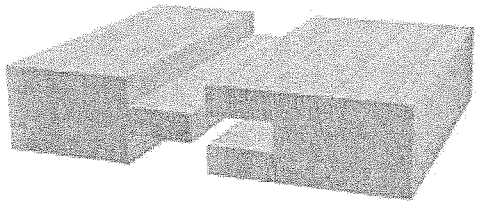
6.2 6.2.1
- corners of small boxes
- lengthen timber (Any 1 × 1) (1)

6.2.2
- picture frames
- fascia boards
- wall plates
- roofing purlins (Any 1 × 1) (1)

6.2.3
- First class work
- Shelving (Any 1 × 1) (1)

6.3

MARK ALLOCATION	
correct interpretation	2
drawing of the joint	2
neatness	1
TOTAL	5



(5)
[10]

QUESTION 7: BUILDING – RELATED CALCULATIONS

7.1 One plank = $\frac{3000\surd}{700}$
= 4.2
= 4 boards per plank√ (2)

7.2 Number of planks = $\frac{26\surd}{4}$
= 6,5
= 7 planks needed to cut all 26 bread boards√ (2)

7.3 Volume of one plank = 3,000 x 0,300 x0,0 25√
= 0,022 cubic meter per plank√√ (3)

7.4 Total cost of material = R1250.00 x 7√
= R8750,00√√ (3)
[10]

TOTAL: [100]

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