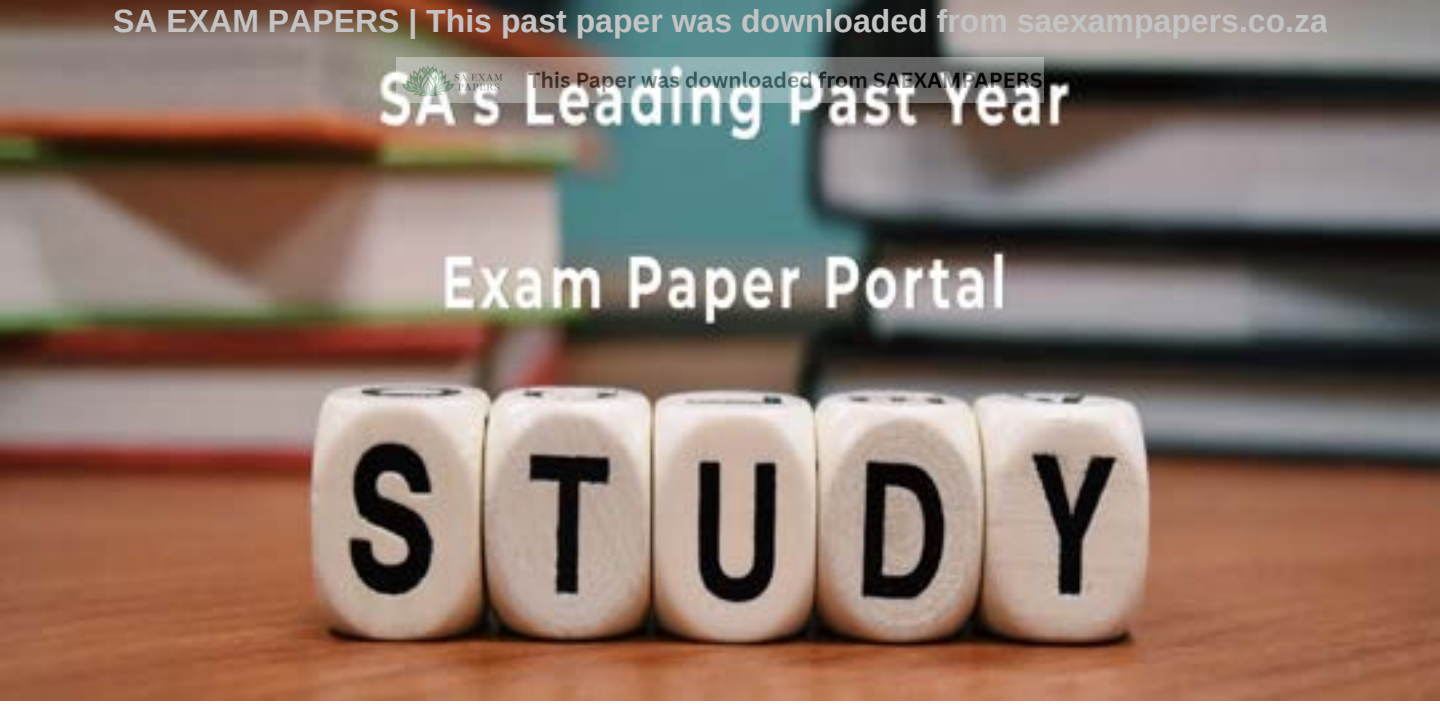


Province of the
EASTERN CAPE
EDUCATION

Iphondo leMpuma Kapa: Isebe leMfundo
Provinsie van die Oos Kaap: Department van Onderwys
Porafensie Ya Kapa Botjahabela: Lefapha la Thuto

NATIONAL SENIOR CERTIFICATE

GRADE 12

SEPTEMBER 2025

CIVIL TECHNOLOGY: WOODWORKING MARKING GUIDELINE

MARKS: 200

This marking guideline consists of 18 pages including 6 answer sheets.

QUESTION 1: SAFETY AND MATERIAL (GENERIC)

1.1 1.1.1 760 mm x 560 mm (1)

1.1.2 3,7 m (1)

1.1.3 30° (1)

1.1.4 50° (1)

1.1.5 510 mm (1)

1.2 Any TWO materials that ladders are generally made of:
- Wood
- Aluminium
- Fibreglass (2 x 1) (2)

1.3
- Lifting medium
- Power type (2 x 1) (2)

1.4 Water-based – provides an elastic, flexible finish (1)
Oil-base – provides a hard, durable finish (1) (2 x 1) (2)

1.5 Any THREE properties of the curing process of concrete.
- Surface of cured concrete is durable.
- Improves the protection of the steel reinforcement.
- Curing allows concrete to achieve optimal strength and hardness.
- Avoids cracking where the surface dries out quickly.
- Improves abrasion resistance. (3 x 1) (3)

1.6 THREE advantages of electroplating.
- Protects metal against corrosion.
- Improves the engineering and mechanical properties of metal.
- May also be used to increase the thickness of undersized parts. (3 x 1) (3)

1.7 Process of applying a plastic finish / coating in powder form (1), using a compressed air spray-gun (1). (2)

1.8 Zinc (1)

[20]

QUESTION 2: EQUIPMENT, TOOLS AND JOINING (GENERIC)

2.1 FIGURE 2.1 on ANSWER SHEET A

2.1.1 Outside door at 2.1.A (2)

2.1.2 Window at 2.1.B (2)

2.1.3 Water closet at 2.1.C (2)

2.1.4 Wash basin at 2.1.D (2)

2.1.5 Single sink unit at 2.1.E (2)

2.1.6 One-way switch – single pole at 2.1.F (2)

2.1.7 Fluorescent light at 2.1.G (2)

2.1.8 Socket outlet at 2.1.H (2)

2.1.9 Grease trap at 2.1.I (2)

2.1.10 Wall-mounted light at 2.1.J (2)

2.2 2.2.1 A – Laser level
B – Telescopic staff
C – Tripod (3)

2.2.2 Any TWO below:
- Place the laser level in its case directly after use
- Do not bump the instruments against objects or drop it
- It must be properly calibrated
- It must be handled carefully (2 x 1) (2)

2.3 2.3.1 The reading on the staff is 1,5 m (1)

2.3.2 Minimum = 30 m
Maximum = 200 m (2)

2.4 2.4.1 Use a dry, soft cloth not a cleaning agent or solvent. (1)

2.4.2 Remove batteries. (1)

2.5 **A** Nut with built-in washer (1)

B Wing nut (1)

C Domed nut (1)

2.6 2.6.1 Rawl bolt (1)

2.6.2 **A** – Drill a hole to the required diameter and depth. (1)

B – Remove debris and clean the hole thoroughly with a brush or by blowing it. (1)

C – Remove the bolt and washer, insert the shield and place the fixture over the hole. (1)

D – Insert the bolt with washer through the fixture and tighten to the recommended torque. (1)

2.6.3 Any TWO below:

- It is a strong fastener that resists pull-out failure.
- Rawl bolts have excellent carrying capacity and tolerance to a variance in the hole size.
- Excellent mechanical properties, such as tensile strenght and yield stress. (2)

[40]

TOTAL SECTION A: 60

QUESTION 3: CASEMENT, CUPBOARDS, WALL- PANELLING AND QUANTITIES (SPECIFIC)

3.1 3.1.1 Sill (1)

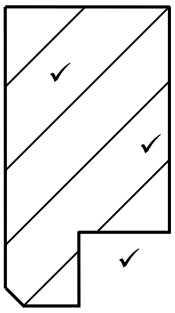
3.1.2 Fanlight (1)

3.1.3 Mullion (1)

3.1.4 Frame stiles (1)

3.1.5 Front rail (1)

3.2



ASSESSMENT CRITERIA	MARK
Correctness of drawing:	
Top rail	1
Rebate	1
Hatching	1
TOTAL:	**3**

(3)

3.3 3.3.1 **A** Ceiling (1)

B Cornice (1)

C Capping (1)

D Horizontal rough grounds (1)

E Tongue and groove boards (1)

3.4 See ANSWER SHEET **B** (8)

3.5 See ANSWER SHEET **C** (9)

[30]

QUESTION 4: ROOFS, CEILINGS, TOOLS AND EQUIPMENT AND MATERIALS (SPECIFIC)

4.1 4.1.1 C (1)

4.1.2 E (1)

4.1.3 G (1)

4.1.3 B (1)

4.1.5 A (1)

4.1.6 D (1)

4.2 4.2.1 Band saw (1)

4.2.2 Any TWO safety precautions to ensure safe handling of the blade.
- Always check the tension of the blade.
- Always check the alignment of the blade.
- Ensure that the blade guide and blade support are in the right position.
- Always use the right blade for specific work and ensure that the teeth are pointing downwards.
- Always adjust the top blade guide 6 mm above the stock.
- If the blade becomes stuck, switch off the machine before trying to release the blade.
- Always avoid backing up or pulling out the blade while it is in cut, this can cause the blade to derail from the guides. (2 x 1) (2)

4.2.3
- Do not force the material onto the blade.
- Avoid the use of blunt blades. (2 x 1) (2)

4.3 4.3.1 Strength (1)

4.3.2 Clean the brush in thinners after each application (1)

Loosen and dry the bristles with a cloth and hang up the brush to dry (1)

4.3.3 Any TWO width of timber when selecting timber for roof trusses
- 38 mm
- 50 mm
- 76 mm
- 114 mm
- 152 mm
- 228 mm (2)

4.4 4.4.1 Any TWO parts of a conventional trap door
- Timber framework
- Panel
- Cover strip (2)

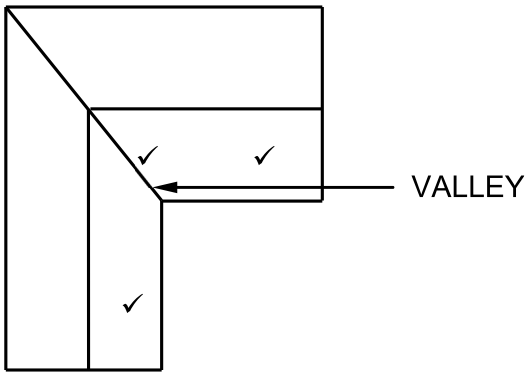
4.4.2 38 mm x 38 mm (2)

4.5 4.5.1 Polypropylene (1)

4.5.2 Synthetic or any water proofing material (1)

4.5.3 Special aluminium foil (1)

4.6 Top view of a roof with a valley between two inclined roofs.



ASSESSMENT CRITERIA	MARK
Inclined roof on top	1
Valley	1
Inclined roof on left	1
TOTAL:	**3**

(3)

4.7 4.7.1 Hurricane clip (1)

4.7.2 Storm clip (1)

4.7.3 Truss hanger (1)

4.8 4.8.1 **A** Rafter joist (1)
B Hip/Corner rafter (1)
C Wall plate (1)
D Ceiling joist (1)
E Jack rafter (1)

4.8.2 Hipped-end roof is a roof with two slanting ends (1), sometimes across a short flat gable. (1) (2)

4.8.3 Eaves are portions of roof that projects (1) beyond the outside walls of a building. (1) (2)

4.8.4 Difference between *open eave* and *closed eave*.

Any ONE from open eave and any ONE from closed eave

Open eaves:
- Roof timber is visible
- Birds nest under the open eave
- Beam filling is compulsory (1)

Closed eave:
- Provides more attractive finish
- Prevent birds from nesting in the roof space
- Beam filling is not compulsory (1)

[40]

QUESTION 5: CENTERING, FORMWORK, SHORING, AND GRAPHICS AS MEANS OF COMMUNICATION (SPECIFIC)

5.1 5.1.1 **D** Bearer (1)

E Horizontal brace (1)

5.1.2 To secure the ribs firmly. (1)

5.2 5.2.3 (1)

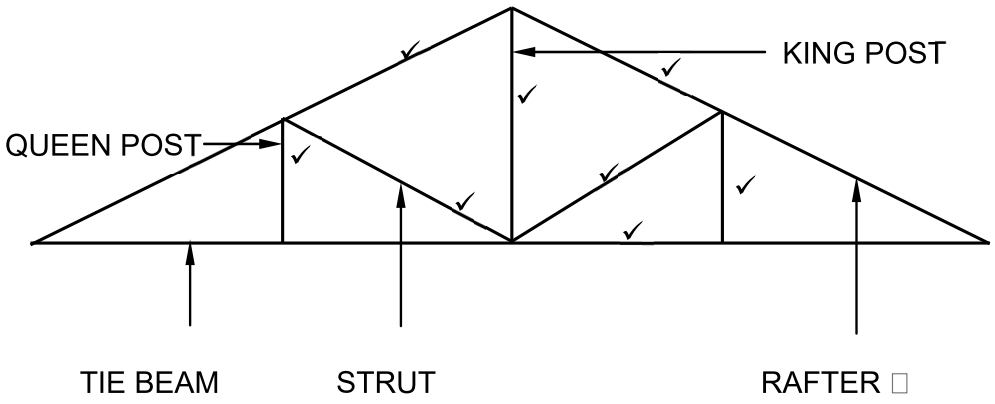
5.2.5 (1)

5.2.1 (1)

5.2.2 (1)

5.2.4 (1)

5.3 Line diagram of SA(Howe) roof truss.

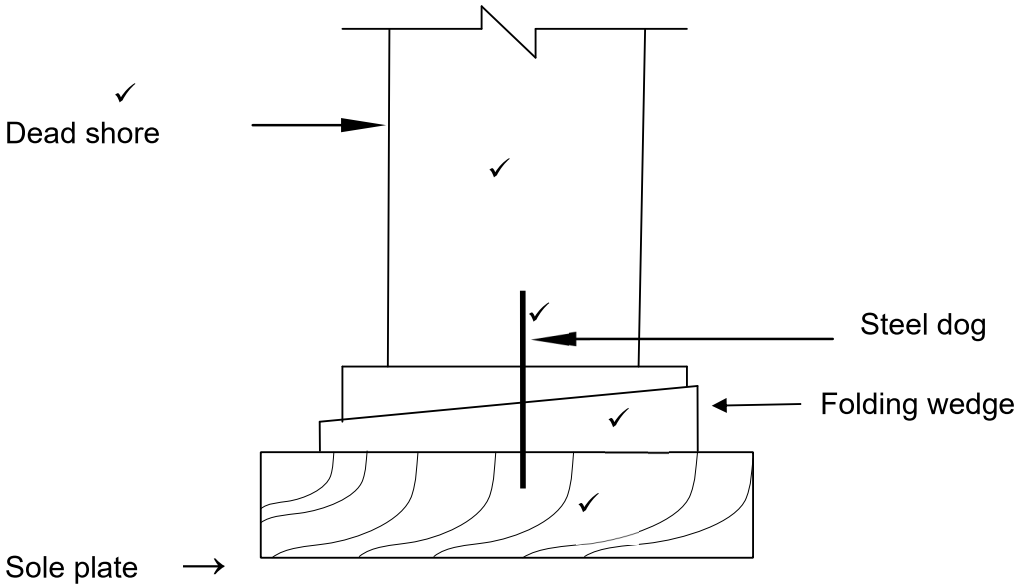


ASSESSMENT CRITERIA	MARK
Correctness of drawing:	
Rafters	2
King post	1
Queen posts	2
Struts	2
Tie beam	1
Label (Any ONE)	1
TOTAL:	**9**

(9)

5.4 See ANSWER SHEET 5.4 (7)

5.5



ASSESSMENT CRITERIA	MARK
Dead shore	1
Steel dog	1
Folding wedge	1
Soleplate	1
Any ONE label	1
Proportion	1
TOTAL:	**6**

(6)
[30]

QUESTION 6: SUSPENDED TIMBER FLOORS, STAIRCASES, IRONMONGERY, DOORS AND JOINING (SPECIFIC)

6.1 6.1.1 C (1)

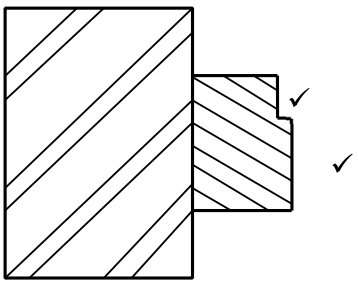
6.1.2 D (1)

6.1.3 C (1)

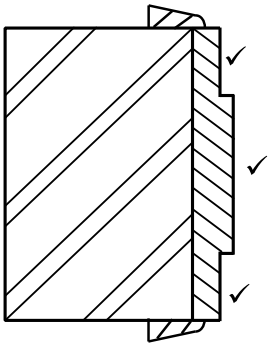
6.1.4 B (1)

6.1.5 B (1)

6.2



Doorframe ✓



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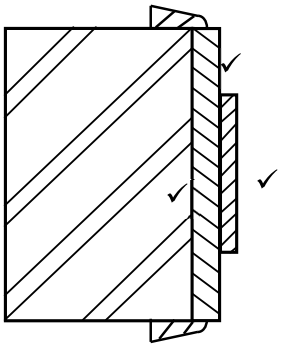


Jamb lining

Assessment criteria	Mark
Frame profile of door	2
Jamb lining profile	3
ANY title	1
TOTAL:	6

(6)

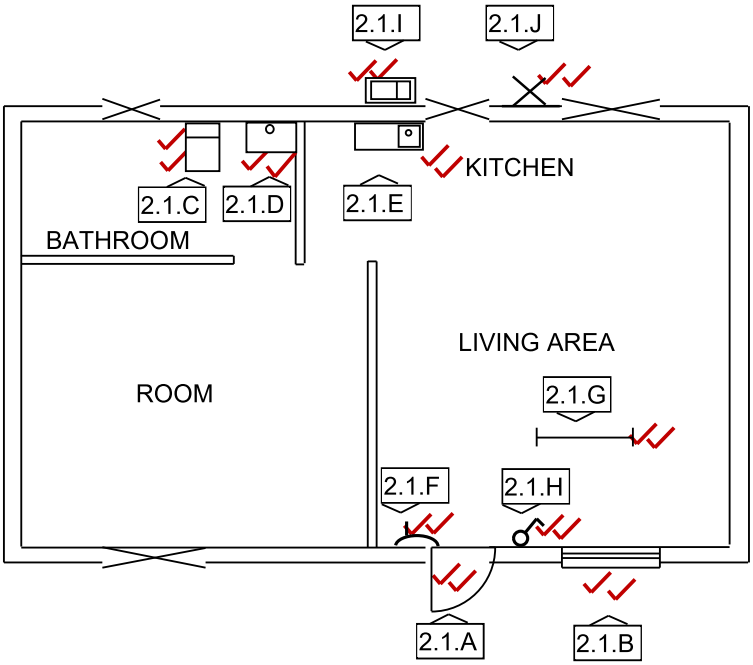
6.3 See ANSWER SHEET D (6)

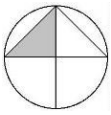
6.4	6.4.1	Floor boards	(1)
	6.4.2	Bearer	(1)
	6.4.3	Ant guard	(1)
	6.4.4	Damp proof coarse	(1)
	6.4.5	Brick pier/brick wall	(1)
	6.4.6	Foundation	(1)
6.5	(1) prevent the damp in the debris to spread (2) to floor members		(2)
6.6	Mortise lock: More substantial build-in lock. Fitted inside a mortise slot, cut into the side edge of the wooden door. Night latch: Surface mounted secondary lock. Mounted on the interior surface of the door.		(4)
6.7	6.7.1	A Floor joists built into the wall	(1)
		B Floor joists bolted into the wall	(1)
	6.7.2	It reduces the length of the floor joists needed	(1)
6.8	See ANSWER SHEET E		(6)
6.9	Handrail assist people when ascend or descend stairs		(1)
	Balustrades are fixed to handrails to form a safe structure		(1)
			[40]

TOTAL: 200

ANSWER SHEET (2.1)	A	CIVIL TECHNOLOGY (GENERIC)	NAME AND SURNAME:	

2.1 Use the information on ANSWER SHEET A and complete the floor plan on scale 1 : 100. (20)

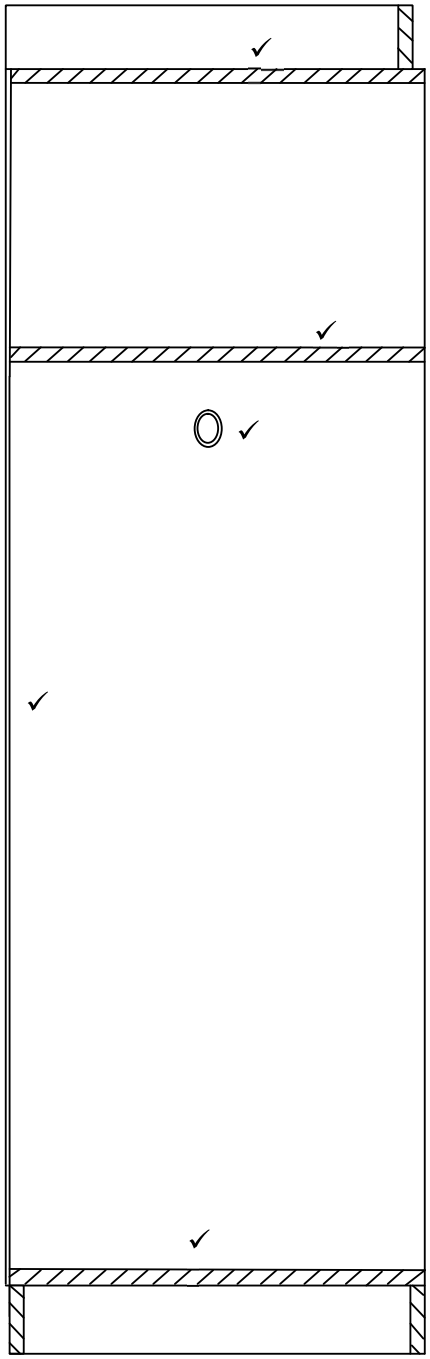




Outside door at 2.1.A	2	
Window at 2.1.B	2	
Water closet at 2.1.C	2	
Wash basin at 2.1.D	2	
Single sink unit at 2.1.E	2	
One-way switch – single pole at 2.1.F	2	
Fluorescent light at 2.1.G	2	
Socket outlet at 2.1.H	2	
Grease trap at 2.1.I	2	
Wall-mounted light at 2.1.J	2	
TOTAL:	**20**	

ANSWER SHEET (3.4)	B	CIVIL TECHNOLOGY (SPECIFIC)	NAME AND SURNAME:	

Use ANSWER SHEET 3.4 and draw a vertical sectional view of the cupboard to scale 1 : 10.



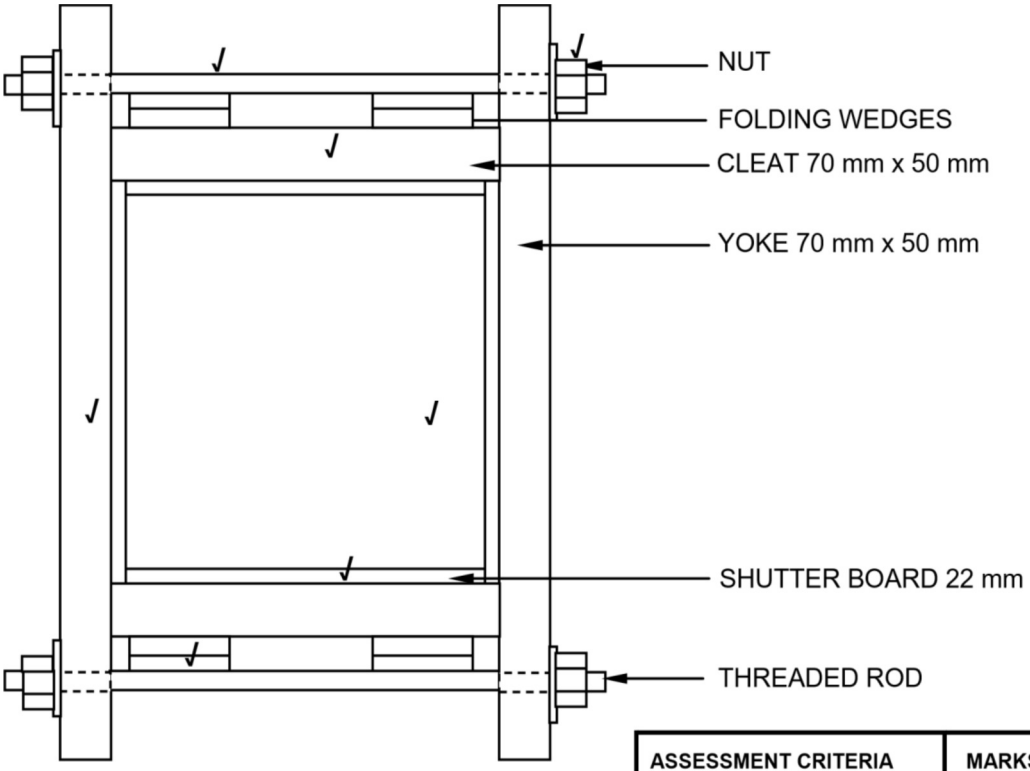
ASSESSMENT CRITERIA	MARK	CM
Front rail	1	
Top shelf	1	
Middle shelf	1	
Hanging rail	1	
Kick plate	1	
Back of cupboard	1	
Application of scale: Correct height Correct depth	 1 1	
TOTAL:	**8**	

ANSWER SHEET (3.5)	C	CIVIL TECHNOLOGY (SPECIFIC)	NAME AND SURNAME:	

DIMENSION PAPER

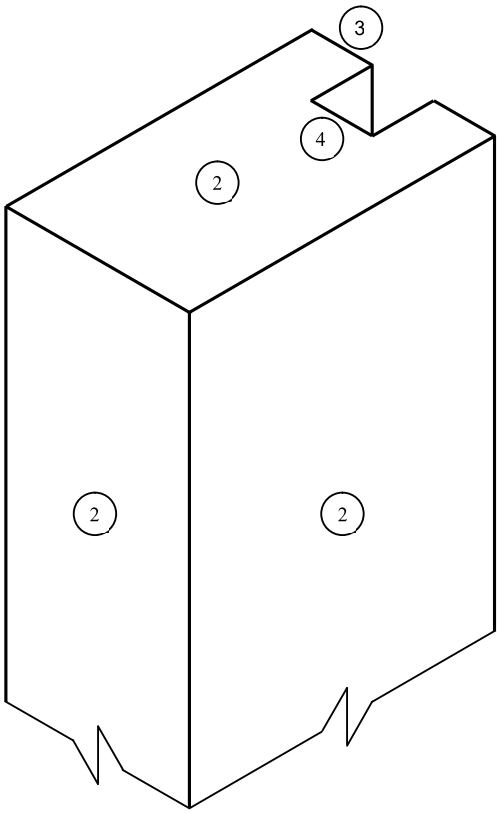
A	B	C	D
			Area of roof underlay for the building:
			Distance between gable ends = 8 560 mm √
2/ √	8,56 √		
	3,60 √	54,43 √	Length of rafter = 3 600 mm
			54,43 m roof under lay is needed
			Number of roofing sheets
			= Width of roof
			Cover width of roofing sheets
			= 9 300 mm √
			610 mm
			= 15,24 √
			= 16
			Total number of roofing sheets for two sides of the roof:
			= 16 + 16 √
			= 32 sheets √

ANSWER SHEET (5.4)	D	CIVIL TECHNOLOGY (SPECIFIC)	NAME AND SURNAME:	



ASSESSMENT CRITERIA	MARKS	LM
Column	1	
Shutter board	1	
Yokes	1	
Cleats	1	
Wedges	1	
Threaded bolts	1	
Nuts	1	
Application of scale One or two incorrect = 3 Three or four incorrect = 2 More than five incorrect = 1 No measurement correct = 0		
TOTAL	7	

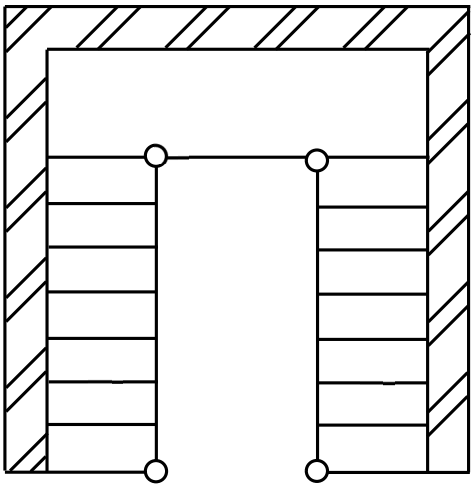
ANSWER SHEET (6.3)	E	CIVIL TECHNOLOGY (SPECIFIC)	NAME AND SURNAME:	



CORRECTNESS OF STILE: (1)

NO	ASSESSMENT CRITERIA	MARK
1	Correctness of the stile	1
2	Stile surface	3
3	Shoulder	1
4	Groove	1
	TOTAL :	**6**

ANSWER SHEET (6.8)	F	CIVIL TECHNOLOGY (SPECIFIC)	NAME AND SURNAME:	



Correctness

ASSESSMENT CRITERIA	MARK	CANDIDATE'S MARK
Treads on each flight of stairs	2	
Half landing	1	
Newel post	1	
Open well	1	
Correctness of drawing	1	
TOTAL:	**6**	

(6)