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REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

CIVIL TECHNOLOGY: WOODWORKING

NOVEMBER 2019

MARKING GUIDELINES

MARKS: 200

These marking guidelines consist of 19 pages.

QUESTION 1: OHSA, SAFETY, MATERIALS, TOOLS, EQUIPMENT AND JOINING (GENERIC)

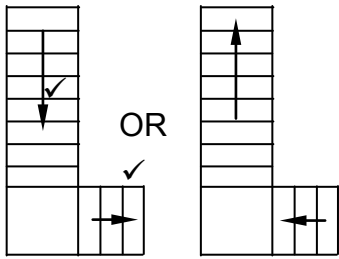
- 1.1 1.1.1 B ✓ (1)
- 1.1.2 I ✓ (1)
- 1.1.3 A ✓ (1)
- 1.1.4 G/H ✓ (1)
- 1.1.5 C ✓ (1)
- 1.1.6 F ✓ (1)
- 1.1.7 J ✓ (1)
- 1.1.8 E ✓ (1)
- 1.2 Electroplating:
- protects metals against corrosion. ✓
 - improves the engineering- and mechanical properties of metal. ✓
 - may be used to increase the thickness of undersized parts.
 - is decorative.
 - will extend the life span.
- ANY TWO OF THE ABOVE** (2)
- 1.3 Curing ✓ (1)
- 1.4 The moisture:
- delays/prevents the rapid drying of fresh concrete.
 - prevents concrete from cracking. ✓
 - ensures that fresh concrete hardens properly.
 - allows adhesive bonding.
 - increases strength of fresh concrete.
- ANY ONE OF THE ABOVE** (1)
- 1.5 • When material is transported in bulk, it must be secured firmly. ✓
- When material is transported to higher levels, make sure that workers maintain a safe distance from the material being moved overhead. ✓
- When heavy material is transported with a lift/hoist/machine, a qualified person must take charge of operations.
- Wear appropriate personal protective equipment (PPE).
- Material must be transported in a safe way.
- Transport should not be overloaded with material.
- ANY TWO OF THE ABOVE** (2)

- 1.6 Scaffold planks should:
- be made of a solid wood at least 228 mm wide and 38 mm thick. ✓
 - be able to support the load.
 - be free from defects.
 - not be painted as it will hide defects/be slippery.
 - be supported at distances not exceeding 1,25 m.
 - not project less than 70 mm and not more than 230 mm beyond the ends of the last prop.
 - be firmly secured to prevent its displacement.
 - be placed in such a way to prevent materials and tools from falling through.
- ANY ONE OF THE ABOVE** (1)
- 1.7 1.7.1 Dumpy level ✓ (1)
- 1.7.2 If the dumpy level is not set up level:
- it will give inaccurate readings. ✓
 - wrong levels will be transferred.
 - true levels will not be transferred.
- ANY ONE OF THE ABOVE** (1)
- 1.8 1.8.1 A – Plastic plug/Plug/Rawl plug/Fisher plug/Fibre plug ✓ (1)
- 1.8.2 A screw ✓ (1)
- 1.8.3 Plastic plugs are used to secure:
- cupboards against a wall. ✓
 - mirrors against a wall.
 - portraits and similar objects against a wall.
 - objects, limited to certain weight, against walls.
- ANY ONE OF THE ABOVE** (1)
- [20]**

QUESTION 2: GRAPHICS AS MEANS OF COMMUNICATION (GENERIC)**ANSWER SHEET 2**

NO.	QUESTIONS	ANSWERS	MARKS
1	Identify the elevation in FIGURE A.	West Elevation ✓	1
2	Identify the type of roof that is used on the building in FIGURE A.	Hipped roof ✓	1
3	Identify number 1.	Ridge Capping/Ridge plate/Ridge tile/Hip cap ✓	1
4	Identify number 4.	Balcony/Floor slab of balcony/Cantilever/Concrete slab ✓	1
5	Identify number 5.	External door/Entrance door/Door/Outside door ✓	1
6	Identify number 7.	Gutter ✓	1
7	Identify number 8.	Rainwater down pipe/RWDP/Down pipe ✓	1
8	Identify number 12.	Wash trough/Wash tub ✓	1
9	Identify number 13.	Built-in cupboard/BIC ✓	1
10	Identify number 15.	Landing ✓	1
11	Identify the company that printed the building plan.	Dlamini printers ✓	1
12	Name a suitable material that can be used for the manufacturing of number 2.	Fibre cement/Galvanised sheeting/Timber/Plastic/PVC/Polyvinylchloride✓	1
13	Name the drawing symbol in the column for the notes in FIGURE 2 that must be installed in the kitchen.	Electricity meter/Electrical meter/Watt meter/Prepaid meter ✓	1
14	Name the drawing symbol in the column for the notes in FIGURE 2 that indicates the type of bricks for the building.	Face brick ✓	1
15	Name a material that should NOT be used to manufacture the frame of number 9 for coastal areas.	Steel/Mild steel/Iron/Ferrous metals ✓	1

16	Name a material that can be used to manufacture the sanitary fitting indicated by number 11.	Stainless steel/Plastic/Ceramic/Granite/Acrylic/Fibre Glass/Concrete✓	1
17	Who checked the building plan?	P Carter ✓	1
18	How many types of windows are used in FIGURE B?	2 ✓	1
19	What does the abbreviation <i>NGL</i> at number 6 stand for?	Natural ground level ✓	1
20	Give the reference code for this plan.	QP 2-2019 ✓	1
21	Which room will electrical symbol 16 serve?	Lounge ✓	1
22	Describe the purpose of number 3.	Prevent people from falling off/through. ✓✓	2
23	Explain what the curved lines between the electrical installations in FIGURE B indicate.	Electrical wiring/Wiring/Electrical cable/Wiring from light switch to light/Shows which switch operates which electrical fitting. ✓✓	2
24	Explain why the light switch is mounted on the outside of the bathroom.	To prevent steam/moisture entering the switch/To prevent electrical shock due to moisture/For safety purposes ✓	1
25	Identify in FIGURE 2 which elevation does NOT have windows.	North elevation ✓	1
26	Identify the thickness of the internal wall in FIGURE 2.	110 mm ✓	1
27	Differentiate between symbols 13 and 15 in terms of their purpose.	13 – Built-in cupboard: to store items. ✓ 15 – Landing: to rest/safety feature/change of direction of stairs ✓	2
28	Justify why FIGURE B is a ground floor plan.	Ground floorplan: <ul style="list-style-type: none"> • does not indicate the roofline ✓ • does not indicate the balcony • indicate an entrance door to the house • indicate a step at the entrance door • the position of the windows and door correlate with the positions of the window and door on the west elevation 	1

29	Predict what will happen if number 10 is NOT installed.	Water/Damp will penetrate into the wall. ✓	1
30	Redraw the staircase in FIGURE B in the adjacent column and indicate the direction of the flight with arrows.		2
31	Calculate the total length of the wall on the eastern side of the building. Show ALL calculations.	<p> $220 \checkmark + 2\ 600 \checkmark + 110 \checkmark + 3\ 400 \checkmark + 220 \checkmark$ $= 6\ 550 \text{ mm or } 6,55 \text{ m } \checkmark$ </p> <p>IF INCORRECT METHOD IS USED TO CALCULATE THE ANSWER USE THE FOLLOWING SLIDING SCALE:</p> <ul style="list-style-type: none"> • 4 MARKS WILL BE AWARDED IF ALL FIVE VALUES ARE CORRECT • 3 MARKS FOR FOUR VALUES CORRECT • 2 MARKS FOR THREE VALUES CORRECT • 1 MARK FOR 2 VALUES CORRECT 	6
		TOTAL:	40

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

3.1 3.1.1 16 mm ✓ (1)

3.1.2 Skirting ✓ (1)

3.1.3 7,5 m² ✓ (1)

3.1.4 Mullion ✓ (1)

3.2 3.2.1

- Transom ✓
- Bottom rail of fanlight/ Bottom rail ✓
- Top rail of casement/ Top rail ✓
- Frame stile/Stile/Casement stile/Fanlight stile

ANY THREE OF THE ABOVE (3)

3.2.2 Drip groove/Throat/Groove ✓ (1)

3.3
3.3.1

A	B	C	D
			Area of roof sheeting needed:
			Width of the roof = 150 mm + 8 000 mm + 150 mm
			= 8 300 mm ✓
✓			Length of sheet = Length of rafter + overhang of roof sheeting
2/	8,3 ✓		= 2 900 mm + 50 mm = 2 950 mm ✓
	<u>2,95</u> ✓	48,97 m ² ✓	NO UNIT IN FINAL ANSWER NO MARK

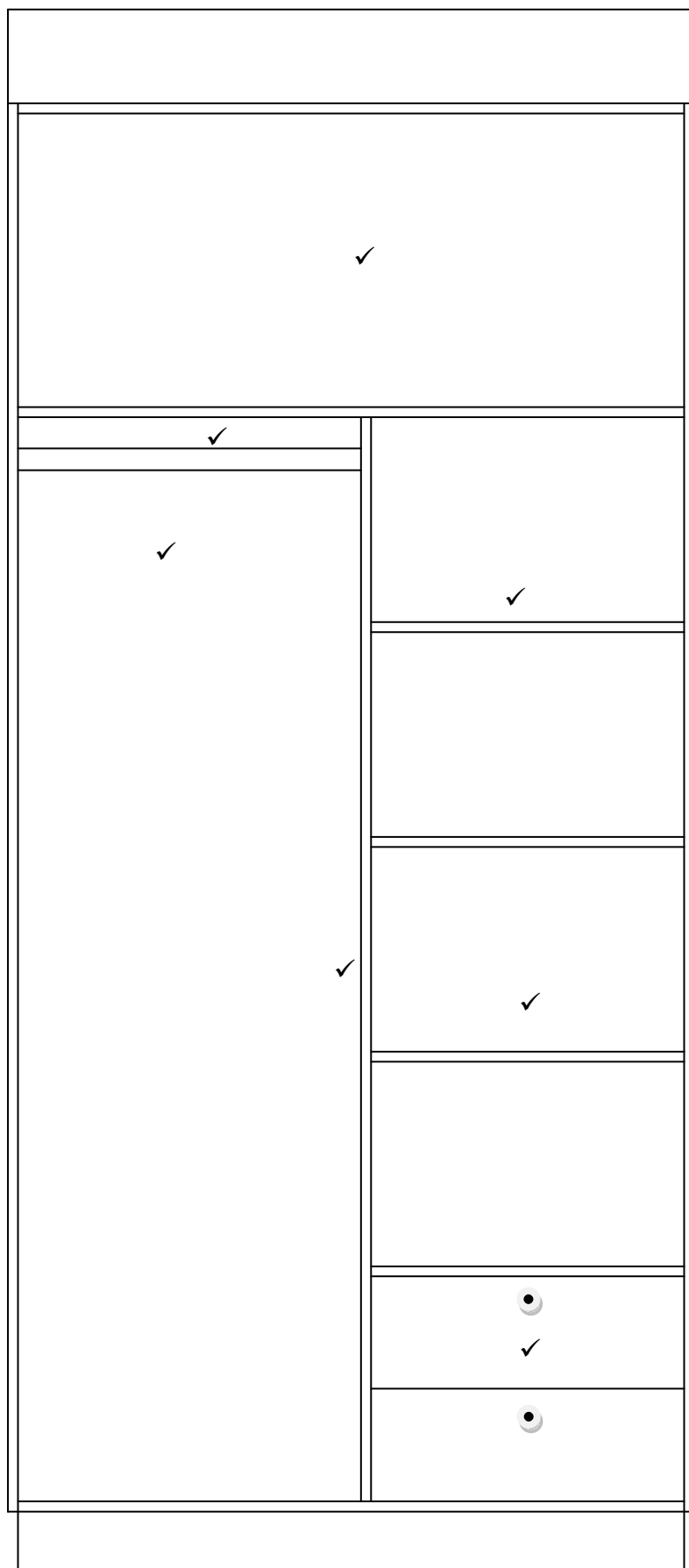
(6)

3.3.2

			Number of ridge plates needed:
			Length of one ridge plate = 1 800 mm
			Width of roof covering = 8 300 mm
			Number of ridge plates = $\frac{\text{Width of roof covering}}{\text{Length of one ridge plate}}$
			= $\frac{8,3}{1,8}$ ✓
			= 4,61
			= 5 ✓ ridge plates of 1,8 m long are needed

(3)

3.5



DRAWERS CAN BE THE FULL WIDTH OR PLACED ON THE LEFT SIDE.

TWO SHELVES CAN ALSO BE ON THE LEFT SIDE

ASSESSMENT CRITERIA	MARK
Top shelf (full width)	1
Intermediate side in middle	1
Hanging space on left side	1
Oval hanging rail	1
FOUR shelves	2
TWO drawer units below shelving	1
Correctness of drawing	1
TOTAL:	8

Correctness ✓

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

- 4.1 4.1.1 A Jigsaw ✓
 B Lathe ✓ (2)
- 4.1.2 • Clean the jigsaw blade after use. ✓
 • Store in such a way that the blade is protected. ✓
 • Use blade only for the intended purposes.
 • Do not force the jigsaw blade to cut through material.
 • Avoid the use of blunt saw blades.
 • Keep the power cord away from the blade.
 • Always plan your cuts carefully – make pre-cuts if necessary to prevent blade from breaking.
 • Use the correct blade for the specific work.
 • Check if the blade is tightly/correctly secured and is not bent.
 ANY TWO OF THE ABOVE (2)
- 4.1.3 • Always ensure that the work piece/stock is fastened tightly. ✓
 • Ensure that the work piece/stock moves freely. ✓
 • Ensure that the tool rest is locked as close as possible to the work piece/stock.
 ANY TWO OF THE ABOVE (2)
- 4.2 • Store the belt sander in a place where it cannot be damaged by dirt or dust. ✓
 • Store in a wooden box away from moisture.
 ANY ONE OF THE ABOVE (1)
- 4.3 • Strength ✓
 • Density ✓ (2)
- 4.4 • Sand the wood surface with different grades of sandpaper ✓
 • Sand until the surface is smooth and free from scratches. ✓
 • Remove all dust. ✓ (3)
- 4.5 • A conventional trapdoor can be removed/consists of a panel that can be pushed up ✓
 • Hinged trapdoor opens upwards/downwards by pivoting around the hinges. ✓ (2)
- 4.6 Timber framework ✓
 Panel ✓
 Cover strip
 ANY TWO OF THE ABOVE (2)
- 4.7 King post: 114 mm x 38 mm ✓
 Branderling: 38 mm x 38 mm/38 mm x 50 mm ✓ (2)

4.8 Hurricane clips:

- Securing purlins to rafters (roof truss) ✓
- Securing trusses to wall plates
- Ideally used at eaves overhangs
- Where truss cross each other or where truss members cross each other or meet at 90°
- To fix opposite faces of roof members.

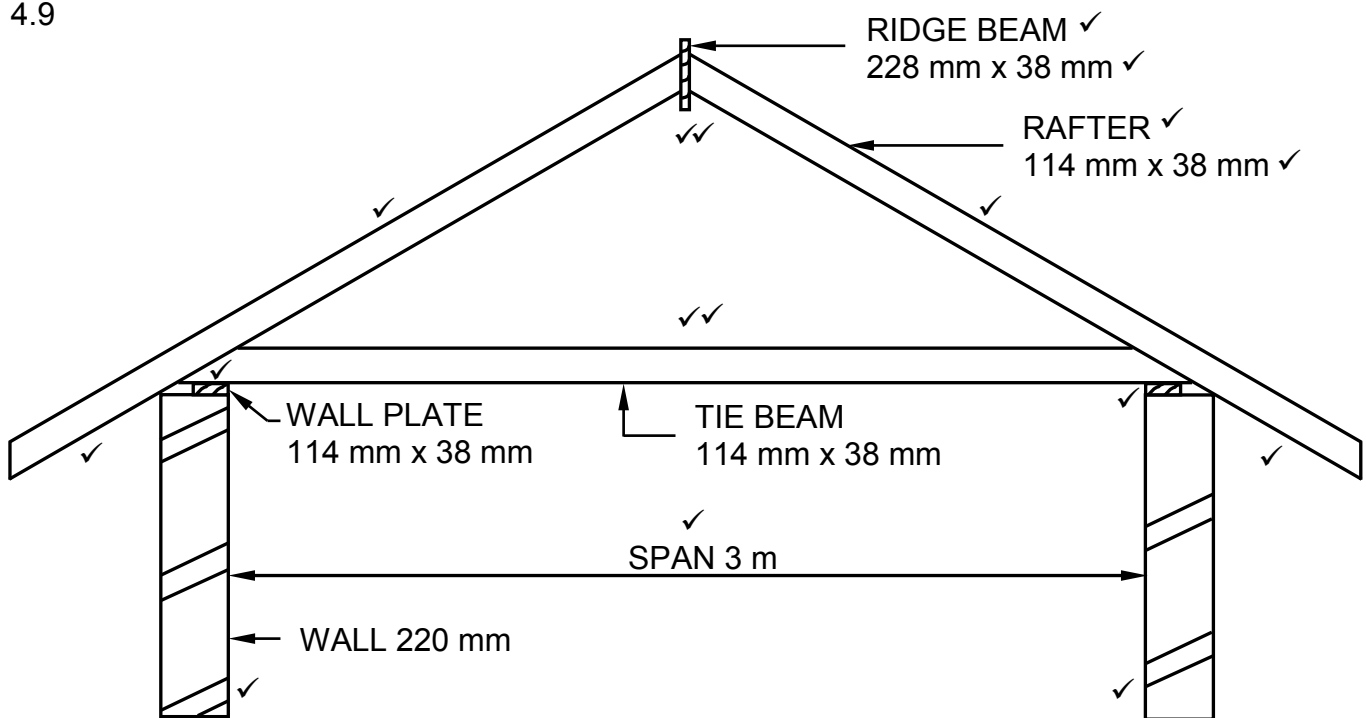
ANY ONE OF THE ABOVE

Storm clips:

- Securing roof tiles to the battens. ✓

(2)

4.9



ASSESSMENT CRITERIA	MARK
Walls drawn correctly	2
Wall plates drawn correctly	2
Tie beam drawn correctly	2
Rafters drawn correctly	2
Ridge beam drawn correctly	2
Overhang drawn correctly	2
Labels (any TWO)	2
Span	1
Dimensions of members (any TWO)	2
Application of scale: ONE or TWO incorrect = 3 THREE or FOUR incorrect = 2 More than FIVE incorrect = 1 NO measurement correct = 0	3
TOTAL:	20

Scale ✓✓✓

DRAWING NOT TO SCALE
A MASK MUST BE USED TO MARK THIS QUESTION

(20)

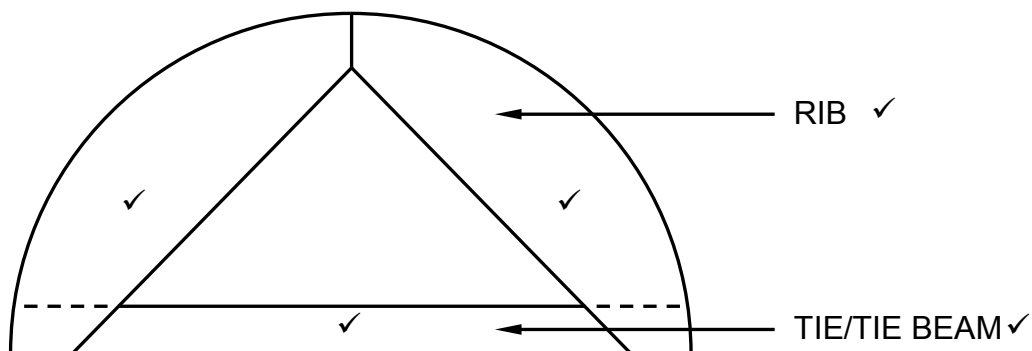
TOTAL [40]

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

5.1 5.1.1 Open laggings ✓ (1)

5.1.2 Closed laggings ✓ (1)

5.2



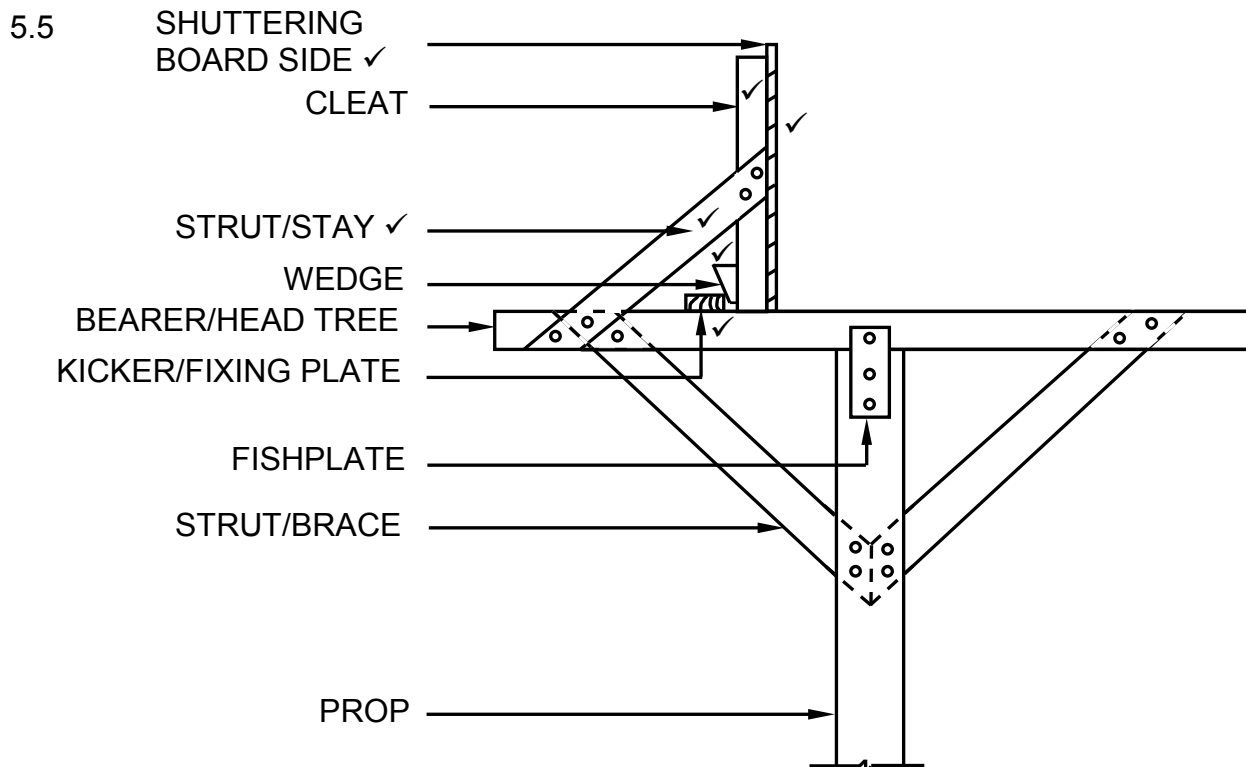
ASSESSMENT CRITERIA	MARK
Tie beam	1
Ribs	2
Two labels	2
Correctness of drawing	1
TOTAL:	6

Correctness ✓

(6)

5.3 Steel/Metal/Hard board/Plywood/Fibre glass/Plastic ✓ (1)

5.4 Releasing oil/Shuttering oil/Plastic ✓ (1)



ASSESSMENT CRITERIA	MARK
Shuttering board side	1
Cleat	1
Kicker/Fixing plate	1
Wedge	1
Stay/Strut	1
Any TWO labels	2
Correctness of drawing	1
TOTAL:	8

Correctness ✓

IF CANDIDATE DREW THE FULL DRAWING, MARK ONLY THE LEFT HAND SIDE.

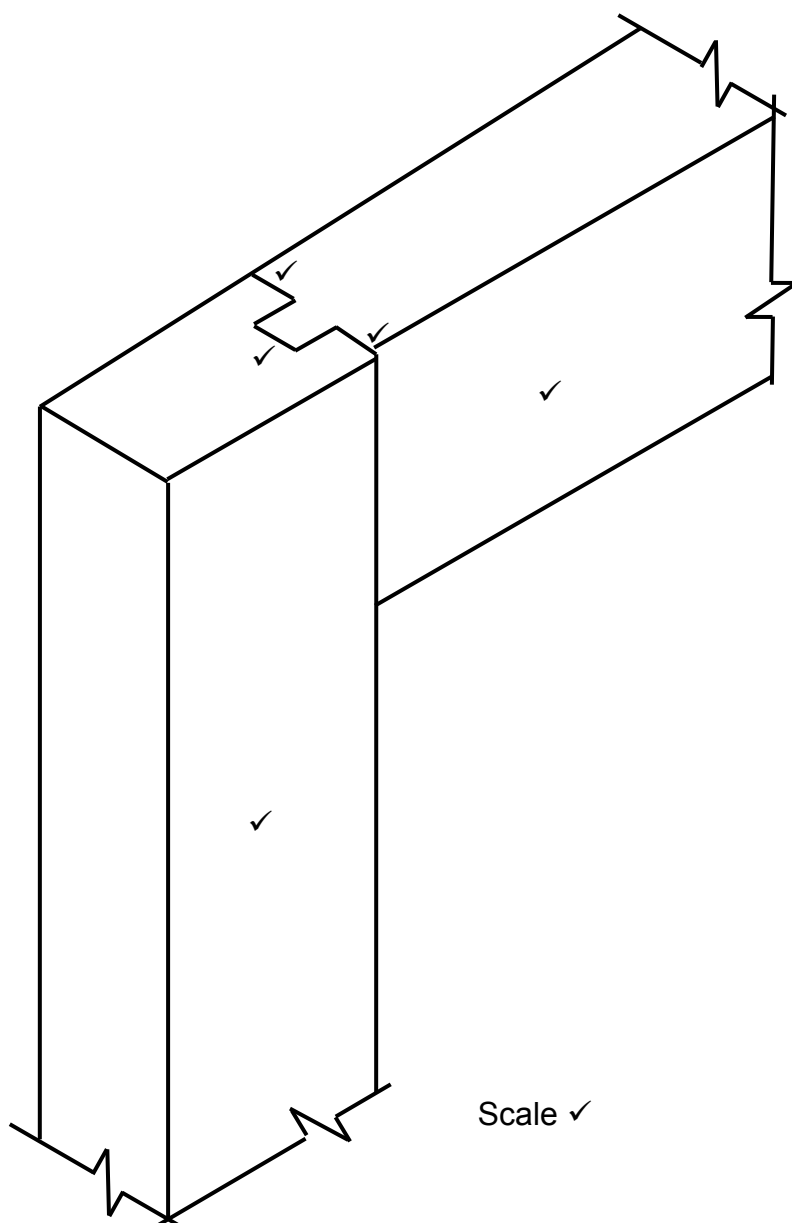
IF CANDIDATE DREW RIGHT SIDE ONLY, A MAXIMUM OF SEVEN MARKS WILL BE AWARDED.

(8)

- 5.6
- A - Needle/Cleat ✓
 - B - Straining sill ✓
 - C - Inclined strut/Raking strut/Strut ✓
 - D - Horizontal shore/Shore ✓
 - E - Folding wedge ✓
 - F - Wall ✓

(6)

5.7



ASSESSMENT CRITERIA	MARK
Stile	1
Top rail	1
Haunch	3
Application of scale	1
TOTAL:	6

IF THE EXPLODED VIEW IS DRAWN A MAXIMUM OF 5 MARKS WILL BE AWARDED.

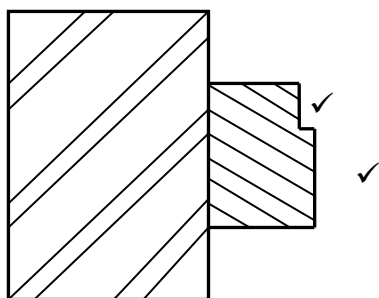
(6)

TOTAL 30

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

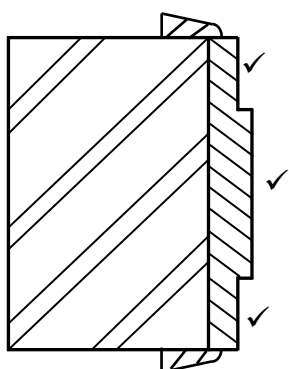
- 6.1 6.1.1 D ✓ (1)
- 6.1.2 D ✓ (1)
- 6.1.3 A ✓ (1)
- 6.1.4 A ✓ (1)
- 6.1.5 B ✓ (1)
- 6.2.1 Double bare face mortise and tenon joint ✓ (1)
- 6.2.2 Framed ledge braced batten door. ✓ (1)

6.3



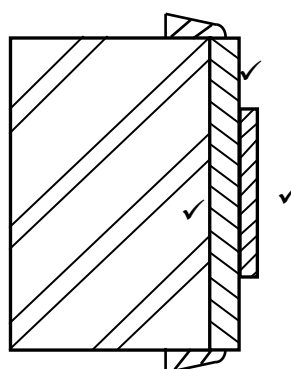
Doorframe ✓

(3)



Jamb lining

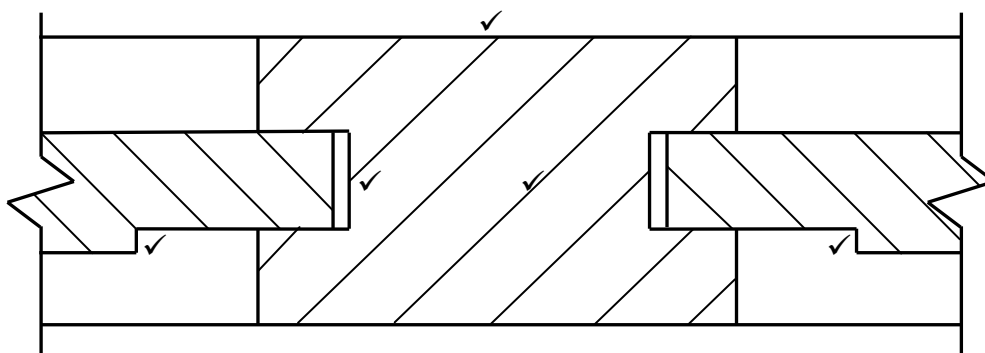
OR



ASSESSMENT CRITERIA	MARK
Frame profile of door	2
Jamb lining profile	3
Any title	1
TOTAL:	6

(3)

6.4



ASSESSMENT CRITERIA	MARK
Muntin	1
Raised panels	2
Space for expansion and shrinkage	1
Hatching	1
Correctness of drawing	1
TOTAL:	6

Correctness ✓

(6)

6.5

- On a cupboard door ✓
- On a drawer ✓

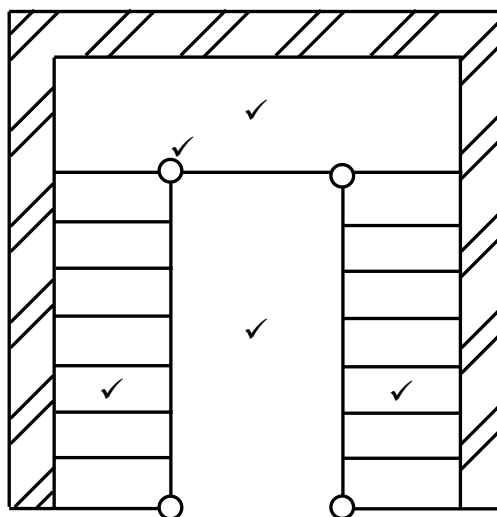
(2)

6.6

Night latch ✓ (**NO BRAND NAMES ACCEPTED**)

(1)

6.7

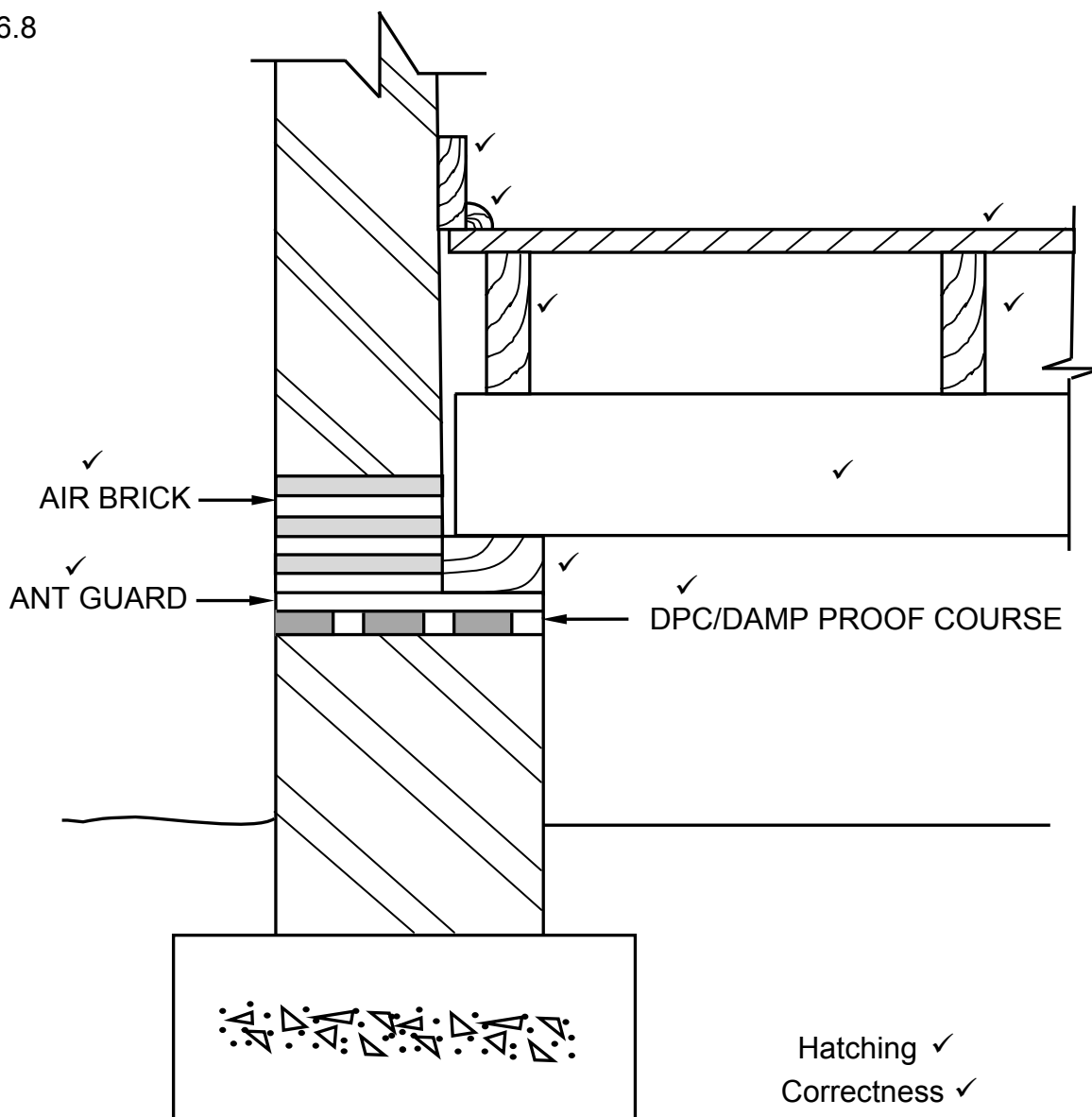


Correctness ✓

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

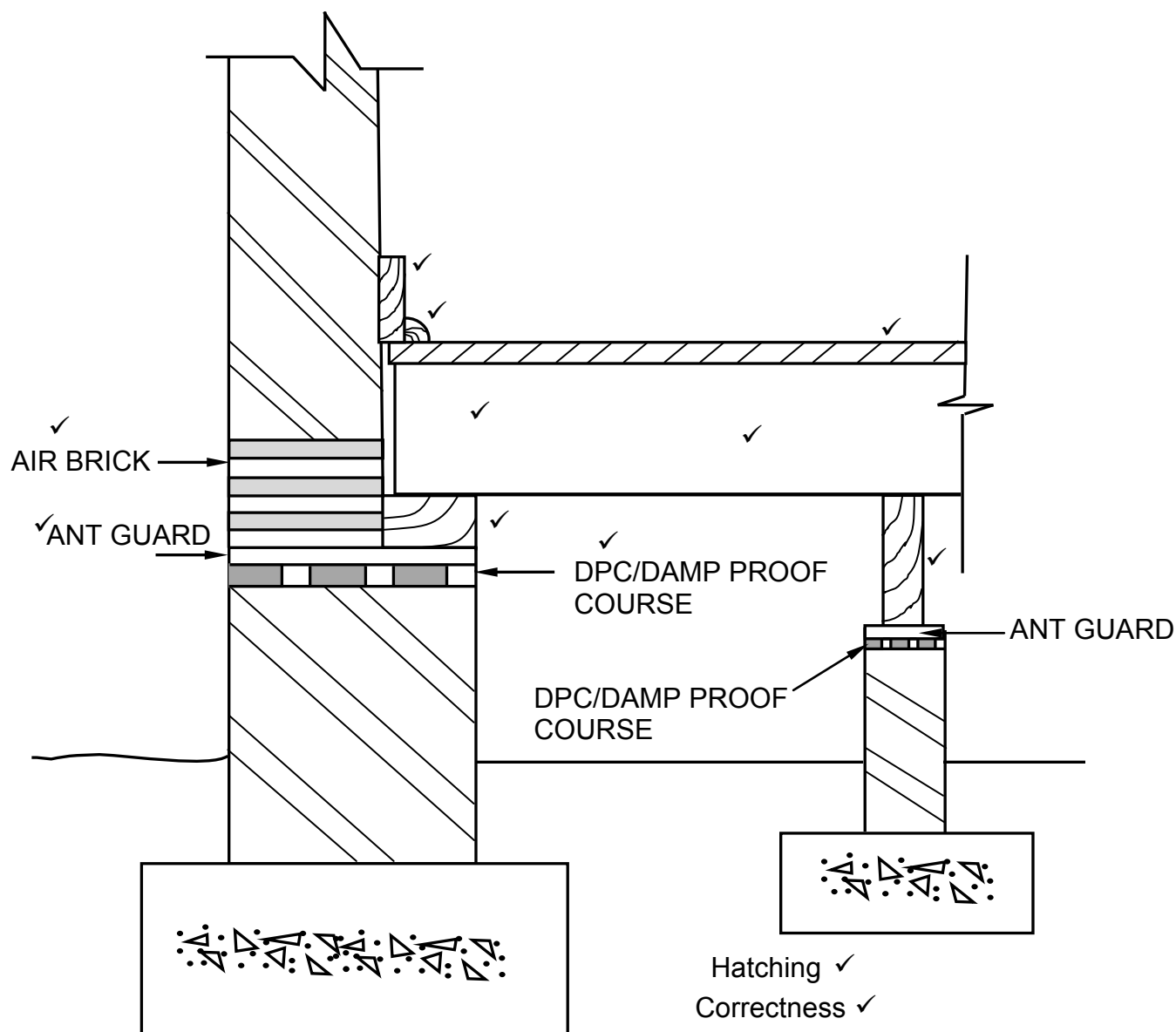
(6)

6.8



ASSESSMENT CRITERIA	MARK
Bearer	1
Joists	2
Wall plate	1
Tongue and groove floorboard	1
Skirting	1
Quadrant	1
Hatching	1
Labels for: Ant guard	1
Air brick	1
DPC	1
Correctness of drawing	1
TOTAL:	12

(12)



ASSESSMENT CRITERIA	MARK
Bearer	1
Joists	2
Wall plate	1
Tongue and groove floorboard	1
Skirting	1
Quadrant	1
Hatching	1
Labels for: Ant guard	1
Air brick	1
DPC	1
Correctness of drawing	1
TOTAL:	12

(12)
[40]**TOTAL: 200**