MARKS: 200

These marking guidelines consist of 19 pages.
QUESTION 1: OHSA, MATERIALS, TOOLS, EQUIPMENT AND JOINING (GENERIC)

1.1

1.1.1  F ✓ (1)
1.1.2  A ✓ (1)
1.1.3  G ✓ (1)
1.1.4  E ✓ (1)
1.1.5  B ✓ (1)

1.2
• Do not throw any tools or materials from a scaffold. ✓
• Never jump on to and off a scaffold. ✓
• Never overload a scaffold.
• Remove or cover sharp edges or corners.
• Always attach free-standing scaffoldings to a building.
• Use a ladder to get on and off a scaffold.
• Keep free of waste or any other obstruction.
• Never jump on a scaffold while working on it.
• Responsible/qualified person must ensure that scaffolding is safe, rigid, stable and firm or has no defects.
• Scaffold must be supplied with guard rails/toe boards.
• Scaffolds must be levelled on uneven ground.
• Do not work on a scaffold in bad weather.
• Wear a safety harness when working on scaffolding.
• Do not throw tools on/off a scaffold.

ANY TWO OF THE ABOVE (2)

1.3
• It prevents workers from falling off the scaffold. ✓
• It is used as a handrail. ✓
• It is used to strap on safety harnesses.
• To protect the worker working on the scaffold.

ANY TWO OF THE ABOVE (2)

1.4
• The primary purpose of painting is to protect metals, wood and other material against corrosion and decay. ✓
• Provides a decorative/aesthetic appearance/finishing. ✓
• Protects surfaces from moisture penetration.
• Protects surfaces from rust/uv rays.

ANY TWO OF THE ABOVE (2)
1.5 The curing of concrete:
- Increases the strength of concrete. 
- Decreases the permeability of hardened concrete.
- Improves durability of concrete by reducing cracks.
- Makes concrete more watertight.
- Minimises shrinkage cracks in concrete.
- Provides volume stability.
- Cured concrete can carry more weight without breaking/crumbling than uncured concrete.
- Prevents rapid drying of concrete.
- Curing ensures that the hydration process continues.

ANY ONE OF THE ABOVE (1)

1.6

1.6.1 Multi detector ✓ (1)

1.6.2 Tool A is used:
  - to detect materials found in/behind walls, ceilings and underneath floors, including ferrous and non-ferrous metals, electrical wiring, wood and metal studs. ✓
  - to locate steel bars and copper pipes. ✓
  - in carpentry, plumbing, and construction.
  - to measure the distance to/from covered objects.

ANY TWO OF THE ABOVE (2)

1.6.3 The batteries must be removed from the tool:
  - to prevent the battery from running flat/battery can die. ✓
  - to prevent acid leaks from batteries damaging the tool.

ANY ONE OF THE ABOVE (1)

1.7

1.7.1 A – Bolt and nut/Bolt ✓
   B – Rawl bolt ✓ (2)

1.7.2 Bolt and nut
  - Bolts and nuts are used to secure pipe supports to metal parts. ✓
  - To join components together.

Rawl bolt
  - A Rawl bolt is used to fix a truss hanger to a wall. ✓
  - To fix brackets/structures/panels to a wall/concrete.
  - For construction, renovation and industrial work

ANY TWO OF THE ABOVE (2)[20]
QUESTION 2: GRAPHICS AS METHOD OF COMMUNICATION (GENERIC)

ANSWER SHEET 2

<table>
<thead>
<tr>
<th>NO.</th>
<th>QUESTIONS</th>
<th>ANSWERS</th>
<th>MARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Identify FIGURE A.</td>
<td>South Elevation/Elevation ✓</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Identify FIGURE B.</td>
<td>Ground floor plan/Floorplan ✓</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Identify number 4.</td>
<td>First floor level/Second floor level/Suspended floor/Floor level/Dash line/ FFL/Expansion joint ✓</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Identify number 5.</td>
<td>Window Sill ✓</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>Identify number 9.</td>
<td>Hand wash basin/Wash basin/Washing basin/HWB/Basin ✓</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>Identify number 10.</td>
<td>Water closet/WC/Toilet pan ✓</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>Identify number 11.</td>
<td>Bath/B ✓</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>On what date was the plan printed?</td>
<td>2018/10/02 ✓</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>Who drew the building plan?</td>
<td>JP Maloi ✓</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>Name the feature in the column for the notes in FIGURE 2 that must be</td>
<td>Ramp ✓</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>installed in front of the sliding door.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Name the feature in the column for the notes in FIGURE 2 that must give</td>
<td>Staircase/Stairs/Stairway ✓</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>access to the first floor.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Identify the type of roof that is used for the building in FIGURE A.</td>
<td>Gable roof ✓</td>
<td>1</td>
</tr>
<tr>
<td>13</td>
<td>Explain the purpose of number 1.</td>
<td>To cover the opening/close the gap between the two slopes of the roof. ✓</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Prevent water and other elements from entering the roof.</td>
<td></td>
</tr>
</tbody>
</table>

ANY ONE OF THE ABOVE
<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
</table>
| 14 | Explain the purpose of number 2. | • To prevent water from falling onto the ground ✓  
• To collect rainwater  
• To channel the rainwater into the downpipe  
• To protect the wall from water  
• To hide the rafters/finish off the roof  | ANY ONE OF THE ABOVE |
| 15 | Explain the abbreviation FFL at number 6. | Finished floor level ✓ | 1 |
| 16 | Explain the purpose of number 7. | To channel the water from the gutter to the ground. ✓ | 1 |
| 17 | Explain the meaning of the arrow on the feature that must be installed in front of the sliding door. | It indicates the direction of the slope of the ramp/it indicates the slope. ✓ | 1 |
| 18 | Explain what is meant by 1:10 indicated on the symbol in the notes. | It indicates the slope or the gradient of the ramp/for every 10 metres horizontally rises 1 metre vertically. ✓ | 1 |
| 19 | Which room will feature 15 serve? | The bathroom. ✓ | 1 |
| 20 | Explain the short dash lines on the windows. | • Indicates what direction the window is opening/window opening. ✓  
• Indicates the location of the hinges.  
• Indicates the location of the casement stay.  | ANY ONE OF THE ABOVE |
<p>| 21 | Deduce the height of window 2 from the window schedule. | 1,2 m or 1 200 mm ✓(Ignore units) | 1 |
| 22 | Deduce the width of window 3 from the window schedule. | 2 m or 2 000 mm ✓(Ignore units) | 1 |
| 23 | On what elevation of the building is the bathroom window situated? | Western elevation/Western side ✓ | 1 |</p>
<table>
<thead>
<tr>
<th></th>
<th>Question</th>
<th>Answer</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>Differentiate between component number 3 and component number 8.</td>
<td>3 – window/window frame/reveal frame stile/casement stile ✔</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8 – sliding door /door frame/ door/reveal /sliding door stile ✔</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Differentiate between the light in the lounge and the light in the bathroom.</td>
<td>The light in the lounge is a fluorescent light/1 x 40W-/2x40- /3x40 fluorescent light ✔ and the light in the bathroom is a normal ceiling light ✔</td>
<td>2</td>
</tr>
<tr>
<td>26</td>
<td>Recommend a suitable floor covering for the bathroom.</td>
<td>Tile/ Vinyl flooring(Novilon)/ Coloured screed/Polished or stained concrete flooring/Water proof laminated floor/carpet. ✔</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ANY ACCEPTABLE ANSWER</td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Recommend an appropriate scale to which FIGURE A should be drawn, according to SANS.</td>
<td>1:50/100/200 ✔</td>
<td>1</td>
</tr>
<tr>
<td>28</td>
<td>Recommend an alternative sanitary fitment to replace number 11 that will serve a similar purpose.</td>
<td>Shower ✔</td>
<td>1</td>
</tr>
<tr>
<td>29</td>
<td>Calculate the internal area of the office in m² Show ALL calculations.</td>
<td>4 m ✔ x 3 m ✔ = 12 m² ✔ OR 12 4 000✔ X 3 000✔ = 12 000 000mm²</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Positive marking</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(220 + 3 000 + 110 + 2 800 + 220) ✔ x 2 ✔</td>
<td></td>
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<td></td>
<td></td>
<td>= 6 350 x 2</td>
<td></td>
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<td></td>
<td></td>
<td>=12 700 mm ✔</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>(220 + 4 000 + 110 + 2 000 + 220) ✔ x 2 ✔</td>
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<tr>
<td></td>
<td></td>
<td>= 6 550 x 2</td>
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<tr>
<td></td>
<td></td>
<td>= 13 100 mm ✔</td>
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<tr>
<td></td>
<td></td>
<td>12 700 + 13 100 mm</td>
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<tr>
<td></td>
<td></td>
<td>= 25 800 mm ✔</td>
<td></td>
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<td></td>
<td></td>
<td>OR</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>= 25,8 m</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>Calculate the perimeter of the building. Show ALL calculations.</td>
<td>Positive marking</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(220 + 3 000 + 110 + 2 800 + 220) ✔ x 2 ✔</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>= 6 350 x 2</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>=12 700 mm ✔</td>
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<td>= 6 550 x 2</td>
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<td>= 13 100 mm ✔</td>
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<td>12 700 + 13 100 mm</td>
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<td></td>
<td></td>
<td>= 25 800 mm ✔</td>
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<td>OR</td>
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<tr>
<td></td>
<td></td>
<td>= 25,8 m</td>
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</tr>
</tbody>
</table>

TOTAL 40
QUESTION 3: CASEMENTS, CUPBOARDS, WALL-PANELLING AND QUANTITIES (SPECIFIC)

3.1

3.1.1 Tongue and groove boards ✓ (1)
3.1.2 520 mm - 570 mm ✓ (1)
3.1.3 Cornice ✓ (1)
3.1.4 Drip groove ✓ (1)
3.1.5 Fanlight ✓ (1)

3.2

3.2.1 • A – Wood/Timber ✓ (1)
• B – Glass/Perspex ✓ (1)

3.2.2 This part is holding the glass/pane in its place. ✓ (1)

3.3

3.3.1 • A Storage space/top unit ✓
• B Hanging space ✓
• C Shelves/storage space/shelf ✓
• D Drawers ✓ (4)

3.3.2 Melamine:
• is waterproof. ✓
• is easier to clean.
• is more durable.
• enhance inside appearance.
• has a smooth finish.

OR
Chipboard:
• Is not water proof
• Is not easy to clean
• Is less durable
• Does not enhance the inner appearance
• Is not as smooth (1)

ANY ONE OF THE ABOVE

3.3.3 • E – Front rail/Top rail ✓
• F – Oval hanging rail/Hanging rail/Pipe rail ✓
• G – Side ✓
• H – Kick plate/base/Bottom rail/Plinth ✓ (4)
3.4

3.4.1
- A – Cornice ✓
- B – Horizontal rough grounds ✓
- C – Quarter round/Quadrant ✓

3.4.2
- To enhance appearance. ✓
- To give an aesthetic appearance. ✓
- There is no need to plaster the wall where panelling is to be done.
- It serves as insulation against sound and heat.
- For durability

ANY TWO OF THE ABOVE

(2)
### 3.5

#### 3.5.1 Internal measurements of long walls:

<p>| | | | |</p>
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<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Internal measurements of long walls:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>= 9 000 – 2/220 = 8 560 mm ✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>OR</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>= 9 000 - 440 = 8 560 mm</td>
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#### 3.5.2 Length of wall plates needed:

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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Length of wall plates needed:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2✓ 8,56 ✓ 17,12 ✓ 17,12 m wall plate needed</td>
</tr>
</tbody>
</table>

#### Number of purlins needed

Number of purlins = Length of rafter / Distance between centres + 1

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<tbody>
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<td></td>
<td></td>
<td></td>
<td>= 3,6 ✓ + 1 OR 3 600 + 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>= (4 + 1) ✓ 2 ✓ OR (5x2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>= 10 purlins ✓</td>
</tr>
</tbody>
</table>

(4) [30]
QUESTION 4: ROOFS, CEILINGS, TOOLS AND EQUIPMENT, AND MATERIALS (SPECIFIC)

4.1

4.1.1 C ✓ (1)
4.1.2 A ✓ (1)
4.1.3 D ✓ (1)
4.1.4 E ✓ (1)
4.1.5 F ✓ (1)

4.2

4.2.1 • A Hipped end ✓
• B Purlin ✓
• C Ridge/Ridge plate ✓
• D Valley rafter/Valley ✓
• E Overhang/Eaves overhang ✓
• F Gable end/Gable wall/Wall/Side of building ✓ (6)

4.2.2 76 mm x 50 mm ✓
6 mm x 76 mm

ANY ONE OF THE ABOVE (1)

4.3

• It allows rain water to be directed into the gutter. ✓
• So that water does not damage the end of the rafters.

ANY TWO OF THE ABOVE (1)

4.4

• A good roof covering must be able to resist weather conditions such as rain and wind/resistance against corrosion. ✓
• Should look durable and enhances the appearance of the building. ✓
• Should be fire resistant.
• Should provide insulation against heat and cold.

ANY TWO OF THE ABOVE (2)
4.5

- IBR sheeting
- Corrugated iron sheeting

4.6
- The installation of steel roofing is faster.
- The installation of steel roofing is more economical.
- The installation of steel roofing is simpler.
- Steel roof covering is cheaper than tiles.
- Steel roof covering is environment friendly.

ANY TWO OF THE ABOVE

4.7
- If roof underlay is not installed there will be more dust inside the roof space.
- If roof underlay is not installed, the roof may not be fully waterproof.
- The risk of wind lifting tiles becomes greater.
- Insulating would not be good.

ANY TWO OF THE ABOVE

4.8
- A - Tie beam
- B - Brandering
- C - Trapdoor
- D - Cover strip

4.9.1
- A – Router
- B – Combination belt and disc sander

4.9.2
Store in a safe, dry place.
Store it in a wooden or plastic box away from moisture.

4.9.3
- Maintain like all machinery – lubricate and adjust according to the manufacturer’s instructions.
- Clean the belt/disc sander after use.
- Repair or replace damaged electrical cords.
- Handle the sander so as not to damage or impair its accuracy.
- Use machinery only for the intended purpose.
- Do not force material onto the belt/disc of the sander.
- Avoid the use of worn out (clogged) belts and discs.
- Service the machine regularly.

ANY TWO OF THE ABOVE
4.9.4 • Table saw/Circular saw/Mitre saw ✓
• Band saw ✓
• Radial arm saw ✓
• Jigsaw
• Scroll saw

ANY THREE OF THE ABOVE (3)

4.10.1 M – Mechanical grading ✓
V – Visual grading ✓ (2)

4.10.2 6 - The number indicates the strength. ✓ (1)

4.10.3 The SABS symbol. ✓ (1)

[40]
QUESTION 5: CENTERING, FORMWORK, SHORING AND GRAPHICS AS MEANS OF COMMUNICATION (SPECIFIC)

5.1 A - Concrete beam/Concrete ✓
    B - Brace/Strut ✓
    C - Prop/Adjustable prop ✓
    D - Sole plate ✓

5.2
   - Block board ✓
   - Laminated board ✓
   - Shutter board ✓
   - Plywood ✓
   - Timber
   - Hard board/Masonite

ANY FOUR OF THE ABOVE

5.3
   - Wedges are inserted under the bearers and props to support the formwork. ✓
   - Wedges keep the different formwork components sturdy and fixed. ✓
   - Wedges help with the lowering and raising of the formwork. ✓
   - Wedges are used for the levelling of the formwork.
   - Wedges ease the striking of formwork.

ANY THREE OF THE ABOVE

5.4
   - It supports more weight. ✓
   - Support the weight of the fresh concrete.

ANY ONE OF THE ABOVE

5.5 5.5.1
   - A – Laggings ✓
   - B – Ribs ✓
   - C – Bearer ✓

5.5.2 Brick arches because they have a solid surface. ✓

5.5.3 Openly spaced laggings/Open laggings/Open ✓
   Laggings are not close to each other.
   There are spacing’s between the openings of the lagging.

ANY ONE OF THE ABOVE

5.6 5.6.1
   - Dead shores are used to support structures. ✓
   - Dead shores carry dead weight above the dead shores, e.g. walls, floors.
   - Support existent walls if openings are made.
   - Transfer the weight of the structure to firm ground during structural renovations.
   - Support a wall if alterations are made.

ANY ONE OF THE ABOVE
5.6.2 Double flying shores provide temporary support to TWO parallel walls where one or two walls show signs of failure. ✓
Double flying shores give temporary support to TWO parallel defective walls.
Double flying shores can only be used with TWO parallel defective walls between 9 and 15 meters.

ANY ONE OF THE ABOVE

5.7
5.7.1 The steel dog is used to secure the joint between prop and needle. ✓
5.7.2 Props are used to strengthen or brace the floors and ceiling. ✓
5.7.3 Sole plates spread the weight transferred by the props over a wider area. ✓
Prevent vertical props/pipes from sinking into the ground.
The soleplate create a level area where the props rest on.

5.8 45° ✓

5.9

ASSESSMENT CRITERIA | MARK | CANDIDATE'S MARK
--- | --- | ---
Span | 1 | 1
Wall plates | 2 | 2
Rafters | 2 | 2
Ridge beam | 1 | 1
Slope of the roof 45° | 1 | 1

TOTAL: 7
6.1
6.1.1 D ✓ (1)
6.1.2 C ✓ (1)
6.1.3 B ✓ (1)
6.1.4 A ✓ (1)
6.1.5 A ✓ (1)

6.2

Joist built into wall

<table>
<thead>
<tr>
<th>ASSESSMENT CRITERIA</th>
<th>MARK</th>
<th>CANDIDATE’S MARK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joist</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Built into wall</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>2</td>
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</table>

Joist secured to wall with truss/joist hanger

<table>
<thead>
<tr>
<th>ASSESSMENT CRITERIA</th>
<th>MARK</th>
<th>CANDIDATE’S MARK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joist</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Truss/Joist hanger</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>TOTAL:</td>
<td>2</td>
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</table>
6.3 Alternative drawing will also be acceptable

<table>
<thead>
<tr>
<th>ASSESSMENT CRITERIA</th>
<th>MARK</th>
<th>CANDIDATE'S MARK</th>
</tr>
</thead>
<tbody>
<tr>
<td>ONE one-brick pier</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>DPC/Proportion</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Ant guard</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Bearer</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Joist</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Floor boards</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>6</strong></td>
<td></td>
</tr>
</tbody>
</table>
6.4

2 OR 3 DIMENSIONAL DRAWINGS WILL BE ACCEPTED

6.5

- Serves as a place of rest.
- For safety in case of a falling accident.
- Facilitates a change in direction when moving up or down stairs.

ANY ONE OF THE ABOVE

6.6

6.6.1 Door stile/Lock rail

6.6.2 Frame stile/Door frame/Stile

6.6.3 Frame stile/Door frame/Stile

6.6.4 Door stile
6.7

The opening allows shrinkage and expansion of the panel/wood.

6.8

A – Brace/Strut
B – Tongue and groove battens/V- Tongue and groove battens
C – Stile

6.9

ASSESSMENT CRITERIA | MARK | CANDIDATE'S MARK
---|---|---
Raised panel top view | 2 | 
Raised and fielded panel top view | 2 | 
TOTAL | 4 | 

(1)

(3)
6.10

6.10.1 Hinge (Any hinge accepted) ✓ (1)
6.10.2 Clout nail/Chipboard screws/Drywall screw ✓ (1)
6.10.3 Nail/Skew nail/Perm fix nail ✓ (1)
6.10.4 Gang nail/Bolt and nut/Nails ✓ (1)

6.11

- Hinges ✓
- Casement fasteners ✓
- Casement stays

ANY TWO OF THE ABOVE (2)

[40]

TOTAL: 200