

# 2023 HSC Construction Marking Guidelines

## Section I

### Multiple-choice Answer Key

Question	Answer
1	C
2	A
3	C
4	B
5	A
6	D
7	A
8	D
9	A
10	C
11	D
12	A
13	C
14	B
15	D

## Section II

### Question 16 (a) (i)

Criteria	Marks
<ul style="list-style-type: none"> <li>• Correctly names the saw pictured</li> </ul>	1

**Sample answer:**

Drop saw

**Answers could include:**

- Sliding saw
- Compound saw
- Mitre saw
- Cut off saw.

### Question 16 (a) (ii)

Criteria	Marks
<ul style="list-style-type: none"> <li>• Lists TWO correct items of PPE</li> </ul>	2
<ul style="list-style-type: none"> <li>• Lists ONE correct item of PPE</li> </ul>	1

**Sample answer:**

Safety glasses/goggles, hearing protection

**Answers could include:**

- Face shield
- Dust mask
- Protective footwear
- Hair tied back/restrained.

### Question 16 (b)

Criteria	Marks
• Outlines advantages of using battery powered tools and equipment	3
• Lists advantages of using battery powered tools	2
• Provides some relevant information	1

**Sample answer:**

They are portable, so not restricted to the length of extension leads, and they can quickly and easily be set up in a variety of locations. They are safer to use as there are no cords, which can be a trip hazard, and no frayed leads to check.

**Answers could include:**

- No generators needed
- Easier to work outdoors
- Quicker and easier to set and begin work
- Can work on remote sites that don't have power
- Easy to work on new dwellings where power hasn't been connected
- No machine leads that require testing and tagging.

### Question 17 (a)

Criteria	Marks
• Outlines a method of resolving the situation	2
• Provides some relevant information	1

**Sample answer:**

The worker or employer could contact government regulators to obtain clarification about award pay rates.

**Answers could include:**

- Professional associations
- Trade unions
- Industry groups such as HIA and MBA.

### Question 17 (b)

Criteria	Marks
• Describes the personal attributes valued in the construction industry	3
• Outlines personal attributes valued in the construction industry	2
• Provides some relevant information	1

**Sample answer:**

The construction industry values workers who display a variety of personal attributes. The industry values workers who attend work regularly and are always punctual. They also value workers who complete tasks within a scheduled time frame and take pride in their work.

**Answers could include:**

- Attitude – positive demeanour
- Confidentiality
- Ethical behaviour
- Honesty
- Personal presentation and grooming
- Work performance
  - taking directions
  - attention to detail
  - consistency of service
  - safe work practices.

**Question 17 (c)**

Criteria	Marks
• Accurately describes clean-up processes to dispose of a variety of substances and materials	5
• Describes some clean-up processes to dispose of substances and materials	4
• Outlines some clean-up processes to dispose of substances or materials	3
• Lists ways to remove materials or substances	2
• Provides some relevant information	1

**Sample answer:**

Workers would need to arrange all materials and substances into categories and place into the correct bins. This is done firstly to collect all like material ready for disposal. For example, all treated pine off cuts should be placed in a loose stacking bin which would then be taken to an approved disposal site. Also remaining liquids would need to be stored in approved sealed containers then taken to a chemical waste disposal plant. Left over bricks can be taken to a recycling centre that accepts construction and demolition debris. Metal waste should be collected and then taken to the metal recycle centre. Any useable materials should be stored correctly for future use.

**Answers could include:**

- Liquids stored in suitable containers
- Use approved disposal collection sites
- Use of different bins/collection areas methods
- Correct handling process followed
- Using alternative resources that are biodegradable, non-toxic, recoverable or reusable.

### Question 18 (a)

Criteria	Marks
• Describes methods used to limit noise of a generator on a construction site	3
• Identifies methods used to limit noise of a generator on a construction site	2
• Provides some relevant information	1

**Sample answer:**

To limit the noise of the generator it should be positioned outside away from workers. Also keep the generator clear from materials that will cause potential echoing when being used. Only use the generator when needed and during allowable construction time frames.

**Answers could include:**

- Ensure machine is operating correctly
- Machine is serviced regularly
- Correct operating procedures are followed
- Use of all PPE.

### Question 18 (b)

Criteria	Marks
• Correctly labels ALL symbols on the plan	3
• Correctly labels some symbols on the plan	2
• Provides some relevant information	1

**Sample answer:**

Number	Name
1	Window
2	Sink
3	Stove top
4	Toilet
5	Sliding door

**Answers could include:**

- Double sink
- WC/Water closet
- Sliding window
- Casement window
- Sash window
- Oven.

## Question 18 (c)

Criteria	Marks
• Explains why symbols are used on construction plans	4
• Describes why symbols are used on construction plans	3
• Identifies why symbols are used on construction plans	2
• Provides some relevant information	1

### **Sample answer:**

These symbols are used so that a standard set of conventions are able to be understood by all users within the construction industry. They are a fast and easy way to recognise layout and provide clarity on plans. These symbols reduce issues associated with language barriers. They provide options when finalising interior fitouts. For example, not all fixtures are the same size and shape. So, adjustments can be made simply to suit the needs of the client and the space.

### **Answers could include:**

- They are an Australian standard
- Comply with AS1100
- Reduce literacy barriers
- They provide clarity and limit confusion
- Indicate where things need to be built and installed
- To represent every element in the plan
- They provide a reference to specifications.

### Question 19 (a)

Criteria	Marks
• Correctly calculates the number of pallets required	2
• Shows some correct calculations	1

**Sample answer:**

Pallets of bricks needed:

$$10\% \times 15\,000 = 1500$$

$$15\,000 + 1500 = 16\,500$$

$$16\,500 \div 500 = 33$$

Need to order 33 pallets

### Question 19 (b) (i)

Criteria	Marks
• Calculates the cubic metres of concrete required correctly	5
• Calculates the cubic metres of concrete required with minor errors	4
• Provides some correct calculations to determine the cubic metres of concrete required	3
• Provides some relevant calculation	2
• Provides some relevant information	1

**Sample answer:**

$6.0 - (2 \times 0.3) = 5.4$	length of side beams
$5.4 \times 3 = 16.2$	total length of side beams
$16.2 \times 0.3 \times 0.3 = 1.46$	volume of side beams
$2 \times 8.5 = 17$	length of top and bottom beams
$17 \times 0.3 \times 0.3 = 1.53$	volume of top and bottom beams
$1.53 + 1.46 = 2.99$	total volume

**Answers could include:**

$8.5 - 0.6 = 7.9$	length of top and bottom beams minus side beams
$7.9 \times 2 = 15.8$	total length of top and bottom beams
$15.8 \times 0.3 \times 0.3 = 1.42$	volume of top and bottom beams
$6.0 \times 2 = 12$	length of end beams
$6.0 - 0.6 = 5.4$	length of centre beam
$12 + 5.4 = 17.4$	total length of beams
$17.4 \times 0.3 \times 0.3 = 1.57$	volume of all beams
$1.42 + 1.57 = 2.99$	total volume

### Question 19 (b) (ii)

Criteria	Marks
• Correctly calculates the amount of concrete required in cubic metres	2
• Shows some relevant calculations	1

**Sample answer:**

Length × Width × Thickness

Convert dimensions from plan to metres

$$8.5 \times 6 \times 0.1 = 5.1 \text{ m}^3$$

## Section III

### Question 20 (a)

Criteria	Marks
<ul style="list-style-type: none"> <li>Provides a detailed description of appropriate ways of communicating on a building site</li> </ul>	5
<ul style="list-style-type: none"> <li>Provides a description of appropriate ways of communicating on a building site</li> </ul>	4
<ul style="list-style-type: none"> <li>Provides an outline of ways of communicating on a building site</li> </ul>	3
<ul style="list-style-type: none"> <li>Provides some basic information about ways of communicating on a building site</li> </ul>	2
<ul style="list-style-type: none"> <li>Provides some relevant information</li> </ul>	1

**Sample answer:**

As construction begins, most trades in the build would need to be involved to establish a current sequence. The site supervisor could arrange both informal and formal meetings through face-to-face discussions, while on-site there are many methods of communication such as non-verbal which includes signage and drawings. Notice boards can be used to inform trades of toolbox talks and WHS meetings.

**Answers could include:**

- Verbal communication
- Non-verbal communication
- Signage
- Written communication
- Formal meetings
- Informal meetings
- Notice boards
- Using plans to discuss the build
- Toolbox talks
- WHS meetings
- Hard signals
- Equipment that could be used:
  - two-way radios
  - speakers
  - phones, SMS.

**Question 20 (b)**

Criteria	Marks
<ul style="list-style-type: none"> <li>Provides a comprehensive explanation of work sequencing and planning on a building site</li> <li>Provides relevant industry examples to support response</li> </ul>	9–10
<ul style="list-style-type: none"> <li>Provides an explanation of work sequencing and planning on a building site</li> <li>Provides relevant industry examples to support response</li> </ul>	7–8
<ul style="list-style-type: none"> <li>Provides a description of work sequencing and planning on a building site</li> <li>Provides some relevant industry examples to support response</li> </ul>	5–6
<ul style="list-style-type: none"> <li>Provides an outline of work sequencing and/or planning on a building site</li> <li>Provides example(s)</li> </ul>	3–4
<ul style="list-style-type: none"> <li>Shows some relevant information</li> </ul>	1–2

**Answers could include:**

- Gantt Chart is regularly referred to and adjusted as needed
- Work sequencing when trades are required
- Task management
- Logical order of tasks
- Working within completion timeframes
- Working according to quality measures
- Determine logistics and task dependencies
- Planning and monitoring progress, setting goals
- Overall goals, objectives, priorities and outcomes
- Plan and sequence tasks within a construct schedule and coordinate with other work processes
- Assess what needs to be done for each component and how it is to be done
- Prepare written work plan and resource list
- Estimate time and number of personnel required
- Ordering supplies
- Planning delivery.

## Section IV

### Question 21

Criteria	Marks
<ul style="list-style-type: none"> <li>Provides a comprehensive explanation of how the risk control hierarchy can be used to manage hazards on a construction site</li> <li>Communicates ideas and information using workplace examples and industry terminology</li> <li>Presents a logical and cohesive response</li> </ul>	13–15
<ul style="list-style-type: none"> <li>Provides a thorough explanation of how the risk control hierarchy can be used to manage hazards on a construction site</li> <li>Communicates information using workplace examples and industry terminology</li> <li>Presents a logical and cohesive response</li> </ul>	10–12
<ul style="list-style-type: none"> <li>Provides an explanation of how the risk control hierarchy can be used to managed hazards on a construction site</li> <li>Provides workplace examples</li> <li>Uses industry terminology</li> </ul>	7–9
<ul style="list-style-type: none"> <li>Provides a description of how hazards are managed using risk control/s</li> <li>Provides workplace example(s)</li> <li>Uses some industry terminology</li> </ul>	4–6
<ul style="list-style-type: none"> <li>Shows an awareness of a risk control</li> <li>Provides some relevant information</li> </ul>	1–3

**Answers could include:**

Control Measures Include:

- Eliminate
- Substitute
- Engineering (Isolate, Modify)
- Administration
- PPE

Other control methods could include:

- Safe work practices
- Monitor and review

There are many potential hazards in the construction industry. They include:

- Hazards to self, colleagues and the general public
- Hazardous materials
- Human factors
- Manual handling
- Tools, equipment, machinery and plant
- Work environment
- Weather
- Work processes and practices
- Working alone

- Working at heights
- Working in and around excavations
- Working near traffic and water
- Working with compressed air, electricity and liquids
- Noise
- Chemicals
- Substances.

# 2023 HSC Construction Mapping Grid

## Section I

Question	Marks	HSC content – focus area
1	1	Skills in construction – measurement and calculation terminology and equipment – page 32
2	1	Skills in construction – plans, drawings and specifications – page 30
3	1	Safety – safe work procedures and practices – page 26
4	1	Skills in construction – measurement and calculation terminology and equipment – page 32
5	1	Working in the industry – working sustainably – page 47
6	1	Safety – WHS compliance – page 24
7	1	Tools of the trade – power and pneumatic tools and equipment – page 37
8	1	Safety – safe work procedures and practices – page 26
9	1	Safety – safe work procedures and practices – page 26
10	1	Skills in construction – plans, drawings and specifications – page 31
11	1	Working in the industry – nature of the industry – page 41
12	1	Tools of the trade – clean, maintain, store and secure – page 39
13	1	Safety – safe work procedures and practices – page 26
14	1	Skills in construction – measurement and calculation terminology and equipment – page 32
15	1	Skills in construction – plans, drawings and specifications – page 31

## Section II

Question	Marks	HSC content – focus area
16 (a)	1	Tools of the trade – power and pneumatic tools and equipment – page 37
16 (b)	2	Tools of the trade – selection and safety – page 38
16 (c)	3	Tools of the trade – power and pneumatic tools and equipment – page 37
17 (a)	2	Working in the industry – employment – page 43
17 (b)	3	Working in the industry – employment – page 43
17 (c)	5	Working in the industry – working sustainably – page 47
18 (a)	3	Working in the industry – working sustainably – page 47
18 (b)	3	Skills in construction – plans, drawings and specifications – page 31
18 (c)	4	Skills in construction – plans, drawings and specifications – page 31
19 (a)	2	Skills in construction – measurement and calculation terminology and equipment – page 33
19 (b)	5	Skills in construction – measurement and calculation terminology and equipment – page 33
19 (c)	2	Skills in construction – measurement and calculation terminology and equipment – page 33

**Section III**

<b>Question</b>	<b>Marks</b>	<b>HSC content – focus area</b>
20 (a)	5	Working in the industry – teamwork – page 45
20 (b)	10	Working in the industry – task planning – page 44

**Section IV**

<b>Question</b>	<b>Marks</b>	<b>HSC content – focus area</b>
21	15	Safety – risk management – page 25