# Knowledge Assessment

**Event 1 of 3**

# Trainer & Assessor Marking Guide

## Criteria

### Unit code, name and release number

MEM09002 - Interpret technical drawing (1)

### Qualification/Course code, name and release number

MEM30319 - Certificate III in Engineering - Fabrication Trade (1)

Version: *1.0*

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*SkillsPoint – IMRS*

*Location – Block B Level 1 Hamilton TAFE Newcastle*

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This assessment can be found in the: [Learning Bank](https://share.tafensw.edu.au/share/access/searching.do?doc=%3Cxml%2F%3E&in=P7ac4831b-430a-4b8d-8b56-f7b32ed5b9cf&q=&type=standard&sort=rank&dr=AFTER)

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## Assessment instructions

Table 1 Assessment instructions

| Assessment details | Instructions |
| --- | --- |
| **Instructions for the trainer and assessor** | This is a written assessment and will be assessing the student on their knowledge of the unit.  This assessment is in 4 parts:   1. Multiple choice questions 2. True or False questions 3. Short answer questions 4. Assessment feedback   Model answers, sample responses or a criteria for each question are provided below.  Use these to support your judgement when determining a satisfactory result.  The student’s response to each question must contain the information indicated in this marking guide in order for their response to be correct. However, if a student provides information other than indicated below, and in the professional opinion of the assessor it is appropriate and meets the intent of the question, it may be considered correct.  The assessment feedback page must be signed by both the student and the assessor so the student displays that they have received, understood and accepted the feedback.  Complete the assessment feedback to the student and ensure you have taken a copy of the assessment prior to it being returned to the student.  Ensure the students name appears on the bottom of each page of the submitted assessment. |
| **About this marking guide** | The student’s response to each question must contain the information indicated in this marking guide in order for their response to be correct.  All questions must be answered correctly in order to satisfactorily complete this assessment event.  Assessors will need to make a judgement call as to whether each answer/response meets the criteria based upon the:   * Rules of Evidence:   + Validity – does the answer address the assessment question and does the evidence reflect the four dimensions of competency?   + Sufficiency – is the answer sufficient in terms of length and depth?   + Currency – has the work been done so recently as to be current?   + Authenticity – is this work the student’s own authentic work? * Principles of Assessment:   + Fairness – individual student’s needs are considered in the assessment process   + Flexibility – assessment is flexible to the individual student   + Validity – any assessment decision is justified, based on the evidence of performance of the student   + Reliability – evidence presented for assessment is consistently interpreted and assessment results are comparable irrespective of the assessor conducting the assessment * Dimensions of competency   + Task skills   + Task Management Skills   + Contingency Planning Skills   + Job Role Environment Skills |
| **Student must provide** | Calculator, pens, pencil, eraser, |
| **Assessor must provide** | Drawings: 09204-T5-1 Stair Assembly Iso Arrgt (Issue B)  09204-T5-2 Stair Assy Orthogonal Arrgt (Issue B)  09204-T5-3 Stair Assy Frame Details (Issue C)  See MEM09002\_AE\_Kn\_1of3\_SR1 (Attachment Pack 1.0) |
| **Time allowed** | 75 minutes |

## Part 1: Multiple choice

*Copy and paste the exact questions as per the student assessment and add your model answers for each question. These answers will be the marking criteria used to determine competency.*

1. (KE1) Safe work practices should be applied for all workplace activities. From the list below select two (2) safe work practices that would apply when interpreting technical drawings in a fabrication workshop.

Table 2 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. Selecting a work space away from sources of ignition | X |
| 1. Selecting a workspace that is well lit | X |
| 1. Spreading drawings across a recently welded item |  |
| 1. Storing drawings in a welding bay |  |

1. (KE2) From the list below select the Australian Standard that applies to Technical Drawing General Principles

Table 3 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. AS 1100.101 | X |
| 1. AS 1554 GP |  |
| 1. AS 1554 SP |  |
| 1. Engineering Australia Code of Practice (C.O.P) |  |

1. (KE3) In the table below match the welding symbol to the correct instruction.

Table 4 Multiple choice

| Answer choices | Welding Symbol | Put X next to your answer |
| --- | --- | --- |
| 1. Fillet weld same side of joint |  |  |
| 1. Fillet weld opposite of joint | X |
| 1. Fillet weld either side of joint |  |
| 1. Fillet weld outside corner joint |  |

1. (KE3) In the table below match the welding symbol to the correct instruction.

Table 5 Multiple choice

| Answer choices | Welding Symbol | Put X next to your answer |
| --- | --- | --- |
| 1. Weld the hole all round |  |  |
| 1. Leave a hole unwelded |  |
| 1. Fillet weld all round | X |
| 1. Weld a circle fillet |  |

1. (KE3) In the table below the welding symbol flag indicates:

Table 6 Multiple choice

| Answer choices | Welding Symbol | Put X next to your answer |
| --- | --- | --- |
| 1. Unequal fillet weld |  |  |
| 1. Fillet weld full penetration |  |
| 1. Weld on site | X |
| 1. Weld and flag as compliant to AS1554 |  |

1. (KE3) Conventions are commonly used in technical drawings to represent components, or repetitive features of components. From the table below select the description which matches the conventional representation

Table 7 Multiple choice

|  |  |  |
| --- | --- | --- |
| **Conventional Representation** | **Description** | **Put X next to your answer** |
|  | 1. Circular Pitch | X |
| 1. External Thread |  |
| 1. Internal Thread |  |
| 1. Pipe Run |  |
|  | 1. Circular Pitch |  |
| 1. External Thread |  |
| 1. Internal Thread |  |
| 1. Pipe Run | X |
|  | 1. Circular Pitch |  |
| 1. External Thread | X |
| 1. Internal Thread |  |
| 1. Pipe Run |  |
|  | 1. Circular Pitch |  |
| 1. External Thread |  |
| 1. Internal Thread | X |
| 1. Pipe Run |  |

**Refer to Drawing 09204-T5-1 and answer questions 7 to 9.**

1. (KE5) How many items make up the stair assembly?

Table 8 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. 1 item |  |
| 1. 2 items |  |
| 1. 7 items | X |
| 1. 4 items |  |

1. (KE5) How many parts (QTY) in total are required for a complete stair assembly?

Table 9 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. 1 part |  |
| 1. 2 parts |  |
| 1. 16 parts |  |
| 1. 23 parts | X |

1. (KE5) What is the total mass of the Hand railing:

Table 10 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. 224.465 kg |  |
| 1. 49.758 kg |  |
| 1. 47.958 kg | X |
| 1. 45. 958 kg |  |

**Refer to Drawing 09204-T5-2 and answer questions 10 to 12.**

1. (KE4) All structural welds full penetration bevel or butt welds conform to what Australian Standard (AS) unless noted otherwise (UNO)?

Table 11 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. AS 1657 |  |
| 1. AS 1554-1-SP | X |
| 1. AS 1554-1-GP |  |
| 1. AS 1250 – 8.8/TS |  |

1. (KE4) What size masonry anchors bolt the stairwell to the concrete structure?

Table 12 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. M16 | X |
| 1. M18 |  |
| 1. M6 |  |
| 1. M12 |  |

1. (KE4) How many masonry anchors bolt the stairwell to the concrete structure?

Table 13 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. 6 | X |
| 1. 16 |  |
| 1. 18 |  |
| 1. 12 |  |

**Refer to Drawing 09204-T5-3 and answer questions 13 to 16.**

1. (KE5) What type of material are the stair treads made from?

Table 14 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. Diamond plate 6 long |  |
| 1. 200 PFC |  |
| 1. 300 PFC |  |
| 1. Diamond plate 6 thick | X |

1. (KE4) What does the PFC abbreviation on the drawing stand for?

Table 15 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. Part Formed Channel |  |
| 1. Parallel Flanged Channel | X |
| 1. Parallel Flanged C Section |  |
| 1. Part Flanged Channel |  |

1. (PC2.3) What is the height of the Stair Assembly from the concrete structure at ground level to the top platform?

Table 16 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. 2316 |  |
| 1. 1105 |  |
| 1. 3630.5 |  |
| 1. 2492 | X |

1. (PC2.3) What is the rise of each stair tread?

Table 17 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. 264 |  |
| 1. 178 | X |
| 1. 187 |  |
| 1. 246 |  |

1. (PC2.2) From the pictorial drawing shown below left select the correct view names:

Table 18 Multiple choice

| Pictorial (Below) and Multiple Views in Third Angle  Projection. | | View Selection | Answer Choices | Put X next to your answer |
| --- | --- | --- | --- | --- |
|  |  | View A | a) Front View |  |
| b) Top View | X |
| c) Left Side View |  |
| d) Right Side View |  |
| View B | a) Front View |  |
|  |  | b) Top View |  |
| c) Left Side View | X |
| d) Right Side View |  |
| View D | a) Front View | X |
| b) Top View |  |
| c) Left Side View |  |
| d) Right Side View |  |

1. (KE3) On the drawing shown below a symbol has been circled . What does this symbol indicate requires to be carried out to the object?

Table 19.0 Multiple choice

|  |  |  |
| --- | --- | --- |
| Answer choices | Drawing | Put X next to your answer |
| 1. Fillet weld the plate to the channel |  |  |
| 1. Butt weld the plate to the channel |  |
| 1. Machined surface | X |
| 1. Welded surface |  |

1. (KE4) The General Notes shown below indicate the size of the fillet welds U.N.O. What unit of measurement is used for the fillet weld size?

Table 20.0 Multiple choice

|  |  |  |
| --- | --- | --- |
| Answer choices | General Notes | Put X next to your answer |
| 1. Micrometres |  |  |
| 1. Millimetres | X |
| 1. Metres |  |
| 1. Centimetres |  |

1. (KE4) What does the abbreviation U.N.O mean in the GENERAL NOTES above?

Table 21 Multiple choice

| Answer choices | Put X next to your answer |
| --- | --- |
| 1. Unless Known Otherwise |  |
| 1. Unit Number Otherwise |  |
| 1. Unless Not Otherwise |  |
| 1. Unless Noted Otherwise | X |

## Part 2: True or false

Table 1 True or false

| Question | | Write *True* or *False* |
| --- | --- | --- |
| 1. (KE1) When carrying out technical drawing interpretation in a fabrication workshop the use of Personal Protective Equipment (PPE) is not required | | False |
| 2. (KE2) AS: 1102 Graphical Symbols would be a reliable source of information to check the meaning of a complex weld symbol | | True |
| 3. (KE3)The symbol shown right represents diameter |  | True |
| 4. (KE3)The symbol shown right represents 1st Angle Projection |  | False |
| 5. (KE3) The symbol shown right is a Datum Identification |  | True |
| 6. (KE3)The symbol shown right indicates a slope |  | False |
| 7. (KE3)The symbol shown right indicates a taper |  | False |

## Part 3: Short answer

## Read the question carefully. Your answer should be a minimum of *2* words but no longer than *10* words. Please refer to the drawing on the following page to answer these questions in Part 3.

1. (PC2.3) What are the overall dimensions of the object?

|  |  |
| --- | --- |
| 1. Total Length = | 100 mm |
| 1. Total Height = | 36+20 = 56 mm |
| 1. Total Width = | R20 x 2 = 40 mm |

1. (KE4) How many holes are shown on the drawing?

|  |  |
| --- | --- |
| Total number of holes= | 3 |

1. (PC2.3) What are the diameters of the largest and smallest holes shown?

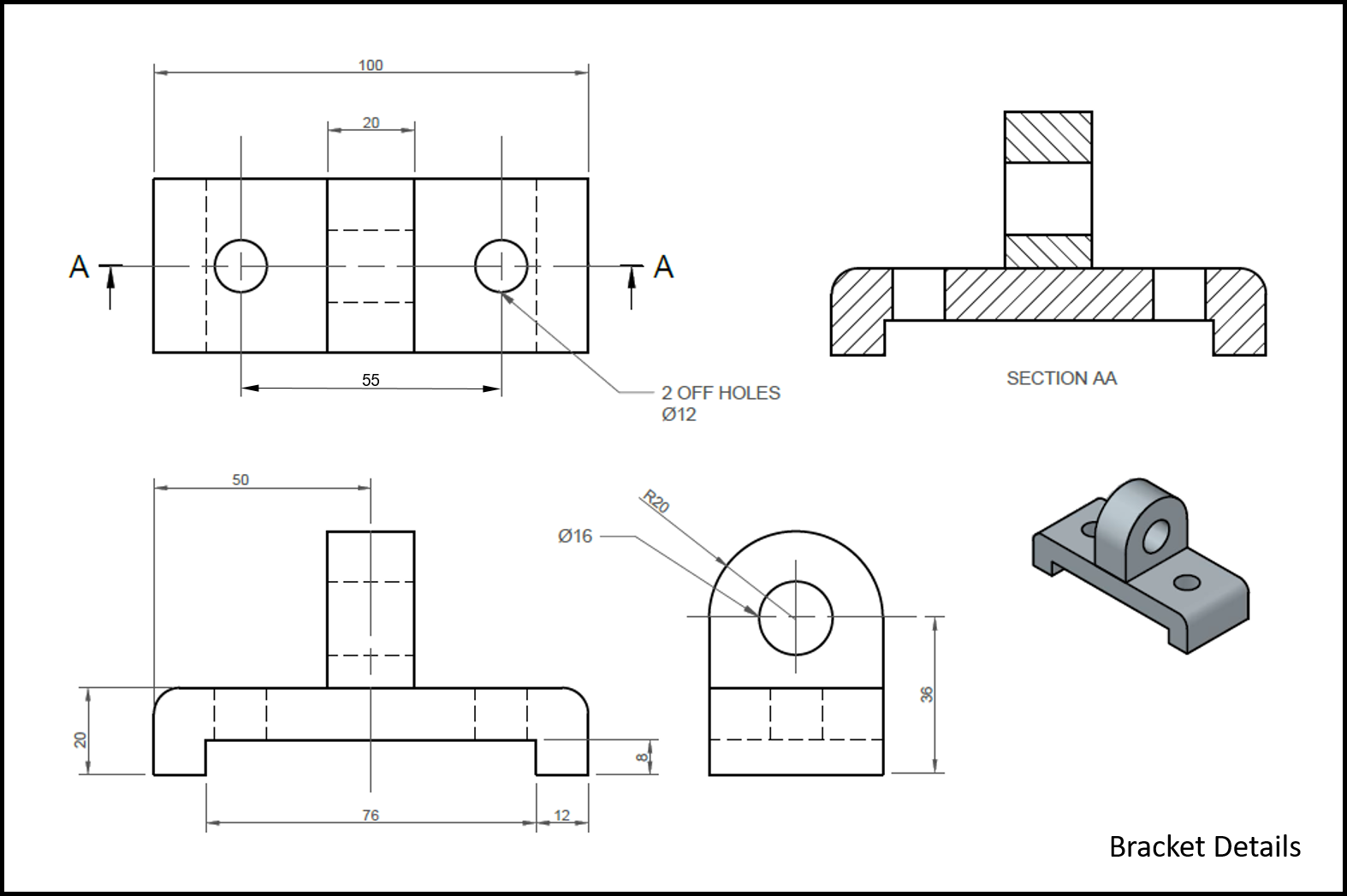
|  |  |
| --- | --- |
| 1. Largest hole diameter = | 16 mm |
| 1. Smallest hole diameter = | 1. mm |

1. (KE4) What are the sloping lines called in SECTION AA?

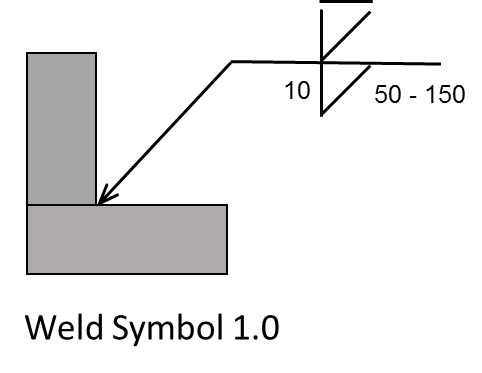
|  |
| --- |
| Cross Hatching |

1. (PC2.3, KE4) What is the distance from the left hand edge of the bracket to the centreline of the first hole?

|  |
| --- |
| 100-55/2 = 22.5 mm |



**Refer to the Weld Symbol 1.0 Below and answer the following questions:**



1. (PC2.4) What type of weld goes on the same side of the joint?

|  |
| --- |
| Fillet Weld |

1. (PC2.4) What size is the weld on the same side of the joint?

|  |
| --- |
| 10 mm |

1. (PC2.4) What is the length of the weld on the same side of the joint?

|  |
| --- |
| 50 mm |

1. (PC2.4) What is pitch distance between welds on the same side of the joint?

|  |
| --- |
| 150 mm |

1. PC2.4) How is the plate prepared on the other side of the joint?

|  |
| --- |
| Single Bevel Butt |

1. (PC2.4) How is the weld finished on the other side of the joint?

|  |
| --- |
| Approximately Flush Finish |