# Skills Assessment : Angle bracket

# Trainer & Assessor Marking Guide

**Event 3 of 3**

## Criteria

### Unit code, name and release number

MEM05005B - Carry out mechanical cutting (1)

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

MEM30305 - Certificate III in Engineering - Fabrication Trade (4)

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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 skills based assessments for MEM05005B and will be assessing the student on their ability to demonstrate skills required in the unit.  This assessment is in 2 parts:   1. Practical 2. Assessment feedback   Pre assessment  The student must have successfully completed the knowledge assessment MEM05005B\_ AE\_Kn\_1of3 prior to attempting the practical skills assessment task.  Assessor is to ensure the workshop is set up with all the necessary mechanical cutting equipment for the completion of the task in the skills assessment.  Assessor is to ensure all material as is specified in the Task is available to the student prior to the commencement of assessment.  The material used in Task 1 is to have the student initials stamped on them as detailed in the Task.  Assessor is to ensure the student has been given instruction and observed using correct and safe operation of mechanical cutting machinery to be used in the assessment, prior to the assessment attempt.  Risk Assessment  The assessor is to provide the student with the appropriate TAKE 5 risk assessment template. The student is to complete the TAKE 5 prior to commencing the task. This TAKE 5 is used to identify potential hazards and environmental issues, and allow the student to implement control measures in line with workplace policies. The student is to submit the completed TAKE 5 to the assessor, prior to commencing the practical task.  Practical Task 1  The purpose of this task is together the necessary evidence that the student can satisfactorily operate mechanical cutting machinery to manufacture an angle bracket to specifications.  The assessor will need to conduct a verbal briefing session for the students at the commencement of the assessment, which will outline the steps to be completed for the assessment, including showing any documentation to be completed and materials and tolls to be used (refer to the steps in the assessment task for the content of your briefing)  The assessor will also visit each student individually prior to the commencement of the marking out. At this point the student must ask the assessor a question about the task, to seek further clarification on the instructions or to re-inforce understanding of the task. The question the student asks will need to be documented by you in Part 2: Observation Checklist  The student must address all the requirements in the observation checklist and at all times during the assessment comply with Standard Operating Procedures (SOP), recognised WHS practices and complying with any instructions or directives you give them as the assessor.  Model answers, sample responses or a criteria for the task are provided in the observation guide.  Use these to support your judgement when determining a satisfactory or unsatisfactory result.  Complete the observation checklist for the task  The assessment feedback comments are to be structured so as to give the student advice on the steps and actions they need to take to reach a satisfactory result when re assessed.  Ensure you have a copy of the assessment prior to it being returned to the student.  The Assessment feedback page must be signed by both the student and the assessor so the student displays they have received, understood and accepted the feedback.  Ensure the students name appears on the bottom of each page of the submitted assessment.  ***On completion***  ***On satisfactory completion of this task, the angle bracket material is to be retained and used for a practical welding task.*** |
| **About this marking guide** | The student’s response to each task or activity must contain the criteria indicated in this marking guide in order for their response to be correct.  All tasks and activities must be completed correctly in order to satisfactorily complete this assessment event.  Assessors will need to make a judgement call as to whether each response meets the criteria based upon the:   * Rules of Evidence:   + Validity – does the answer address the skill required and does the evidence reflect the four dimensions of competency?   + Sufficiency – is the task or activity 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** | Pens, measuring equipment, reference documents and PPE suitable for working in a fabrication workshop and meet the SOP requirements for operating mechanical cutting machinery and equipment. |
| **Assessor must provide** | A Fabrication workshop fitted with suitable workbenches and workspace.  Equipment which can include but not limited to; punch and shear, cutting saws  All the necessary hand tools and marking out equipment to perform the  Task 1 material  1 off 50 x 50 x 6mm LCS Equal Angle 400 long  1 off 25mm x 6mm LCS Flat bar 250 long  Letter stamps for marking Tasks 1 |
| **Due date/time allowed/venue** | 1 Hour |

## Part 1: Practical

To complete this part of the assessment, the student is required to participate in a practical demonstration of how to complete a task or activity.

This practical will be observed by you, or the student can digitally record them and submit them as evidence.

The student’s responses will be used as part of the overall evidence requirements of the unit.

You should refer to the list of criteria provided in the Observation Checklist to understand what skills the student is required to demonstrate in this section of the assessment. This Checklist outlines the Performance Criteria, Performance Evidence and Assessment Conditions you will be marking the student on.

Once completed the student is required to submit this assessment and the tasks and activities required to be completed to you for marking.

**Contingency Management:**

While undertaking this task a number of unforeseen circumstances may arise. The assessor will have the opportunity to question each learner to gather an understanding of how the student will respond to these events. Below is a table with examples of possible questions and acceptable responses.

The assessor has the opportunity in the observation checklist to record relevant questions and responses in the table ***“Table 3 Additional Questions”***

Table 4 Unforeseen Circumstances

|  |  |  |
| --- | --- | --- |
| Scenario | Assessors question | Acceptable students response |
| Power failure in workshop | What is the correct action in the case of power failure? | *Notify assessor of failure.*  *Move to safe location* |
| Mechanical cutting machine failure | What do you need to do if the mechanical cutting machine fails and prevents you from carrying out the cutting task? | *Notify assessor of failure*  *Arrange access to use alternative mechanical cutting device.* |
| Emergency evacuation | What do you do if an emergency evacuation drill happens during the assessment? | *Follow standard emergency evacuation procedure* |

**Task 1: Manufacture Angle bracket using mechanical cutting equipment**

Task 1 consists of four (4) steps as described below:

**Step 1:**

Refer to the specification for the angle bracket material requirements. Complete the information in ***Table 1: Material list/cutting list*** attached.

Identify all the machine and tooling required to complete Task 1: Manufacture angle bracket. Complete the information in ***Table 2: Select machine and tooling*** attached.

**Step 2:**

Refer to the drawing and specifications to mark out each item of the angle bracket

* Mark out each item for the angle bracket as per the drawing specifications
* Check marking out is correct to specifications using appropriate measuring equipment
* Witness all marking out
* Stamp you initials in the bottom right corner of the material

**Step 3:**

Set up cutting machine required to produce holes as per specifications

* Set up tooling correctly to produce holes
* Adjust machine and tooling as necessary to produce holes
* Ensure material is secured and positioned correctly
* Punch required holes as per specification

**Step 4:**

Set up cutting machine required to produce angle bracket (Item A, B C)

* Set up tooling correctly to cut material to size and shape
* Adjust machine and tooling as necessary to cut to material correctly
* Ensure material is secured and positioned correctly
* Cut material to shape and size as per specification

**Note:** Ensure all sharp edges are removed before submitting for assessment

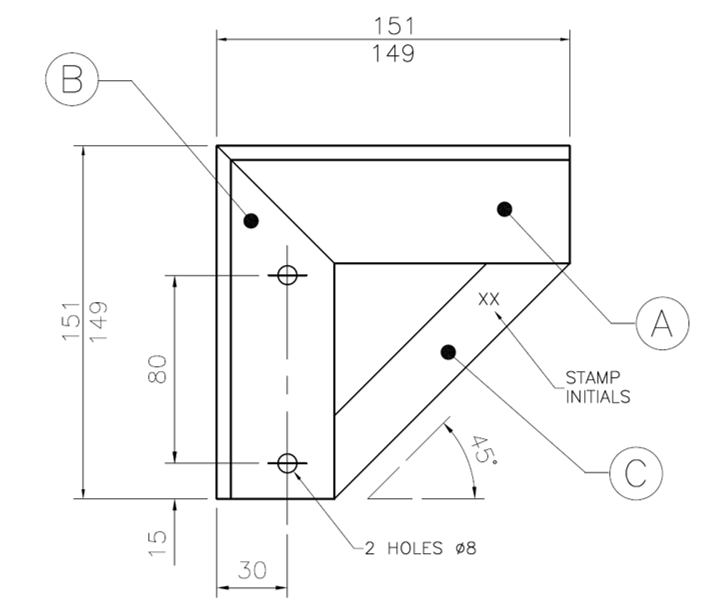
Simulated Environment Conditions

***Note: The assessor may direct the student to use different equipment in different spaces to ensure competency is applied in new and different situations.***

The assessment is to be carried out in the workshop complying with all WHS requirements and compliance with Standard Operating Procedures.

The assessment should take approximately 1 hour.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Quantity | Title | Material | Finish requirements | Tolerance | Sheet Number |
| 2  1 | Angle bracket | ***Item A & B***  50 x 6mm EA 400mm long  ***Item C***  25 x 6 mm Flat Bar 250mm long | Remove all sharp edges  All cuts to be done using mechanical cutting equipment | + - 1mm Angles + - 10  All dimensions in mm UNO | 1 of 1 |



## Table 1: Material Cutting list

Complete the following table listing material required to produce the angle bracket

|  |  |  |
| --- | --- | --- |
| Quantity | Material | Dimensions |
| *2* | *50mm x 6mm equal angle* | *150mm* |
| *1* | *25mm x 6mm Flat bar* | *250mm* |

## Table 2: Selecting machine and tooling

Complete the following table listing the cutting machine and tooling required to produce the angle bracket

|  |  |  |
| --- | --- | --- |
| Procedure/Task | Cutting machine | Tooling |
| Marking out |  | *300mm steel rule* |
| *Scriber* |
| *Dividers* |
| *Centre punch* |
| *Ballpein hammer* |
| Measuring to specifications |  | *300 mm rule* |
| 8 mm punched holes | *Punch and shear* | *8mm hole punch set* |
| Cut material to shape | *Cold cut off saw*  *Horizontal bandsaw*  *Power hacksaw* |  |
| Remove sharp edges |  | *Flat file*  *Deburr tool* |
| Stamp initials |  | *Letter stamps* |

## Part 2: Observation Checklist

The Observation Checklist will be used by you to mark the students’ performance in any of the previous three event types. Use this Checklist to understand what skills the student is required to demonstrate in this section of the assessment. This Checklist outlines the Performance Criteria, Performance Evidence and Assessment Conditions you will be marking the student on. All the criteria must be met. The student’s demonstration will be used as part of the overall evidence requirements of the unit. You may ask questions while the demonstration is taking place or if appropriate directly after the task/activity has been completed.

Table 2 Observation Checklist

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Item# | Task requirements | S | U/S | Assessor comments  (describe the students ability in demonstrating the required skills and knowledge) |
|  | Task outcomes and objectives are verbally presented by the assessor. You are to ask your assessor questions to clarify task-related information |  |  | Student attends verbal briefing and asks assessor a question to clarify the information presented. Please record the question the student asked below:  *Question:* |
|  | Standard Operating procedures (SOP) for Operating mechanical cutting equipment are followed   * Wear correct PPE * Carry out prestart checks * Follow safe work practices and housekeeping * Carry out shutdown procedure |  |  | Student set up a safe working environment for operating mechanical cutting equipment.  *Locate and identify where to the start-up, stop and emergency stop controls for the mechanical cutting machines are.*  *Located, read and understands requirements of the SOP*  *Student Wearing the appropriate PPE as directed in the SOP and workshop procedures*  *Ensures the task is within the cutting capacity of the machines*  *Ensures all safety guards are in place and in working order.*  *Ensures all securing devices fitted are in good working order*  *Assessor’s comments/ responses noting where student has not achieved a satisfactory result and what is need to gain a satisfactory outcome.* |
|  | Refer to detailed drawing to identify the most appropriate mechanical cutting equipment and source the appropriate tools and equipment required to complete Task 1 |  |  | Student refers to detailed drawing to determine machine and tooling requirements  Student completes the information as required in: Table 2 selecting machine and tooling  *Student interprets drawing correctly indicating machine and tooling requirements*  *Mechanical cutting equipment, tools and equipment correctly listed as per table 2.*  *Assessor’s comments/ responses noting where student has not achieved a satisfactory result and what is need to gain a satisfactory outcome.* |
|  | Mark out material as per specifications using material economically |  |  | Student marked out material correctly as per specifications economically  *Material marked and checked to specifications*  *Material supplied used economically to minimise waste*  *Assessor’s comments/ responses noting where student has not achieved a satisfactory result and what is need to gain a satisfactory outcome.* |
|  | Select the appropriate mechanical cutting machine.  Identify condition  Prestart machine check  Determine- safe for use. Tag out if required  Maintained before, during and use |  |  | Student chooses the correct tooling and confirms they are in good condition at all stages of the manufacture.  *Checked punch and dies for punch and shear machine correct size, sharp and free of chips or damage*  *Damaged, blunt or defective tooling is identified and marked for repair or replacement*  *Marking out tools in good condition*  *Assessor’s comments/ responses noting where student has not achieved a satisfactory result and what is need to gain a satisfactory outcome.* |
|  | Set up cutting machine, load material and adjusts accordingly as per  Standard operating procedure (SOP) prior to cutting |  |  | Student follows SOP to set up and load materials, and adjusts machine accordingly  *Student places material correctly and secures material and measures to check positioning*  *Student set up backstops and guides prior to cutting as per SOP*  *Student fitted correct punch and dies (8mm)*  *Student set correct cutting angle for cutting machine selected.*  *Student adjusts machine to ensure material is punched and cut to size as per specifications.*  *Assessor’s comments/ responses noting where student has not achieved a satisfactory result and what is need to gain a satisfactory outcome.* |
|  | Follow Safe work practice/ codes/standard operating procedures for operating mechanical cutting equipment at all times |  |  | Student operates mechanical cutting machines correctly following all safety and standard operating procedures  *Area in the immediate vicinity of mechanical cutting machine clean and free of any slip, trip or other hazards*  *Student starts and stops machine safely*  *Student performed test cuts to check accuracy of stops and guides*  *Student operates machine safely and correctly as per SOP*  *Area in the immediate vicinity of mechanical cutting machine clean and free of any slip, trip or other hazards*  *Assessor’s comments/ responses noting where student has not achieved a satisfactory result and what is need to gain a satisfactory outcome.* |
|  | Measure angle bracket to check conformance to specifications |  |  | Student uses correct measuring device to ensure sheetmetal angle bracket meets specifications  *Student checks angle bracket on completion against specifications*  *Assessor’s comments/ responses noting where student has not achieved a satisfactory result and what is need to gain a satisfactory outcome.* |
|  | Correctly use and operate the mechanical cutting equipment to successfully complete task 1 manufacture angle bracket |  |  | Student followed all verbal instructions and successfully completed all parts of task 1 in this assessment carry out mechanical cutting  *Completed angle bracket within tolerances of +- 1mm and + - 10*  *Satisfactory finish on angle bracket with no sharp edges or burrs*  *Correct techniques used in the operation of mechanical cutting equipment*  *Defective mechanical cutting equipment, tooling identified and marked for repair where necessary*  *Kept work area clean and followed sound housekeeping practices*  *Cleaned up mechanical cutting equipment and immediate area on completion of the task and handed the face plate in for marking*  *Assessor’s comments/ responses noting where student has not achieved a satisfactory result and what is need to gain a satisfactory outcome.* |
|  | Shut down mechanical cutting equipment and returned tooling to correct storage on completion of task |  |  | Student carried out correct shut down procedure and maintenance for mechanical cutting equipment and tooling including storage.  *Tooling maintained and cleaned as per manufacturers recommendations*  *Machines cleaned down all off cuts and punched blanks placed in respective recycle, scrap bins in accordance with workshop procedures.*  *Punch and dies to be returned to correct storage*  *Machine shut down and primary source of power isolated as per SOP*  *Immediate area around mechanical cutting equipment cleaned in accordance with workshop housekeeping procedures*  *Assessor’s comments/ responses noting where student has not achieved a satisfactory result and what is need to gain a satisfactory outcome.* |

|  |
| --- |
| Additional Questions |
| Assessors may ask additional questions to clarify student understanding. List here any additional questions that were asked during this assessment event.  *Record all additional questions that were asked of the student during the assessment event.* |
| **Student Reponses to Additional Questions** |
| List here the student responses to any additional questions that were asked during this assessment event.  *Record the student responses to any additional questions that were asked during this assessment event.* |