

# Model Answers

## Domain

Furniture > Furniture making

## Unit

16230 v 3

Demonstrate knowledge of and use adhesives in furniture making

Level 2

Credits 2

## Assessment Information

### Entry Information

There are no pre-requisite requirements for this unit.

### Required Evidence

This Assessment Guide, that includes the following completed assessment tasks:

- » 5 questions
- » One Observation Checklist
- » Attaching job specification

### Appeals

The candidate must understand the appeals process before carrying out this assessment.

Information about Competenz's assessment appeals process can be found on the Assessors and Moderators page of Competenz's website [www.competenz.org.nz](http://www.competenz.org.nz).

## Change control

The following changes have been made to 16230 v3 assessment materials.

Edition of this document	Changes made
Edition 2 July 2017	<ul style="list-style-type: none"><li>» Updated to Competenz 2017 assessment templates, including the addition of a 'Candidate evidence check', legislative updates in 'Assessment requirements', and the addition of an 'Assessor final judgement' section.</li><li>» Updated formatting.</li><li>» Footer has been updated to reflect new Edition.</li></ul>
Edition 1 Dec 2014	No changes. Original document. FITEC document. Version 3

## Assessment Requirements

This Assessment Guide is designed to help you provide evidence of your skills and knowledge required by this unit standard.

People credited with this unit standard are able to: demonstrate knowledge of adhesives; prepare to use adhesives; and use adhesives, in furniture making.

### Before you begin

Read through the assessment requirements yourself. Talk with your Assessor if there is anything you don't understand.

Meet with your Assessor to plan your assessment. Your Assessor will:

- » talk you through this Guide, and discuss when and how you will be assessed.
- » check you are ready to begin this assessment.

### What you need to do

1. Complete the following assessment tasks:

Questions	Answer questions about using adhesives in furniture making. This will involve: <ul style="list-style-type: none"><li>» Obtaining and explaining a job specification from your workplace</li><li>» Answering 5 questions about adhesive use in furniture making.</li></ul>
Observation Checklist	Be observed using adhesives in furniture making. This will involve: <ul style="list-style-type: none"><li>» Selecting and using adhesives</li><li>» Comply with all manufacturer's instructions, MSDS and worksite policies and procedures relating to adhesive use.</li></ul>

**Note:** Your Assessor may choose someone to observe your work. This person must have expertise in using adhesives in furniture making and could be someone you report to, your trainer, or a supervisor or manager who works with you regularly.

2. You may wish to provide additional supporting evidence that proves you have the knowledge and skills required by this unit. Additional evidence may include, for example, workplace documentation you have used and/or completed, training records, photos, screenshots, printouts, videos, voice recordings.
3. When you have completed all assessment tasks, complete the 'Candidate evidence check' at the end of this Guide.
4. When you are sure you have completed and/or attached everything, contact your Assessor or Account Manager to arrange next steps.

## Conditions

- » Your evidence must clearly show your knowledge of and use of adhesives in furniture making.
- » Complete all assessment tasks yourself. Use your own words when answering questions.
- » It is expected that you will have had learning / experience of using adhesives in furniture making on more than one occasion, before you are formally assessed.
- » It is likely that you will have already been observed using adhesives in furniture making on more than one occasion, before you are formally assessed.
- » All tasks you carry out for this assessment must be completed following workplace procedures, and comply with organisational and legislative (legal) requirements.
- » You may be assessed against on-job or off-job tasks.
- » You must show competence in at least two of the following adhesives: hot glue, PVA, aliphatic resins, contact glue, epoxy resins, casein glues, urea formaldehyde, polyurethane glue, melamine glue.
- » You must select and use Personal protective equipment (PPE), appropriate to job requirements, in accordance with worksite policies and procedures and manufacturer's instructions. For this unit standard PPE includes but is not limited to – gloves, respirators or masks, goggles.

## Definitions

- » *Manufacturer's instructions* are instructions provided by manufacturers of substances, equipment, and machinery used in furniture making. These instructions may include details on safe and correct handling, use and storage of substances and/or details on substance properties. Examples are labels on substance containers, product data sheets, and operator's manuals.
- » *Material Safety Data Sheets (MSDS)* are documents containing information on toxic substances used in the worksite. It is a requirement of the Environmental Risk Management Authority that all worksites using toxic substances have an MSDS.
- » *Worksite policies and procedures* refer to documented policies and to documented or other directions provided to staff. These may include, but are not limited to, ways of managing health and safety, environmental considerations, quality, and production, and must conform to legislation. Examples include standard operating procedures, company health and safety plans, on-site briefings, and supervisor's instructions. For the purposes of this unit standard worksite policies and procedures may also refer to the policies and procedures of an off-job training site.

## Further information

The following legislation (law) applies to this unit standard:

- » Hazardous Substances and New Organisms Act 1996

## Unit Standard Evidence Map

Unit 16230 v 3	Demonstrate knowledge of and use adhesives in furniture making	Level 2	Credits 2
Outcomes and Evidence Requirements		Evidence	No.
<b>Outcome 1:</b> Demonstrate knowledge of adhesives used in furniture making.			
1.1	Adhesives are explained in terms of a suitable use in furniture making.  Range hot animal glue, PVA, aliphatic resin, contact glue, epoxy resin, casein glue, hot melt adhesive urea formaldehyde, polyurethane, melamine glue.	Task Sheet	1
1.2	At least two adhesives available in the worksite are identified and the requirements for safe handling of these adhesives are explained in accordance with MSDS.	Task Sheet	2
1.3	Two adhesives available in the worksite are compared and an advantage of using each one over the other is explained.	Task Sheet	4
<b>Outcome 2:</b> Prepare to use adhesives in furniture making.			
2.1	Job specifications are obtained and explained in accordance with worksite policies and procedures.  Range material type, number of items.	Task Sheet	4
2.2	Equipment and materials are selected in accordance with job specifications.	Observation Checklist	1 and 2
2.3	Materials are checked for defects and any defects are identified and marked, and any defective materials are omitted in accordance with job specifications.	Observation Checklist	3
2.4	Adhesives are selected in accordance with job specifications.	Observation Checklist	4
2.5	Safety precautions to be taken when using selected adhesives are explained in accordance with MSDS.	Task Sheet	5
2.6	Adhesives and application equipment are prepared in accordance with manufacturer's instructions.	Observation Checklist	5
<b>Outcome 3:</b> Use adhesives in furniture making.			
3.1	The atmospheric conditions for gluing are in accordance with manufacturer's instructions.	Observation Checklist	6
3.2	Adhesives are applied in accordance with manufacturer's instructions and MSDS.	Observation Checklist	7

3.3	Equipment is cleaned and stored, and adhesives are stored, in accordance with worksite policies and procedures and MSDS.	Observation Checklist	8
3.4	Work area is left clean, clear, and safe in accordance with worksite policies and procedures.	Observation Checklist	9 and 10

Any queries, contact: Kompetenz, PO Box 9005, Newmarket, Auckland 1149. Ph. 0800 526 1800

# Questions

Answer the following questions about your knowledge and use of adhesives in furniture making.

Use your own words. You can answer the questions in writing, or give your answers verbally to your Assessor who will write down what you say. You may need to arrange this in advance with your Assessor.

Draw pictures or diagrams to support your answers if you wish.

Your Assessor may ask you additional questions to check your knowledge and understanding.

## Judgement statements

- The candidate's written and/or verbal responses support their competency.
- The candidate demonstrates knowledge of adhesive use in furniture making.
- The candidate complies with manufacturer's instructions, MSDS and worksite policies and procedures relating to adhesive use in furniture making.

<b>Your name</b>	
<b>Workplace</b>	
<b>Answers written by:</b> (Tick one)	<input type="checkbox"/> Candidate <input type="checkbox"/> Assessor <input type="checkbox"/> Other (please write):

		<input checked="" type="checkbox"/>																						
1.	For each adhesives listed below explain a suitable use for furniture making.	<input checked="" type="checkbox"/>																						
	<table border="1"> <thead> <tr> <th style="background-color: #e0e0e0;">Adhesive</th> <th style="background-color: #e0e0e0;">Use</th> </tr> </thead> <tbody> <tr> <td>Hot animal glue</td> <td>General assembly work, Glue blocks, corner blocks</td> </tr> <tr> <td>PVA</td> <td>General assembly work, general jointing</td> </tr> <tr> <td>Aliphatic resin</td> <td>Edge to edge bonding, surface laminating</td> </tr> <tr> <td>Contact glue</td> <td>Bonding veneer edging</td> </tr> <tr> <td>Epoxy resin</td> <td>Filler for timber defects, bonding most materials</td> </tr> <tr> <td>Casein glue</td> <td>Pressing overlays on frames, laying veneers</td> </tr> <tr> <td>Hot melt adhesive</td> <td>Edgebanding for panels</td> </tr> <tr> <td>Urea-formaldehyde</td> <td>General carcass and assembly work, where strong bond or water resistance required</td> </tr> <tr> <td>Polyurethane</td> <td>Outdoor furniture and non-wood materials</td> </tr> <tr> <td>Melamine glue</td> <td>Gluing MDF to Melamine</td> </tr> </tbody> </table>	Adhesive	Use	Hot animal glue	General assembly work, Glue blocks, corner blocks	PVA	General assembly work, general jointing	Aliphatic resin	Edge to edge bonding, surface laminating	Contact glue	Bonding veneer edging	Epoxy resin	Filler for timber defects, bonding most materials	Casein glue	Pressing overlays on frames, laying veneers	Hot melt adhesive	Edgebanding for panels	Urea-formaldehyde	General carcass and assembly work, where strong bond or water resistance required	Polyurethane	Outdoor furniture and non-wood materials	Melamine glue	Gluing MDF to Melamine	
Adhesive	Use																							
Hot animal glue	General assembly work, Glue blocks, corner blocks																							
PVA	General assembly work, general jointing																							
Aliphatic resin	Edge to edge bonding, surface laminating																							
Contact glue	Bonding veneer edging																							
Epoxy resin	Filler for timber defects, bonding most materials																							
Casein glue	Pressing overlays on frames, laying veneers																							
Hot melt adhesive	Edgebanding for panels																							
Urea-formaldehyde	General carcass and assembly work, where strong bond or water resistance required																							
Polyurethane	Outdoor furniture and non-wood materials																							
Melamine glue	Gluing MDF to Melamine																							

**Assessor**

This question supports E.R. 1.1.

**Judgement statement**

- The candidate explains the use of 10 adhesives used in furniture making.
- The candidate completes the table fully and correctly

**Example answer**

Similar to above.

2. Name two adhesives used on your worksite and describe all safe handling requirements as listed in the MSDS.

Note you may refer to the MSDS Sheet to complete this question.

#	Adhesive	Use
1.	Gorilla Grip	Observe very strict hygiene. Avoid contact. Keep container tightly closed. Keep away from heat sources.
2.	Titebond MP300	In accordance with good manufacturing practices, good ventilation of the processing area is recommended. Gloves are recommended as product is difficult to remove from effected areas if contact with skin occurs. Store in tightly closed containers to protect from atmospheric moisture. Replace outage with inert nitrogen. Store at temperature of 24C to 40.5C.

**Assessor**

This question supports E.R. 1.2.

**Judgement statements**

- The candidate identifies two adhesives used in their worksite and their safe handling practices.
- The candidate completes the table fully and correctly.

**Example answer**

Similar to above.

3. Compare the following two adhesives and describe their key characteristics and explain one advantage of using each glue over the other.

Adhesive	Key characteristics	One advantage
PVA	Non-staining. Excess glue easier to remove.	Sets faster than Polyurethane.
Polyurethane	More relaxed in the assembly process	Longer open time than PVA.

#### Assessor

This question supports E.R. 1.3.

#### Judgement statements

- The candidate compares two adhesives and describes key characteristics and identifies one advantage over the other.
- The candidate completes the table fully and correctly.

#### Example answer

- Similar to above.

4. Obtain a job specification from your worksite and attach to this Guide.

Note: this job must include one of: hot glue, PVA, aliphatic resins, contact glue, epoxy resins, casein glues, urea formaldehyde, polyurethane glue, melamine glue.

- Job specification attached.

Using the above job specification complete this table for the piece of furniture you will make.

Item	Description
Type of product to be produced	e.g. Rimu Bookcase with makers name attached underneath bottom shelf
No. of units to be produced	1
Material type	Rimu panel
Adhesives	PVA,
Quantity and dimensions of timber required	1.65m high x 900mm wide x 250mm depth, top, bottom, 2 sides rimu
Any other relevant details i.e. details of timeframes, other	Time to complete: 1 ½ hours - factory / 1 school term



materials, tools, equipment etc	
------------------------------------	--

**Assessor**

This question supports E.R. 2.1.

**Judgement statements**

- The candidate obtains and attaches a suitable job specification from their worksite.
- The candidate explains the job specification correctly.
- The candidate completes the table fully and correctly.

**Example answer**

- Similar to above.

5. Select two adhesives used in your workplace and explain one key safety precaution required to be taken for each, as detailed in the MSDS.

#	Name of adhesive	Safety precaution
1	PVA	Use in a ventilated area
2	Hot glue	Take precautions to avoid direct contact with skin

**Assessor**

This question supports E.R. 2.5.

**Judgement statements**

- The candidate identifies safety precautions required for two types of adhesives.
- Answers are according to the MSDS.
- The candidate completes the table fully and correctly.

**Example answer**

- Similar to above.

**You have reached the end of the questions.**

# Observation Checklist

Carefully read through this Observation Checklist so you know exactly what is expected.

You, the candidate, must fill in Part A.

Part B will be completed by your Assessor or someone who has been approved by your Assessor.

You must be observed using adhesives in furniture making. This will involve:

- » Using the job specification from your workplace.
- » Preparing to use adhesives in furniture making.
- » Using adhesives in furniture making.

You may need to be observed more than once.

Your Observer may ask you additional questions to check your knowledge and understanding.

## Note to the Observer

- » Complete Part B of this checklist.
- » Watch the candidate carry out each task.
- » Note down any extra questions you ask of the candidate during the observation, and their response.

## Assessor

This Observation Checklist supports the candidate's successful performance in Outcomes 2 and 3.

## Judgement statements

The completed Observation Checklist supports the candidate's successful performance in

- Using adhesives in furniture making
- Complying with all manufacturer's instructions, MSDS and worksite policies and procedures relating to adhesive use.

### Part A: Candidate to complete this section

<b>Your name</b>	Candidate name provided
<b>Workplace</b>	Workplace identified
<b>Job specification</b>	<input type="checkbox"/> Provided by workplace <input type="checkbox"/> Attached to Assessment Guide
	<b>Assessor – Both</b> boxes must be ticked.

### Part B: Observer to complete this section

For each statement below, tick if you agree.

**When preparing to use adhesives for furniture making, the candidate:**

1. Selects all equipment and materials in accordance with job specification.

**Assessor**

This observation question supports E.R. 2.2.

2. Selects and uses Personal Protective equipment correctly, including:

Gloves

Respirators or masks

Goggles

Other: (list)

**Assessor**

This observation question supports E.R. 2.2.

All PPE used must be ticked or listed.

3. Checks materials for defects and identifies and marks any defects found. Omits defective material in accordance with job specifications.

**Assessor**

This observation question supports E.R. 2.3.

4. Selects adhesives in accordance with job specifications.

**Assessor**

This observation question supports E.R. 2.4.

5.	Prepares adhesives and application equipment in accordance with manufacturer's instructions.	<input checked="" type="checkbox"/>
	<b>Assessor</b> This observation question supports E.R. 2.6.	
<b>When using adhesives for furniture making, the candidate:</b>		<input checked="" type="checkbox"/>
6.	Makes sure the atmospheric conditions for gluing are in accordance with manufacturer's instructions.	<input checked="" type="checkbox"/>
	<b>Assessor</b> This observation question supports E.R. 3.1.	
7.	Applies adhesives in accordance with manufacturer's instructions and MSDS.	<input checked="" type="checkbox"/>
	<b>Assessor</b> This observation question supports E.R. 3.2.	
8.	Cleans and stores equipment and adhesives in accordance with worksite policies and procedures and MSDS.	<input checked="" type="checkbox"/>
	<b>Assessor</b> This observation question supports E.R. 3.3.	
9.	Leaves work area:	<input checked="" type="checkbox"/>
	<input type="checkbox"/> Clean <input type="checkbox"/> Clear <input type="checkbox"/> Safe	
	<b>Assessor</b> This observation question supports E.R. 3.4. All boxes must be ticked. Work area is left clean, clear and safe in accordance with worksite policies and procedures.	

10. Completes the above tasks in accordance with all manufacturer's instructions, MSDS and worksite policies and procedures relating to adhesive use.

All manufacturer's instructions     MSDS

Worksite policies and procedures relating to adhesive use

**Assessor**

This observation question supports Outcomes 2 and 3.

All boxes must be ticked.

Please comment on the candidate's ability to use adhesives in furniture making.

Any comments support the candidate's successful performance in meeting the above standards.

I confirm that I have directly observed the candidate carry out all the above tasks to the standard required.  Yes  
 No

I confirm that I have knowledge and experience in use of adhesives in furniture making.  Yes  
 No

<b>Observer name and title</b>	Observer name and title recorded	<b>Signature</b>	Observer signed
--------------------------------	----------------------------------	------------------	-----------------

<b>Phone / Email</b>	Contact details recorded	<b>Date</b>	Date recorded
----------------------	--------------------------	-------------	---------------

## Candidate evidence check

### Required evidence

Use this checklist to make sure you finished the assessment tasks in full.

Clearly name and label all attachments.

#### I have completed and/or attached:

- The completed questions in this guide
- One Observation Checklist completed and signed by an observer
- One job specification from my worksite.

#### Assessor

The required evidence for each assessment has been completed and/or attached.

### Additional supporting evidence

If you have any other evidence which helps prove your skills and knowledge in this unit (such as completed documents, photos, videos or voice recordings), attach it and record it below.

Clearly name and label all attachments.

I have attached the following as additional supporting evidence:

#### Assessor

There is no requirement to attach additional supporting evidence.

Any additional supporting evidence is relevant and further supports the candidate's competency in this unit.

## Assessor final judgement

After reviewing the candidate's evidence for Unit Standard 16230 v 3, it is clear that the candidate can competently:

- Demonstrate knowledge of adhesives used in furniture making.
- Prepare to use adhesives in furniture making.
- Use adhesives in furniture making
- Comply with all manufacturer's instructions, MSDS and worksite policies and procedures relating to adhesive use.

### Assessor feedback to the candidate

Please provide specific feedback to the candidate about their performance in meeting the requirements of this unit standard.

**Assessor**

Assessor name recorded

**Date**

Date recorded