Model Answers

Domain	Furniture > Furniture Operations			
Unit	25569 v 3	Demonstrate knowledge of timber types and insect attack in furniture operations	Level 2	Credits 6

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:

» Questions

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.

Assessment Requirements

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

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 different types of timber used in furniture operations; timber seasoning; and insect attack and measures to deal with insect attack.

Note: Your Assessor may choose someone to verify observe your work. This person must have expertise in timber types and insect attack in furniture operations 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 timber types and insect attack in furniture operations.

» Complete all assessment tasks yourself. Use your own words when answering questions.

» This unit standard may be assessed on or off job.

» It is expected that you will have learned about timber types and insect attack in furniture operations, before you are formally assessed.

» All tasks you carry out for this assessment must be completed following worksite policies and procedures, and comply with organisational and legislative (legal) requirements.

Definitions

» *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.

References

The assessment tasks must be completed in accordance with the following reference texts:

» Evidence requirement 1.1 must be in accordance with the following text: Jackson, A and Day, D., (2005) *Collins Complete Woodworker's Manual*. London, England: HarperCollins, which is available at http://www.amazon.com.

» Evidence requirements 1.2 and 1.3 must be in accordance with the timber species information on the New Zealand Wood Website available at http://www.nzwood.co.nz/what-wood/timber-species.

» Evidence requirements for outcome 2 must be in accordance with AS/NZS 4787:2001 *Timber – Assessment of drying quality*, available from Bennett's Government Bookshops or online at http://www.standards.co.nz/.

» Evidence requirements for outcome 3 must be in accordance with the following reference text: *Common Insects and Fungi that affect Logs and Sawn Timber in New Zealand* (2007) published by AsureQuality Ltd, PO Box 4127, Mt Maunganui South, Tauranga 3149.

Unit Standard Evidence Map

Unit 25569 v3	Demonstrate knowledge of timber types and insect attack in furniture operations	Level 2	Credits 6
Outcomes and Evidence Requirements		**Evidence**	**No.**
Outcome 1:	Demonstrate knowledge of different types of timber used in furniture operations.		
1.1	Characteristics of softwoods and hardwoods are explained in accordance with the reference text. Range two of – colour range, grain pattern, growth rings, speed of growth.	Questions	1
1.2	Classifications of timbers are defined. Range exotic, indigenous.	Questions	2
1.3	Two species of timber belonging to each timber classification are stated. Range classifications – exotic, indigenous.	Questions	2
1.4	Two species of timber used in the worksite are identified and classified. Range any of – radiata pine, douglas fir, rimu, beech, kauri, tawa, mataī, eucalyptus, mahogany, teak, oak.	Questions	4
1.5	The identified timbers are described in terms of their properties. Range strength and flexibility, durability, texture, grain.	Questions	4
1.6	Storage requirements for the identified timbers are explained in accordance with worksite policies and procedures.	Questions	5
Outcome 2:	Demonstrate knowledge of timber seasoning.		
2.1	Three reasons for seasoning or drying timber are stated.	Questions	6
2.2	Terminology relating to timber drying is defined. Range Fibre Saturation Point, Equilibrium Moisture Content, Moisture Content, Green Weight, Oven Dry Weight.	Questions	7
2.3	The process of air seasoning and kiln drying is explained.	Questions	8
2.4	The advantages of kiln drying in relation to air seasoning are explained.	Questions	9
Outcome 3:	Demonstrate knowledge of insect attack and explain measures to deal with insect attack.		
3.1	Boring insects are described in terms of their appearance and the damage they do to timber. Range pinhole borer, two-toothed longhorn, common household borer, powder post beetles.	Questions	10

3.2	An example of an insect attack is identified and action for preventing further attack is explained.	Questions	11 and 12
3.3	Safety precautions to be taken when using pesticides are described. Range safety equipment, application methods, contamination of other areas in the workplace.	Questions	13, 14 and 15

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

Questions

Answer the following questions about timber types and insect attack in furniture operations.

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

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

Your name	Candidate Name
Workplace	Workplace Name
Date	Date assessment commenced
Answers written by: (Tick one)	☐ Candidate ☐ Assessor ☐ Other (please write):

Questions 1-5 are about different types of timber used in furniture operations ☑

1. Explain two of the listed characteristics of softwoods and two hardwoods. ☑

Characteristic Two required	Softwoods	Hardwoods
Colour range	Light colours	Wide range of colour
Grain pattern	Straight grain	Straight and wavy grain
Growth rings	Clear growth rings	Do not have clear growth rings
Speed of growth	Fast growing	Slower growing

Assessor

This question supports E.R. 1.1.

Judgement statement

☐ The candidate explains two characteristics of softwoods and hardwoods.

☐ Answers are in accordance with reference text

Example answer

As above

2. For each timber classification provide: ☑

» A definition

» Two species of timber.

Timber classification	Definition	Two species of timber
Exotic	Native tree of timber from and overseas country, but are grown in NZ.	Timber species 1: Timber species 2: Two of: Radiata Pine, Douglas fir, Eucalypts, Macrocarpa
Indigenous	Trees of timbers which are a native species grown within the country of their origin.	Timber species 1: Timber species 2: Two of: Red Beech, Silver Beech, Rimu, Tawa, Matai, Kahikatea, Totara, Matai, Kauri, Miro

Assessor

This question supports E.R. 1.2 and 1.3

Judgement statements

☐ The candidate provides definitions of exotic and indigenous timbers

☐ The candidate provides two species of timber for each classification.

Example answer

As provided

3. Which of the following species of timber are used in your worksite:

☐ Radiata pine
☐ Douglas fir
☐ Rimu
☐ Beech
☐ Kauri
☐ Tawa
☐ Matai
☐ Eucalyptus
☐ Mahogany
☐ Teak
☐ Oak
☐ Other (please write):

Assessor

This question supports E.R. 1.4

At least two boxes must be ticked.

Judgement statements

☐ The candidate correctly identifies two species of timber used in their worksite.

4. Using two species of timber from your worksite: ☑

» Classify them correctly

» Describe their properties.

Species	Classification	Properties
1.		Strength and flexibility:
		Durability:
		Texture:
		Grain:
2.		Strength and flexibility:
		Durability:
		Texture:
		Grain

Assessor

This question supports E.R. 1.4 and 1.5 and 1.6

Judgement statements

☐ The candidate classifies two species of timber used in their worksite.

☐ The candidate describes properties of identified timber including: strength and flexibility, durability, texture and grain.

Example answer

As below

Identification	Classification	Properties
Radiata pine	Exotic	Strength and flexibility: Flexible
		Durability:

		Non-durable
		Texture and grain: Even texture
		Grain: straight grain
Rimu	Indigenous	Strength and flexibility: Fairly soft timber
		Durability: Heartwood durable, sapwood prone to insect attack
		Texture: Even texture
		Grain: Straight and even grain

5. What are the storage requirements for the 2 timber species used at your worksite?

Assessor

This question supports E.R. 1.6

Judgement statements

☐ The candidate correctly describes storage requirements for the identified timbers in accordance with worksite policies and procedures.

Example answer

Timber must be stored to keep it at an equilibrium moisture content (EMC).

For the following questions refer to reference text:

AS/NZS 4787:2001 *Timber – Assessment of drying quality*, available at http://www.standards.co.nz/.

☑

Questions 6 - 9 are about timber seasoning.

6. Give three reasons for seasoning or drying timber. ☑

1. Improve strength

2. Dimensional stability
3. Lighter and easier to handle
4. Improved gluing and machining performance

Assessor

This question supports E.R. 2.1

Judgement statements

☐ The candidate states three reasons for seasoning or drying timber.

Example answer

See above – 3 required only

7. Define the following terms relating to timber drying. ☑

Term	Definition
Fibre Saturation Point	Point in drying process where all the free water has been removed
Equilibrium Moisture Content	Point in drying process where moisture in the timber and the moisture in the surrounding atmosphere are the same
Moisture Content	Weight of the wood substance against the weight of water and expressed as a percentage
Green Weight	Weight of a sample of timber that contains natural moisture and wood fibre
Oven Dry Weight	The weight of a sample of timber that has all the natural moisture removed leaving the weight of the wood fibre only

Assessor

This question supports E.R. 2.2

Judgement statements

☐ The candidate provides definitions for the following all terms.

☐ Answers are similar to model answers provided.

Example answer

As above.

8. Briefly explain the following two drying processes. ☑

Drying process	Explanation
Air seasoning	Air drying is carried out by leaving timber out in the open to dry. Some form of shelter from the rain may be provided. Timber may take several weeks to

	dry in these conditions especially in the winter.
Kiln drying	The timber is enclosed in a kiln, and by using heat, steam, fans and ventilation the drying time is stepped up dramatically. High temperature kilns operating at around 120 degrees Celsius are able to dry timber in a matter of hours.

Assessor

This question supports E.R. 2. 3

Judgement statements

☐ The candidate explains the process for air drying and kiln drying.

☐ Answers are similar to model answers provided.

Example answer

As above

9. Explain **two** advantages of kiln drying as opposed to air seasoning ☑

1. Kiln drying is faster than air seasoning.
2. Can get timber to any moisture content even in winter
3. All timber is dried evenly
4. Any borer in timber is killed.

Assessor

This question supports E.R. 2. 3

Judgement statements

☐ The candidate explains two advantages of kiln drying as opposed to air seasoning.

☐ Answers are similar to at least two of model answers provided

Example answer

As above – 2 required only

For the following questions refer to reference text:

Common Insects and Fungi that affect Logs and Sawn Timber in New Zealand (2007) published by AsureQuality Ltd, PO Box 4127, Mt Maunganui South, Tauranga 3149.

☑

Questions 10 - 15 are about insect attacks and measures to deal with insect attacks.

10. For each borer insect, explain ☑

- » What they look like (Appearance)
- » What damage they cause to timber.

Borer Insect	Appearance	Damage they cause
Two-Toothed Longhorn	Larger than most borer up to 25mm long Reddish brown to black in colour Thread-like antennae extend about halfway down the body.	Grub tunnels with the grain and creates very large tunnels
Pinhole Borer	The beetles are elongated, cylindrical, and predominantly chestnut-brown or dark brown. The head is broader than it is long. The jaws are directed downwards and the antennae end in a flattened, plate-like club.	Only attacks living or newly felled timber. Tunnel out a hole about 1 – 2mm to lay eggs and a spore of fungi which discolours the timber.
Common Household Borer	The adult beetle is small, about 5mm in length, and dull brown-grey in colour. The head, which is shielded by a hood-shaped segment, is almost invisible and the wing covers appear to be finely furrowed.	Attacks well seasoned timber makes small round holes around 2mm in diameter. Grubs in wood can reduce wood to honey comb structure. Then to just a shell
Powder Post Beetle	About the same length as the common borer but is darker and slimmer in appearance	The wood upon which they feed is generally eaten into a fine flourlike powder They can damage and, may eventually destroy (by completely

		tunnelling) all exposed wood

Assessor

This question supports E.R. 3.1

Judgement statements

- ☐ The candidate describes named Borer insects, in terms of appearance and the damage each does to timber.
- ☐ Answers are similar to model answers provided.

Example answer

As above

11. Tick the box next to the picture that indicates insect attack. ☑

☐

☐

☑

Assessor

This question supports E.R. 3.2

Judgement statements

☐ The candidate identifies an insect attack.

Example answer

As above

12. Explain what can be done to prevent further insect attacks. ☑

Fumigation and coating with anti borer chemical or remove and replace the effected pieces.

Assessor

This question supports E.R. 3.2

Judgement statements

☐ The candidate identifies the action required to prevent a further insect attack.

Example answer

See above

13. List **four** pieces of personal protective equipment (PPE) that should be used when using pesticides. ☑

1. Overalls
2. Gloves
3. Safety eye protection
4. Facemask or respirator

Assessor

This question supports E.R. 3.3

Judgement statements

☐ The candidate identifies personal protective equipment worn when using pesticides

Example answer

As above

14. Explain a method of pesticide application used in your worksite. ☑

Any one of:

Spray timber with protective coat of anti-borer chemical

Set off a borer bomb

Assessor

This question supports E.R. 3.3

	Judgement statements ☐ The candidate describes a pesticide application method used in their workplace **Example answer** As above	
15.	When applying pesticide explain what steps you take to prevent contaminating other areas of the worksite. Any one of: All safety equipment thoroughly cleaned after use and correctly stored. Used inside a sealed plastic container **Assessor** This question supports E.R. 3.3 **Judgement statements** ☐ The candidate describes a pesticide application method used in their workplace **Example answer** As above	☑

You have reached the end of the questions.

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:** ☑ All Questions in this guide **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 25569 v 3, it is clear that the candidate can competently:

- ☑ Demonstrate knowledge of different types of timber used in furniture operations.
- ☑ Demonstrate knowledge of timber seasoning.
- ☑ Demonstrate knowledge of insect attack and explain measures to deal with insect attack.

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