



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **FDFTEC4008A Apply principles of food packaging**

**Revision Number: 1**

## FDFTEC4008A Apply principles of food packaging

### Modification History

Not applicable.

### Unit Descriptor

<b>Unit descriptor</b>	This unit of competency covers the skills and knowledge required to oversee packaging operations and assess the nature and likely causes of packaging problems.
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### Application of the Unit

<b>Application of the unit</b>	<p>This unit covers a range of packaging technologies and is appropriate for a senior operator or manager responsible for overseeing packaging processes. The unit includes a basic understanding of the principles of modified atmosphere packaging processes.</p> <p>This unit is not designed to meet the competency requirements of the person responsible for determining packaging specifications, nor does it cover food packaging and labelling legislation. Where this is a requirement, refer to FDFTEC4006A Apply an understanding of legal requirements of food production.</p>
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### Licensing/Regulatory Information

Not applicable.

### Pre-Requisites

<b>Prerequisite units</b>		

## Employability Skills Information

<b>Employability skills</b>	This unit contains employability skills.
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## Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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## Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify characteristics of packaging suitable for use with food products	<ul style="list-style-type: none"><li>1.1. Packaging materials suitable for food application are identified</li><li>1.2. Packaging interactions with food products are identified</li><li>1.3. Environmental impact and handling features of packaging materials are identified</li><li>1.4. Customer and legal requirements of packaging are identified</li><li>1.5. Packaging material characteristics meet the needs of the food to be packaged</li></ul>
2. Apply packaging knowledge in a production environment	<ul style="list-style-type: none"><li>2.1. Properties of packaging materials used in a packaging process are identified</li><li>2.2. Costs of packaging materials are identified</li><li>2.3. Procedures for safe operation of the packaging process are established and/or reviewed</li><li>2.4. Out-of-specification packaging outcomes are analysed to identify probable cause</li><li>2.5. Opportunities for improvement to materials, processes or environmental impacts are identified and investigated within level of technical responsibility</li><li>2.6. Proposals for improvement are developed and implemented within level of authority and according to company procedures</li></ul>

## Required Skills and Knowledge

### REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

#### Required skills

##### *Ability to:*

- identify properties of packaging materials as specified in packaging specifications for product handled
- identify the quality assurance systems in place to ensure that the packaged product meets customer and legal requirements
- identify factors that affect shelf-life of the packaged product and the features of packaging design that preserve the product
- identify problems that occur in the packaging process and investigate likely causes
- determine appropriate corrective action to prevent packaging non-conformance
- identify packaging materials suitable for use with food products, including plastics, paper-based materials, glass and metal-based materials
- describe the purpose of packaging and the properties of packaging materials designed to protect product and extend shelf-life, including the role of packaging to provide:
  - protection of product from contamination (microbial, pest infestation, and physical damage)
  - barriers (atmospheric, moisture, flavour and light)
  - package sealability and seal integrity
  - easy-to-open access to the product
  - information to the consumer about the product
  - market appeal
- identify legal requirements relating to packaged product, including Food Standards Code requirements and other legislation relevant to the product
- identify pathogens and spoilage that can occur in packaged food and the conditions required for these to occur
- identify features intrinsic to the food type, according to food type, such as pH, water activity, nutrient content, presence of microbiological compounds, respiration rate (fresh fruit and vegetables) and biological structure
- identify extrinsic factors, such as processing method, temperature, water loss/humidity, maturity (applies to maturity of fruit and vegetables when harvested), handling, cleaning, sanitation and personal hygiene practices and gaseous composition of the storage atmosphere
- identify food spoilage indicators, including microbial contamination, enzymic browning and sensory degradation of characteristics, such as flavour, aroma, colour and texture
- describe the features of packaging material requirements of products handled in the workplace, including coated packaging products, and active/interactive packaging

## REQUIRED SKILLS AND KNOWLEDGE

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- identify factors that influence selection of packaging materials, including market appeal, suitability for use with the food product/s to be packaged, compatibility with packaging technology, cost, environmental features, consumer safety/tamper evidence
- identify packaging methods and technologies designed to extend shelf-life, including active packaging materials, vacuum packing, gas flushing or sparging and modified atmosphere packaging (MAP)
- describe the significance of factors, such as moisture and temperature in promoting/preventing product spoilage
- identify typical problems that occur in the packaging process, and outline likely causes and appropriate response options within level of responsibility (where MAP is used, this includes pack collapse and may include fogging - relevant to fresh fruit and vegetables)
- identify relevant sources of technical expertise and related authority levels to address packaging issues
- for MAP packaging processes, describe the effect of gas composition on the packaged product according to enterprise procedures, including the role of the most commonly used gases in food packaging including carbon dioxide, oxygen and nitrogen and the reaction between gases, the packaged product and the packaging material
- use communication skills to interpret and complete work information to support operations of work team or area
- demonstrate and support cooperative work practices within a culturally diverse workforce

## Required knowledge

### *Knowledge of:*

- properties of packaging materials designed to protect product and extend shelf-life
- packaging interactions with food products
- costs of packaging materials
- legal requirements relating to packaged product, including Food Standards Code requirements and other legislation relevant to the product
- features of packaging design that preserve the product
- pathogens and spoilage that can occur in packaged food and the conditions required for these to occur
- impact of extrinsic factors on food products, such as processing method, temperature, water loss/humidity, maturity (applies to maturity of fruit and vegetables when harvested), handling, cleaning, sanitation and personal hygiene practices and gaseous composition of the storage atmosphere
- characteristics of product and its behaviour when packaged over the shelf-life of the product
- factors that influence selection of packaging materials

**REQUIRED SKILLS AND KNOWLEDGE**

- typical problems that occur in the packaging process, and likely causes and appropriate response options
- the characteristics of product handled and its behaviour when packaged over the shelf-life of the product, for example, reactions that occur when canning some types of vegetables requiring appropriately coated cans, respiration that is ongoing after fresh fruit and vegetables are packaged requiring gas permeable packaging materials, and the effect of high moisture and high fat content products on the packaging process where MAP packaging processes are used

## Evidence Guide

<b>EVIDENCE GUIDE</b>	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
<b>Overview of assessment</b>	Assessment must be carried out in a manner that recognises the cultural and literacy requirements of the assessee and is appropriate to the work performed. Competence in this unit must be achieved in accordance with food safety standards and regulations.
<b>Critical aspects for assessment and evidence required to demonstrate competency in this unit</b>	<p>Evidence of ability to:</p> <ul style="list-style-type: none"> <li>analyse packaging system components, including materials used and interaction with product, costs, processes, legal and customer requirements and environmental and handling implications</li> <li>analyse and confirm safety aspects of processes and equipment</li> <li>analyse non-conformances and packaging problems and determine probable cause</li> <li>propose improvements to the packaging system.</li> </ul>
<b>Context of and specific resources for assessment</b>	<p>Assessment must occur in a real or simulated workplace where the assessee has access to:</p> <ul style="list-style-type: none"> <li>packaging specifications</li> <li>product, packaging components and consumables</li> <li>packaging process equipment</li> <li>relevant standard operating procedures (SOPs)</li> <li>communication systems</li> <li>workplace information recording systems, requirements and procedures.</li> </ul>
<b>Method of assessment</b>	This unit should be assessed together with core units and other units of competency relevant to the function or work role.
<b>Guidance information for assessment</b>	To ensure consistency in one's performance, competency should be demonstrated on more than one occasion over a period of time in order to cover a variety of circumstances, cases and responsibilities, and where possible, over a number of assessment activities.



## Range Statement

<b>RANGE STATEMENT</b>	
<p>The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.</p>	
<b>Policies and procedures</b>	Product packaging and related work processes are consistent with company policies and procedures, regulatory and licensing requirements, legislative requirements, and industrial awards and agreements and takes account of occupational health and safety (OHS) and environmental impact
<b>Packaging processes and technologies</b>	Packaging processes and technologies include: <ul style="list-style-type: none"> <li>• active packaging materials</li> <li>• vacuum packing</li> <li>• gas flushing or sparging</li> <li>• MAP</li> </ul>
<b>Out-of-specification results</b>	Follow-up action in response to out-of-specification results occurs in consultation with the relevant quality/technical expert responsible for packaging specifications

## Unit Sector(s)

<b>Unit sector</b>	Technical
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## Competency field

<b>Competency field</b>	
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## Co-requisite units

<b>Co-requisite units</b>		