



**Australian Government**

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

# **FDFBK2005A Operate a doughnut making process**

**Revision Number: 1**

## FDFBK2005A Operate a doughnut making process

### Modification History

Not applicable.

### Unit Descriptor

|                        |                                                                                                                                               |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Unit descriptor</b> | This unit of competency covers the skills and knowledge required to set up, operate, adjust and shut down the doughnut manufacturing process. |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|

### Application of the Unit

|                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Application of the unit</b> | <p>This unit has application in a production baking environment. It typically targets the production worker responsible for applying basic operating principles to the operation and monitoring of a doughnut making process and associated equipment.</p> <p>When batch or product changeover procedures are part of this work process, the procedures should be used to customise the application of this unit. Where more detailed changeovers are carried out, FDFOP2011A Conduct routine maintenance, should be considered.</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. |
|-----------------------------|------------------------------------------|

## 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. Prepare the doughnut manufacturing equipment and process for operation | 1.1. Materials are confirmed and available to meet operating requirements<br>1.2. Cleaning and maintenance requirements and status are identified and confirmed<br>1.3. Machine components and related attachments are fitted and adjusted to meet operating requirements<br>1.4. Processing/operating parameters are entered as required to meet safety and production requirements<br>1.5. Equipment performance is checked and adjusted as required<br>1.6. Pre-start checks are carried out as required by workplace requirements                                                                                                                                                                                                                               |
| 2. Operate and monitor the doughnut manufacturing process                 | 2.1. The process is started and operated according to workplace procedures<br>2.2. Equipment is monitored to identify variation in operating conditions<br>2.3. Variation in equipment operation is identified and maintenance requirements are reported according to workplace reporting requirements<br>2.4. The process is monitored to confirm that specifications are met<br>2.5. Out-of-specification product/process outcomes are identified, rectified and/or reported to maintain the process within specification<br>2.6. The work area is maintained according to housekeeping standards<br>2.7. Work is conducted according to workplace environmental standards<br>2.8. Workplace records are maintained according to workplace recording requirements |
| 3. Shut down the doughnut manufacturing process                           | 3.1. The appropriate shutdown procedure is identified<br>3.2. The process is shut down according to workplace procedures<br>3.3. Maintenance requirements are identified and reported according to workplace reporting requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

## Required Skills and Knowledge

### REQUIRED SKILLS AND KNOWLEDGE

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

#### Required skills

##### **Ability to:**

- access workplace information to identify doughnut manufacturing requirements
- select, fit and use personal protective clothing and/or equipment
- confirm supply of necessary materials and services
- confirm condition of materials, including confirming flour and water temperature, flour type and oil type
- conduct pre-start checks, such as inspecting equipment condition to identify any signs of wear, selecting appropriate settings and/or related parameters, cancelling isolation or lock outs as required, confirming that equipment is clean and correctly configured for processing requirements, positioning sensors and controls correctly, ensuring any scheduled maintenance has been carried out, and confirming that all safety guards are in place and operational
- conduct pre-start checks for equipment, including:
  - doughnut mixing and forming equipment
  - deep frying equipment
  - cooling tunnels/spirals
- start, operate, monitor and adjust process equipment to achieve required outcomes, including monitoring:
  - materials transfer prior to commencing mixing
  - mixing parameters, such as water and flour temperature, sequence of ingredient addition and mixing times
  - forming parameters, including air pressure to maintain weight of doughnut
  - proving parameters, such as humidity/temperature within prover and time
  - frying parameters, such as oil temperature, appearance of cooked doughnuts and time
- take corrective action in response to out-of-specification results
- respond to and/or report equipment failure within level of responsibility
- locate emergency stop functions on equipment
- follow isolation and lock out/tag out procedures as required to take process and related equipment off-line in preparation for cleaning and/or maintenance within level of responsibility
- demonstrate batch/product changeovers
- complete workplace records as required
- maintain work area to meet housekeeping standards
- operating finishing/filling equipment according to enterprise procedures, including preparing decorating ingredients, such as mixing and heating, crushing, cutting or

## REQUIRED SKILLS AND KNOWLEDGE

sieving toppings

- monitor temperature of toppings, spread/application of toppings and glazes, jam/filling placement and quantity and appearance of finished product
- use process control systems according to enterprise procedures
- collect samples and conduct tests according to enterprise procedures
- conduct routine maintenance according to enterprise procedures
- clean and sanitise equipment according to enterprise procedures
- use oral communication skills/language competence to fulfil the job role as specified by the organisation, including questioning, active listening, asking for clarification and seeking advice from supervisor
- work cooperatively within a culturally diverse workforce

### Required knowledge

#### *Knowledge of:*

- purpose and basic principles of the doughnut manufacturing process, including the stages in doughnut manufacture (e.g. mixing, proving, frying and finishing) and the requirements of each processing stage (e.g. the relationship between temperature, time and humidity in the proving process)
- the role of main ingredients, such as yeast
- basic operating principles of equipment, including main equipment components, status and purpose of guards, equipment operating capacities and applications, and the purpose and location of sensors and related feedback instrumentation
- services required and action to take if services are not available
- the flow of the doughnut manufacturing process and the effect of outputs on customer satisfaction and downstream processes, such as packaging
- quality requirements of materials and effect of variation on doughnut manufacturing process performance
- quality characteristics to be achieved by the finished doughnut
- process specifications, procedures and operating parameters, including procedures for adjusting water temperature to compensate for atmospheric conditions
- operating requirements and parameters and corrective action required where results are out-of-specification operating parameters
- typical equipment faults and related causes, including signs and symptoms of faulty equipment and early warning signs of potential problems
- methods used to monitor the doughnut manufacturing process, including inspecting, measuring and testing as required by the process
- inspection or test points (control points) in the process and the related procedures and recording requirements
- contamination/food safety risks associated with the doughnut manufacturing process and related control measures
- common causes of variation and corrective action required
- occupational health and safety (OHS) hazards and controls, including limitations of

**REQUIRED SKILLS AND KNOWLEDGE**

- protective clothing and equipment relevant to the doughnut manufacturing process
- requirements of different shutdowns as appropriate to the process and workplace production requirements, including emergency and routine shutdowns and procedures to follow in the event of a power outage
- isolation, lock out and tag out procedures and responsibilities
- product/process changeover procedures and responsibilities
- procedures and responsibility for reporting production and performance information
- environmental issues and controls relevant to the doughnut manufacturing process, including waste/rework collection and handling procedures related to the process
- finishing requirements, where relevant, including preparation methods, monitoring of parameters, such as icing temperature, operating procedures for application of finishings and quality requirements, such as even coverage
- basic operating principles of process control, including the relationship between control panels and systems and the physical equipment
- sampling and testing associated with process monitoring and control where relevant
- routine maintenance procedures where relevant
- cleaning and sanitation procedures where relevant

## Evidence Guide

### EVIDENCE GUIDE

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.

#### Overview of assessment

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.

#### Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of ability to:

- conduct pre-start checks on machinery used for making doughnuts
- start, operate, monitor and adjust process equipment to achieve required quality outcomes
- take corrective action in response to typical faults and inconsistencies
- complete workplace records as required
- apply safe work practices and identify OHS hazards and controls
- safely shut down equipment
- apply food safety procedures to work practices.

#### Context of and specific resources for assessment

Assessment must occur in a real or simulated workplace where the assessee has access to:

- personal protective clothing and equipment
- work procedures, including advice on safe work practices, food safety, quality and environmental requirements
- information on equipment capacity and operating parameters
- production schedule and recipe/batch instructions
- specifications, control points and processing parameters
- doughnut mixing, forming, proving, injecting and frying equipment, and related equipment as required, such as glazing and topping application equipment
- doughnut ingredients and related materials, such as frying oil and glazing/toppings and fillings as required
- sampling schedules and test procedures and equipment as required

| <b>EVIDENCE GUIDE</b>                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                            | <ul style="list-style-type: none"><li>• cleaning procedures, materials and equipment as required.</li></ul>                                                                                                                                                                                                                                                                                                                                       |
| <b>Method of assessment</b>                | <p>This unit should be assessed together with core units and other units of competency relevant to the function or work role. Examples could be:</p> <ul style="list-style-type: none"><li>• FDFOP2004A Clean and sanitise equipment</li><li>• FDFOP2011A Conduct routine maintenance</li><li>• FDFOP2013A Apply sampling procedures</li><li>• FDFOP2030A Operate a process control interface</li><li>• MSL973001A Perform basic tests.</li></ul> |
| <b>Guidance information for assessment</b> | <p>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.</p>                                                                                                                                                                        |

## Range Statement

### RANGE STATEMENT

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.

|                                 |                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Policies and procedures</b>  | Work is carried out according to company policies and procedures, regulatory and licensing requirements, legislative requirements, and industrial awards and agreements                                                                                                                                                                                                                 |
| <b>Legislative requirements</b> | Legislative requirements are typically reflected in procedures and specifications. Legislation relevant to this industry includes: <ul style="list-style-type: none"> <li>the Food Standards Code, including labelling, weights and measures legislation</li> <li>legislation covering food safety, environmental management, OHS, anti-discrimination and equal opportunity</li> </ul> |
| <b>Workplace information</b>    | Workplace information may include: <ul style="list-style-type: none"> <li>standard operating procedures (SOPs)</li> <li>specifications</li> <li>production schedules and instructions</li> <li>manufacturers' advice</li> <li>standard forms and reports</li> </ul>                                                                                                                     |
| <b>Doughnuts</b>                | Doughnut types may include: <ul style="list-style-type: none"> <li>hole doughnuts and jam injected doughnuts</li> </ul> Doughnut may be: <ul style="list-style-type: none"> <li>glazed or covered with topping</li> </ul>                                                                                                                                                               |
| <b>Materials</b>                | Materials typically include: <ul style="list-style-type: none"> <li>flour</li> <li>yeast</li> <li>water</li> <li>ice</li> <li>oil</li> <li>glazes</li> <li>toppings</li> </ul>                                                                                                                                                                                                          |

| <b>RANGE STATEMENT</b>                      |                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                             | <ul style="list-style-type: none"> <li>• pre-mixes</li> </ul>                                                                                                                                                                                                                                                                                                                                                       |
| <b>Equipment</b>                            | <p>Equipment may include:</p> <ul style="list-style-type: none"> <li>• scales</li> <li>• mixers</li> <li>• hoppers</li> <li>• forming equipment</li> <li>• cutters or injectors</li> <li>• gas or electric frying equipment</li> <li>• provers</li> <li>• enrobers and other glazing and equipment, such as cooling tunnels or spirals</li> </ul> <p>Specific conveyor line attachments depend on product types</p> |
| <b>Weighing and measuring</b>               | Weighing and measuring may be automated or done manually                                                                                                                                                                                                                                                                                                                                                            |
| <b>Shutdown procedures</b>                  | <p>Shutdown procedures may include:</p> <ul style="list-style-type: none"> <li>• cleaning (in some cases cleaning may be carried out by a dedicated cleaning crew)</li> </ul>                                                                                                                                                                                                                                       |
| <b>Operation of equipment and processes</b> | <p>Operation of equipment and processes may require:</p> <ul style="list-style-type: none"> <li>• the use of process control panels and systems</li> </ul>                                                                                                                                                                                                                                                          |
| <b>Services</b>                             | <p>Services may need to be confirmed. These depend on the nature of the process. Typical examples include:</p> <ul style="list-style-type: none"> <li>• power</li> <li>• steam</li> <li>• water</li> <li>• vacuum</li> <li>• compressed and instrumentation air</li> </ul>                                                                                                                                          |

## Unit Sector(s)

|                    |        |
|--------------------|--------|
| <b>Unit sector</b> | Baking |
|--------------------|--------|

## Competency field

|                  |  |
|------------------|--|
| Competency field |  |
|------------------|--|

## Co-requisite units

|                    |  |  |
|--------------------|--|--|
| Co-requisite units |  |  |
|                    |  |  |
|                    |  |  |