



Australian Government

Assessment Requirements for FBPOPR2036 Operate an extrusion process

Release: 1

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Modification History

Release	Comments
Release 1	This version released with FBP Food, Beverage and Pharmaceutical Training Package Version 1.0

Performance Evidence

An individual demonstrating competency in this unit must satisfy all of the elements and performance criteria of this unit.

There must be evidence that the individual has operated an extrusion process on at least one occasion, including:

- accessing workplace information to identify processing requirements
- selecting, fitting and using personal protective clothing and/or equipment
- confirming supply of necessary materials/ingredients and services
- conducting pre-start checks, including:
 - inspecting equipment condition to identify any signs of wear
 - selecting and fitting appropriate attachments where required
 - setting processing 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
 - confirming that all safety guards are in place and operational
- starting, operating, monitoring and adjusting process equipment to achieve required outcomes, including monitoring control points and conducting inspections as required at each stage of the extrusion process to confirm process remains within specification, including:
 - parameters, including throughput
 - load/work input as measured by rpm (revolutions per minute)
 - kilowatts
 - amps and/or Hz (hertz) at each stage of the process
- monitoring supply of materials to and from the extrusion process
- taking corrective action in response to out-of-specification results

- responding to and/or reporting equipment failure within level of responsibility
- locating emergency stop functions on equipment
- following 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
- completing workplace records as required
- maintaining work area to meet housekeeping standards
- using process control systems according to workplace procedures
- cleaning and sanitising equipment according to workplace procedures
- following relevant work health and safety procedures.

Knowledge Evidence

An individual must be able to demonstrate the knowledge required to perform the tasks outlined in the elements and performance criteria of this unit. This includes knowledge of:

- purpose and basic principles of each part of the process, including the purpose and methods used to achieve each stage of the extrusion process
- basic operating principles of equipment used for the extrusion process, including:
 - main equipment components
 - status and purpose of guards
 - equipment operating capacities and applications
 - the purpose and location of sensors and related feedback instrumentation
- services required for the extrusion process and action to take if services are not available
- the flow of the extrusion process and the effect of outputs on downstream processes
- quality characteristics of extruded output, including required characteristics of mass or blend to be extruded, including:
 - gelatinisation and viscosity
 - dimensions, texture and hardness of extruded product
 - moisture content
- effect of variation in inputs and/or services on process performance
- operating requirements and parameters and corrective action required where operation is outside specified operating parameters, including the effect of variation in key variables, including:
 - throughput and work input at each stage of the process
 - effect of time and temperature
 - barrel pressures and temperatures at each zone
- typical equipment faults for the extrusion process and related causes, including signs and symptoms of faulty equipment and early warning signs of potential problems, including:
 - screw and barrel assembly wear
 - die plate wear
 - wear of conditioner paddles
 - extruder knife condition

- methods used to monitor the extrusion 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
- common causes of variation in the operation of the extrusion process and corrective action required
- contamination risks related to the extrusion process and related control measures
- work health and safety hazards and controls relevant to the operation of the extrusion 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 required for the operation of the extrusion process
- procedures and responsibility for reporting production and performance information
- environmental issues and controls relevant to the extrusion process, including waste/rework collection and handling procedures related to the process
- basic operating principles of process control, including the relationship between control panels and systems and the physical equipment
- cleaning and sanitation procedures required for the extrusion process.

Assessment Conditions

Assessment of skills must take place under the following conditions:

- physical conditions:
 - a workplace or an environment that accurately represents workplace conditions
- resources, equipment and materials:
 - personal protective clothing and equipment
 - extrusion and related equipment and services
 - ingredients/blend/mass to be extruded
 - sampling schedules and test procedures and equipment
 - cleaning procedures, materials and equipment
- specifications:
 - work procedures, including advice on safe work practices, food safety, quality and environmental requirements
 - information on equipment capacity and operating parameters
 - production schedule/batch instructions
 - specifications, control points and processing parameters
 - documentation and recording requirements and procedures.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volumes, including Implementation Guides, are available at VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=78b15323-cd38-483e-aad7-1159b570a5c4>