



Australian Government

Assessment Requirements for PMBPROD334 Produce products using twin screw extruders

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to PMBPROD334A Produce products using twin screw extruders

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria and demonstrate the ability to:

- read and interpret procedures, job specifications, instruments/control panels, material labels and safety data sheets (SDS)
- plan the twin screw extrusion process and sequence tasks
- set up twin screw extruder equipment and materials to meet specifications
- start up and operate the equipment
- monitor key variables, including:
 - actual and set temperatures
 - speeds, including screw speed and haul-off
 - colour and uniformity
 - surface finish and appearance
 - product finished thickness
 - output rate
 - product integrity and general conformance to specification
- make adjustments to remedy faults and non-conformity
- maintain output and product quality using appropriate instruments, controls, test information and readings
- safely shut down equipment in normal and abnormal circumstances
- leave machine in appropriate condition with any required locks, tags or notices
- identify hazards and apply relevant hazard controls
- apply safety procedures
- apply housekeeping procedures
- apply waste management procedures
- recognise early warning signs of equipment/processes needing attention or with potential problems
- distinguish between causes of problems, including:
 - operational problems
 - instrument failure/malfunction
 - electrical failure/malfunction
 - mechanical failure/malfunction
 - wrong readings
 - equipment design deficiencies
 - materials properties
 - process variables
 - raw material variations/contamination
 - process abnormalities
 - procedural errors
- recognise and prioritise problems requiring action
- resolve routine and non-routine problems
- communicate effectively with team/work group and supervisors
- complete workplace records
- do basic arithmetical manipulations, including additions, subtractions, divisions, fractions and percentages.

Knowledge Evidence

Must provide evidence that demonstrates knowledge relevant to their job sufficient to operate independently and to solve routine and non-routine problems, including knowledge of:

- function and operating principles of twin screw extruder equipment, machine components and ancillary equipment
- impact of variations in machine process conditions and raw materials on product quality and production output
- factors which may affect product quality or production output and appropriate remedies
- twin screw extrusion manufacturing process and phases of the cycle
- importance of machine set-up and warm-up for effective processing of materials
- characteristics of materials and their behaviour in relation process conditions and stages of production
- quality requirements at each production stage
- mechanical, hydraulic, pneumatic, electrical and electronic principles which effect machine operation
- common adjustments in process variables and their impact on product quality and production output
- impact of variations in raw materials and equipment operation in relation to final product
- possible changes to materials properties to better suit specific process requirements
- routine and non-routine problems that may arise, the range of possible causes and appropriate actions
- organisation procedures relevant to the work environment/job role
- hierarchy of control
- hazards that may arise in the job/work environment and:
 - their possible causes
 - potential consequences
 - appropriate risk controls.

Assessment Conditions

- The unit should be assessed holistically and the judgement of competence shall be based on a holistic assessment of the evidence.
- In all plants it may be appropriate to assess this unit concurrently with units such as:
 - teamwork
 - communication.
- The collection of performance evidence:
 - should occur over a range of situations which include typical disruptions to normal, smooth operation of an operating plant
 - will typically include a supervisor/third-party report or other evidence, focusing on consistent performance and problem recognition and solving. A supervisor/third-party report must be prepared by someone who has a direct, relevant, current relationship with the person being assessed and who is in a position to form a judgement on workplace performance relevant to the unit of competency
 - must include the use of an appropriate industrial item of equipment requiring demonstration of operation, start and stop procedures and responding to problems
 - may use industry-based simulation for all or part of the unit particularly where safety, lack of opportunity or significant cost is an issue.
- Assessment should occur in operational workplace situations. Where this is not possible or where personal safety or environmental damage are limiting factors assessment must occur in a sufficiently rigorous simulated environment that reflects realistic operational workplace conditions. This must cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.
- Assessment in a simulated environment should use evidence collected from demonstration of skills and one or more of:
 - walk-throughs
 - pilot plant operation
 - industry-based case studies/scenarios
 - ‘what ifs’.
- Knowledge evidence may be collected concurrently with performance evidence or through an independent process, such as workbooks, written assessments or interviews.
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications associated with this unit.
- The regulatory framework will be reflected in workplace policies and procedures and is not required to be independently assessed.
- Foundation skills are integral to competent performance of the unit and should not be assessed separately.
- Assessors must satisfy the assessor competency requirements that are in place at the time of the assessment as set by the VET regulator.

- In addition the assessor or anyone acting in subject matter expert role in assessment shall demonstrate both technical competency and currency. If the assessor cannot demonstrate technical competency and currency they shall assess with a subject matter expert who does meet these requirements.
- Technical competence can be demonstrated through one or more of:
 - relevant VET or other qualification/Statement of Attainment
 - appropriate workplace experience undertaking the type of work being assessed under routine and non-routine conditions
 - appropriate workplace experience supervising/evaluating the type of work being assessed under routine and non-routine conditions
- Currency can be demonstrated through one or more of:
 - being currently employed undertaking the type of work being assessed
 - being employed by the organisation undertaking the type of work being assessed and having maintained currency in accordance with that organisation's policies and procedures
 - having consulted/had contact with an organisation undertaking the type of work being assessed within the last twelve months, the consultation/contact being related to assessment
 - conducting on the job training/assessments of the type of work being assessed
 - being an active member of a relevant professional body and participating in activities relevant to the assessment of this type of work.

Links

MSA Training Package Implementation Guides - <http://mskills.org.au/training-packages/info/>