



Australian Government

PMBPROD375 Vulcanise products using an autoclave

Release: 1

PMBPROD375 Vulcanise products using an autoclave

Modification History

Release 1. Supersedes and is equivalent to PMBPROD375B Vulcanise products using an autoclave

Application

This unit of competency covers the skills and knowledge required to operate and adjust an autoclave to vulcanise/cure rubber products.

This unit of competency applies to experienced operators who are required to load product, bring the autoclave online, monitor operations, maintain continuity of process, make adjustments to remedy faults and non-conformity and solve problems within area of responsibility.

This unit of competency applies to an experienced operator demonstrating theoretical and technical knowledge and well developed skills in situations that require some discretion and judgement. The operator may work alone or as a member of a team or group and will work in liaison with other shift team members, team leader and supervisor, as appropriate.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Competency Field

Production

Unit Sector

Not applicable

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

- | | |
|-------------------------------------|---|
| 1 Plan own work requirements | 1.1 Identify work requirements from workplace procedures |
| | 1.2 Identify equipment and processes used for materials preparation, vulcanising and any related production process and for the downstream operations |

- 1.3 Identify hazards connected with materials and process from workplace reference materials, including safety data sheets (SDS) and equipment instructions
 - 1.4 Implement measures to control identified hazards in line with procedures and duty of care
 - 1.5 Identify requirements for materials, quality, production and equipment checks
- 2 **Set up autoclave vulcanising process**
- 2.1 Identify and read equipment information, quality specifications and standard operating procedures (SOPs)
 - 2.2 Check heat and pressure settings and process adjustments for conformity to procedures
 - 2.3 Compare equipment and material condition to known optimum condition and take appropriate action in accordance with procedures (including, where authorised, making adjustments within overall specifications to process settings to ensure product output quality is appropriate).
 - 2.4 Check that all gauges are operating, safety features are activated or fitted, locks and guards are in place
- 3 **Operate and make adjustments to the autoclave process to procedures**
- 3.1 Load and close autoclave and bring on line
 - 3.2 Monitor production outputs, equipment operating temperatures and pressures
 - 3.3 Make adjustments to remedy faults and non-conformity as required
 - 3.4 Shut down, vent and unload autoclave
 - 3.5 Take samples as required and identify product out of specification
 - 3.6 Note and report non-conformity to required workplace specifications, following workplace procedures
 - 3.7 Clean, adjust and lubricate equipment as required
 - 3.8 Pause or stop equipment in an emergency, following

		procedures
4	Respond to product quality improvement requests	<p>4.1 Monitor vulcanising process and note conditions which may affect product quality standards</p> <p>4.2 Report process variations</p> <p>4.3 Note and implement changes in standard operating procedures and specifications</p>
5	Anticipate and solve problems	<p>5.1 Recognise a problem or a potential problem</p> <p>5.2 Determine problems needing priority action</p> <p>5.3 Refer problems outside area of responsibility to appropriate person, with possible causes</p> <p>5.4 Seek information and assistance as required to solve problems</p> <p>5.5 Solve problems within area of responsibility</p> <p>5.6 Follow through items initiated until final resolution has occurred</p>

Foundation Skills

This section describes those required skills (language, literacy and numeracy) that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Regulatory framework The latest version of all legislation, regulations, industry codes of practice and Australian/international standards, or the version specified by the local regulatory authority, must be used.

Applicable legislation, regulations, standards and codes of practice include:

- health, safety and environmental (HSE) legislation, regulations and codes of practice relevant to the workplace, manual handling and hazardous materials
- Australian/international standards relevant to the materials being used and products being made
- any relevant licence and certification requirements.

All operations to which this unit applies are subject to stringent HSE requirements, which may be imposed through state/territory or federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between performance criteria and such requirements the legislative requirements take precedence.

Procedures All operations must be performed in accordance with relevant procedures.

Procedures are written, verbal, visual, computer-based or in some other form, and include one or any combination of:

- emergency procedures
- work instructions
- standard operating procedures (SOPs)
- safe work method statements (SWMS)
- formulas/recipes
- batch sheets
- temporary instructions
- any similar instructions provided for the smooth running of the plant.

Tools and equipment Tools and equipment include:

- autoclave
- ancillary equipment that is integral to the process other than boiler operation.

Additional tools and equipment will be selected as required from:

- hand tools used in this process
- knives and other bag opening equipment
- hoists/lifting equipment not requiring any special permits or licences
- manual handling aids, such as hand carts and trolleys
- relevant personal protective equipment (PPE).

Hazards Hazards must be identified and controlled. Identifying hazards requires consideration of:

- confined spaces
- weight, shape, volume of materials to be handled
- hazardous products and materials
- rotational equipment or vibration
- knives and cutting blades
- sharp edges, protrusions or obstructions
- slippery surfaces, spills or leaks
- smoke, dust or other atmospheric hazards
- high temperatures
- electricity
- gas
- gases and liquids under pressure
- structural hazards
- equipment failures
- machinery, equipment and product mass
- other hazards that might arise.

Problems Routine and non-routine problems must be resolved.

Non-routine problems must be resolved by applying operational knowledge to develop new solutions, either individually or in collaboration with relevant experts, to:

- determine problems needing action
- determine possible fault causes
- develop solutions to problems which do not have a known solution
- follow through items initiated until final resolution has occurred
- report problems outside area of responsibility to designated person.

Non-routine problems are unexpected problems or variations of previous problems and include one or more of:

- unstable process variables
- sub-optimal operation
- variations in feed rates
- variations in quality
- emergency situations
- intermittent faults.

Operational knowledge includes one or more of:

- procedures
- training
- technical information, such as journals and engineering specifications
- remembered experience
- relevant knowledge obtained from appropriate people.

Routine problems are predictable and have known solutions and include one or more of:

- processing problems
- equipment malfunctions
- out of specification equipment operation
- variations in materials
- wrong cure cycle
- changed product cure systems/section
- steam problems.

Unit Mapping Information

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Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=932aacef-7947-4c80-acc6-593719fe4090>