



Australian Government

PMBTECH501 Analyse equipment performance

Release: 1

PMBTECH501 Analyse equipment performance

Modification History

Release 1. Supersedes and is equivalent to PMBTECH501B Analyse equipment performance

Application

This unit of competency covers the skills and knowledge required to analyse and verify equipment performance. It applies to equipment that uses screws and dies/tools as typically used in extrusion, injection moulding and blow moulding.

This unit of competency applies to experienced technicians or those in similar roles who are required to apply in-depth knowledge of materials, process, equipment and problem solving in order to set up and operate performance verification trials, determine actual compared to theoretical performance of equipment and equipment components, and make recommendations based on the results.

This unit of competency may be contextualised to analyse the performance of equipment that does not use screws and dies/tools, however, both the theoretical/mathematical and practical analysis of the process at a level equivalent to a screw/die analysis must be included.

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

Pre-requisite Unit

PMBTECH401 Predict polymer properties and characteristics

MSMOPS401 Trial new process or product

Competency Field

Technical

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.

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| 1 | Determine theoretical performance | 1.1 | Identify item of plant and plant component to be analysed |
| | | 1.2 | Locate and interpret design specification |
| | | 1.3 | Identify process materials being processed/to be processed during verification trial |
| | | 1.4 | Determine process material properties under process conditions |
| | | 1.5 | Calculate theoretical performance of component with that material under those conditions |
| 2 | Conduct trial | 2.1 | Design verification trial to be compatible with theoretical analysis |
| | | 2.2 | Determine measurements needed from trial to yield required data |
| | | 2.3 | Select equipment suitable to give required measurements |
| | | 2.4 | Arrange for verification trial with relevant process personnel |
| | | 2.5 | Set up required measurement equipment |
| | | 2.6 | Supervise trial and ensure trial conditions are appropriate |
| | | 2.7 | Collect trial data for analysis |
| 3 | Verify performance of component | 3.1 | Compare theoretical with actual performance |
| | | 3.2 | Determine significance of variation between theoretical and actual performance |
| | | 3.3 | Investigate any suspicious results and take appropriate action |

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| 4 | Recommend required action | 4.1 | Determine appropriate action to bring performance to desired level |
| | | 4.2 | Initiate the corrective action to procedures |
| | | 4.3 | Determine measures to increase equipment productivity |
| | | 4.4 | Re-check performance after corrective action is implemented |

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, hazardous materials and product specifications
- 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:

- test procedures
- technical specifications
- technical drawings
- 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:

- measuring equipment (e.g. micrometers, tapes, verniers and scales)
- hand tools
- data analysis tools (e.g. computer programs for data recording and presentation).

Hazards

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

- hazardous products and materials
- rotational equipment or vibration
- sharp edges, protrusions or obstructions
- slippery surfaces, spills or leaks
- smoke, dust or other atmospheric hazards
- moving machinery
- high temperatures
- other hazards that might arise.

Unit Mapping Information

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Links

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