



Australian Government

PMBPROD373 Draw optical fibre

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to PMBPROD373B Draw optical fibre

Application

This unit of competency covers the skills and knowledge required to operate and adjust optical fibre drawing process to produce optical fibre.

This unit of competency applies to experienced operators who are required to start up and shut down injection blow moulding equipment, monitor equipment operation, 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.

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| 1 | Plan own work requirements | 1.1 | Identify equipment and processes used for production process and upstream and downstream operations from production plan or request |
| | | 1.2 | Identify materials required, including additives |
| | | 1.3 | Recognise hazards and take appropriate action |
| | | 1.4 | Identify and check emergency stops, guards and controls |
| | | 1.5 | Identify requirements for materials, quality, production and equipment checks |
| | | 1.6 | Identify materials, waste management and housekeeping needs |
| 2 | Check optical fibre drawing equipment set-up | 2.1 | Determine equipment requirements |
| | | 2.2 | Set process to specifications as required |
| | | 2.3 | Check materials are correct |
| | | 2.4 | Select appropriate dies (number and sizes) and arrange in correct production sequence |
| | | 2.5 | Coat drawing rollers with alcohol to procedures |
| | | 2.6 | Check speed, time, tension and wind-off speed to requirements |
| | | 2.7 | Check optical fibre winding equipment settings and adjustments, including tensions and spool loading, to specifications |
| | | 2.8 | Discard, or make adjustments to the process for, non-conforming materials |
| | | 2.9 | Set up date, batch and materials markings to specifications, as required |
| | | 2.10 | Complete other pre-start checks to procedures |

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| 3 | Operate and make adjustments to optical fibre drawing machine to procedures | 3.1 | Check and load materials using correct manual handling methods |
| | | 3.2 | Start up equipment and make adjustments to reach required settings |
| | | 3.3 | Monitor controls/displays/terminals for production/process data |
| | | 3.4 | Monitor product/process quality |
| | | 3.5 | Maintain continuity of process |
| | | 3.6 | Make adjustments to remedy faults and non-conformity to standard as required |
| | | 3.7 | Collect and reprocess/discard scrap/trim and other materials |
| | | 3.8 | Complete required workplace documentation/records |
| | | 3.9 | Clean, adjust and lubricate equipment as required |
| | | 3.10 | Pause or stop equipment in an emergency, as required |
| 4 | Shut down equipment to procedures | 4.1 | Shut down equipment as required |
| | | 4.2 | Complete equipment cleanup, adjustments and waste management |
| | | 4.3 | Place suitable guards, locks and notices to prevent inadvertent start-up |
| 5 | Anticipate and solve problems | 5.1 | Recognise a problem or a potential problem |
| | | 5.2 | Determine problems needing priority action |
| | | 5.3 | Refer problems outside area of responsibility to appropriate person, with possible causes |
| | | 5.4 | Seek information and assistance as required to solve problems |
| | | 5.5 | Solve problems within area of responsibility |

- 5.6 Follow through items initiated until final resolution has occurred

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:

- optical fibre drawing equipment and components, including dies, threading path and spools

- ancillary equipment that is integral to the process.

Additional tools and equipment will be selected as required from:

- hand tools used in this process
- welders
- lubrication system
- measuring 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:

- glass fibre breakages
- weight, shape, volume of materials to be handled
- hazardous products and materials
- rotational equipment or vibration
- 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:

- flaws in dies
- flaws in preform
- incorrect processes and temperatures
- incorrect thickness of optical fibre
- equipment malfunctions
- variations in materials
- contamination of materials
- processing problems.

Unit Mapping Information

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Links

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