



Australian Government

PMC552040 Operate glass melting process

Release: 1

PMC552040 Operate glass melting process

Modification History

Release 1. Supersedes and is equivalent to PMC552040C Operate glass melting process

Application

This unit of competency covers the skills and knowledge required to operate primary melting furnaces and ancillary equipment that is integral to the process. It applies to a large production context where the melting process is used to melt, refine or condition raw material to produce glass for forming processes or to form products directly from the melting furnace.

This unit of competency does not apply to secondary processes, the softening of already made glass or the production of scientific glass.

This unit of competency applies to operators who are required to start up and shut down the equipment, monitor and adjust process parameters, perform test procedures and identify and rectify routine problems.

This unit of competency applies to an individual working alone or as part of a team or group and working 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

Operations

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 | Prepare the melting equipment | 1.1 | Establish production program and melting guidelines from the job specifications/work instructions |
| | | 1.2 | Conduct furnace pre-start procedures according to enterprise procedure checklist |
| | | 1.3 | Ensure furnace start-up function complies with standard operating procedures (SOPs) |
| | | 1.4 | Ensure glass melting equipment is operated in accordance with established enterprise procedures |
| 2 | Test furnace back-up equipment | 2.1 | Make sure furnace back-up equipment test schedule is maintained |
| | | 2.2 | Conduct back-up equipment test procedures to meet specific enterprise requirements |
| 3 | Melt raw materials | 3.1 | Interpret the molten glass mix and required furnace operation from job specifications |
| | | 3.2 | Melt glass and monitor furnace and other operating parameters in accordance with established enterprise procedures |
| 4 | Monitor and interpret data and adjust operation | 4.1 | Monitor instruments and control panels, and interpret test results for fluctuations, variations and trends |
| | | 4.2 | Monitor plant and process and deduce conditions of materials in process and products being made |
| | | 4.3 | Determine appropriate action to improve process operation |
| | | 4.4 | Adjust furnace controls to ensure glass melt parameters are maintained to job specifications |
| | | 4.5 | Check that process operation has improved |

- 4.6 Continue analysing data and making adjustments until desired level of process operation is achieved and product is within specifications in accordance with work instructions
- 5 **Rectify problems**
 - 5.1 Identify the range of faults that can occur during the operation
 - 5.2 Determine and rectify fault causes in accordance with established enterprise procedures
 - 5.3 Identify and rectify equipment failure causes in accordance with established enterprise procedures
 - 5.4 Make sure appropriate records and log books of equipment operations are maintained to meet enterprise requirements
 - 5.5 Identify non-routine problems and report to designated person
- 6 **Control hazards**
 - 6.1 Identify hazards from the job to be done
 - 6.2 Identify other hazards in the work area
 - 6.3 Assess the risks arising from those hazards
 - 6.4 Implement measures to control those risks in line with procedures

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, equipment and production processes 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:

- job cards
- emergency procedures
- work instructions
- 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:

- furnaces

- measuring and recording equipment
- ancillary equipment that is integral to the process.

Problems Routine problems must be resolved by applying known solutions.

Routine problems are predictable and include one or more of:

- raw materials feed
- change of fuel source
- variations in furnace temperature
- variations in melt quality.

Known solutions are drawn from one or more of:

- procedures
- training
- remembered experience.

Non-routine problems must be reported according to according to relevant procedures.

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

- high temperatures
- smoke, dust, vapours or other atmospheric hazards
- weight, shape, volume of materials to be handled
- hazardous products and materials
- sharp edges, protrusions or obstructions
- slippery surfaces, spills or leaks
- electricity
- gas
- gases and liquids under pressure
- noise
- rotational equipment or vibration
- plant services (steam, condensate, cooling water, etc)
- structural hazards
- equipment failures
- machinery, equipment and product mass
- limited head spaces or overhangs
- working at heights

- working in restricted or confined spaces
- other hazards that might arise.

Records and reports Records include one or more of:

- log books/sheets
- electronic records
- job/work sheets
- other records used for the smooth running of the plant.

Reports include one or more of:

- paper or electronic-based logs and reports
- verbal/radio reports
- reporting items found which require action.

Unit Mapping Information

Release 1. Supersedes and is equivalent to PMC552040C Operate glass melting process

Links

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