



Australian Government

Assessment Requirements for MSL965001 Design and manufacture glass apparatus and glass systems

Release: 1

Assessment Requirements for MSL965001 Design and manufacture glass apparatus and glass systems

Modification History

Release 1. Supersedes and is equivalent to MSL965001A Design and manufacture glass apparatus and glass systems

Performance Evidence

Evidence of competence in this unit must satisfy all of the requirements of the elements and performance criteria, and include demonstration of:

- designing and safely manufacturing at least two (2) glass apparatus and glass systems
- consulting with clients about design specifications and cost
- interpreting a brief, including design requirements and cost
- applying basic theoretical knowledge of chemistry and physics to make relevant design conclusions
- incorporating design elements that reflect use requirements, improve efficiency, safety and/or increase production capabilities
- preparing blueprints, drawings or designs for the glass apparatus and glass systems
- selecting appropriate grades of glass and components and preparing them for use
- trialling and commissioning glass apparatus and glass systems and making adjustments as necessary
- communicating problems to either supervisor or outside service technician
- completing workplace documentation accurately and communicating work results.

Knowledge Evidence

- Must provide evidence that demonstrates knowledge of:
- design principles for glass apparatus and glass systems
- types of glass used in job role (including special formula glass), their properties and applications
- incompatible glass types
- glass-to-glass and glass-to-metal seals
- theoretical and practical knowledge of glassworking methods and procedures, including chemistry, physics, electrode sealing techniques and electrode placement in glass
- basic theory of operation and use for the glass apparatus and systems for which design and manufacture are required
- characteristics, capabilities and limitations of glassblowing techniques
- relevant hazards, work health and safety (WHS) and environment requirements.

Assessment Conditions

- Judgement of competence must be based on holistic assessment of the evidence. Assessment methods must confirm consistency of performance over time, rather than a single assessment event. The timeframe must allow for adequate assessment of operation under all normal and a range of abnormal conditions.
- This unit of competency is to be assessed in the workplace or a simulated workplace environment. A simulated workplace environment must reflect realistic operational workplace conditions that cover all aspects of workplace performance, including the environment, task skills, task management skills, contingency management skills and job role environment skills.
- Foundation skills are integral to competent performance of the unit and should not be assessed separately.
- 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.
- Knowledge evidence may be collected concurrently with performance evidence or through an independent process, such as workbooks, written assessments or interviews (provided a record is kept in each case).
- This unit of competency may be assessed with:
 - MSL965002 Perform glass coating, grinding and finishing operations
 - MSL965003 Construct, modify and maintain high vacuum systems
- Holistic assessment methods include:
 - inspection of glass apparatus, glass systems and workplace documentation completed by the candidate
 - review of candidate's work outputs over a period of time to assess accuracy, consistency and timeliness
 - feedback from supervisors and/or clients
 - oral/written questioning about properties of glass, design principles, glassworking methods and procedures, quality problems and safe work procedures.
- Access is required to instruments, equipment, materials, workplace documentation, procedures and specifications associated with this unit, including, but not limited to:
 - a scientific glassblowing facility, appropriate safety equipment, materials and safe work procedures, and repair methods
 - bench burner, hand torch, micro torch and ribbon burner, gas supplies and gas economiser
 - hand tools, such as carbon paddles and mandrels, range of forceps, glass tubing gauges, angle setting jigs, calipers, glass support rollers, brass shapers, carbon rods, glass knife, stainless steel gauze, vernier calipers and other measuring tools, and strain viewer, dydinium glasses and polariscope
 - glassworking lathe, mechanical glass cutters and saws, and mechanical glass grinding equipment
 - annealing oven
 - measuring and recording equipment
 - various glass types, including soda-lime, borosilicate, quartz, silica and special formula glasses; glass to metal and glass to glass seals.
- Assessors must satisfy the assessor competency requirements that are in place at the time of the assessment as set by the VET regulator.

- The assessor must demonstrate both technical competence and currency.
- Technical competence can be demonstrated through:
 - relevant VET or other qualification/Statement of Attainment AND/OR
 - relevant workplace experience.
- Currency can be demonstrated through:
 - performing the competency being assessed as part of current employment OR
 - having consulted with a laboratory about performing the competency being assessed within the last twelve months.

Links

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