



Australian Government

MEM19045 Set gems in channel style settings

Release: 1

MEM19045 Set gems in channel style settings

Modification History

Release 1. Supersedes and is equivalent to MEM19045A Set gems in channel style settings.

Application

This unit of competency defines the skills and knowledge required to prepare, seat and set gems into channel style settings. It applies to pre-manufactured jewellery items and includes application of both tapered and parallel channel setting techniques.

This unit applies to individuals involved in jewellery manufacture in a small or large-scale production context. They use and adapt technical skills and knowledge to produce work that meets pre-determined design and production requirements.

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

Band: A

Unit Weight: 4

Pre-requisite Unit

MEM13015 Work safely and effectively in manufacturing and engineering

MEM16006 Organise and communicate information

Competency Field

Jewellery

Elements and Performance Criteria

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Determine job requirements	1.1 Follow standard operating procedures (SOPs) 1.2 Comply with work health and safety (WHS) requirements at all times 1.3 Use personal protective equipment (PPE) in accordance with SOPs 1.4 Identify job requirements from specifications

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
2. Prepare for gem setting	2.1 Plan gem setting procedure and associated materials and equipment based on job requirements 2.2 Obtain and prepare equipment for the task 2.3 Handle gem in a manner which ensures damage is prevented 2.4 Determine the characteristics and purpose of the channel in setting gem material from job requirements
3. Construct channel settings	3.1 Secure the item to be set in a manner which prevents damage to the jewellery piece during the setting process 3.2 Check the thickness, width and length of the channel construction in regard to the gem dimension to be set 3.3 Prepare, lay out and cut the appropriate channel to suit the gem shape and number to be set 3.4 Cut the bearing by hand or with a burr and seat the gem in accordance with industry standards 3.5 Form the channel edge by hand or with an automatic hammer handpiece to secure the gem in the setting, including executing a bright cut on the inside edge of the channel
4. Finish work	4.1 Remove any securing compound and clean the jewellery piece for inspection 4.2 Ensure that jewellery piece meets quality standards 4.3 Complete documentation in accordance with workplace procedures 4.4 Clean up and maintain production environment and equipment in accordance with SOPs

Foundation Skills

This section describes those language, literacy, numeracy and employment skills 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.

Specifications include one or more of the following:	• drawings • job sheets • work instructions.
Gemstones include one or more of the following:	• brilliant shaped stones • baguette shaped stones.
Materials used in channel settings include one or more of the following:	• gemstones • natural stones • modified and synthetics gems • gold • silver • platinum • cast and handmade alloys • faceted and cabochon cut gems in either calibrated or freeform shapes.
Gem setting tools and equipment include one or more of the following:	• gravers • grinders • micro-motors • polishing machines • sharpening stones • setters wax or cement • jewellers burrs and drills • 10X loupe or head set • emery paper • flat and half pliers • needle files • pocket knife • oil • workbench • blocks or dowels covered with setters cement • bench mate setters clamp • engravers vice • bench vice • hand held setters clamp.

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM19045A Set gems in channel style settings.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>

Assessment Requirements for MEM19045 Set gems in channel style settings

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include:

- following work instructions, standard operating procedures (SOPs) and safe work practices
- identifying materials used in channel settings
- applying techniques for handling gems safely and minimising stress during setting processes
- producing a tapered channel setting reflective of industry standard on at least two occasions using gem setting tools and equipment
- producing a parallel channel setting reflective of industry standard on at least two occasions using gem setting tools and equipment
- completing workplace documentation in accordance with procedures.

Note: Where a volume and/or frequency is not specified, demonstration must be provided at least once.

Knowledge Evidence

Evidence required to demonstrate the required knowledge for this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include knowledge of:

- safe work practices and procedures and use of personal protective equipment (PPE)
- materials used in channel settings and their essential characteristics
- types of gemstones
- gem setting tools and equipment
- setting and materials terminology
- requirements for channel setting
- calculation of the required material size
- jewellery item setting methods that do not inflict damage to gems or settings
- depth and spacing at which to cut the bearing on the inside of the channel wall
- how to seat the gem level and straight in the channel that has been prepared
- method of forming the channel wall over the gem to secure it
- industry standard for finishing the top of the channel
- gem features and handling procedures

- maintenance requirements of tools
- setting techniques, processes and procedures
- setting of gems with varying Mohs hardness or naturally included materials
- suitability of metal for carving and setting
- essential characteristics of various styles of channel settings
- various securing techniques for jewellery items to be set.
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Assessment Conditions

- Assessors must:
 - have vocational competency in setting gems in channel style settings at least to the level being assessed with relevant industry knowledge and experience
 - satisfy the assessor requirements in the *Standards for Registered Training Organisations 2015* or its replacement and comply with the *National Vocational Education and Training Regulator Act 2011*, its replacement or equivalent legislation covering VET regulation in a non-referring state/territory as the case requires.
- Where possible, assessment must occur in operational workplace situations. Where this is not possible or where personal safety or environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment that reflects realistic operational workplace conditions. This must cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications.
- 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.
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