



Australian Government

Department of Education, Employment and Workplace Relations

MEM19034A Apply chain manufacture process

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit of competency covers the skills and knowledge required to plan, construct and solder a series of chains according to required specification.

Application of the Unit

This unit applies to enterprises where jewellery is designed and/or made.

Band A

Unit Weight 2

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Not applicable.

Elements and Performance Criteria

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|---|---|
| 1 Draw wire for chain making to size required | 1.1 Identify and implement occupational health and safety (OHS) and environmental requirements for carrying out the tasks and for the work area |
| | 1.2 Establish item requirements and specifications from source documentation and/or appropriate personnel, as required |

- 1.3 Establish and organise stages, materials and tools/equipment for the fabrication process
 - 1.4 Calculate required material
 - 1.5 Cut materials and draw wire to the required size
 - 1.6 Anneal materials, as necessary, to relieve stress/work hardening
 - 1.7 Draw materials to specified tolerance using appropriate equipment
 - 1.8 Obtain and check resources and equipment for the task are fit for purpose
- 2 Fabricate jewellery chains
 - 2.1 Follow OHS requirements for carrying out the work
 - 2.2 Produce spit jig suitable for specified chain
 - 2.3 Produce links to the correct size and specification
 - 2.4 Solder links free from pit holes and flooding
 - 2.5 Construct chain links accurately and sequentially
 - 2.6 Conduct quality assurance during construction to maintain link consistency and meet requirements
- 3 Finish jewellery chains
 - 3.1 Follow OHS requirements for completing the work
 - 3.2 Polish and finish chains to a blemish-free high lustre
 - 3.3 Clean up and maintain production environment, including polishing machines/tumblers, according to enterprise procedures

Required Skills and Knowledge

Required knowledge includes:

- uses of wire and chain
- safety requirements for drawing wire
- use of rolling equipment and techniques for rolling
- calculations and measurements
- procedures to anneal material and reasons for stress relieving metal
- equipment and techniques for wire drawing
- use of cleaning solution and safe practices with chemicals
- procedure to make a split jig
- techniques for coiling and cutting link wire
- procedures to fit and solder chain links
- safe use of polishing lathe and polishing tumbler
- selection and use of buffs and compounds
- selection, use and maintenance of steel polishing shot

Required skills include:

- calculating required material size
- cutting materials
- rolling materials to size and thickness
- annealing materials
- drawing materials to size
- soldering materials/items
- cleaning materials/items
- filing and finishing items
- polishing jewellery chains

Evidence Guide

Overview of assessment	A person who demonstrates competency in this unit must be able to apply soldering techniques to produce chains according to specification.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessors must be satisfied that the candidate can competently and consistently: • implement OHS workplace procedures and practices, including the use of risk control measures • demonstrate applying chain manufacturing process on more than one occasion and in different contexts. This includes: • draw wire materials to size required • produce jewellery items/chains from wire • fabricate finished jewellery chains to specification.
Context of and specific resources for assessment	• Assessment may occur on the job or in an appropriately simulated environment. Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. • Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability. • Access must be provided to appropriate learning and/or assessment support when required. Where applicable, physical resources should include equipment modified for people with disabilities.
Method of assessment	• Assessment must satisfy the endorsed Assessment Guidelines of the MEM05 Metal and Engineering Training Package. • Assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge. • Assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application. • Assessment may be applied under project-related conditions (real or simulated) and require evidence of process.

	• Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances. • Assessment may be in conjunction with assessment of other units of competency where required.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the language and literacy capacity of the candidate and the work being performed.

Range Statement

Appropriate personnel	Appropriate personnel may include: • supervisor • manager • trainer • mentor • teacher • team member • client
OHS requirements	OHS requirements may include: • legislation • protective equipment • material safety management systems • hazardous substances and dangerous goods code • local safe operation procedures • awards provisions
Environmental requirements	Environmental requirements may relate to: • liquid waste • solid waste • gas, fumes, vapour, smoke emissions, including fugitive emissions, and dust • excessive energy and water use • excessive noise
Enterprise procedures	Enterprise procedures may include: • the use of tools and equipment • instructions, including job sheets, cutting lists, plans, drawings and designs • reporting and communication • manufacturer specifications • operational procedures
Equipment	Equipment may include: • draw bench • jewellery bench • soldering torch • adjustable chair • pickle bath and heater • propane-oxy heating equipment • flexible drive and drill bits • spit jigs

	• hand tools • measuring and marking out equipment • abrasives, lubricants and compounds • round square and fancy shaped drawplates • stock gauge rod and wire for chain links • polishing lathe with extraction, buffs, brushes and compounds • tumbler with stainless/steel shot • protective clothing and equipment
Finished/polished	Finished/polished may include: • finishing by files and emery • tumbling with appropriate shot • polishing on a polishing lathe using appropriate brushes and compounds

Unit Sector(s)

Jewellery and horological

Custom Content Section

Not applicable.