



Australian Government

MSTTF2019 Cut and form metal

Release: 1

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Modification History

Release 1. Unit code Title and Application changed. Elements and Performance Criteria restructured and simplified with several elements combined. Foundation Skills field populated. Range of Conditions removed with relevant information moved to Knowledge Evidence. Assessment Requirements clarified with generic foundation skills statements moved to appropriate section and duplication with Performance Criteria removed. Supersedes and is equivalent to MSTTF2002 Cut, bend and shape metal.

Application

This unit describes the skills and knowledge required to cut prescribed lengths of metal bar stock and to bend the lengths into various shapes by hand or with the aid of formers.

This unit applies to individuals working in accordance with pre-determined specifications and established procedures.

No licensing or certification requirements exist at the time of publication. Relevant legislation, industry standards and codes of practice within Australia must be applied.

Competency Field

Textile fabrication

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Prepare for cutting and forming metal	1.1 Identify job and material requirements specifications from work specifications 1.2 Identify and comply with work health and safety requirements 1.3 Plan work to meet job requirements 1.4 Accurately calculate required length of material based on specifications 1.5 Select section material to meet specifications, and choose suitable length of material stock for cutting to minimise waste 1.6 Identify and prepare required tools and equipment in accordance with job requirements and workplace procedures
2. Cut material	2.1 Mark out cutting points on material and select appropriate cutting

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
	equipment 2.2 Secure material to prevent movement using appropriate jigs or fixtures 2.3 Use safety equipment in accordance with work health and safety requirements when operating cutting equipment 2.4 Select and install consumables in accordance with manufacturer requirements 2.5 Set and operate equipment in accordance with manufacturer instructions and workplace procedures 2.6 Cut material to correct length and remove burrs using suitable technique 2.7 Inspect cut sections to verify that size and condition meets specifications and workplace quality standards
3. Form material	3.1 Identify required forming process and confirm safety and operational readiness of equipment 3.2 Set former and place and secure metal section 3.3 Use forming techniques to achieve required specification 3.4 Descale or otherwise finish formed product after forming to meet specifications 3.5 Inspect formed product and verify that it meets specifications and workplace quality standards
4. Maintain work area and equipment	4.1 Label or tag completed product and complete documentation in accordance with workplace procedures 4.2 Clean work area and store tools and electrical equipment in accordance with workplace procedures 4.3 Follow workplace procedures for reuse, recycling and disposal of materials 4.4 Clean tools and equipment and complete routine operator maintenance in accordance with workplace procedures and manufacturer instructions

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

- Reading skills to interpret familiar workplace procedures and work documentation
- Numeracy skills to take accurate measurements and to set and adjust machine settings

Other foundation skills essential to performance are explicit in the performance criteria of this unit.

Unit Mapping Information

Release 1. Supersedes and is equivalent to MSTTF2002 Cut, bend and shape metal.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a203ec5c-de7d-406b-b3e1-8f1a9b76e92e>

Assessment Requirements for MSTTF2019 Cut and form metal

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Performance Evidence

There must be evidence the candidate has completed the tasks outlined in the elements and performance criteria of this unit, and demonstrated the ability to:

- comply with all safety requirements for the use of cutting and forming equipment, and complete all of the following in any combination:
 - cut metal using at least three different tools or equipment types
 - cut metal for at least three products
 - form metal for at least three products
- perform routine operator maintenance of cutting, bending and forming equipment at least once.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- safe work practices and procedures for working with metal, including:
 - use of personal protective equipment (PPE)
 - hazard identification and control measures, specifically those associated with cutting and heating equipment and the use of powered machinery
- common metals and basic sections used in textile fabrication work
- metal working processes and techniques:
 - metal cutting
 - metal grinding and dressing
 - metal forming – hot and cold bending and hand forming
 - quality checking and quality indicators
 - environmental protection and waste minimisation requirements
- power sources and associated safety requirements - single phase, three phase and weather-protected outlets
- cutting and forming tools and equipment, their appropriateness for particular applications and their operating principles, including:
 - abrasive cutting wheels
 - gas equipment

- grinding wheels
- guillotines
- power hacksaws
- workplace procedures for recording and reporting information.

Assessment Conditions

Skills must have been demonstrated in the workplace or in a simulated environment that reflects workplace conditions and contingencies. The following conditions must be met for this unit:

- use of suitable facilities, equipment and resources, including:
 - work specifications
 - metal stock to be processed
 - metal cutting and forming equipment
 - workplace procedures.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

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