



Australian Government

MEM23137 Evaluate rolling tools and processes

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MEM23137A Evaluate rolling tools and processes.

Application

This unit of competency defines the skills and knowledge required to evaluate hot and cold rolling tools for structural profiles and roll forming of sheet and strip metal and includes consideration of roll design criteria, materials properties and product features, work health and safety (WHS) and sustainability implications.

It is suitable for people working as tool designers and maintenance technicians or paraprofessionals and draftspersons, and for those pursuing manufacturing engineering or related technical qualifications and careers.

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

Pre-requisite Unit

MEM23004 Apply technical mathematics

MEM23109 Apply engineering mechanics principles

Competency Field

Engineering science

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 scope of rolling tool evaluation	1.1 Identify rolling tools and related rolling products for evaluation 1.2 Confirm stakeholders to be consulted on evaluation 1.3 Confirm that appropriate support, including technical and professional assistance, is available 1.4 Identify relevant WHS and regulatory requirements, standards, codes of practice, risk management and organisational procedures
2. Prepare for evaluation of rolling tools	2.1 Identify principles and techniques required to evaluate and optimise rolling tools and related manufacturing processes

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	2.2 Select appropriate analysis techniques, software and software validation techniques 2.3 Investigate sustainability implications of roll tooling and related manufacturing processes
3. Evaluate rolling tools and related manufacturing processes	3.1 Review design and construction features and functions of rolling tools and related manufacturing processes 3.2 Assess rolling tools and related manufacturing processes for compliance with WHS and other regulatory and risk management requirements 3.3 Assess rolling tools, roll products and related processes for sustainability 3.4 Assess suitability of rolling tools for integration with quick changeover, preventative maintenance and other lean manufacturing-related techniques 3.5 Review integration of rolling tools with production management and control software 3.6 Apply systems thinking, continuous improvement, problem-solving and decision-making, and constraint and contingency management principles and techniques to evaluation 3.7 Review rolling tools in relation to product manufacturability and process maintainability
4. Report results	4.1 Record results of evaluation 4.2 Provide documentation including tool, product and process analysis, and computer-aided design (CAD) files

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.

Appropriate technical and professional assistance includes:	• technical support and advice relating to elements which have intrinsic dangers • professional support for technologies.
WHS, regulatory requirements and organisational procedures include:	• WHS acts, regulations and relevant standards • codes of practice from Australian and overseas engineering and technical associations and societies • risk assessments • registration requirements • safe work practices • state and territory regulatory requirements.
Sustainability includes:	• meeting all regulatory requirements • conforming to all industry covenants, protocols and best practice guides • minimising ecological and environmental footprint of process, plant and product • maximising economic benefit of process plant and product to the organisation and the community • minimising the negative WHS impact on employees, community and customer.
Continuous improvement implementation includes one or more of the following techniques:	• balanced scorecard • current and future state mapping • measuring performance against benchmarks • process improvement, problem solving and decision making • data management, generation, recording, analysing, storing and use of software • training for improvement systems participation • technical training.
Constraints and contingencies include one or more of the following:	• financial • organisational • procedural • cultural • physical (resource, access and logistical limitations).

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM23137A Evaluate rolling tools and processes.

Links

Companion Volume Implementation Guides are available on VETNet -

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