



Australian Government

RIICCM201E Carry out measurements and calculations

Release: 1

RIICCM201E Carry out measurements and calculations

Modification History

Release	Comments
Release 1	This version first released with RII Resources and Infrastructure Industry Training Package Version 5.0.

Application

This unit describes the skills and knowledge required to carry out measurements and calculations in the resources and infrastructure industries. It includes using measurements and calculations to estimate quantities for various work activities.

It applies to those working in operational roles. They generally work under supervision to undertake a prescribed range of functions involving known routines and procedures and take responsibility for the quality of own work outcomes.

Licensing, legislative and certification requirements may apply to this unit can vary between states, territories and industry sectors. Users must check requirements with relevant body before applying the unit.

Unit Sector

Civil construction

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Plan and prepare for measurements and calculations	1.1 Obtain, interpret and confirm work requirements 1.2 Access, interpret and apply documentation and procedures 1.3 Select the appropriate plant and equipment and check for faults
2. Perform measurements	2.1 Select and apply the appropriate method of obtaining the measurement required 2.2 Obtain measurements using appropriate plant and equipment and confirm the required accuracy 2.3 Confirm and record measurements
3. Perform calculations	3.1 Select appropriate calculation method according to workplace

ELEMENT	PERFORMANCE CRITERIA
	procedures 3.2 Calculate values for the project using the appropriate calculation method 3.3 Confirm and record results
4. Estimate quantities	4.1 Select appropriate formulas for calculating quantities 4.2 Make calculations to determine quantities 4.3 Estimate quantities required from the calculations taken 4.4 Confirm and record quantities for the project with regard to project tolerances

Foundation Skills

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

SKILL	DESCRIPTION
Self-management	Monitors and minimises own exposure to worksite risks and hazards during activities
Oral communication	Uses a range of communication techniques and systems to communicate with others

Unit Mapping Information

Supersedes and is equivalent to RIICCM201D Carry out measurements and calculations.

Links

Companion Volume implementation guides is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

Assessment Requirements for RIICCM201E Carry out measurements and calculations

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Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- carry out measurements and calculations on at least two different occasions, including:
 - completing measurements, calculations and estimations of quantities for projects of varying complexity
 - measuring using a rule or tape measure for a variety of tasks with 100% accuracy.

During the above, the candidate must:

- locate and apply relevant documentation, policies and procedures and confirm that the work activity is compliant
- implement the requirements, procedures and techniques for carrying out measurements and calculations, including:
 - circumference
 - area
 - length
 - number
 - percentage
 - perimeter
 - quantity
 - ratio
 - volume
- work with others to undertake and complete measurements and calculations, including:
 - using a range of communications techniques and equipment
 - complying with written and verbal reporting requirements and procedures
- communicate with others to receive and clarify work instructions and to determine coordination requirements prior to commencing and during work activities.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- key policies, procedures and documentation required to carry out measurements and calculations, including those related to:
 - work health and safety procedures
 - emergency procedures
 - operation of tools and equipment safely
 - achievement of project quality and accuracy
 - plant and equipment maintenance
 - job safety analyses (JSAs)/job safety environmental analyses (JSEAs)/safe work method statements (SWMS)
 - environmental requirements
- a range of numerical calculations, conversions and measurements, including:
 - conversions of different metric values
 - metres to millimetres
 - measurement and calculation of different quantities
 - understanding tolerances.

Assessment Conditions

Mandatory conditions for assessment of this unit are stipulated below. The assessment must:

- include access to:
 - personal protective equipment
 - equipment required to carrying out measurements and calculations
 - relevant documentation
- be conducted in a safe environment; and,
- be assessed in the context of this sector's work environment; and,
- be assessed in compliance with relevant legislation/regulation and using policies, procedures and processes directly related to the industry sector for which it is being assessed; and,
- confirm consistent performance can be applied in a range of relevant workplace circumstances.

Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated work environment* provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.

Assessor requirements

Assessors must be able to clearly demonstrate current and relevant industry knowledge and experience to satisfy the mandatory regulatory standards as set out in the Standards for Registered Training Organisations (RTOs) 2015/Australian Quality Training Framework mandatory requirements for assessors current at the time of assessment and any relevant licensing and certification requirements. This includes:

- vocational competencies at least to the level being delivered and assessed
- current industry skills directly relevant to the training and assessment being provided
- current knowledge and skills in vocational training and learning that informs their training and assessment
- formal relevant qualifications in training and assessment
- having knowledge of and/or experience using the latest techniques and processes
- possessing the required level of RII training product knowledge
- having an understanding and knowledge of legislation and regulations relevant to the industry and to employment and workplaces
- demonstrating the performance evidence, and knowledge evidence outlined in this unit of competency, and
- the minimum years of current** work experience after competency has been obtained as specified below in an industry sector relevant to the outcomes of the unit.

It is also acceptable for the appropriately qualified assessor to work with an industry expert to conduct assessment together and for the industry expert to be involved in the assessment judgement. The industry expert must have current industry skills directly relevant to the training and assessment being provided. This means the industry subject matter expert must demonstrate skills and knowledge from the minimum years of current work experience after competency has been obtained as specified below, including time spent in roles related to the unit being assessed:

Industry sector	AQF indicator level***	Required assessor or industry subject matter expert experience
Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying) and Civil Infrastructure	1	1 year
	2	2 years
Drilling, Coal Mining, Extractive (Quarrying), Metalliferous Mining and Civil Infrastructure	3-6	3 years
Other sectors	Where this unit is being assessed outside of the resources and infrastructure sectors assessor and/or industry subject matter expert experience should be in-line with industry standards for the sector in which it is being assessed and where no industry standard is specified should comply with any relevant regulation.	

*Guidance on simulated environments has been stipulated in the Companion Volume Implementation Guides located on VETNet.

**Assessors can demonstrate current work experience through employment within industry in a role relevant to the outcomes of the unit; or, for external assessors this can be demonstrated through exposure to industry by conducting a minimum number of site assessments as determined by the relevant industry sector, across various locations.

*** While a unit of competency does not have an AQF level, where a unit is being delivered outside of a qualification the first numeric character in the unit code should be considered as the AQF indicator level for assessment purposes.

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