



Australian Government

RIICCM201D Carry out measurements and calculations

Release: 3

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Modification History

Release	Comment
1	This unit replaces RIICCM201A Carry out measurements and calculations.
2	Editorial corrections Amended Performance Evidence.
3	Required frequency and volume of evidence amended in Performance evidence. Substantial amendments made in Assessment Conditions field, including: references to Industry Sectors, assessor and subject matter expert experience requirements, how assessment should be conducted and what it should confirm.

Application

This unit describes a participant's skills and knowledge required to carry out measurements and calculations in Civil Construction.

This unit is appropriate for those working in operational roles.

Licensing, legislative, regulatory and certification requirements that apply to this unit can vary between states, territories, and Industry sectors. Relevant information must be sourced prior to application of the unit.

Unit Sector

Civil construction

Elements and Performance Criteria

1. Plan and prepare for measurements and calculations	1.1 Access, interpret and apply measurements and calculations documentation and ensure the work activity is compliant 1.2 Obtain, read, interpret, clarify and confirm work requirements 1.3 Select, and check for faults, equipment/tools for work activities
2. Perform measurements	2.1 Select and apply method of obtaining the measurement 2.2 Obtain measurements using appropriate tool, and ensure required accuracy

	2.3	Confirm and record measurements
3. Perform calculations	3.1	Select appropriate calculation method
	3.2	Calculate values for the project using the appropriate factors
	3.3	Confirm and record results
4. Estimate quantities	4.1	Select appropriate formulas for calculating quantities
	4.2	Make calculations for determining quantities
	4.3	Estimate quantities from the calculations taken
	4.4	Confirm and record quantities for the project within project tolerances

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit. Further information is available in the Resources and Infrastructure Industry Training Package Companion Volume.

Unit Mapping Information

RIICCM201A Carry out measurements and calculations

Links

Companion Volume implementation guides are found in VETNet -

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

Assessment Requirements for RIICCM201D Carry out measurements and calculations

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Performance Evidence

Evidence is required to be collected that demonstrates a candidate's competency in this unit. Evidence must be relevant to the roles within this sector's work operations and satisfy all of the requirements of the performance criteria of this unit and include evidence that the candidate:

- locates and applies applicable documentation, policies and procedures
- implements the requirements, procedures and techniques for the safe, effective and efficient carrying out of measurements and calculations including:
 - calculating each of the following using a realistic civil construction project:
 - quantity
 - length
 - perimeter
 - circumference
 - area
 - volume
 - number
 - ratio
 - percentage
- works effectively with others to undertake and complete measurements and calculations that meet all of the required outcomes, including:
 - using a range of communications techniques and equipment
 - complying with written and verbal reporting requirements and procedures

- demonstrates completion of measurements and calculations that safely, effectively and efficiently meets all of the required outcomes on more than one (1) occasion 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 within 98% accuracy

Knowledge Evidence

The candidate must demonstrate knowledge of the following when carrying out measurements and calculations:

- accessing, interpreting and applying the organisation and site requirements and procedures for:
 - using operational tools and equipment safely and effectively
 - achieving project quality and accuracy
 - using JSA's/JSEA/Safe work methods
- conversion of different metric values e.g. metres to millimetres
- understanding tolerances
- completing measuring, calculating, geometry and determination of quantities
- caring for measuring equipment
- working with civil construction terminology

Assessment Conditions

- An assessor of this unit must satisfy the requirements of the NVR/AQTF or their successors; and Industry regulations for certification and licensing; and,
- this unit is best assessed in the context of this sector's work environment;
- where personal safety or environmental damage are limiting factors, assessment may occur in a simulated 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; and,
- this unit must be assessed in compliance with relevant legislation/regulation and using policies, procedures, processes and operational manuals directly related to the industry sector for which it is being assessed; and,
- assessment may be conducted in conjunction with the assessment of other Units of Competency; and,
- assessment must confirm consistent performance can be applied in a range of relevant workplace circumstances; and,
- assessors must demonstrate the performance evidence, and knowledge evidence as outlined in this Unit of Competency, and through the minimum years of current* work experience specified below in an Industry sector relevant to the outcomes of the unit; or,

- where the assessor does not meet experience requirements a co-assessment or partnership arrangement must exist between the qualified assessor and an Industry subject matter expert. The Industry subject matter expert should hold the unit being assessed (or an equivalent unit) and/or demonstrate equivalence of skills and knowledge at the unit level. An Industry technical expert must also demonstrate skills and knowledge from the minimum years of current work experience specified below in the Industry sector, including time spent in roles related to the unit being assessed; and,
- assessor and Industry subject matter expert requirements differ depending on the Australian Qualifications Framework Level (AQF) of the qualification being assessed and/or Industry Sector as follows:

Industry sector	AQF** Level	Required assessor or Industry subject matter expert experience
Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying) and Civil Construction	1	1 Year
	2	2 Years
Drilling, Coal Mining and Extractive (Quarrying)	3-6	3 Years
Metalliferous Mining and Civil Construction	3-6	5 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.	

*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 frequent site assessments across various locations.

**Where a unit is being delivered outside of a Qualification the first numeric character in the Unit code should be considered to indicate the AQF level

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