



Australian Government

CPCPCM4012A Estimate and cost work

Release 1

CPCPCM4012A Estimate and cost work

Modification History

Changes to performance criteria, required skills and knowledge, range statement and critical aspects

Not equivalent to CPCPCM4002A

Unit Descriptor

This unit of competency specifies the outcomes required to estimate materials, labour and time requirements and to establish costs for provision of services or products.

The unit covers the gaining of information, the estimation of materials, labour and time, the calculation of costs and the associated documentation.

Application of the Unit

This unit of competency supports the development of estimating and costing skills relevant to minor plumbing jobs.

Licensing/Regulatory Information

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-Requisites

Nil

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

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|---|--------------------------------------|-----|--|
| 1 | Gather information. | 1.1 | Details of customer requirements are obtained through discussion with customer or from information supplied. |
| | | 1.2 | Plans and specifications are accessed and site is inspected. |
| | | 1.3 | Details of products and services to be provided are sourced. |
| | | 1.4 | Delivery point and methods of transportation are determined where necessary. |
| | | 1.5 | Details are recorded according to workplace procedures. |
| 2 | Estimate materials, labour and time. | 2.1 | Work, including preparatory tasks, is planned and sequenced. |
| | | 2.2 | Types and quantities of materials required for product work are <i>estimated</i> . |
| | | 2.3 | Labour requirements to perform work are estimated. |
| | | 2.4 | Time requirements to perform work are estimated. |
| | | 2.5 | <i>Sustainability principles and concepts</i> are observed when preparing for and undertaking work process. |

- 3 Calculate costs.
 - 3.1 Total materials, labour and overhead costs are calculated according to workplace procedures using appropriate *equipment*.
 - 3.2 Total work cost is calculated, including overheads and mark-up percentages.
 - 3.3 Final cost for work is calculated.

- 4 Document and verify details.
 - 4.1 Details of costs and charges are documented according to workplace procedures.
 - 4.2 Costs, calculations and other details are verified according to workplace procedures.
 - 4.3 Customer quotation and tender are prepared.
 - 4.4 Details are documented for future reference according to workplace procedures and using relevant *information*.

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

- communication skills to:
 - enable clear and direct communication, using questioning to identify and confirm requirements, share information, listen and understand
 - identify customer requirements
 - use language and concepts appropriate to cultural differences
 - use and interpret non-verbal communication
- literacy skills to:
 - complete workplace documentation
 - prepare quotes and tenders
 - record details, including costs and charges
- numeracy skills to:
 - estimate materials and labour required for provision of services or products
 - determine costs for the provision of a quotation or tender in the plumbing and services industry
 - apply calculations

Required knowledge

- estimating and calculating processes
- impact of time on wages and other costs
- job safety analysis (JSA) and safe work method statements (SWMS)
- process for estimating and costing work
- processes for accessing information and for calculating material requirements
- relevant statutory requirements related to estimating and costing work
- SI system of measurements
- relevant Australian standards applicable to the work to be undertaken
- tendering and contracting processes
- workplace and equipment safety requirements

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

This unit of competency could be assessed in the workplace or a close simulation of the workplace environment providing that simulated or project-based assessment techniques fully replicate plumbing and services workplace conditions, materials, activities, responsibilities and procedures.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

A person who demonstrates competency in this unit must be able to provide evidence of:

- locating, interpreting and applying relevant information, standards and specifications to the estimation and costing of work
- applying safety requirements throughout the work sequence, including electrical safety requirements and the use of personal protective clothing and equipment
- estimating and costing three varied jobs in at least Class 1 buildings, including:
 - applying sustainability principles and concepts
 - estimating quantities of material required
 - determining types and amount of labour required to complete the work
 - estimating time required to complete the work
 - estimating overheads associated with the job
 - providing a written quotation and tender for each of the work requirements
 - communicating and working effectively and safely with others.

Context of and specific resources for assessment

This competency is to be assessed using standard and authorised work practices, safety requirements and environmental constraints.

Assessment of essential underpinning knowledge will usually be conducted in an off-site context.

Assessment is to comply with relevant regulatory or Australian standards' requirements.

Resource implications for assessment include:

- an induction procedure and requirement
- realistic tasks or simulated tasks covering the minimum task requirements
- relevant specifications and work instructions
- tools and equipment appropriate to applying safe work practices
- support materials appropriate to activity
- workplace instructions relating to safe work practices and addressing hazards and emergencies
- material safety data sheets
- research resources, including industry-related systems information.

Reasonable adjustments for people with disabilities must be made to assessment processes where required. This could include access to modified equipment and other physical resources, and the provision of appropriate assessment support.

Method of assessment

Assessment methods must:

- satisfy the endorsed Assessment Guidelines of the Construction, Plumbing and Services Training Package
- include direct observation of tasks in real or simulated work conditions, with questioning to confirm the ability to consistently identify and correctly interpret the essential underpinning knowledge required for practical application
- reinforce the integration of employability skills with workplace tasks and job roles
- confirm that competency is verified and able to be transferred to other circumstances and environments.

Validity and sufficiency of evidence requires that:

- competency will need to be demonstrated over a period of time reflecting the scope of the role and the practical requirements of the workplace
- where the assessment is part of a structured learning experience the evidence collected must relate to a number of performances assessed at different points in time and separated by further learning and practice, with a decision on competency only taken at the point when the

assessor has complete confidence in the person's demonstrated ability and applied knowledge

- all assessment that is part of a structured learning experience must include a combination of direct, indirect and supplementary evidence.

Assessment processes and techniques should as far as is practical take into account the language, literacy and numeracy capacity of the candidate in relation to the competency being assessed.

Supplementary evidence of competency may be obtained from relevant authenticated documentation from third parties, such as existing supervisors, team leaders or specialist training staff.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Factors for *estimating* and costing must include:

- labour
- materials
- overheads.

Sustainability principles and concepts:

- cover the social, economic and environmental use of resources to meet current and future needs
- may include:
 - use of materials and resources to meet the current needs of society while preserving the environment for the future
 - efficient use and recycling of material
 - disposing of waste material to ensure minimal environmental impact
 - energy efficiency
 - water efficiency.

Equipment may include:

- calculators

- computers running appropriate software to estimate and calculate necessary details
- measuring equipment appropriate to work
- stationery.

Information may include:

- charts and hand drawings
- instructions issued by authorised organisational or external personnel
- job drawings
- manufacturer specifications and instructions
- material safety data sheets (MSDS)
- memos
- organisation work specifications and requirements
- regulatory and legislative requirements, particularly those pertaining to:
 - codes of practice
 - contracts
 - building codes
 - WHS and environmental requirements
 - plumbing regulations
- relevant Australian standards
- safe work procedures relating to estimating and costing work
- signage
- verbal, written and graphical instructions
- work bulletins
- work schedules, plans and specifications.

Unit Sector(s)

Functional area

Unit sector Plumbing and services

Custom Content Section

Not applicable.