



Australian Government

Department of Education, Employment and Workplace Relations

CPCPCM4002A Estimate and cost work

Release: 1

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Modification History

Not Applicable

Unit Descriptor

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

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

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units Nil

Employability Skills Information

Employability skills 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

ELEMENT	PERFORMANCE CRITERIA
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 developed. 1.4.Delivery point and methods of transportation are determined where necessary. 1.5.Details are recorded in accordance with 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 estimated. 2.3.Labour requirements to perform work are estimated. 2.4.Time requirements to perform work are estimated.
3. Calculate costs.	3.1.Total materials, labour and overhead costs are calculated in accordance with 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 in accordance with workplace procedures. 4.2.Costs, calculations and other details are verified in accordance with workplace procedures. 4.3.Customer quotation and tender are prepared. 4.4.Details are documented for future reference in accordance with workplace procedures and using relevant information.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

REQUIRED SKILLS AND KNOWLEDGE

Required skills

Required skills for this unit are:

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

Required knowledge

Required knowledge for this unit is:

- accessing information and the processes for calculating material requirements
- 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
- relevant statutory and authority requirements related to estimating and costing work
- SI system of measurements
- standards applicable to the work to be undertaken
- tendering and contracting processes
- workplace and equipment safety requirements.

Evidence Guide

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 the use of personal protective clothing and equipment
- as a minimum, the ability to estimate and cost three varied jobs in at least Class 1 buildings, including:
 - 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.

EVIDENCE GUIDE

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 working 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

EVIDENCE GUIDE

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

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 ***estimation*** and costing include:

- labour
- materials
- overheads.

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
- diagrams or sketches

RANGE STATEMENT

- 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:
 - building codes
 - OHS 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)

Unit sector Plumbing and services

Co-requisite units

Co-requisite units Nil

Functional area

Functional area