



Australian Government

Department of Education, Employment and Workplace Relations

CPCCSV5002A Evaluate materials for construction of domestic scale buildings

Release: 1

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Modification History

Not Applicable

Unit Descriptor

Unit descriptor This unit of competency specifies the outcomes required to evaluate and select materials for domestic scale buildings. It relates to a range of building materials, including concrete, glass, timber, plastic and plasterboard in accordance with the Building Code of Australia (BCA).

Application of the Unit

Application of the unit This unit of competency supports the attainment of the understanding and skills to evaluate materials for construction of domestic scale buildings, requiring the demonstration of research, analysis and evaluation for the choice and application of building materials and subsequent reporting skills within the context of relevant legislation, the BCA and Australian standards.

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. Analyse building materials.	1.1. Properties of materials are analysed and selected for performance in domestic scale building projects requiring evaluation. 1.2. Quality standards and performance of materials are identified according to BCA, <i>adherence to legislative requirements</i> and <i>types of structures</i>. 1.3. Methods of testing materials are recorded. 1.4. Visual characteristics of materials are identified and recorded. 1.5. Compatibility between materials and their performance are identified and documented.
2. Investigate suitability of materials for typical domestic scale buildings.	2.1. Samples of commonly used construction materials are identified and selected for investigation according to their purpose and standard work practices. 2.2. <i>Materials</i> identified as structurally adequate and meeting <i>standard specifications</i> are selected in accordance with BCA. 2.3. Materials of a required fire resistance are selected in accordance with BCA. 2.4. Materials are selected based on cost-effectiveness and in accordance with manufacturer specifications. 2.5. Alternative materials for a given application are selected according to BCA.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

Required skills for this unit are:

- ability to respond to change and contribute to workplace responsibilities, such as current work site environmental and sustainability frameworks or management systems
- communication skills to:
 - enable clear and direct communication, using questioning to identify and confirm requirements, share information, listen and understand
 - written skills to:

REQUIRED SKILLS AND KNOWLEDGE

- produce detailed specification notes
- provide notations and dimensions on drawings
- use language and concepts appropriate to cultural differences
- use and interpret non-verbal communication
- innovation skills to select suitable materials for building, taking into account a range of factors such as cost and environmental issues
- numeracy skills to produce drawings for residential buildings
- planning and organisational skills to collect, organise and analyse information
- problem solving skills to carry out tests on materials and to use and apply data for decision making
- technological skills to:
 - complete documentation and calculations
 - enable information gathering and analysis.

REQUIRED SKILLS AND KNOWLEDGE

Required knowledge

Required knowledge for this unit is:

- authorities and powers of a building surveyor
- behaviour of structural members undergoing stress, strain, compression, bending or combined actions
- environmental issues impacting on material selection
- grading processes and grade markings used to categorise timber and timber products
- nature of materials and effect on performance
- processes for the administration and preparation of documentation
- processes for the interpretation of reports, working drawings and specifications
- relevant federal, state or territory legislation and local government policy and procedures
- research methods
- structural and design principles for buildings
- terminology, definitions and hazard identification.

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, provided that simulated or project-based assessment techniques fully replicate construction 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 the ability to:

- comply with OHS regulations applicable to workplace operations
- apply organisational management policies and procedures, including quality assurance requirements where appropriate

EVIDENCE GUIDE

- evaluate, choose and apply various building materials; their subsequent maintenance; and associated reporting of data, findings, recommendations and strategies for at least one domestic scale building project or equivalent in compliance with relevant legislation
- provide reports to appropriate body/individual as determined by the project brief.
- apply strategic plans, workplace policies and procedures.

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 mandatory 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

EVIDENCE GUIDE

- 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

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.

- Properties of materials*** include:
- environmental considerations
 - adherence to legislative requirements for the BCA.
- Domestic scale building projects requiring evaluation*** include:
- domestic scale buildings, including existing and proposed structures
 - provision of site access/facilities, work schedules and project milestones.
- Adherence to legislative requirements*** is limited to:
- domestic scale buildings (similar in characteristics to those of residential dwellings in terms of loading, construction and size and may include small industrial, commercial and public buildings).
- Types of structures*** include:
- residential structures with concrete skeleton and slabs
 - residential structures with steel and metallic column and member construction
 - residential structures with timber and other composite material construction
 - residential structures constructed from non-metallic materials.
- Materials*** include:
- adhesives and sealants
 - admixtures
 - clay products
 - concrete and concrete products
 - glass
 - masonry
 - metal
 - mortar for load bearing walls
 - new relevant proprietary materials
 - plaster and plasterboard
 - plastic
 - pre-stressed structural concrete components
 - protective and fire-rated protective coatings
 - timber and timber products.
- Standard specifications*** include
- preliminary or outline specifications

RANGE STATEMENT

industry standard specifications
and may be:

- developed specifications
- detailed specifications addressing specific components such as structural or other requirements.

Unit Sector(s)

Unit sector Construction

Co-requisite units

Co-requisite units Nil

Functional area

Functional area