



Australian Government

Department of Education, Employment and Workplace Relations

CPCBC5004A Supervise and apply quality standards to the selection of building and construction materials

Release: 1

CPCBC5004A Supervise and apply quality standards to the selection of building and construction materials

Modification History

Not Applicable

Unit Descriptor

Unit descriptor

This unit of competency specifies the outcomes required to supervise the systems through which materials are selected, acquired and stored on site for building or construction work up to and including medium rise projects. It ensures the delivery to the site of materials that meet contract specifications and service requirements for commercial projects.

To achieve the outcomes for this unit, knowledge of relevant building construction materials and technologies, environmental effects on materials and testing procedures is required.

Application of the Unit

Application of the unit

This unit of competency supports builders, related construction industry professionals and senior managers within building and construction firms responsible for supervising and applying quality standards to the selection of construction materials for medium rise building and construction projects.

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. Identify and describe the properties of building materials.	<ul style="list-style-type: none">1.1. Suitability of <i>materials</i> commonly used in the region is identified for a given building system.1.2. Properties of materials, their standards of quality and the compatibility and non-compatibility of different materials are identified.1.3. Environmental impacts of different materials are identified.1.4. Impact of allowable tolerances on the conversion of naturally occurring materials is identified.1.5. Tolerances for installing and assembling materials are identified and checked in regard to the nature of the work being performed and the requirements of Australian standards.
2. Ensure suitable building materials are selected for application.	<ul style="list-style-type: none">2.1. <i>Selection of building materials</i> is conducted with reference to structural requirements and suitability for the building system specified in the contract.2.2. Materials are selected for their safety, required fire resistance rating, serviceability and cost effectiveness.2.3. Short and long-term degradation of materials is considered in relation to the proposed life cycle of the building.2.4. Alternative materials are selected if specified materials are unavailable or unsuitable.
3. Supervise the acceptance, safe handling and storage of materials on site.	<ul style="list-style-type: none">3.1. Organisational procedures for the <i>acceptance, safe handling and storage of materials</i> on site are identified and communicated.3.2. Limitations and effects of transportation on materials and components are determined and action is taken in the case of potentially damaging circumstances.3.3. Materials are handled correctly and safely on site using appropriate equipment and safe work practices.3.4. Materials are stored in accordance with manufacturer specifications and in compliance with the relevant Australian standards.3.5. Systems are implemented for inspecting all materials delivered on site for naturally occurring and/or manufactured defects before installation.3.6. Personnel are aware of actions to be taken in the case of defects caused by incorrect installation, application or placement.3.7. Timber is preserved and ferrous and non-ferrous metals used in the construction process are protected

ELEMENT

PERFORMANCE CRITERIA

using established methods.

ELEMENT

PERFORMANCE CRITERIA

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| 4. Supervise testing of materials on site for suitability and fitness for purpose. | 4.1. Testing of materials , including soil, filling, compacting, surfacing, concreting and welding, is carried out to specifications and results are analysed on-site before and during installation. |
| | 4.2. Samples of materials taken during placement or installation are accurately identified and sent for laboratory testing. |
| | 4.3. Materials are given visual checks for suitability before building in, with materials sent off-site for testing if required. |
| | 4.4. Processes are implemented to ensure defective materials are identified and remedial action is recorded. |
| 5. Establish records of materials testing and report on testing process conformance or otherwise. | 5.1. Records of tests and testing procedures are established and maintained by the organisation in accordance with its quality management obligations. |
| | 5.2. Test results and reports are periodically evaluated to maintain integrity of organisational quality standards. |
| | 5.3. Non-conformant on-site materials tests are immediately notified to the appropriate company officer for further action. |

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:

- apply numeracy skills to workplace requirements
- communication skills to:
 - enable clear and direct communication, using questioning to identify and confirm requirements, share information, listen and understand
 - communicate organisational procedures and other information to relevant personnel
 - read and interpret:
 - documentation from a variety of sources
 - plans, specifications and drawings
 - report on difficulties with either supply or standards of materials

REQUIRED SKILLS AND KNOWLEDGE

- use and interpret non-verbal communication
- use language and concepts appropriate to cultural differences
- written skills to:
 - establish and maintain records of tests and testing procedures
 - record relevant information
- materials testing skills to enable materials to be tested according to relevant Australian standards or the ability to arrange for testing to be carried out independently
- reporting skills to report on difficulties with either supply or standards of materials
- supervisory skills to ensure the correct selection and installation of materials on site and secure storage of materials on site
- systems development skills to ensure systems are developed to ensure correct materials that meet appropriate standards are delivered and used on site.

REQUIRED SKILLS AND KNOWLEDGE

Required knowledge

Required knowledge for this unit is:

- alternative materials
- building and construction materials and technologies
- construction and contracting equipment and its use
- construction supply processes
- environmental effects on various building and construction materials
- relevant licensing arrangements
- testing procedures
- workplace 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 by the effective supervision and application of quality standards to the selection of specified construction materials.

This unit of competency can 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:

- identify building and construction materials specified in the project or contract documentation
- communicate effectively both verbally and in writing with manufacturers and suppliers of materials
- test the materials to maintain quality standards on site

EVIDENCE GUIDE

- apply effective sampling and record keeping processes
- use safe handling and materials storage techniques
- comply with organisational and legislative requirements.

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:

- documentation that should normally be available in either a building or construction office
- relevant codes, standards and regulations
- office equipment, including calculators, photocopiers and telephone systems
- computers with appropriate software to view 2-D CAD drawings, run costing programs and print copies
- a technical reference library with current publications on measurement, design, building construction and manufacturers' product literature
- a suitable work area appropriate to the construction process.

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

EVIDENCE GUIDE

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

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

RANGE STATEMENT

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.

RANGE STATEMENT

Materials include:

- brick or concrete structures, including:
 - cavity brick
 - core filled concrete blocks
 - single skin clay block
 - tilt-up concrete panels
- cladding, including:
 - brick veneer
 - colourbond and zincalume sheeting
 - fibre cement or compressed wood panelling
 - stuccoed stud walls
 - weatherboards
- floor systems, including:
 - bearers and joists
 - brick bases
 - compressed sheet wet area flooring
 - concrete slab floors, including slabs on ground and suspended slabs
 - engineered floor Joists
 - fitted (cut-in) floors
 - platform floor construction
 - sheet flooring
 - tongue and groove flooring
- timber and timber structures.

Selection of building materials includes:

- arranging for expert advice as necessary to confirm or refute materials options
- identifying materials from specifications and drawings
- identifying specifications and standards described in contract documents
- selecting and ordering materials that meet those requirements.

Acceptance, safe handling and storage of materials include:

- allocation of space for on-site storage of materials
- confirming products or materials are as ordered and signing off delivery documentation
- ensuring safe unloading and handling of construction materials
- ensuring correct materials are delivered to correct site
- providing for adequate on-site security of

RANGE STATEMENT

- Testing of materials* includes:
- materials
 - undertaking quality checks within the competence of the individual.
 - arranging external quality tests or inspections and providing results as necessary
 - arranging on-site quality and fit for purpose tests for products to be used in construction
 - completing appropriate organisational records
 - refusing acceptance of substandard or out of specification materials.
- Records of tests and testing procedures* include:
- distributing copies in accordance with organisational policy
 - following up reports that indicate departures from quality or manufacturing requirements
 - obtaining appropriate records and reports for review and analysis
 - providing advice and information to regulatory authorities as authorised by the organisation
 - taking appropriate remedial action within the scope of individual's authority.

Unit Sector(s)

Unit sector Construction

Co-requisite units

Co-requisite units Nil

Functional area

Functional area