



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **CPCCSV5003A Produce working drawings for residential buildings**

**Release: 1**

## **CPCCSV5003A Produce working drawings for residential buildings**

### **Modification History**

Not Applicable

### **Unit Descriptor**

#### **Unit descriptor**

This unit of competency specifies the outcomes required to read and interpret plans and specifications and to undertake basic architectural drafting of conventional residential structures.

It includes the production of two and three-dimensional (3-D) drawings in accordance with standard industry drawing practice and to a level suitable for building permit approval.

### **Application of the Unit**

#### **Application of the unit**

This unit of competency supports the attainment of the understanding and skills to produce working drawings for residential buildings and requires the demonstration of two and three-dimensional drawing skills and compliance within the context of relevant legislation, the Building Code of Australia (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

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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. Use drawing instruments, equipment and materials to set out drawings.                                   | 1.1. Drawing instruments, equipment and materials are used to produce <b><i>working drawings for residential buildings</i></b> with scaled line work, simple geometric shapes, lettering, numbering and correct setting out of drawings.                                                                                                                                                                                                                                                                          |
| 2. Produce drawings at varying scales using architectural conventions for linework, lettering and symbols. | 2.1. Linework is applied in a range of different types and media in accordance with standard industry drawing practice for <b><i>production of building drawings</i></b> .<br>2.2. Hand letter text is formed in a variety of formats.<br>2.3. Different drawing scales are identified and used.<br>2.4. Graphic symbols are identified and used.<br>2.5. Orthographic projection in building drafting applications is drawn accurately to scale.<br>2.6. Notations and dimensions are added to complete drawing. |
| 3. Read and interpret plans and specifications for a single storey dwelling.                               | 3.1. Interrelationships between plans and specifications are identified and interpreted.<br>3.2. Key information is located and interpreted according to drawings, specifications and <b><i>application of Australian standards</i></b> .                                                                                                                                                                                                                                                                         |
| 4. Draw three dimensional sketches.                                                                        | 4.1. Annotated 3-D sketches of various building components are produced to specifications using parametric (e.g. isometric) or perspective techniques.                                                                                                                                                                                                                                                                                                                                                            |
| 5. Produce building permit approval drawings.                                                              | 5.1. Building permit approval drawings, including detailed specification notes for residential dwellings, are completed to architectural conventions.                                                                                                                                                                                                                                                                                                                                                             |

## 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

## REQUIRED SKILLS AND KNOWLEDGE

systems

- communication skills to:
  - enable clear and direct communication, using questioning to identify and confirm requirements, share information, listen and understand
  - written skills to:
    - produce detailed specification notes
    - provide notations and dimensions on drawings
  - use language and concepts appropriate to cultural differences
  - use and interpret non-verbal communication
- interpret and apply information from plans and specifications to develop required drawings
- numeracy skills to produce drawings for residential buildings
- planning and organisational skills to collect, organise and analyse information
- technological skills to:
  - enable production of working drawings
  - complete documentation and calculations.

### Required knowledge

Required knowledge for this unit is:

- codes of conduct and ethics
- drafting and drawing protocols
- 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, design and construction principles of buildings
- terminology, definitions and fault identification.

# Evidence Guide

## EVIDENCE GUIDE

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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 applicable
- produce two and three-dimensional drawings for residential building projects, including at least one orthographic, one isometric and one perspective drawing
- produce drawings to appropriate body/individual as determined by the project brief.

### 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

## EVIDENCE GUIDE

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- 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

## EVIDENCE GUIDE

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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

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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.

- Working drawings for residential buildings*** include:
- area analysis
  - BCA Class 1 and 10 buildings
  - computer-generated or paper-based presentations
  - construction notes
  - details
  - elevations
  - floor plans
  - general notes
  - location
  - neighbouring buildings
  - plan and specification interpretation
  - projections
  - sections
  - services
  - single storey dwellings (elementary or conventional)

## RANGE STATEMENT

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***Production of building drawings***  
includes:

- site plans
- two and three-dimensional drawings.
- banks and landscaping
- base structure - timber and masonry
- cathedral ceilings
- certificate of title to land
- chimney construction
- complex roof and wall shapes
- composite construction (e.g. steel and timber)
- conversion of plans and specifications to architectural and building detail
- drawing protocols, including:
  - abbreviations
  - legends
  - lettering standards
  - numbering
  - paper size
  - scale
  - standard units of measurement
  - symbols
- electrical connections plan
- excavation cut and fill
- flashings and box gutters
- general plumbing services plan
- glazing, including bay window construction
- insulation and sarking
- internal and external wall claddings
- joinery
- land surveyor plans
- large span timber beams and connections, including glue laminated beams
- levels and contours
- retaining walls
- roof construction
- sewerage connection and easement plan
- soil classification and tests
- stairs
- stormwater connection and easement plan
- timber and masonry
- upper floor construction

## RANGE STATEMENT

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***Application of Australian standards*** includes:

- wall construction
- window and door schedules.
- AS1100 Architectural drawing and supplement
- AS1684 Residential timber framing
- AS2870 Residential slabs and footings
- AS3700 Masonry.

## Unit Sector(s)

**Unit sector** Construction

## Co-requisite units

**Co-requisite units** Nil

## Functional area

**Functional area**