



Australian Government

Department of Education, Employment and Workplace Relations

CPCJS3004A Manufacture and install continuous handrailing and special stair components

Release: 1

CPCCS3004A Manufacture and install continuous handrailing and special stair components

Modification History

Not Applicable

Unit Descriptor

Unit descriptor This unit specifies the outcomes required to prepare, join and install continuous handrailing and special stair components. Special stair components include wreaths, scrolls, bullnosed steps and decorative features.

Application of the Unit

Application of the unit This unit of competency supports the achievement of skills and knowledge to manufacture and install continuous handrailing and special stair components, which may include working with others and as a member of a team.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units

CPCCOHS2001A	Apply OHS requirements, policies and procedures in the construction industry
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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. Plan and prepare.	1.1. Work instructions and operational details are obtained using relevant information, confirmed and applied for planning and preparation purposes. 1.2. Safety (OHS) requirements are followed in accordance with safety plans and policies. 1.3. Signage and barricade requirements are identified and implemented. 1.4. Tools and equipment selected to carry out tasks are consistent with job requirements, checked for serviceability and any faults are rectified or reported prior to commencement. 1.5. Material quantity requirements are calculated in accordance with plans, specifications and quality requirements. 1.6. Materials appropriate to the work application are identified, obtained, prepared, safely handled and located ready for use. 1.7. Environmental requirements are identified for the project in accordance with environmental plans and statutory and regulatory authority requirements, and are applied.
2. Prepare wreath for continuous handrailing.	2.1. Pitch of stair and change of direction of handrail are identified from stair design. 2.2. Area governing design of wreath is set out or assessed to determined thickness of material to be prepared. 2.3. Material is prepared, cut square to wreath length and set out to shape for dressing. 2.4. Wreath is formed to square section with designated twist and free of bumps.
3. Join and mould wreath to straight sections.	3.1. Straight sections of handrail are measured and cut to length with ends square to join wreath and joined to specifications with joints tight and no movement. 3.2. Wreath is moulded to handrail shape and fine sanded to smooth finish. 3.3. Handrailing is installed in lengths practical to manage and rejoined in location.
4. Manufacture scroll and join to handrail.	4.1. Design of scroll and wreath, where applicable, is identified, set out and prepared to designed shape. 4.2. Materials are prepared to required overall scroll and wreath dimensions, set-out patterns are applied and scroll and wreath are formed to basic shapes. 4.3. Scroll and wreath are moulded to design and

ELEMENT

PERFORMANCE CRITERIA

connecting handrail shape and fine sanded to smooth finish.

4.4. Scroll and wreath are joined to handrail to specification with joints tight and no movement.

ELEMENT	PERFORMANCE CRITERIA
5. Manufacture and install bullnosed steps.	5.1.Design of bullnosed steps is identified, method of constructing curve is determined, and riser of step is manufactured to design curve with block support fixed to specification. 5.2.Tread is cut and dressed with nosing to shape according to design specification. 5.3.Bullnosed step is fitted and fixed to stair and secured in location to specified fixing.
6. Manufacture and install brackets and decorative features.	6.1.Brackets and Scotia, where applicable, are fitted and secured into place to cut and mitred string to specified fixing. 6.2.Decorative/ornamental features are fitted and secured to designed position and to specified fixing, and all surfaces are fine sanded to smooth finish.
7. Clean up.	7.1.Area is cleaned and waste material disposed of safely. 7.2.Tools and equipment are cleaned, maintained and stored.

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 recognise procedures, respond to change and contribute to workplace responsibilities, such as current work site environmental or 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
 - follow instructions
 - read and interpret drawings and specifications
 - use and interpret non-verbal communication
 - use language and concepts appropriate to cultural differences
- innovation skills to select appropriate tools and equipment, respond to workplace challenges and put ideas into action
- interpret drawings and documentation

REQUIRED SKILLS AND KNOWLEDGE

- numeracy skills to apply measurements and calculations
- planning and organisational skills to identify requirements, apply relevant resources and sequence tasks
- problem solving skills to recognise and take action to rectify minor faults and problems
- teamwork skills to be able to work with others to action tasks and relate to people from a range of cultural, social, ethnic backgrounds and with varying physical and mental abilities.

Required knowledge

Required knowledge for this unit is:

- commonly used stair construction and joining methods
- identification marking of materials systems
- interpretation of drawings and specifications
- job safety analysis (JSA) and safe work method statements
- measuring and setting out processes relevant to manufacturing and installing stair components
- methods of forming and constructing handrails
- organisation's quality assurance requirements
- special feature components of stair construction
- timber carving and moulding techniques
- types and characteristics of stairs
- types and use of adhesives, fixings and fasteners relevant to stair construction
- types and uses of static machines
- types of materials and their characteristics relevant to stair construction
- 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, 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 manufacture a scroll, ramp and wreath and join to a handrail where applicable plus manufacture and install bullnose and common stair brackets and decorative features, providing evidence of the ability to:

- comply with OHS regulations applicable to workplace operations
- apply organisational quality procedures and processes within the context of manufacturing and installing special features to stairs
- identify details of special features, design of stair and method of attaching to adjoining components
- identify method of manufacturing, setting out techniques and materials required
- select and use appropriate processes, tools and equipment to manufacture and install feature items
- select appropriate materials and use safe and effective procedures to operate machines and prepare material to initial requirements
- demonstrate correct procedures in setting out and using machines, power tools and hand tools to mould and manufacture designed shape
- adopt safe and effective handling procedures for movement and placement of materials and components
- safely and efficiently fit and secure feature item to designed location
- identify typical faults and problems that occur

EVIDENCE GUIDE

and action required to rectify them

- communicate with others to ensure safe and effective workplace operations.

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:

- workshop and site location for manufacturing and installation processes
- materials appropriate to application tasks
- tools and equipment appropriate to proposed processes
- drawings and documentation relevant to activity.

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 a reasonable inference that competency is not only verified under the particular assessment circumstance, but is able to be transferred to other circumstances and environments.

Validity and sufficiency of evidence requires that:

- competency will need to be demonstrated over

EVIDENCE GUIDE

- a period of time reflecting the scope of the role and 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 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.

Information includes:

- diagrams or sketches
- instructions issued by authorised organisational or external personnel
- manufacturer specifications and instructions, where specified
- material safety data sheets (MSDS)
- memos

RANGE STATEMENT

- regulatory and legislative requirements pertaining to manufacturing and installation of handrailing and stair components
- relevant Australian standards
- safe work procedures relating to manufacturing and installation of handrailing and stair components
- signage
- verbal, written and graphical instructions
- work bulletins
- work schedules, plans and specifications.

RANGE STATEMENT

Planning and preparation

include:

- assessment of conditions and hazards
- determination of work requirements and safety plans and policies
- equipment defect identification
- work site inspection.

Safety (OHS) is to be in accordance with state and territory legislation and regulations and project safety plan and may include:

- emergency procedures, including extinguishing fires, organisational first aid requirements and evacuation
- hazard control
- hazardous materials and substances
- organisational first aid
- PPE prescribed under legislation, regulations and workplace policies and practices
- safe operating procedures, including the conduct of operational risk assessment and treatments associated with:
 - concealed services (water, power and gas)
 - lighting
 - restricted access barriers
 - traffic control
 - work site visitors and the public
 - working at heights
 - working in confined spaces
 - working in proximity to others
- use of firefighting equipment
- use of static machines
- use of tools and equipment
- workplace environmental requirements and safety.

Tools and equipment include:

- chisels, including carving chisels
- clamps
- hammers
- hand saws
- measuring tapes and rules
- power drills
- power routers
- power saws
- saw stools
- screwdrivers
- set spanners

RANGE STATEMENT

- spirit levels
- squares.

RANGE STATEMENT

Quality requirements include:	• attention to specifications of work • control of handling procedures • procedures for installing and finishing • quality of materials • relevant regulations, including: • AS1473 Guarding and safe use of woodworking machinery • internal company quality policy and standards • manufacturer specifications where specified • workplace operations and procedures • use and maintenance of equipment • workplace operations and procedures.
Materials include:	• metal • timber.
Environmental requirements include:	• clean-up management • dust and noise • stormwater protection • waste management.
Statutory and regulatory authority include:	• federal, state and local authorities administering applicable Acts, regulations and codes of practice.
Fixed includes:	• gluing • handrail bolts • nailing • screws.

Unit Sector(s)

Unit sector	Construction
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Co-requisite units

Co-requisite units	Nil
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Co-requisite units Nil

Functional area

Functional area