



Australian Government

Department of Education, Employment and Workplace Relations

FPICOT3219B Produce standard truss or frame plans and details using computers

Release: 1

FPICOT3219B Produce standard truss or frame plans and details using computers

Modification History

Not Applicable

Unit Descriptor

Unit descriptor

This unit describes the outcomes required to produce simple truss or frame plans, including details of their fabrication and installation, using computerised systems. General workplace legislative and regulatory requirements apply to this unit; however there are no specific licensing or certification requirements at the time of publication. This unit replaces FPICOT3219A Produce standard truss or frame plans and details using computers.

Application of the Unit

Application of the unit

This unit involves producing standard truss or frame plans and details using computers in a forest products factory setting. These skills and knowledge required for competent workplace performance are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

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. Select software	1.1. Applicable occupational health and safety (OHS), environmental, legislative and organisational requirements relevant to drawing and detailing trusses or frames using computerised systems are identified and followed 1.2. Software options are reviewed and evaluated against specified work requirements 1.3. Appropriate software program is selected and referred to for direction
2. Interpret plans and loading conditions	2.1. Plans and work requirements are identified, interpreted and assessed 2.2. Drawing views and notes are interpreted, and other design requirements and restrictions are identified 2.3. Additional information and data are obtained from appropriate personnel and other sources 2.4. Functional and pictorial image of structures, trusses or frames is created 2.5. Design requirements outside normal software limitations are specified and referred to appropriate personnel 2.6. Communication with others is established and maintained in line with OHS requirements
3. Test design options and select optimum	3.1. Fixed design details are transferred to layout data in line with software requirements 3.2. Frame or truss types are specified and timber type and species selected in line with material suitability and availability 3.3. Common industry spacing of frames, trusses and their components are set to the defined design structure in line with industry standards 3.4. Component sizes are fixed to clarify and confirm design options 3.5. Layouts, spacing and sizing of individual structural members are progressively selected in line with software requirements 3.6. Design details are selected, reviewed and revised in line with work order
4. Produce layouts and cutting requirements	4.1. Design records are reviewed for design integrity, completeness and consistency in line with workplace and applicable certifying authority standards 4.2. Structure layout drawings and truss or frame assembly drawings are produced using software in line with workplace and software requirements

ELEMENT**PERFORMANCE CRITERIA**

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| | 4.3. Component cutting detail is produced in line with manufacturing requirements and schedules |
| | 4.4. Installation package is assembled in line with workplace procedures and industry standards |
| | 4.5. Design records and documentation are completed and maintained in line with workplace procedures |
| 5. Assist in production and construction | 5.1. Questions regarding designs and assembly decisions are answered and explained in a clear and concise manner |
| | 5.2. Effective communication techniques are used to assist and develop production personnel |
| | 5.3. Alternative materials or sizes for components are provided within the scope of the design and work requirements |
| | 5.4. Common site problems are discussed and prevention strategies examined and adopted to ensure future site practice meets design requirements |

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills include:

- Technical skills sufficient to safely and accurately design and detail timber trusses or frames using computerised methods; produce drawings and cutting lists suitable for manufacture; locate, interpret and apply relevant information and specifications in written, diagrammatic and verbal form; interpret and apply common industry terminology; convey information in written, sketch and verbal form
- Communication skills sufficient to use appropriate communication and interpersonal techniques with colleagues and others
- Literacy skills sufficient to record and report workplace information; maintain documentation
- Numeracy skills sufficient to select appropriate mathematical and estimation processes
- Problem solving skills sufficient to identify problems; demonstrate appropriate response procedures

Required knowledge includes:

- Applicable commonwealth, state or territory legislation, regulations, standards,

REQUIRED SKILLS AND KNOWLEDGE

codes of practice and established safe practices relevant to the full range of processes for producing standard truss or frame plans and details using computers

- Environmental protection requirements, including the safe disposal of waste material, and the minimisation of carbon emissions
- Organisational and site standards, requirements, policies and procedures for producing standard truss or frame plans and details using computers
- Environmental risks and hazards
- Using energy effectively and efficiently
- Using material effectively and efficiently
- Relevant organisational and site standards, requirements, policies and procedures
- Established communication channels and protocols
- Application of building and structural regulations and site policy
- Range, types and uses of computer software
- Common industry terminology for all component types
- Relationship between component loads, supports and spans and component loads, species, type, dimensions and grade
- Industry standard cross section sizes and profiles, length and spacing dimensions
- Problem identification and resolution strategies, and common fault finding techniques
- Types of tools and equipment, and procedures for their safe use and maintenance
- Appropriate mathematical procedures for estimating and measuring, including calculating time to complete tasks
- Procedures for recording and reporting workplace records and information

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

A person who demonstrates competency in this unit must be able to provide evidence that they can safely and efficiently select and use computerised systems to accurately produce and detail simple truss or frame plans, including fabrication and installation requirements in line with industry and organisational guidelines

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The evidence required to demonstrate competency in this unit must be relevant to, and satisfy, all of the requirements of the elements of this unit and include demonstration of:

- following organisational policies and procedures relevant to producing standard truss or frame plans and details using computers
- following applicable commonwealth, state or territory legislative and regulatory requirements and codes of practice, including OHS, environmental and organisational policies and procedures, relevant to producing standard truss or frame plans and details using computers
- applying communication techniques and safe work practices in the work area
- detailing trusses or frames using computerised systems and producing drawings and cutting lists suitable for manufacture
- producing computerised drawings, layouts and cutting requirements
- applying mathematical procedures, such as estimation and measurement
- developing and selecting framing layout options and detailing framing design
- providing assistance in production and construction

Context of and specific resources for assessment

- Competency is to be assessed in the workplace or realistically simulated workplace
- Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints
- Assessment of required knowledge, other than confirmatory questions, will usually be conducted in

EVIDENCE GUIDE

an off-site context

- Assessment is to follow relevant regulatory or Australian Standards requirements
- The following resources should be made available:
 - workplace location or simulated workplace
 - materials and equipment relevant to undertaking work applicable to this unit
 - specifications and work instructions

EVIDENCE GUIDE

Method of assessment

- Assessment must satisfy the endorsed Assessment Guidelines of the FPI11 Training Package
- Assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of required knowledge
- Assessment must be by direct observation of tasks, with questioning on required knowledge and it must also reinforce the integration of key competencies
- Assessment methods must confirm the ability to access and correctly interpret and apply the required knowledge
- Assessment may be applied under project-related conditions (real or simulated) and require evidence of process
- Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances
- Assessment may be in conjunction with assessment of other units of competency
- The assessment environment should not disadvantage the candidate
- Assessment practices should take into account any relevant language or cultural issues related to Aboriginality, gender or language backgrounds other than English
- Where the participant has a disability, reasonable adjustment may be applied during assessment
- Language and literacy demands of the assessment task should not be higher than those of the work role

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.

RANGE STATEMENT

OHS requirements:

are to be in line with applicable commonwealth, state or territory legislation and regulations, and organisational safety policies and procedures, and may include:

- personal protective equipment and clothing
- safety equipment
- first aid equipment
- fire fighting equipment
- hazard and risk control
- fatigue management
- elimination of hazardous materials and substances
- manual handling including shifting, lifting and carrying

Environmental requirements may include:

- legislation
- organisational policies and procedures
- workplace practices

Legislative requirements:

are to be in line with applicable commonwealth, state or territory legislation, regulations, certification requirements and codes of practice and may include:

- award and enterprise agreements
- industrial relations
- Australian Standards
- confidentiality and privacy
- OHS
- the environment
- equal opportunity
- anti-discrimination
- relevant industry codes of practice
- duty of care
- lifts and cranes, scaffolding, building codes and regulations

Organisational requirements may include:

- legal
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- quality assurance
- procedural manuals
- quality and continuous improvement

RANGE STATEMENT

processes and standards

- OHS, emergency and evacuation procedures
- ethical standards
- recording and reporting requirements
- equipment use, maintenance and storage requirements
- environmental management requirements (waste minimisation and disposal, recycling and re-use guidelines)

RANGE STATEMENT

Software	is a commercial package running on suitable computer hardware and producing designs using specific truss and frame assembly hardware requirements
Assessment may include:	• for concentrated loads • requirements for columns, beams and lintels • dimensions defining geometry and loading of individual trusses and frames
Appropriate personnel may include:	• supervisors • clients • colleagues • line management • software support engineers
Image includes details of:	• load support • loading transfer mechanisms • tying positions
Structures may include:	• timber roofs • wall frames and floors of solid brick • brick veneer and timber frame domestic houses • free-standing or attached timber structures, such as pergolas
Communication may include:	• verbal and non-verbal language • constructive feedback • active listening • questioning to clarify and confirm understanding • use of positive, confident and cooperative language • use of language and concepts appropriate to individual social and cultural differences • control of tone of voice
Design details may include:	• timber component species, type, cross section, grade, length and cutting angles, nail plate and other joining hardware sizes and marking requirements
	and may be:
	• selected from options on the basis of fabrication feasibility, ease of erection, cost, material availability, customer preference, and

RANGE STATEMENT

- Assembly drawing** details may include:
- site standards
 - revised without compromising truss, frame or structure strength
 - design assumptions regarding supporting and tying components
- and may be:
- simple wooden roof trusses, floor trusses, wall frames and beams for solid brick, brick veneer and timber frame simple domestic houses and light commercial structures
- Installation package** may include:
- truss and frame assembly drawings
 - detailing information
 - installation information guides
- Explanations** may be provided to:
- certifying authorities and builders
- Problems** may include:
- detailing errors
 - fabrication errors
 - site errors

Unit Sector(s)

Not Applicable

Competency field

Competency field Common Technical