



**Australian Government**

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

# **FPITMM4205A Prepare and advise on a broad range of timber roof truss details using computers**

Release: 1

## **FPITMM4205A Prepare and advise on a broad range of timber roof truss details using computers**

### **Modification History**

Not Applicable

### **Unit Descriptor**

#### **Unit descriptor**

This unit describes the outcomes required to prepare and advise on a broad range of timber roof truss drawings, production documents and installation instructions using custom software  
General workplace legislative and regulatory requirements apply to this unit; however there are no specific licensing or certification requirements at the time of publication

### **Application of the Unit**

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

The unit involves the preparation of a broad range of timber roof truss drawings, production documents and installation instructions using computers in a timber production or design setting  
The 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. Interpret plans or designs and create layouts	<p>1.1. Applicable <i>Occupational Health and Safety</i> (OHS), environmental, <i>legislative</i> and <i>organisational requirements</i> relevant to preparing and advising on timber <i>roof truss</i> details are identified and followed</p> <p>1.2. <i>Design inputs</i> are identified and verified</p> <p>1.3. <i>Computer software</i> is checked for currency and used to prepare roof truss layouts and production documentation</p> <p>1.4. Design requirements outside software limitations are resolved</p>
2. Review and test design options	<p>2.1. Roof truss layouts are reviewed and tested for optimal suitability for stakeholders</p> <p>2.2. <i>Effective processes</i> are used to optimise roof truss layout and ensure <i>stakeholder</i> objectives are met</p>
3. Provide advice on design, production and installation issues	<p>3.1. <i>Production and installation advice</i> is prepared and documented</p> <p>3.2. Documented advice is maintained and communicated to all stakeholders, prior to and following installation, as required by organisational procedures</p>
4. Manage roof truss outputs	<p>4.1. Roof truss design layouts are certified in line with legislative or organisational requirements</p> <p>4.2. <i>Drawings and documentation</i> are maintained, communicated and stored, in line with <i>identified standards</i></p>

## Required Skills and Knowledge

### REQUIRED SKILLS AND KNOWLEDGE

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

#### Required skills

- Technical skills sufficient to accurately prepare roof truss drawings, production documents and installation instructions and test designs and specifications using

## **REQUIRED SKILLS AND KNOWLEDGE**

custom software

- Communication skills sufficient to discuss and provide production and installation advice to a range of stakeholders
- Literacy skills sufficient to interpret design requirements, research evaluate and communicate design concepts, interpret workplace documents and technical information, prepare accurate and detailed advice and instructions to a range of stakeholders
- Numeracy skills sufficient to evaluate areas, volumes, loads, pressures, mass and grades, analyse qualitative and quantitative information and data
- Problem solving skills sufficient to identify problems and appropriate response procedures

### **Required knowledge**

- Applicable Commonwealth, State or Territory legislation, regulations, standards, codes of practice and established safe practices relevant to the full range of processes for preparing and advising on a broad range of timber roof truss drawings, production documents and installation instructions using custom software
- Organisational and site standards, requirements, policies and procedures relevant to interpreting plans and designs to prepare a broad range of timber roof truss details
- Environmental protection requirements, including the safe disposal of waste material
- Limits of ability and authority with respect to non-conforming design
- Established communication channels and protocols
- Problem identification and resolution strategies and common fault finding techniques
- Types of tools and equipment relevant to preparing and advising on timber roof truss details, and procedures for their safe use, operation and maintenance
- Appropriate mathematical procedures for estimating and measuring, including calculating time to complete tasks
- Procedures for recording and reporting workplace 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 prepare and advise on a broad range of timber roof truss details using computers

#### 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 applicable Commonwealth, State or Territory legislative and regulatory requirements and codes of practice relevant to preparing and advising on a broad range of timber roof truss details using computers
- following organisational policies and procedures relevant to preparing and advising on a broad range of timber roof truss details using computers
- preparation and advice on a broad range of timber roof truss details using computers
- preparation of roof truss layouts and production documentation for each roof truss type identified in the range statement
- preparation of roof truss layouts and production documentation where interaction between roof truss types is required

#### 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 an off-site context
- Assessment is to comply with 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

#### Method of assessment

- Assessment must satisfy the endorsed Assessment Guidelines of the FPI11 Training Package
- Assessment methods must confirm consistency and accuracy

## EVIDENCE GUIDE

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 employability skills
- 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. **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.

**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

## **RANGE STATEMENT**

- safety equipment
- first aid equipment
- fire fighting equipment
- hazard and risk control
- fatigue management
- ergonomic office layouts and practice
- elimination of hazardous materials and substances
- management of hazardous materials and substances
- manual handling including shifting, lifting and carrying



## RANGE STATEMENT

**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
- Building Code of Australia
- confidentiality and privacy
- OHS
- the environment
- equal opportunity
- anti-discrimination
- relevant industry codes of practice
- duty of care

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

**Roof trusses** must include:

- "A" type truss
- truncated standard
- raking truss
- girder truss
- truncated girder
- jack girder
- rafter truss
- gable truss
- saddle truss
- bowstring truss
- vaulted truss

## **RANGE STATEMENT**

- truncated saddle

## RANGE STATEMENT

**Design inputs** may include:

- identified standards
- pitching lines and load bearing points

and may include design factors such as:

- roof material loads
- wind zone and applied loads
- commercial or residential output
- additional roof loading
- post disaster structures
- roof shape
- roof lines

and may include available materials, such as:

- dimensioned timber
- graded timber
- treated or untreated timber
- nail plate and other hardware dimensions
- proprietary software capable of developing a planning outcome to an identified standard

**Computer software** must include:

**Effective processes** may include:

- documented use of iterative process
- documented use of organisational process
- documented reference to identified standards

**Stakeholders** may include:

- clients
- builders
- manager
- supervisor
- production staff
- engineers
- architects and designers
- building certifiers
- software providers

**Production and installation advice** may include:

- installation instructions to stakeholders, including roof truss layouts
- certification to stakeholders

**Drawings and documentation** may include:

- drawing views
- drawing notes
- records of conversation
- records of amendments
- functional and pictorial images
- design records

## **RANGE STATEMENT**

**Identified standards** may include:

- component cutting details
- Building Codes of Australia
- Australian Standards
- organisational quality standards

## **Unit Sector(s)**

Not Applicable

## **Competency field**

**Competency field** Timber Manufactured Products