



Australian Government

Department of Education, Employment and Workplace Relations

FPIWPP3213B Heat treat material

Release: 1

FPIWPP3213B Heat treat material

Modification History

Not Applicable

Unit Descriptor

Unit descriptor

This unit describes the outcomes required to heat treat material in both standard and controlled humidity ovens to achieve the desired moisture content and curing

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 FPIWPP3213A Heat treat material

Application of the Unit

Application of the unit

The unit involves heat treating material in a forest products factory

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

Prerequisite units

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. Prepare for heat treating	1.1. Applicable <i>Occupational Health and Safety</i> (OHS), <i>environmental</i> , <i>legislative</i> and <i>organisational requirements</i> relevant to heat treating material are identified and followed 1.2. <i>Work order</i> is reviewed and checked with <i>appropriate personnel</i> 1.3. Type and quantity of <i>material</i> to be <i>heat treated</i> is assessed and acquired from the <i>storage location</i> 1.4. <i>Equipment</i> is selected appropriate to work requirements and checked for operational effectiveness in line with manufacturer's recommendations 1.5. Heat treating process <i>cycles</i> are planned in line with site procedures 1.6. <i>Communication</i> with others is established and maintained in line with OHS requirements
2. Dry material	2.1. <i>Pre start-up checks</i> are carried out on equipment in line with site requirements 2.2. <i>Oven</i> settings are adjusted to suit process cycles and material condition and continually monitored in line with operational procedures 2.3. <i>Emergency shutdown</i> procedures are followed in response to oven alarm 2.4. Heating temperature and humidity are set for optimal recovery of product 2.5. <i>Racks</i> containing materials of consistent processing condition and allowable range of thickness are prepared and loaded into the oven, maximising space 2.6. Material is <i>visually assessed</i> and <i>moisture levels</i> measured to ensure specified outcome has been achieved 2.7. Processed racks are tagged or marked and material samples taken for <i>testing</i> in line with site requirements 2.8. Heat treating process and equipment faults are <i>recorded and reported</i> to the appropriate personnel
3. Redistribute material	3.1. Material is <i>regraded</i> in line with site requirements and industry standards 3.2. Material is directed and <i>moved</i> to storage or processing operations in line with site requirements 3.3. Sub-standard material is rejected and <i>disposed of</i> in

ELEMENT	PERFORMANCE CRITERIA
4. Conduct operator maintenance	<p>line with site procedures and environmental requirements</p> <p>3.4. Work area is cleaned in line with OHS requirements</p> <p>4.1. Oven shut-down procedures are followed in line with OHS legislation and site procedures</p> <p>4.2. Heat treating mechanisms are checked for effective condition in line with site procedures</p> <p>4.3. Temperature and humidity settings, water drainage, atomising sprays and fans are checked, adjusted or maintained</p> <p>4.4. Oven area is kept clear of dust, shavings and debris in line with OHS requirements</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 use and maintain relevant tools, machinery and equipment; efficiently and safely heat treat material
- Communication skills and interpersonal techniques sufficient to interact appropriately with colleagues and others in the workplace
- Literacy skills sufficient to accurately record and report workplace information, and maintain documentation
- Numeracy skills sufficient to estimate, measure and calculate time required to complete a task
- Problem solving skills sufficient to identify problems and equipment faults and demonstrate 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 heat treating material
- Environmental protection requirements, including the safe disposal of waste material, minimising carbon emissions and the cleaning of plant, tools and equipment
- Organisational and site standards, requirements, policies and procedures for heat treating material

REQUIRED SKILLS AND KNOWLEDGE

- Environmental risks and hazards
- Heat treating techniques
- Methods of visual inspection
- Characteristics of material
- Oven temperatures and humidity
- Distribution processes
- Established communication channels and protocols
- Problem identification and resolution strategies and common fault finding techniques
- Types of tools and equipment and procedures for their 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 safely and efficiently heat treat material in line with organisational requirements

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 heat treating material
- following organisational policies and procedures relevant to heat treating material
- heat treating material in readiness for storage and/or processing
- redistributing material on site using designated equipment
- conducting operator maintenance on oven and racking equipment

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 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

Method of assessment

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

EVIDENCE GUIDE

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 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

RANGE STATEMENT

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
- safe forest practices including required actions relating to forest fire
- manual handling including shifting, lifting and carrying
- legislation
- organisational policies and procedures
- workplace practices

Environmental requirements may include:

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

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

RANGE STATEMENT

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

Work order is to include:

instructions for the heat treating of material and may include:

- colour
- type
- width
- length
- thickness
- quantity
- instructions for the environmental monitoring of work and procedures
- environmental care requirements relevant to the work

Appropriate personnel may include:

- supervisors
- suppliers
- clients
- colleagues
- managers

Material may include:

- logs
- raw boards
- laminated panels
- coves
- board
- medium density fibreboard
- plywood

Heat treating

is the process of curing newly formed materials or board to the desired level of moisture content, weight, thickness and density

Storage locations may include:

the use of:

- storage racks
- storage bays
- bins
- stacks

RANGE STATEMENT

- pallet boxes
- modularised storage components
- temporary stacking bays (stand, frame or ground)

and may be divided into:

- standard product classification
- product designation
- size
- dimension
- stack number
- weight
- grade
- shelf life
- stock rotation position

Equipment may include:

- standard or controlled humidity type ovens including:
 - temperature and humidity settings
 - water drainage
 - atomising sprays
 - fans

and is to include:

- procedures for equipment lock-out, ie protecting operators and co-workers from accidental injury by isolating the machine from the power source

Cycles

are the heat treating time materials spend in the oven based on condition of the materials and thickness

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
- body language

RANGE STATEMENT

Pre start-up checks

are conducted to ensure:

- oven and rack systems have been set-up correctly
- systems are performing accurately
- equipment is operating to optimum performance

Oven

is the source of providing heat to the materials on the drying racks in an isolated and controlled setting with heat and humidity set accordingly

Emergency shutdown

is the immediate shutting off of the equipment to prevent an accident or prevent damage to the machine or product

Racks

- are the systems on which the enterprise has chosen to treat the materials
- are usually a tiered system for the materials to lie on while being treated ensuring stability and reasonable spacing to prevent warping
- can be motorised, wheeled or lifted into position

Visually assessed

is the assessment of materials to determine finish quality and faults

Moisture level

- is the amount of moisture maintained in timber or timber products after drying to avoid cracking and deforming
- in Australia generally ranges between 10% in warmer, more humid climates to 14% in cooler climates

Testing

- is the process of measuring:
 - moisture content
 - weight
 - thickness and density to achieve the desired outcome for all of these
- ensures accurate heat treating
- allows for adjustment of the cycles accordingly

Records and reports may include:

- heat treating requirements
- product type
- size
- inspection

RANGE STATEMENT

- grading and labelling outcomes
- storage locations
- quality outcomes
- hazards
- incidents
- equipment malfunctions

and may be:

- manual
- using a computer-based system
- another appropriate organisational communication system

Regrading

is the process of visually inspecting material to re-classify quality and use after treating has taken effect

Movement of material may include:

the use of:

- conveyor belt systems
- track systems
- lifting equipment
- lifting equipment such as:
 - fork lifts
 - slings
 - trolley jacks
 - gantry cranes
 - loaders
- assistance with lifting such as:
 - the involvement of two or more personnel to lift materials manually or to guide the movement of mechanical equipment

Disposing of may include:

- recycling sub-standard material
- re-using sub-standard material

Unit Sector(s)

Unit sector

No sector assigned

Co-requisite units

Co-requisite units

Competency field

Competency field Wood Panel Products