



Australian Government

Department of Education, Employment and Workplace Relations

LMFPT3002A Select materials for piano repair and manufacture

Revision Number: 1

LMFPT3002A Select materials for piano repair and manufacture

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the skills and knowledge required to select materials used in the manufacture and repair of pianos.
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Application of the Unit

Application of the unit	This unit applies to the skills and knowledge required to select appropriate materials used in manufacture, repair or rebuilding of upright, grand and player pianos. These materials include timber, metal, plastics, synthetic fasteners, adhesives, surface coatings and hardware. This unit applies in a workplace and on-site environment and may be conducted in a small to large scale enterprise. Applications may include some complex or non routine activities involving individual responsibility or autonomy and/or collaboration with others through members of groups or teams.
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	Nil	

Employability Skills Information

Employability skills	This unit contains employability skills.
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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.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine materials requirements	1.1. Types of materials may include timber, metal, felt, synthetics and other materials used in the construction and repair of pianos. 1.2. Characteristics of timber, metal and synthetic materials used in piano construction are analysed according to structural and aesthetic requirements according to workplace documentation. 1.3. Client requirements and desires are reviewed, confirmed and clarified
2. Select and use fasteners	2.1. Work instructions are used to determine job requirements for fasteners, including design, colour, finish process and quality 2.2. Fasteners are applied according to workplace requirements. 2.3. Work site is set up according to the task, including preparation of required material and selection of holding and supporting equipment. 2.4. Work is placed and held or supported in position for fastener application. 2.5. Tools are selected and used to attach fasteners, according to their safety and effecting intended purposes. 2.6. Personal protective equipment is selected, correctly fitted and used.
3. Select and use adhesives	3.1. Adhesives are selected according to workplace requirement 3.2. Work site is set up according to the task, including preparation of required materials and selection of holding and supporting equipment 3.3. Work is placed and held or supported in position for adhesive application 3.4. Personal protective equipment is selected, correctly fitted and used 3.5. OHS requirements that apply to the safe application of adhesives are identified and followed. 3.6. Adhesives are applied using clamping techniques, as required.
4. Identify surface coatings and finishes for pianos	4.1. Surface coatings - used for both interior and exterior finishing on piano components are identified, with preparation, application and durability

ELEMENT	PERFORMANCE CRITERIA
	4.2. Furniture <i>finishes</i> used are investigated for requirements
5. Identify hardware	5.1. Work requirements are used to determine <i>hardware</i> needs for piano construction and repair
6. Clean up work area	6.1. All tools, materials and other equipment are checked, cleaned and returned to their appropriate location 6.2. Work area is cleared and waste removed 6.3. <i>Workplace documentation</i> is completed and filed

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

- communicate with supervisor and customer to:
 - confirm work orders and instructions
 - identify problems
 - report outcomes of selecting and applying hardware and fixings
- work with others and in a team to select and apply hardware and fixings
- use pre-checking and inspection techniques to anticipate production problems, avoid reworking and wastage
- participate in establishing new ideas and work specifications for selecting and applying hardware and fixings
- plan and organise activities to avoid any backtracking, work flow interruptions, rework or wastage, including preparation and layout of the worksite and selection of tools, equipment and materials
- manage own work performance to:
 - follow OHS and workplace practices
 - plan and organise work schedules and routines
 - maintain required production output
 - assess quality of own work
- adapt to new skill requirements
- research and apply new ideas and techniques
- use workplace technology related to selecting and applying hardware and fixings including specified tools, equipment, calculators and measuring devices

Required knowledge

- State or Territory OHS legislation, regulations, standards and codes of practice relevant to the full range of processes for selecting and applying hardware and fixings
- organisational and site standards, requirements, policies and procedures for applying hardware and fixings
- reading and interpreting workplace documents including work orders, work instructions and operator instructions
- environmental protection requirements relating to the disposal of waste material
- established lines of communication and protocols
- types, characteristics, uses, limitations and preparation of materials and equipment used in piano repair and manufacture
- types of tools and equipment used to apply hardware and fixings and procedures for their safe use, operation and maintenance

REQUIRED SKILLS AND KNOWLEDGE

- characteristics of hardware and fixings and their use
- problem identification and resolution
- set up and operation of tools and equipment used for applying hardware and fixings
- storage systems and labelling
- procedures for the recording, reporting and maintenance of workplace records and information
- appropriate mathematical procedures for estimation and measurement

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.

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

Locate, interpret and apply information relevant to selection and use of materials, fasteners, hardware and adhesives for piano repair and manufacture

- Identify, select and apply at least 3 types of fasteners and adhesives to appropriate materials
- Identify surface coatings and finishes used in piano repair and manufacture
- Communicate and work with others in the work area
- Apply safe handling practices and safe operating procedures for equipment, products and materials to:
 - minimise the risk of injury to self or others
 - prevent damage to goods, equipment and products
- Clean tools, equipment and work area
- Maintain and repair a range of hand and power tools used in piano repair
- Apply OHS practices when using hand and power tools, holding and support equipment, products and materials, including use of personal protective equipment

Context of and specific resources for assessment

Assessment may occur on the job or in a simulated workplace environment in accordance with work practices and safety requirements

Assessment is to occur under standard work practices, and to comply with legislative and regulatory requirements.

The following resources should be made available:

- hand and power tools used in the repair and manufacture of pianos
- materials used in the repair and manufacture of pianos
- safety and personal protective equipment
- holding and supporting equipment
- workplace location or simulated workplace

Method of assessment

Assessment must confirm consistency (over time and in a range of workplace relevant contexts) in application of

EVIDENCE GUIDE

skills and knowledge when:

- organising work
- completing tasks according to instructions
- working systematically with attention to detail
- identifying improvements and avoiding damage
- using workplace practices
- using OHS practices
- assessing operational readiness of tools and equipment
- recognising and adapting to cultural differences in the workplace, including modes of behaviour and interactions

Assessment must include a variety of project or work activities that allow the candidate to demonstrate competency in the unit

Assessment should be by direct observation of tasks and include questioning on required knowledge and skills to ensure correct interpretation and application.

Assessment should be conducted over time and may be in conjunction with assessment of other units of competency

The following examples are appropriate for this unit:

- direct observation of the candidate performing a variety of work tasks that involve the use of different hand and power tools, materials and equipment
- oral and written questions about the safe and effective use of fasteners, adhesives, surface coatings and finishes, and hardware, the appropriateness of various tools for particular jobs, and maintenance and storage of materials, tools and equipment
- review of portfolios of evidence and third party workplace reports of the candidate's on-the-job performance

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.	
Legislative/regulatory requirements	All work must comply with relevant Federal and State or Territory legislative or regulatory requirements.
Timber may include:	spruce, ebony, beech, birch, hardwood, softwood, veneers, chipboard and MDF
Metal may include:	aluminium, steel, solders, cast iron, brass
Felts may include:	wool, synthetic
Synthetics may include:	plastic (keys, bushings, damper head, damper flanges, hammer butt, jack, jack flange, capstone)
Other materials may include:	ivory, leather
Characteristics of timber may include:	density, moisture content, grain, shrinkage, knots
Structural requirements may include:	hardness, density
Aesthetic requirements may include:	growth rings, veneers, medullary rays, colour, grain patterns
Fasteners may include:	screws (head, slot, machine and thread types), nails (panel pins)
Adhesives may include:	animal (horse, fish), PVA, contact, epoxy, casein, latex
Work site may include:	workshop or factory location or onsite at client's premises
Holding and supporting equipment may include:	portable workbench, clamps, vices, gripper mats
Personal protective equipment may include:	Safety glasses, goggles, hearing protection, safety footwear, protective clothing, gloves, respiratory protection.

RANGE STATEMENT	
OHS requirements may include:	relevant Federal, State or Territory OHS legislation, regulations, standards and codes of practice, and workplace policies and procedures including the use of personal protection equipment, hazard and risk control and manual handling.
Clamping techniques may include:	sash, 'G', spring, pipe
Surface coatings may include:	shellack, single pack, polyurethane (two pack), nitro-cellulose and pre-catalysed lacquers, woodgrain fillers, stains, oils, enamels, acrylics
Finishes may include:	high gloss, gloss, satin, matt, limed, pigmented
Hardware may include:	locks, hinges - butt, escutcheon inserts, sliding rollers/runners, knobs, handles, finger guards, castors
Workplace documentation may include:	Time sheets, customer cards, work orders including job sheets, cutting lists, plans, drawings and designs, tool maintenance records and schedules

Unit Sector(s)

Unit sector	Piano Technology
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Competency field

Competency field	
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Co-requisite units

Co-requisite units		