



Australian Government

MSFCP2002 Produce barrels using non-fired processes

Release: 1

MSFCP2002 Produce barrels using non-fired processes

Modification History

Release 1 - New unit of competency

Application

Pre-requisite Unit

Competency Field

Unit Sector

Coopering

Elements and Performance Criteria

Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.	
1	Identify and respond to timber and material properties	1.1	Types of timber and inherent characteristics are analysed to select the optimum timber for the product
		1.2	Characteristics and properties of oak are identified and considered
		1.3	Properties and impacts of metals are identified and considered
2	Respond to the impact of the barrel properties on wine product	2.1	Cause and effects on the product of controlled oxidation is considered and responded to
		2.2	Cause and effects on the product of barrel maturation is considered and responded to
		2.3	Cause and effect of the fermentation in barrel is considered and responded to
		2.4	Impact of seasoning on the barrel timber components and the product are considered as a factor in determination of seasoning requirements
3	Prepare for	3.1	Applicable work health and safety (WHS), legislative and organisational requirements relevant to coopering

	production		operations are verified and complied with
		3.2	Work order is reviewed, confirmed and clarified with appropriate personnel
		3.3	Barrel production sequence is planned
		3.4	Procedures are determined for checking quality at each stage of the process
		3.5	Suitable work area is selected for the task
		3.6	Tools and equipment suitable for the work are selected and checked for safe operation
4	Select and prepare components	4.1	Materials, hardware, fittings and attachments are collected
		4.2	Fixing and joining devices are selected in accordance with work instructions and type of materials to be joined
		4.3	Jigs are selected and checked for suitability of purpose
		4.4	Components, including staves and heads, are machined and prepared to specification
5	Assemble components	5.1	Components are laid out and joined using jigs, appropriate fastenings and clamping devices
		5.2	Hand and/or power tools and equipment are used as required
		5.3	Assembled components are checked for compliance with specifications
		5.4	Components are prepared, assembled, fitted and checked in accordance with specification
6	Finish the product	6.1	Product is lined in accordance with specification
		6.2	Product is tested for leakage and faults are repaired
		6.3	Decorative features or fittings are fitted and secured to specification
		6.4	Product is sanded and prepared for coating
		6.5	Product is coated in accordance with specification and intended commercial application

7	Clean work area/s and maintain equipment	7.1	Faulty and/or defective equipment is tagged and reported in accordance with workplace procedures
		7.2	Finished products are organised and stored in holding area
		7.3	Waste and scrap are removed following workplace procedures
		7.4	Tools and equipment used are cleaned; inspected for serviceable condition and stored appropriately in accordance with workplace procedures
		7.5	Equipment and work area clean-up is maintained in accordance with workplace procedures
		7.6	Records and reports are completed to workplace requirements

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency. Detail on appropriate performance levels for each furnishing unit of competency in reading, writing, oral communication and numeracy utilising the Australian Core Skills Framework (ACSF) are provided in the Furnishing Training Package Implementation Guide.

Range of Conditions

Specifies different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Range is restricted to essential operating conditions and any other variables essential to the work environment.

- Unit context includes:**
- WHS requirements, including legislation, building codes, material safety management systems, hazardous and dangerous goods codes and local safe operating procedures, or equivalent
 - work is carried out in accordance with legislative obligations, environmental legislation, relevant health regulations, manual handling procedures and organisation insurance requirements
 - work requires individuals to demonstrate some discretion, judgement and problem-solving skills

Work order includes:	• design • tolerances • process • materials • finish • quantity
Appropriate personnel include:	• supervisors • suppliers • clients • colleagues • managers
Barrels include:	• traditional barrel or equivalent products, such as: • vats • casks • tubs • bars • baths
Timbers include:	• French/American/Australian oak • red gum • maple spruce • jarrah • birch • cyprus • elm • fir
Oak properties include:	• types and sources • composition • medullary rays • tyloses
Metals include:	• steel • stainless steel • copper • other alloys
Barrel maturation:	• contributes to extraction of flavours from the oak which enhance the complexity and intensity of the wine flavour
Seasoning impact includes:	• the effects on the levels of extractable oak constituents, particularly oak lactones
Production sequence includes:	• docking and grading staves • dressing staves • jointing staves

**Tools and equipment
include:**

- rising or assembling barrel
- bending the barrel
- crozing
- making heads
- cutting the head
- fitting the head
- finishing the barrel
- fitting final hoops
- testing
- hand tools:
 - hand plane
 - chisels
 - hand saws
 - spokeshave
 - hammer
 - mallet
 - auger
 - croze
 - driver
 - knives (belly, crum, heading and hollow)
 - cooper's hammer
 - maul
 - bradawl
 - adze(s)
 - shaves (hoop, inside and heading)
 - swift
 - marking-out tools
 - files
 - rasps
 - scraper
 - screwdrivers
 - hand drill
- power tools:
 - bench grinder
 - presses (hoops)
 - head making machine
 - drop saw
 - circular power saw
 - planer
 - double sided planer

	• drill • jig saw • computer numerically controlled (CNC) router • laser cutter • trimmer • biscuit machine • brad/nail and staple gun • sanders (long belt, disk and machine)
Materials include:	• solid timber • caulking cotton • wedges • workhole pegs • tooth picks • metal wedges
Jigs include:	• shaped templates for routing
Coopering components include:	• heads • staves and hoops • decorative features or fittings in steel, stainless steel or copper
Checking includes:	• fitting • correct number and fitting of staves • hoop and hardware, fittings and attachments • conformity to work instruction and quality requirements
Lining includes:	• plastics • foil • sealing coating
Testing includes:	• standard hot water leakage testing
Repair of leakage faults include:	• plugging • caulking • re-machining
Decorative features or fittings include:	• final hoops and taps which may be steel, stainless steel or copper
Coating includes:	• paint • lacquer • polyurethane • varnish
Waste includes:	• off-cuts • shavings • sawdust

Records and reports include:

- the machining method
- product type
- size
- inspection
- grading and labelling outcomes
- storage locations
- quality outcomes
- hazards
- incidents
- equipment malfunctions

Personal protective equipment includes:

- that prescribed under legislation, regulations and enterprise policies and practices

Information and procedures include:

- workplace procedures relating to the use of tools and equipment
- work instructions, including job sheets, cutting lists, plans, drawings and designs
- workplace procedures relating to reporting and communication
- manufacturer specifications and operational procedures

Unit Mapping Information

Supersedes and is not equivalent to LMFCP2002A Produce barrels using non-fired processes

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0601ab95-583a-4e93-b2d4-cfb27b03ed73>

Assessment Requirements for MSFCP2002 Produce barrels using non-fired processes

Modification History

Release 1 - New unit of competency

Performance Evidence

- Interpret work order and locate and apply relevant information
- Apply safe handling requirements for equipment, products and materials, including use of personal protective equipment
- Identify materials used in the work process
- Follow work instructions, operating procedures and inspection processes to:
 - minimise the risk of injury to self or others
 - prevent damage to goods, equipment and products
 - maintain required production output and product quality
- Identify a range of timber types, including oak, and detail their uses and limitations and the properties of American and French oak
- Consider the likely effects of controlled oxidation, barrel maturation and in-barrel fermentation on products
- Complete a minimum of two (2) non-fired and fully finished barrel or equivalent products to specification
- Effectively conduct operator maintenance on tools and equipment
- Use mathematical ideas and techniques to correctly complete measurements, calculate area and estimate material requirements
- Communicate ideas and information to enable confirmation of work requirements and specifications and the reporting of work outcomes and problems, interpret basic plans and follow safety procedures
- Avoid backtracking, work flow interruptions or wastage
- Work with others and in a team by recognising dependencies and using cooperative approaches to optimise work flow and productivity

Knowledge Evidence

- State or Territory WHS legislation, regulations, standards and codes of practice relevant to the full range of processes for coopering operation
- Basic barrel construction terminology and techniques
- Basic barrel repair terminology and techniques
- Organisational and site standards, requirements, policies and procedures for coopering
- Types of coopering tools and equipment and procedures for their safe use, operation and maintenance
- Types of timbers used in the coopering industry, their characteristics, properties, uses and limitations

- Types and sources of oak and the advantage/disadvantages of each
- The effects of the structure of timber, including:
 - parts of the tree and tree cell structure
 - optimum stave production techniques
 - types of seasoning and the impacts of techniques, including combination techniques, on the cell structure
- The effects of the barrel properties on the wine and spirit product
- Coopering components standard shapes and forms
- Environmental protection requirements relating to the disposal of waste material
- Established communication channels and protocols
- Relevant problem identification and resolution
- Set-up and operation of machining equipment
- Cutting patterns and sequences
- Cutting tool condition assessment
- Storage systems and labelling
- Procedures for the recording, reporting and maintenance of workplace records and information
- Appropriate mathematical procedures for estimation and measurement

Assessment Conditions

- Assessors must:
 - hold training and assessment competencies as determined by the National Skills Standards Council (NSSC) or its successors
 - have vocational competency in the furnishing industry at least to the level being assessed with broad industry knowledge and experience, usually combined with a relevant industry qualification
 - be familiar with the current skills and knowledge used and have relevant, current experience in the furnishing industry.
- Assessment methods must confirm consistency of performance over time rather than a single assessment event and in a range of workplace relevant contexts.
- Assessment must be by observation of relevant tasks with questioning on underpinning knowledge and, where applicable, multimedia evidence, supervisor's reports, projects and work samples.
- Assessment is to be conducted on single units of competency or in conjunction with other related units of competency. Foundation skills are integral to competent performance in the unit and should not be assessed separately.
- Assessment must occur on the job or in a workplace simulated facility with relevant process, equipment, materials, work instructions and deadlines.
- Access is required to materials, including examples of timber, samples of oak and equipment, relevant to producing a coopering product and specifications.

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