



Australian Government

Department of Education, Employment and Workplace Relations

LMTMF6004A Produce negative and positive casts for lasts and corrective orthoses

Revision Number: 1

LMTMF6004A Produce negative and positive casts for lasts and corrective orthoses

Modification History

Not applicable.

Unit Descriptor

Unit descriptor This unit covers the skills and knowledge necessary for the construction of negative casts, and the production and modification of positive casts for lasts and corrective orthoses.

Application of the Unit

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This unit applies to activities associated with producing negative casts, and producing and modifying positive casts and lasts. Casts are restricted to casts of lower limb below the knee. Significant judgement is required in planning, design, technical or supervisory activities related to products or processes. Work is generally conducted in a small business situation.

Translation of measurements and general foot shape into definitive lasts and casts includes variables such as individual tissue tolerances, the nature and extent of functional demands, existing foot characteristics, including joint stiffness and prominent deformities, as well as casting styles and material characteristics.

Cast types should reflect the orthoses type, materials, function, entry technique and footwear incorporation.

A range of exit devices may apply dependent in part on selection of materials and cast type

This unit is applied according to OHS and workplace practices of the enterprise, which may include:

- requirements prescribed by legislation, awards, agreements and conditions of employment
- standard operating procedures
- work instructions
- oral, written and visual communication
- quality practices, including responsibility for maintenance of own work quality and contribution to quality improvement of team or section output
- housekeeping
- tasks related to environmental protection, waste disposal, pollution control and recycling

This unit requires the application of skill associated with communication to review assessments and prescriptions, consult with other parties to clarify or obtain information, take measurements and make drawings, document job specifications, maintain client files and complete administrative tasks.

Planning and organising, problem solving and initiative and enterprise are required to produce negative and positive casts to meet specific design criteria. Skill and knowledge in required technology are applied to cast production processes. Self management skills are required to analyse all stages of work to ensure client needs and quality standards are achieved.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisites

Employability Skills Information

Employability Skills This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Not applicable.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Clarify assessments and prescriptions	1.1 Assessments and prescriptions are reviewed to confirm that all required information has been provided prior to design and manufacture 1.2 Other parties are consulted, if necessary, to clarify or provide additional information
2 Prepare for casting	2.1 Identify and mark biomechanical and functional requirements 2.2 Take measurements and drawings as required 2.3 Select the casting techniques appropriate to the requirements 2.4 Appropriate materials are chosen to fabricate the cast
3 Produce below knee negative cast	3.1 A negative cast is made manually or by computer assistance, taking into account factors such as biomechanical requirements, volume expansion, functional and positioning requirements 3.2 Cast is checked in terms of quality, requirements, and modified as required 3.3 Job specifications for constructing positive cast are determined and documented
4 Produce positive cast and last	4.1 Appropriate materials are chosen to fabricate the cast 4.2 A positive cast from a form is produced, by either hand or computerised methods, which meets requirements for individual shape, alignment and specific designs, taking into account factors such as biomechanical requirements, volume expansion, functional and positioning requirements 4.3 The cast is fabricated and modified to meet specific footwear and orthoses design criteria and OHS practices 4.4 The shape of the cast and last is checked against design specifications
5 Adjust positive cast	5.1 The shape of the positive cast is checked against client measurements, technical drawings and design specifications, taking into account factors such as biomechanical requirements, volume expansion, functional and positioning requirements 5.2 The positive cast and last is adjusted by adding, cutting or grinding material to meet specifications
6 Perform record keeping procedures	6.1 Client files are maintained 6.2 Administrative tasks are completed

Required Skills and Knowledge

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

Demonstrates knowledge of:

- the elements and principles of medical grade orthoses and footwear design and how they can be used to meet specified requirements
- applied anthropometrics of the foot, the variables in and effects of physical force systems (orthoses and footwear) on the body and dimensional, shape and other physical characteristics of commercial orthoses and footwear
- footwear construction and standards
- terminology
- diagnostic and definitive constructions
- modification processes
- materials and tools and equipment used
- safety and environmental aspects of relevant workplace activities
- OHS practices, including hazard identification and control measures
- quality practices
- workplace practices
- recording and reporting practices

Demonstrates skills to:

- use hand and machine tools, and operating computer equipment
- apply skills in a wide variety of cast materials
- produce, assessing and modifying casts
- evaluate, problem solve and address a variety of common footwear problems
- communicate and interact effectively with clients, component suppliers and in the workplace
- determine report requirements and presenting reports and information in appropriate formats
- read, interpret and follow information on work specifications, standard operating procedures and work instructions and other reference material
- maintain accurate records
- communicate within the workplace
- sequence operations
- meet specifications
- clarify and check task-related information
- carry out work according to OHS practices

Evidence Guide

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for the Training Package.

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

Demonstrates skills and knowledge to:

- obtain and clarify instructions and requirements
- identify special construction details and constraints
- make accurate measurements
- account for factors such as biomechanical requirements, volume expansion, functional and positioning requirements
- translate information into working patterns
- select appropriate materials
- make and check the cast
- prepare specifications for developing the positive cast
- adjust the positive cast
- identify and confirm costs, timelines etc.
- communicate effectively with design team, customers etc.
- apply OHS policies in work operations
- maintain accurate records

Consistently applies skills and knowledge when:

- organising work
- completing tasks
- identifying improvements
- using workplace practices
- using OHS practices
- recording and reporting accidents and incidents
- assessing operational readiness of equipment used and work processes
- recognising and adapting to cultural differences in the workplace, including modes of behaviour and interactions
- completing work systematically with attention to detail without damage to goods and equipment

Context and specific resources for assessment

Assessment may occur on the job or in an appropriately simulated environment and requires access to work areas, materials and equipment and to information on workplace practices and OHS practices.

Guidance information for assessment

This unit may be assessed independently or in combination with other relevant units.

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. Add any 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.

Legislative/regulatory requirements All work must comply with relevant Federal and State or Territory legislative or regulatory requirements.

Materials may include:

- plaster
- wood
- thermoset resin
- expandable foams
- casting polyurethane

Fabricate may include:

- tools and techniques used to manufacture the cast device, including:
 - hand and machine tools
 - cam
 - mechanical duplicators
 - pour techniques
 - a variety of combinations

OHS practices OHS practices must include hazard identification and control, risk assessment and implementation of risk reduction measures specific to the tasks described by this unit, and may include:

- manual handling techniques
- standard operating procedures
- personal protective equipment
- safe materials handling
- taking of rest breaks
- ergonomic arrangement of workplaces
- following marked walkways
- safe storage of equipment
- housekeeping
- reporting accidents and incidents
- other OHS practices relevant to the job and enterprise

Unit Sector(s)

Sector Medical Grade Footwear