



Australian Government

Department of Education, Employment and Workplace Relations

HLTPO304D Fabricate spinal, upper and lower extremity orthoses

Release: 1

HLTPO304D Fabricate spinal, upper and lower extremity orthoses

Modification History

HLT07 Version 4	HLT07 Version 5	Comments
HLTPO304C Fabricate spinal, upper and lower extremity orthoses	HLTPO304D - Fabricate spinal, upper and lower extremity orthoses	Unit updated in V5. ISC upgrade changes to remove references to old OHS legislation and replace with references to new WHS legislation. No change to competency outcome.

Unit Descriptor

Descriptor

This unit describes the knowledge and skills required to fabricate and finish spinal, upper and lower extremity orthoses

Application of the Unit

Application

Work performed requires a broad knowledge base with substantial depth in some areas and the ability to analyse and plan approaches to technical problems.

It is expected that an orthotist or prosthetist/orthotist oversees client evaluation, cast measurement and fittings, wherever possible

It requires the transference and application of theoretical concepts and/or technical or creative skills to a range of situations

Individuals will take responsibility for own outputs and limited responsibility for the achievement of group outcomes

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Not Applicable

Employability Skills Information

Employability Skills This unit contains Employability Skills

Elements and Performance Criteria Pre-Content

Elements define the essential outcomes of a unit of competency.

The Performance Criteria specify the level of performance required to demonstrate achievement of the Element. Terms in italics are elaborated in the Range Statement.

Elements and Performance Criteria

ELEMENT

1. Ascertain requirements for spinal, upper and lower extremity orthoses

PERFORMANCE CRITERIA

- 1.1 Review *prescriptions or instructions* from *appropriate health professionals* to confirm all required information has been provided
- 1.2 Participate in taking client measurements and *design* of orthoses as directed, and in accordance with *organisation policy and procedure*
- 1.3 Use *effective communication* skills to ensure information collected is accurate

ELEMENT**PERFORMANCE CRITERIA**

2. Fabricate and trial fit spinal, lower and upper extremity orthoses

2.1 Assemble materials and *equipment*

2.2 Fill and modify cast or prepare tracing for manufacture as required in accordance with client requirements

2.3 Fabricate orthoses using appropriate materials and techniques

2.4 Fabricate lower and upper orthoses using appropriate *techniques*, materials and equipment

2.5 Trial fit orthoses in accordance with organisation policy and modify prior to final fit

2.6 Clean and store equipment in accordance with manufacturer's specifications and organisation policy and procedures

3. Finish spinal, lower and upper extremity orthoses

3.1 Finish orthoses using appropriate materials and techniques

3.2 Align and assemble components correctly

3.3 Fit orthoses to client in accordance with organisation policy, and modify as required to ensure client satisfaction with product

3.4 Establish, complete and store job records in accordance with organisation policy and procedures

3.5 Repair and modify spinal, lower and upper extremity orthoses as required

Required Skills and Knowledge

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

Essential knowledge:

The candidate must be able to demonstrate essential knowledge required to effectively do the task outlined in elements and performance criteria of this unit, manage the task and manage contingencies in the context of the identified work role

This includes knowledge of:

- Anthropometrics and basic anatomy and physiology in relation to the full range of orthotics
- Basic cardio vascular systems in relation to orthotics
- Biomechanical requirements for orthoses design, fabrication and client use
- Common pathologies and biomechanical deficits affecting the spine, upper and lower limbs requiring orthotic intervention
- Organisation policy and procedure concerning the scope of the role of the prosthetic orthotic technician
- Orthotic components, materials and fabrication techniques
- Other practitioners in the field and in major related fields, including their roles, capabilities and limitations
- Relevant work health and safety (WHS) standards/legislation, regulatory requirements, health fund reimbursement policies and codes of practice.
- Safety and environmental aspects of relevant organisation activities
- Skin integrity and impact of pressure on skin
- Use of and physical allowance directed to management of the limbs including stockings, bandages and orthotic devices.
- Workplace procedures; recording/documentation processes/techniques.

Essential skills:

It is critical that the candidate demonstrate the ability to effectively do the task outlined in elements and performance criteria of this unit, manage the task and manage contingencies in the context of the identified work role

This includes the ability to:

- Apply procedures and processes including reporting requirements
- Collect and analyse instructions and client information correctly
- Communicate and work effectively with work colleagues, associates and clients encompassing teamwork, client confidentiality, and appropriate communication and

interpersonal skills

- Communicate effectively with clients and health professionals
- Communicate effectively with the client to obtain clear and precise information
- Communicate with people from diverse cultural and linguistic backgrounds
- Conduct fittings in accordance with organisation policy
- Fabricate at least each of the following orthoses: foot (inner sole), ankle/foot, knee/ankle/foot, spinal, and arm/elbow to meet client requirements
- Interpret general orthotic technical information from information sheets and technical drawings to determine clinician and client requirements
- Maintain accurate job records
- Operate appropriate hand tools and machinery safely
- Prepare and use casts/moulds for orthotic fabrication
- Read and interpret technical drawings, anatomical measurements, limb and trunk tracings and specifications
- Recognise, report and manage errors and risk within work role
- Select appropriate materials and techniques for the fabrication of spinal, upper and lower extremity orthoses
- Select appropriate materials for the construction of a range of orthoses
- Take anatomical measurements
- Take into account opportunities to address waste minimisation, environmental responsibility and sustainable practice issues, including appropriate practices to ensure efficient use of resources
- Undertake modifications and repairs
- Use correctly and safely hand tools and machinery to fabricate orthoses
- Use reading and writing skills as required to fulfil job roles in a safe manner and as specified by the organisation at a level of skill that includes:
 - reading and interpreting technical specifications, WHS and organisation policy and procedure manuals
 - documenting client information
 - literacy in English or a community language depending on the language used in pamphlets or workplace manuals

continued ...

Essential skills (contd):

- Use numeracy skills ranging from the ability to complete arithmetic calculations, to measuring and fabricating an orthotic
- Use oral communication skills as required to fulfil job roles in a safe manner and as specified by the organisation, including skills in:
 - asking questions
 - providing clear information
 - listening to and understanding workplace instructions
 - clarifying workplace instructions when necessary
 - effective verbal and non-verbal communication with a range of internal and external

- persons
- literacy in English or a community language, depending on client group and organisation requirements
 - Use problem solving skills in the development of an orthotic to meet a range of client needs

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, the Range Statement and the Assessment Guidelines for this Training Package.

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

- The individual being assessed must provide evidence of specified essential knowledge as well as skills
- Observation of workplace performance is essential for assessment of this unit
- Consistency of performance should be demonstrated over the required range of situations relevant to the workplace
- Where, for reasons of safety, space, or access to equipment and resources, assessment takes place away from the workplace, the assessment environment should represent workplace conditions as closely as possible

Context of and specific resources for assessment:

- Assessment should replicate workplace conditions as far as possible
- Access to an appropriate workplace or simulated work environment where assessment can take place
- Relevant organisation policy, guidelines, procedures and protocols
- Materials and equipment normally found in the workplace to enable the design and fabrication of orthoses

EVIDENCE GUIDE

Method of assessment may include:

- Observation of work activities
- Observation of simulation
- Written tasks
- Relevant formal and informal education/training courses
- Case studies and scenarios
- Interviews/questioning
- Role plays

Access and equity considerations:

- All workers in the health industry should be aware of access and equity issues in relation to their own area of work
- All workers should develop their ability to work in a culturally diverse environment
- In recognition of particular health issues facing Aboriginal and Torres Strait Islander communities, workers should be aware of cultural, historical and current issues impacting on health of Aboriginal and Torres Strait Islander people
- Assessors and trainers must take into account relevant access and equity issues, in particular relating to factors impacting on health of Aboriginal and/or Torres Strait Islander clients and communities

Related units:

- This unit can be assessed independently
- However holistic assessment practice with other health technician units of competency is encouraged

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. 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.

- Spinal, upper and lower extremity orthoses includes:*
- Cervical, thoraco-lumbar-sacral, lumbar sacral flexion-extension control
 - Spinal/shoulder and arm brace
 - Orthoses for a brachial plexus lesion
 - Arm/elbow braces
 - Wrist braces
 - Static and dynamic wrist-hand braces
 - Finger braces
 - Foot (inner sole)
 - Ankle-foot
 - Knee
 - Knee/ankle/foot
 - Hip
- Prescriptions or instructions may include:*
- Referral from clinician i.e. type of prosthesis required
 - Client clinical history
 - Client specifications and assessments
 - Work specifications and patterns
 - Design/construction drawings/sketches
- Appropriate health professionals may include:*
- Prosthetist orthotist
 - Orthotist
 - Specialist or general medical practitioner
 - A physiotherapist or other allied health professional

Design may include:

- Selection of materials: thermoplastic foam, high temperature thermoplastic, cork, metal, soft collars, textiles (leather, cotton, synthetic), copper, steels, titanium, aluminium, graphite, polypropylene, plastics, polymeric materials, composites, etc.
- Criteria used for spinal orthoses: cervical spine, thoracic-lumbar spine, lumbar-sacral spine
- Component selection i.e.: modular, commercially manufactured orthoses, corsets, postings, arch support, ankle stirrups and joints, knee joints, hip joints, uprights, shoulder girdles and joints, elbow joints, wrist joints, hand and finger controls, control mechanisms, pins, pegs, dowels, straps, body jackets, cervical rings, girdles, etc.
- Type of construction with emphasis on: suspension, motion control, components/materials, alignment methods, practical considerations, finishing
- Assessment of materials for proposed use, durability, function, manufacturing processes, adjustability, maintenance, safe handling procedures
- Cosmetic and hygiene considerations
- Indications for use of specific materials

Organisation policy and procedures may relate to:

- Role and supervision of the Prosthetic Orthotic Technician in relation to client contact, design and fitting of orthoses
- Safe use of equipment
- Client records
- Job records
- Work health and safety (WHS)
- Client confidentiality and privacy
- Quality assurance

Effective communication may include:

- Language may be English, sign language or community language depending on client group
- Listening, asking open questions, providing encouragement, displaying empathy

Equipment may include:

- General hand and portable power tools
- Machinery - router, flat bed sewing machine, patcher, infra red heat lamps, pneumatic tools, vacuum pump, oven, lathe, drilling machine, milling machine, cut-off machines, grinders, etc
- Vacuum formers
- Pressure formers
- Welding equipment
- Soldering equipment
- Marking out tools
- Measuring tools and equipment

Unit Sector(s)

Not Applicable