



Australian Government

Department of Education, Employment and Workplace Relations

HLTDT511C Join alloy structures

Release: 1

HLTDT511C Join alloy structures

Modification History

Not Applicable

Unit Descriptor

Descriptor

This unit of competency describes the skills and knowledge required to join dental alloys using thermal processes

All procedures are carried out in accordance with occupational health and safety policies and procedures, current infection control guidelines, Australian and New Zealand Standards, state/territory legislative requirements and organisation policy

Application of the Unit

Application

This unit applies to work in dental technology

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Pre-requisite units

This unit must be assessed after successful achievement of pre-requisites:

- HLTDT301C Construct models
- HLTDT302C Construct custom impression trays
- HLTDT303C Construct registration rims
- HLTDT304C Articulate models and transfer records
- HLTDT507C Construct immediate dentures
- HLTDT508C Construct removable acrylic partial dentures
- HLTDT509C Cast metal alloy removable partial denture framework
- HLTDT510C Construct crown and bridge structures
- HLTDT519B Construct simple complete removable acrylic dentures and appliances
- HLTIN301C Comply with infection control policies and procedures

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

PERFORMANCE CRITERIA

- | | |
|----------------------|--|
| 1. Solder components | 1.1 Identify and position component materials accurately to comply with the design and in a manner that enables the optimum join to be made
1.2 Select <i>appropriate solder and flux according to the component materials</i>
1.3 Select <i>appropriate heating methods</i>
1.4 <i>Apply and control solder</i>
1.5 <i>Evaluate each finished join</i>
1.6 Clean, trim, shape and finish components to produce a smooth surface free of sharp edges and irregularities |
| 2. Weld components | 2.1 Identify and position component materials accurately to comply with the design and in a manner that enables the optimum join to be made
2.2 Select appropriate welding techniques and equipment
2.3 Weld components
2.4 Evaluate each finished weld
2.5 Clean, trim, shape and finish components to produce a smooth surface free of sharp edges and irregularities |

Required Skills and Knowledge

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:

- Applied oral anatomy
 - articulation and occlusion
 - dentition - arrangement of the teeth, naming and coding of teeth
 - structures of the oral cavity - hard and soft palate, lateral and posterior borders of the oral cavity, tongue and floor of the mouth
 - teeth - form and function
- Dental alloys
- Dental metallurgy
- Finishing methods
- Fluxes
- Infection control guidelines for the decontamination of completed laboratory work
- Occupational health and safety policies and procedures
- Orthodontic wires
- Soldering and welding techniques including laser welding technology

Essential skills:

It is critical that the candidate demonstrate the ability to

- Consistently comply with current infection control guidelines, Australian Standards and legislative requirements as they relate to the dental technician's specific job role
- Consistently comply with occupational health and safety policies and procedures as they relate to the dental technician's specific job role
- Produce soldered or welded joints that exhibit bio-compatibility and optimum mechanical properties

REQUIRED SKILLS AND KNOWLEDGE

In addition, the candidate must be able 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:

- Consistently follow sequenced written instructions and manufacturer specifications for the preparation of materials
- Select materials and techniques to join alloy structures
- Use appropriate practices to ensure efficient use of power and other resources
- Use safe work practices to minimise the risk of transmission of infection including:
 - consistently following the procedure for washing and drying hands
 - consistently putting into practice clean techniques
 - consistently using personal protective equipment
 - consistently limiting contamination
 - consistently maintaining clean receiving and work areas
- Use literacy skills to read and follow directions, policies and procedures including:
 - occupational health and safety policies and procedures
 - infection control policies and procedures
 - material safety data sheets
 - laboratory policies and procedures

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
- Consistency of performance should be demonstrated over the required range of workplace situations

EVIDENCE GUIDE

Context of and specific resources for assessment:

- Assessment should replicate workplace conditions as far as possible
- Where, for reasons of safety, access to equipment and resources and space, assessment takes place away from the workplace, simulations should be used to represent workplace conditions as closely as possible

Method of assessment

- Evidence of essential knowledge and understanding may be provided by:
 - traditional or online (computer-based) assessment
 - written assignments/projects
- Case study and scenario as a basis for discussion of issues and strategies to contribute to best practice
- Questioning
- Staff and/or client feedback
- Supporting statement of supervisor
- Authenticated evidence of relevant work experience and/or formal/informal learning
- Role play/simulation

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

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.

- Appropriate heating methods may include:*
- Heating components to a temperature that:
 - is sufficient to melt and control the flow of solder
 - is sufficient to form a bond
 - prevents damage to the metallurgical properties of the dental materials being joined
- The application and control of solder may include but is not limited to:*
- Achieving the thickness and coverage required for optimum durability and maximum strength
 - Giving an even flow
- Evaluation of each finished join may include:*
- Confirming the finished join meets requirements of:
 - position
 - strength
 - integrity
 - function

Unit Sector(s)

Not Applicable