Australian Government

Department of Education, Employment and Workplace Relations

# HLTDT301D Construct models

**Release: 1**

## HLTDT301D Construct models

# Modification History

| HLT07 Version 4 | HLT07 Version 5 | Comments |
|---|---|---|
| HLTDT301C Construct models | HLTDT301D - Construct models | Unit updated in V5.<br>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 of competency describes the skills and knowledge required to construct models from impressions of the client's upper or lower jaws

All procedures are carried out in accordance with work health and safety (WHS) 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:

- HLTIN301C Comply with infection control policies and procedures
- HLTWHS200A Participate in WHS processes

# 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. Verify integrity of impressions | 1.1 Apply *standard precautions when receiving, handling and working on dental materials*<br>1.2 *Decontaminate impressions* according to infection control guidelines<br>1.3 Examine impressions for *defects*<br>1.4 Check impressions to ensure they meet the specifications of the work order<br>1.5 Handle impressions with care to avoid damage or distortion<br>1.6 Ensure accompanying models are intact with no defects or adjustments<br>1.7 Prepare a range of impressions for pouring |
| 2. Select and prepare model materials | 2.1 Select appropriate *model materials*<br>2.2 Ensure all equipment used for mixing materials is clean<br>2.3 *Prepare model materials* in accordance with desired outcomes<br>2.4 Maintain and *store model materials* in accordance with manufacturer's instructions |
| 3. Pour impressions | 3.1 *Pour model materials* into impressions in accordance with accepted techniques<br>3.2 Allow required setting time |
| 4. Finish model | 4.1 Separate an intact model from the impression<br>4.2 Inspect the model for defects<br>4.3 *Trim the model* in accordance with requirements<br>4.4 Duplicate the master cast to create a working model where required by prescription |

# 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:
  - 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
- Infection control guidelines for the decontamination of impressions
- Properties of elastic impression materials including:
  - alginate impression material
  - polyether impression material
  - polysulphide impression material
  - polyvinyl siloxane impression material
- Properties of rigid impression materials including:
  - impression compound
  - zinc oxide-eugenol impression pastes
- The desirable properties of model materials including:
  - accurate reproduction of all details of the impression
  - colour contrast with other materials used on them
  - ease of manipulation
  - sufficient strength and hardness
  - suitability for use with all types of impression materials
- The significance of study models for:
  - dentate and partially dentate mouths
  - edentulous mouths

**REQUIRED SKILLS AND KNOWLEDGE**

*Essential skills*:

It is critical that the candidate demonstrate the ability to

- Consistently prepare models from a range of impressions
- Consistently prepare model materials
- Consistently produce models suitable for the construction of dental prostheses or appliances
- 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 work health and safety (WHS) policies and procedures as they relate to the job role

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
- Critically evaluate all work produced so as to consistently meet both the technical requirements of the laboratory and client requirements
- Select materials and procedures to prepare a range of impressions for pouring
- Take into account opportunities to address waste minimisation, environmental responsibility and sustainable practice issues, including 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 limiting contamination
  - consistently maintaining clean receiving and work areas
  - consistently putting into practice clean techniques
  - consistently using personal protective equipment
- Use literacy skills to read and follow directions, policies and procedures including:
  - infection control policies and procedures
  - laboratory policies and procedures
  - material safety data sheets
  - work health and safety (WHS) 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<br>• Consistency of performance should be demonstrated over the required range of workplace situations |
| *Context of and specific resources for assessment*: | • Assessment should replicate workplace conditions as far as possible<br>• Simulations may be used to represent workplace conditions as closely as possible<br>• 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:<br>  • traditional or online (computer-based) assessment<br>  • written assignments/projects<br>• Case study and scenario as a basis for discussion of issues and strategies to contribute to best practice<br>• Questioning<br>• Staff and/or client feedback<br>• Supporting statement of supervisor<br>• Authenticated evidence of relevant work experience and/or formal/informal learning<br>• Role play/simulation |

**EVIDENCE GUIDE**

*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.

## RANGE STATEMENT

| | |
|---|---|
| *Standard precautions when receiving, handling and working on dental materials may include but is not limited to*: | • A dedicated clean area to receive incoming cases<br>• Appropriate personal protection:<br>  • disposable gloves<br>  • apron<br>  • eye protection<br>  • mask where there is a risk of airborne transmission of infection<br>• Cleaning reusable containers with detergent followed by disinfection<br>• Decontamination of impressions<br>• Disposal of all packaging materials in accordance with the waste regulations of State/Territory health and environmental authorities<br>• Excluding all food and drink from the work area<br>• Washing hands before leaving the work area |
| *Decontamination of impression materials must include*: | • Cleaning in a mild detergent solution until all traces of blood and body fluids are removed, followed by rinsing<br>• Rinsing impression in clean running water |
| *Defects in impressions may include but are not limited to*: | • Blood and saliva contamination<br>• Bubbles<br>• Impression short in one or more regions<br>• Poor adhesion of impression to tray<br>• Tray flange showing through impression |
| *The range of impressions may include*: | • Dentate impressions<br>• Edentulous impressions |
| *Model materials may include but are not limited to*: | • Epoxy resin<br>• Plaster<br>• Quick set stone<br>• Regular stone |

**RANGE STATEMENT**

| | |
|---|---|
| *The preparation of model materials may include but is not limited to*: | • Equipment used for mixing is clean<br>• The water-stone ratio as recommended by the manufacturer |
| *The requirements for storage of model material may include but is not limited to*: | • Date of expiry as stated by manufacturer<br>• Rotation of stock<br>• Specific storage requirements including:<br>  • protection from light<br>  • storage temperature as recommended by the manufacturer |
| *The poring of materials may include*: | • Techniques to exclude air from the mix:<br>  • mechanical spatulation<br>  • vibration<br>  • vacuum<br>• Techniques to ensure elastic impression materials are not distorted |
| *Trimming the model may include but is not limited to*: | • Trimming regular models so that:<br>  • the base is parallel to the occlusal plane<br>  • the sides are free from unrelated material<br>  • posterior borders are equal on maxillary and mandibular models so that models can stand when placed in a vertical position on bench<br>  • essential anatomical detail is retained<br>• Trimming orthodontic models so that:<br>  • pre-set angles are maintained |

# Unit Sector(s)

Not Applicable