SFHOH24

Design and manufacture metallic bridge sub-structures and metallic bridge components

Overview

This standard describes the design and manufacture, using manual or digital techniques, of metallic bridge sub-structures and metallic bridge components. Metallic sub-structures will receive anatomical forms on to them in tooth-coloured materials.

They are likely to be complex in form given that they combine two or more units. You need to design and manufacture the metallic bridge sub-structures and bridge components, finish and assure their quality ready for fitting in the individual's mouth.

The term 'client' is used to mean the member of the oral health care team who has prescribed the restoration. Clients may be external to the organisation (such as other laboratories, dental practitioners, training schools) or internal (within a dental hospital).

The individual is the one for whom the custom-made restoration is being made.

The design and manufacturing process may be carried out in a regulated dental laboratory within a variety of settings.

Users of this standard will need to ensure that practice reflects up to date information, policies and regulations.

Performance criteria

You must be able to:

1. communicate with relevant others at a pace, manner and level appropriate to their understanding, preferences and needs
2. collate and confirm accuracy of all specification information required for the metallic bridge sub-structures and metallic bridge components design and manufacture with relevant others
3. select the necessary components, materials and equipment and confirm that they are fit for purpose
4. set up and operate the manufacturing equipment in accordance with the specification
5. manufacture the metallic bridge sub-structures and metallic bridge components using appropriate methods and techniques
6. monitor the manufacturing process and adjust as required
7. devest or retrieve the manufactured product using an appropriate method which releases the item without causing damage
8. ensure that the manufactured product matches the specification and make any necessary adjustments
9. clean and finish the restoration, prepare and package it safely for dispatch for the next process
10. dispose of waste in accordance with all relevant legislation, guidelines, and workplace procedures
11. complete and store all documentation in accordance with relevant legislation, guidelines, and workplace procedures

Knowledge and understanding

You need to know and understand:

1. how to communicate with relevant others at a pace, manner and level appropriate to their understanding, preferences and needs
2. the importance of applying standard infection control precautions and the potential consequences of poor practice
3. the principles, uses, methods, techniques and equipment involved in both manual and digital design and manufacturing.
4. the skeletal anatomy, tooth morphology, orofacial musculature including the tongue and temporomandibular joint function and movement
5. the physiological and pathological changes associated with the ageing process and trauma related to the oral environment
6. the importance of retention of the periodontal ligament and the changes in proprioreception due to loss of periodontal ligament
7. the principles and practice of:

• articulation
• aesthetics and phonetics

8. the principles of restoration design
9. the constituents of restorations (onlays, crowns, post and cores, inlays) and how they are made
10. the classification and sub-classification of materials on the basis of chemical composition and internal structure
11. the mechanical, physical, thermal, chemical and biological properties of materials
12. the purpose of different products used for cast and mould manufacture
13. the purpose of different materials used in the manufacture of restorations
14. the relationship between chemical bonds and the properties of solid materials
15. legal and physical implications of modifying manufacturer products and ensuring quality assurance .
16. how to clean and finish the restoration, prepare and package it safely for dispatch for the next process
17. different methods of waste disposal and how to apply these
18. the importance of updating documentation and storing individuals records safely and securely

SFHOH24

Design and manufacture metallic bridge sub-structures and metallic bridge components

Developed by	Skills for Health
Version Number	4
Date Approved	20 Mar 2025
Indicative Review Date	20 Mar 2030
Validity	Current
Status	Original
Originating Organisation	Skills for Health
Original URN	SFHOH24
Relevant Occupations	Associate Professionals and Technical Occupations, Dental Technician
Suite	Dental Technology
Keywords	Metallic, sub-structures, bridge; digital