

Overview

This standard describes the design and manufacture, using manual or digital techniques of

- single metallic restorations and integral restorations
- manufacture of metallic sub-structures that are to be used for the application of tooth coloured materials

You need to design and manufacture the single metallic integral restorations which have been prescribed, and finish them ready for fitting in the individual's mouth by analogue or digital methods.

Metallic sub-structures have the same anatomical form as a tooth and receive anatomical forms on to them - sub-structures included in this standard are inlays, posts and cores, and copings. You need to manufacture the sub-structure which has been prescribed for the application of tooth coloured materials and finish them ready for the application of tooth coloured materials.

The term 'client' is used to mean the member of the oral health care team who has prescribed the custom-made 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 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 all specification information required for
 - the design and manufacture of the single metallic restorations and integral restorations
 - the design and manufacture of the metallic sub-structures for the application of tooth-coloured materials
3. confirm accuracy of the specification with relevant others
4. determine the design parameters of the restoration and substructure when forming the pattern
5. select the necessary components, materials and equipment and confirm that they are fit for purpose
6. set up and operate the manufacturing equipment in accordance with the specification for the required analogue or digital manufacturing.
7. manufacture the single metallic restorations and integral restorations using appropriate methods and techniques
8. manufacture the metallic sub-structures for the application of tooth-coloured materials using appropriate methods and techniques
9. monitor the manufacturing process and adjust as required
10. deinvest or retrieve the manufactured product using an appropriate method which releases the item without causing damage
11. check that the manufactured product matches the specification and make any necessary adjustments
12. clean and finish the restoration, prepare and package it safely for dispatch together with instructions for the individual and client
13. dispose of waste in accordance with all relevant legislation, guidelines, and workplace procedures
14. 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 and use of digital design and manufacturing including restoration design.
4. relevant digital manufacturing equipment, methods and techniques
5. the skeletal anatomy, tooth morphology, orofacial musculature including the tongue and temporomandibular joint function and movement
6. the classification, aetiology, including oral cavity disorders and diseases and the physiological effects of malocclusions.
7. the physiological and pathological changes associated with ageing process and trauma related to the oral environment
8. the importance of retention of the periodontal ligament and the changes in proprioception due to loss of periodontal ligament
9. the principles and practice of:
 - articulation
 - aesthetics and phonetics
10. the constituents of sub-structures and how they are made
11. the formation of restorations and how they are made via analogue and digital manufacturing
12. the classification and sub-classification of materials on the basis of chemical composition and internal structure
13. the mechanical, physical, thermal, chemical and biological properties of materials
14. the purpose of products used for cast and mould manufacture or digital manufacturing
15. the purpose of different materials used in the manufacture of restorations
16. construction of patterns by casting and digital methods
17. conversion of the patterns to metallic components via analogue or digital manufacturing.
18. legal and physical implications of modifying manufacturer products and ensuring quality assurance.

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19. how to clean and finish both restorations and sub-structure, prepare and package it safely for dispatch together with instructions for the individual and client or for dispatch to the next stage of tooth coloured application.
 20. different methods of waste disposal and how to apply these
 21. the importance of updating documentation and storing individuals records safely and securely

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Design, manufacture and finish single and integral metallic restorations



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