CCSJ321

# Perform electro-deposition on jewellery or silverware components

## Overview

This standard covers the skills to plate or electroform components using different techniques. You will research different electro-depositioning methods and produce a range of items using them. You will consider the different materials and metals used for different outcomes and practice performing these. Managing waste safely is a key function within this standard.

In producing plated and electroformed components, individuals will be required to work to instructions and to use a range of tools and mechanical techniques appropriate to the type of material and items required.

During, and on completion of, the plating and electroforming operations, individuals will be expected to visually check the quality of their work. They will need to report any defects, to seek guidance on defects, seek advice on the appropriate action to rectify them, and to ensure that the finished work meets the required specification.

## Performance criteria

*You must be able to:*

1. research the different techniques used in electro-depositioning in jewellery and silversmithing in line with project needs
2. produce a selection of items using a range of **electro-deposition techniques** in line with workplace instructions
3. electroform various **materials** in line with workplace instructions
4. electroplate on a range of **metals** in line with workplace instructions
5. follow safe working practice that minimise risk of injury to yourself and others and damage to components and equipment in line with health and safety practice
6. complete initial quality checks on the components in line with project needs
7. seek support and guidance when problems arise in line with workplace instructions
8. check the work for defects in line with the needs of the project
9. take action to rectify any defects detected in line with workplace instructions
10. complete the work to the given specification in line with workplace instructions
11. manage waste materials safely, responsibly and economically in line with workplace instructions

## Knowledge and understanding

*You need to know and understand:*

1. safety precautions to be taken when performing electro-deposition
2. how to avoid damage to metal surfaces
3. chemicals and equipment for prescribed tasks and processes
4. how plating/electroforming solutions are maintained and kept free of contaminants
5. plating to different micro thicknesses
6. uses of matrix materials
7. limitations to plating and electroforming
8. characteristics of mandrel/matrix and solutions, the dangers of interactions of materials during production, contamination problems, and precautions to take against contamination
9. neutralising agents
10. how to determine the most appropriate part of the tank for specified treatments
11. how to recognise uneven or insufficient deposition and completion
12. how to separate core mandrels
13. chemical and waste management
14. how to check that finished work meets the specification required
15. who to ask for guidance and support when needed
16. best practice in electro-depositioning within chosen jewellery industry
17. the importance of following the given specification and timescales
18. common defects and how to rectify them

## Scope/range

1. **Electro-deposition techniques:**

    1. plating
    2. gilding
    3. matrix
    4. electro-forming

2. Electroform **materials:**

    1. metal
    2. wax

3. Electroplate **metals:**

    1. silver
    2. base metal
    3. gold (gilding)

CCSJ321

# Perform electro-deposition on jewellery or silverware components

| | |
|---|---|
| **Developed by** | Creative & Cultural Skills |
| **Version Number** | 2 |
| **Date Approved** | 14 Aug 2015 |
| **Indicative Review Date** | 14 Aug 2018 |
| **Validity** | Current |
| **Status** | Original |
| **Originating Organisation** | Creative & Cultural Skills |
| **Original URN** | CCSJ3.21 |
| **Relevant Occupations** | Design Associate Professionals, Skilled Trades NEC |
| **Suite** | Jewellery Manufacture, Silversmithing and Allied Trades |
| **Keywords** | Jewellery; design; technique; product; electro-deposition; silverware; components; material; metal; plate; electro-form; electroform |