

Title	Perform hand soldering in electronic manufacturing		
Level	3	Credits	10

Purpose	<p>This unit standard covers hand soldering for people working in the assembly environment of electronic manufacturing. Surface mount technology is excluded.</p> <p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"> –select soldering equipment; –produce manual solder connections; and –maintain soldering equipment.
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Classification	Electronic Engineering > Electronic Manufacturing
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Available grade	Achieved
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Guidance Information

- 1 **Range**
Competence may be demonstrated on one or more of the following – printed circuit board assemblies using active and passive components with leads, signal wiring, power wiring, terminations, connectors, screening, electrical or electronic components, product assemblies. Surface mount devices are excluded.
- 2 For surface mount devices see Unit 12576, *Assemble surface mount printed circuit boards manually*.
- 3 **References**
Health and Safety in Employment Act 1992;
ANSI/IPC J-STD- 001D, *Requirements for Soldered Electrical and Electronic Assemblies*, February 2005, published jointly by IPC – Association Connecting Electronics Industries and the Electronic Industries Alliance;
IPC-A-610D, *Acceptability of Electronic Assemblies*, 2005, published by IPC – Association Connecting Electronics Industries.
- 4 The following apply to all outcomes of this unit standard:
 - a all activities are to be completed and reported within agreed timeframes;
 - b all work practices must meet worksite's documented quality management requirements;
 - c all activities must comply with policies, procedures and requirements of the enterprises involved; and any relevant legislative and/or regulatory requirements, which include, but are not limited to, the Health and Safety in Employment Act 1992.

Outcomes and performance criteria

Outcome 1

Select soldering equipment.

Performance criteria

1.1 The selected equipment and material are suitable for the soldering application.

Range performance may include but is not limited to – temperature requirement, tip size, tip shape, solder material, fluxes, cleaning material.

1.2 The setup and operation of the soldering equipment meets enterprise quality and safety standards.

Outcome 2

Produce manual solder connections.

Performance criteria

2.1 Component performance is not affected by the soldering process.

Range physical, heat, electrostatic damage.

2.2 The soldering process complies with required connection standards.

Range standards include – cleanliness of joint, application of heat, solder materials.

2.3 The soldered connections comply with industry quality standards for the application.

Range IPC standards, or equivalent, for physical appearance, mechanical strength, electrical properties, component placement.

Outcome 3

Maintain soldering equipment.

Performance criteria

3.1 Soldering equipment is turned off when not in use for long periods.

3.2 Corroded or damaged tips are repaired or replaced.

3.3 Sponge is kept clean and damp.

3.4 Coating of solder is left on the tip when soldering iron is not in use.

This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	24 February 1998	31 December 2021
Review	2	28 June 1999	31 December 2021
Revision	3	3 April 2001	31 December 2021
Review	4	23 November 2003	31 December 2021
Rollover and Revision	5	19 March 2010	31 December 2021
Review	6	26 July 2018	31 December 2021

Consent and Moderation Requirements (CMR) reference

0003

This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.