

Title	Carry out installation, testing, commissioning, and maintenance of solar water heating systems		
Level	4	Credits	5

Purpose	<p>This unit standard is for people who work in the plumbing industry.</p> <p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"> – prepare for installation of solar water heating systems; – install, commission, and test solar water heating systems; and – maintain solar water heating systems.
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Classification	Plumbing, Gasfitting and Drainlaying > Plumbing
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Available grade	Achieved
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Guidance Information

- 1 Legislation, regulations and/or industry standards relevant to this unit standard include but are not limited to the:
- Building Act 2004;
 - Electricity Safety Regulations 2010;
 - Health and Safety at Work Act 2015;
 - Plumbers, Gasfitters, and Drainlayers Act 2006;
 - Plumbers, Gasfitters, and Drainlayers Regulations 2010.

The following standards, which are available at <http://www.standards.govt.nz/>:
 AS/NZS 2712:2007 Solar and heat pump water heaters – Design and construction,
 AS/NZS 3500.4:2021 *Plumbing and drainage, Part 4: Heated water services*,
 AS/NZS 5601.1:2013 *Gas installations, Part 1: General installations*,
 NZS 3604:2011 *Timber-framed buildings*.

The following Building Code clauses, and any related Acceptable Solution and Verification Method documents, which are available at <https://www.building.govt.nz/>:
 New Zealand Building Code Clause E1 Surface Water,
 New Zealand Building Code Clause E2 External Moisture,
 New Zealand Building Code Clause G10 Piped Services,
 New Zealand Building Code Clause G12 Water Supplies.

Any new, amended or replacement referenced standards, codes of practice, guidelines, Building Code Acceptable Solutions and Verification Methods, or authority requirements affecting this unit standard will take precedence for assessment purposes, pending review of this unit standard.

2 Definitions

Job requirements refer to specific requirements of the job at hand not covered by job specifications.

Job specifications refer to instructions (oral, written, graphic) and may include any of the following – manufacturer instructions; design drawing detail specifications; specifications from a specialist source such as an architect, designer, engineer, or a supervisor; and site or work specific requirements.

Maintain may refer to all or any of – repair, upgrade, alter, remove.

Other services refer to any existing installed services.

3 Candidates must hold a current limited certificate trainee authorisation or exemption under supervision as issued under the Plumbers, Gasfitters, and Drainlayers Act 2006.

4 Range

Evidence is required of installation of two solar water heating systems.

5 Level of performance

To achieve this standard the candidate must be capable of consistently performing the requirements:

- to current and relevant legislation, standards and codes (including safety);
- in an environmentally sustainable manner;
- within an acceptable timeframe;
- in the workplace;
- in different and unfamiliar contexts.

Outcomes and performance criteria

Outcome 1

Prepare for installation of solar water heating systems.

Performance criteria

- 1.1 Confirm compliance documents in accordance with job specifications.
- 1.2 Confirm positioning, pipework layout, structural and functional requirements in accordance with job specifications and customer requirements.
- 1.3 Observe safety requirements relating to working at heights and lifting loads in accordance with relevant legislation and codes.
- 1.4 Prepare materials and equipment in accordance with job specifications and job requirements.

Outcome 2

Install, commission, and test solar water heating systems.

Performance criteria

- 2.1 Install fixing and required brackets in accordance with job specifications.
- 2.2 Install and connect required pipework in accordance with job specifications and with particular attention to weather tightness.
- 2.3 Identify any low voltage wiring, temperature sensors, pumps, or controllers that need to be installed.
- 2.4 Commission and test systems as required in accordance with relevant legislation, standards, and codes.

Outcome 3

Maintain solar water heating systems.

Performance criteria

- 3.1 Identify faults in terms of causes and means of rectification.
- 3.2 Rectify faults in accordance with maintenance requirements, job specifications, and relevant standards and codes.

Replacement information	This unit standard and unit standard 30610 replaced unit standard 24305.
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Planned review date	31 December 2029
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	26 October 2017	31 December 2028
Review	2	30 May 2024	N/A

Consent and Moderation Requirements (CMR) reference	0003
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact Waihangara Ara Rau Construction and Infrastructure Workforce Development Council qualifications@waihangaararau.nz if you wish to suggest changes to the content of this unit standard.