

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

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 References
 - Building Act 2004;
 - Electricity Safety Regulations 2010;
 - Health Act 1956;
 - 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 3500.4:2003 *Plumbing and drainage – Part 4 Heated water services*,
 - AS/NZS 5601.1:2010 *Gas installations - Part 1: General installations*,
 - NZS 3604:2011 *Timber-framed buildings*;
 - The following clauses, and any related compliance 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;
 - and all subsequent amendments and replacements.
- 2 This unit standard requires the application of theory as included in the Plumbers, Gasfitters, and Drainlayers Regulations 2010.
- 3 Credit for this unit standard does not entitle the candidate to legally perform certain electrical aspects of this work unless registered or supervised by a registered person under the provisions of the Electricity Act 1992.

- 4 Range
Installation of at least two solar water heating systems covering – direct, indirect, thermosiphon, pump.
- 5 Definitions
Job requirements – specific requirements of the job at hand not covered by job specifications.
Job specifications – 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. Where job specifications are in conflict with applicable legislation, standards, and/or codes, such legislation, standards, and/or codes shall take precedence for the purpose of assessment.
Maintain may refer to all or any of – repair, upgrade, alter, remove.
Other services – any existing installed services.
- 6 All practical activities are to be carried out in a way that avoids harm to people and damage to property, environment, existing installed services, materials, tools, and equipment.
- 7 Candidates must hold a current limited certificate or exemption under supervision as issued under the Plumbers, Gasfitters, and Drainlayers Act 2006.

Outcomes and performance criteria

Outcome 1

Prepare for installation of solar water heating systems.

Performance criteria

- 1.1 Confirm building consent in accordance with job specifications.
- 1.2 Confirm positioning, pipework layout, and structural and aesthetic 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 Confirm fixing and/or support in accordance with job specifications, and install required brackets and other fixing.

- 2.2 Install and connect required pipework in accordance with job specifications and with particular attention to weather tightness.
- 2.3 Identify any wiring requirements that need to be carried out by other trade personnel.
- 2.4 Commission and test systems as required in accordance with relevant legislation, standards, and codes.
- 2.5 Inform the customer of operation and maintenance requirements in accordance with job specifications.

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 2022
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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	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 The Skills Organisation reviewcomments@skills.org.nz if you wish to suggest changes to the content of this unit standard.