

Title	Demonstrate knowledge of design development, layout and construction for marinas		
Level	4	Credits	6

Purpose	People credited with this unit standard are able to demonstrate knowledge of: design development for marinas; the construction of marinas; and the layout requirements for marinas.
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Classification	Boating Industries > Marina Operations and Services
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Available grade	Achieved
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Guidance Information

- 1 Reference
Legislation – Resource Management Act (RMA) 1991 and any subsequent amendments.
Clean Marina programme: Best Management Practices (CMBMP), New Zealand Marina Operators Association, latest version <http://www.cleanmarinas.org.nz>.
- 2 Definition
Waling refers to timberwork bolted to the outer edges of concrete piers and fingers.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of design development for marinas.

Performance criteria

- 1.1 Environmental considerations are explained for marina design in accordance with the RMA and CMBMP.

Range considerations include – seabed preservation, fluids storage, waste management, materials and coatings.
- 1.2 Dredging is explained in terms of potential impact to the environment in accordance with the RMA and CMBMP.

Range water quality, flora and fauna, noise pollution, chemical pollution.

- 1.3 Land-based excavation and marina infrastructure development are explained in terms of potential impact to the environment in accordance with RMA.
- Range water quality, noise pollution, flora and fauna, waste management, utilities usage.
- 1.4 Flushing considerations are explained for marina in accordance with the CMBMP.
- 1.5 Structural integrity is explained for marina in accordance with CMBMP.
- Range structural strength, pontoon buoyancy, pontoon stability, strength to restrain berthed vessels.
- 1.6 Serviceability, function and safety are explained for marina in accordance with CMBMP.

Outcome 2

Demonstrate knowledge of the construction of marinas.

Performance criteria

- 2.1 Construction types for marina are explained in terms of advantages and disadvantages.
- Range pile, walkway pontoon, finger float, gangway.
- 2.2 Waling pieces are explained in terms of purpose and function.
- 2.3 Selection, placement and attachment of cleats and rings are explained in accordance with mooring requirements.
- 2.4 Suitable fendering types and attachment details are described in accordance with boat operational requirements.

Outcome 3

Demonstrate knowledge of the layout requirements for marinas.

Performance criteria

- 3.1 Space requirements for berths are explained in accordance with boat size and type.
- Range fairway distances, berth dimensions, water depth.
- 3.2 Service routing arrangements are described for electrical and water supply in terms of layout and securement on pontoons.
- 3.3 Electrical and water supply service tower arrangements are described in terms structural attachment and connection on pontoons.

- 3.4 Car parking for an existing marina is compared with RMA and local authority requirements.
- 3.5 Toilet and washing facilities for an existing marina are compared with RMA and local authority requirements.

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	17 June 2011	31 December 2019
Review	2	23 November 2017	N/A

Consent and Moderation Requirements (CMR) reference	0136
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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 NZ Marine and Composites Industry Training Organisation training@nzmarine.com if you wish to suggest changes to the content of this unit standard.