

Title	Demonstrate knowledge of composite technology for a marine or composite industry		
Level	4	Credits	5

Purpose	People credited with this unit standard are able to: explain laminate configurations; describe resin system characteristics; explain fibre reinforcements and core materials; explain the performance of cured resins, and describe hardness testing methods for fillers and resins used in composite construction.
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Classification	Boating Industries > Boatbuilding
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Available grade	Achieved
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Guidance Information

Definitions

Resin types refers to epoxy resin, polyester resin, vinylester resin or any other resins used in marine or composite industry.

Workplace policies and procedures refers to the documented procedures and policies providing guidelines of the tasks and activities carried out in the workplace. This typically includes relevant health and safety policies to manage risk in the workplace.

Outcomes and performance criteria

Outcome 1

Explain laminate configurations used in composite construction.

Performance criteria

- 1.1 Monolithic and cored laminate configurations are explained in terms of advantages and disadvantages, and use.
- 1.2 Monolithic and cored laminate configurations are explained in terms of their typical locations and structural functions.

Outcome 2

Describe resin system characteristics used in composite construction.

Range evidence of three resin types is required.

Performance criteria

- 2.1 Resin system characteristics are described in terms of their advantages and disadvantages.
- 2.2 Resin system characteristics are described in terms of application.

Outcome 3

Explain fibre reinforcements and core materials for composite construction.

Range properties, advantages, disadvantages.

Performance criteria

- 3.1 Fibre reinforcement and core materials are explained in accordance with workplace policies and procedures.

Range fibre reinforcement and core materials may include – glass, acrylic, kevlar, carbon fibre, end grain balsa, foam core, timber cores, honeycomb, semi-saturated matt core; evidence of three fibre reinforcements and three core materials is required.

Outcome 4

Explain the performance of cured resins in composite construction.

Performance criteria

- 4.1 Room temperature and high temperature cure are explained in terms of epoxy resin system performance.
- 4.2 Resin cure characteristics are explained in terms of curing chemistry, stiffness and surface bonding.

Range evidence of three resin types is required.

Outcome 5

Describe hardness testing methods for fillers and resins used in composite construction.

Performance criteria

- 5.1 Methods used of hardness testing for fillers and resins are described.

Range methods include – fingernail, Barcol, Shore D durometers.

Planned review date	31 December 2027
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	14 December 2007	31 December 2017
Review	2	8 December 2016	31 December 2024
Review	3	25 August 2022	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 Hanga-Aro-Rau Manufacturing, Engineering and Logistics Workforce Development Council qualifications@hangaarorau.nz if you wish to suggest changes to the content of this unit standard.