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| Title | Produce composite items by resin injection | | |
| Level | 4 | Credits | 7 |

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| Purpose | People credited with this unit standard are able to prepare materials and equipment, and produce composite items by resin injection. |
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| Classification | Composites > Industrial Composites |
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| Available grade | Achieved |
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Guidance Information

- 1 All required equipment must be set up, started up, operated, and shutdown in accordance with company policies and procedures.
- 2 All work practices must meet recognised codes of practice such as the Code of Practice for Health and Safety in the Manufacture of Composites Based on Synthetic Resins (Fibreglass), 1998, available at <http://www.worksafe.govt.nz>, and documented worksite health and safety procedures (where these exceed code) for personal, product, and worksite health and safety, and must meet the obligations required by legislation.
- 3 Learners undertaking assessment against this unit standards are expected to comply with the following legislation and any subsequent amendments –
 - Health and Safety at Work Act 2015
 - Health and Safety in Employment Regulations 1995
 - Resource Management Act 1991
 - Hazardous Substances and New Organism Amendment Act 2015.
- 4 Definitions

Equipment refers to applicators, dispensers, measuring devices, injection equipment, injection pump, cutters and cleaning utensils.

Job specifications refers to standard requirements of the job being undertaken.

Process specification refers to the documented instructions and method of applying the materials to manufacture the item. (For example: time, materials, temperature, application rates).

Product specification refers to the documented requirements of the manufactured item.

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 requirements to eliminate hazard/risk in the workplace.

- 5 Assessment does not include low pressure (less than 0.5 bar) resin injection or vacuum assisted resin transfer moulding.

Outcomes and performance criteria

Outcome 1

Prepare materials and equipment to produce composite items.

Performance criteria

- 1.1 Injection plan is verified against job specifications.
- Range includes but is not limited to – resin input positions, resin pathways, expected injection time, resin cure times, resin to reinforcement ratio.
- 1.2 Materials and equipment are prepared and to meet the job specifications.
- 1.3 Equipment is set-up and calibrated in accordance with manufacturer's instructions and workplace policies and procedures.
- Range injection equipment, injection pump

Outcome 2

Produce composite items using resin injection.

Range evidence of three different composite items is required.

Performance criteria

- 2.1 Produce composite items in accordance with product and process specifications.
- 2.2 Finished item is checked and remedial action is taken if required to ensure product specifications are met.

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| Planned review date | 31 December 2021 |
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Status information and last date for assessment for superseded versions

| Process | Version | Date | Last Date for Assessment |
|-----------------------|---------|-------------------|--------------------------|
| Registration | 1 | 9 December 1994 | 31 December 2012 |
| Revision | 2 | 14 April 1997 | 31 December 2012 |
| Revision | 3 | 5 January 1999 | 31 December 2012 |
| Review | 4 | 26 September 2001 | 31 December 2018 |
| Revision | 5 | 12 February 2003 | 31 December 2018 |
| Rollover and Revision | 6 | 21 August 2009 | 31 December 2018 |
| Revision | 7 | 20 August 2010 | 31 December 2018 |
| Review | 8 | 20 April 2017 | N/A |

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| 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 NZMAC ITO training@nzmarine.com if you wish to suggest changes to the content of this unit standard.