

Title	Describe resin infusion and injection processes for composites		
Level	4	Credits	5

Purpose	People credited with this unit standard are able to describe: the vacuum resin infusion process for composites; the resin injection moulding process for composites; and the resin film infusion process for composites.
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Classification	Composites > Production Composites
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Available grade	Achieved
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Guidance Information

Definitions

Resin infusion – low pressure (less than 0.5 bar) vacuum resin transfer moulding, including Resin Transfer Moulding (RTM) light.

Resin injection – injection resin transfer at pressure greater than 0.5 bar.

RTM light – low pressure closed moulding resin transfer technique that uses a semi rigid matched pair of moulds clamped closed by a perimeter flange. Cavity vacuum is typically less than 0.5 bar.

Outcomes and performance criteria

Outcome 1

Describe the vacuum resin infusion process for composites.

Performance criteria

- 1.1 The vacuum infusion process is described in terms of technical application parameters.

Range	includes – permeability of the laminate, viscosity of resin, pressure differential in the cavity.
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- 1.2 Typical resin infusion applications are described in accordance with application requirements.
- 1.3 Vacuum infusion materials are described in terms of suitable resins, fibres and cores.
- 1.4 Infusion equipment is identified and described in terms of function.

Range	tooling and mould types, pumps, piping, reservoirs.
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Outcome 2

Describe the resin injection moulding process for composites.

Performance criteria

2.1 The resin injection moulding process, equipment and suitable applications are described in relation to vacuum infusion.

Range mould type, pressure.

Outcome 3

Describe the resin film infusion process for composites.

Performance criteria

3.1 Resin film infusion is described in relation to vacuum infusion and pre-preg.

3.2 Typical film infusion applications are described in accordance with application requirements.

3.3 Resin film infusion materials are described in terms of suitable resins, fibres, and cores.

Planned review date	31 December 2026
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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
Revision	2	20 August 2010	31 December 2017
Review	3	8 December 2016	31 December 2023
Review	4	26 August 2021	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 ITO training@nzmarine.com if you wish to suggest changes to the content of this unit standard.