

Title	Carry out advanced make ready and print for screen printing		
Level	4	Credits	30

Purpose	People credited with this unit standard are able to: select and set screen printing tools on the machinery being operated; describe methods of rectifying printing problems and solve printing problems, encountered during the print run.
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Classification	Printing > Printing - Screen
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Available grade	Achieved
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Prerequisites	Unit 340, <i>Demonstrate knowledge of safe working practices in the print industry</i> , or demonstrate equivalent knowledge and skills.
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Guidance Information

- 1 Legislation, regulations and/or industry standards relevant to this unit standard include but are not limited to the:

- Hazardous Substances and New Organisms Act 1996;
- Health and Safety at Work Act 2015;
- Privacy Act 2020;
- Resource Management Act 1991.

Any new, amended or replacement Acts, regulations, standards, codes of practice, guidelines, or authority requirements or conditions affecting this unit standard will take precedence for assessment purposes, pending review of this unit standard.

- 2 Definitions

Job requirements refer to specific requirements for the print job at hand. These requirements may or may not be covered in the job documentation and may include special instructions, quality requirements expected by the customer, and/or production standards of the print workplace and/or organisation.

Workplace procedures refer to organisation policies and procedures that are documented in memo, electronic, or manual format and available in the workplace. They may include but are not limited to – standard operating procedures, site specific procedures, site safety procedures, equipment operating procedures, quality assurance procedures, product quality specifications, manufacturer's requirements, references, approved codes of practice, housekeeping standards, environmental considerations, on-site briefings, supervisor's instructions, and procedures to comply with legislative and local body requirements relevant to the print sector.

- 3 It is recommended that people hold credits for Unit 5144, *Undertake pre-make ready for screen printing*, before being assessed against this unit standard.
- 4 Assessment information
Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with applicable service information, workplace procedures and legislative requirements.

Outcomes and performance criteria

Outcome 1

Select and set screen printing tools on the machinery being operated.

Range screen printing tools – squeegee;
may include scraper.

Performance criteria

- 1.1 Select screen printing tools to meet the job requirements and press specifications.
- 1.2 Set screen printing tools to meet the job requirements and press specifications.

Outcome 2

Describe methods of rectifying printing problems encountered during the print run.

Performance criteria

- 2.1 Identify pinhole problems, and describe methods to rectify these.
- Range stencil, substrate, ink incompatibility with substrate, ink formulations, squeegee, machine setting.
- 2.2 Identify stencil breakdown problems, and describe methods to rectify these.
- Range mesh tension, incorrect exposure, machine setting, ink incompatibility, drying, degreasing, coating technique.
- 2.3 Identify moiré pattern problems, and describe methods to rectify these.
- Range mesh count, mesh tension, screen angle, clash with substrate.
- 2.4 Identify ghosting problems caused by a poorly reclaimed screen, and describe methods to rectify these.

- 2.5 Identify sawtooth problems, and describe methods to rectify these.
- Range emulsion build up, underexposure of stencil, ink viscosity, mesh count, machine setting, excessive wash ups (too frequent, too hard).
- 2.6 Identify static problems, and describe methods to rectify these.
- Range ink viscosity, climatic conditions, substrate, excessive squeegee speed, mesh tension.
- 2.7 Identify ink reticulation problems, and describe methods to rectify these.
- Range ink formulation, ink properties, squeegee pressure.
- 2.8 Identify orange peel problems, and describe methods to rectify these.
- Range squeegee selection, mesh tension, substrate, ink properties, machine setting.
- 2.9 Identify ink drying problems, and describe methods to rectify these.
- Range room temperature, ink additives, mesh tension, ultra-violet (UV) light intensity, over/under curing.
- 2.10 Identify substrate problems, and describe methods to rectify these.
- Range substrate movement, static, pre-conditioning treatment, ink adhesion, ink compatibility, moisture in substrate, changes in relative humidity, debris.
- 2.11 Identify blocking problems, and describe methods to rectify these.
- Range solvent retention, overstacking, gloss to gloss, substrate moisture content, mesh tension.
- 2.12 Identify problems through the use of quality control equipment and guides, and describe methods to rectify these.
- Range any of the following – quality control strips, densitometers, bar code verifiers, spectrophotometers.

Outcome 3

Solve printing problems encountered during the print run.

Performance criteria

- 3.1 Solve stencil problems to ensure that job requirements are met.
- Range pinholes, stencil breakdown; plus a minimum of any two of – moiré patterns, ghosting, sawtooth, static.

3.2 Solve substrate problems to ensure that job requirements are met.

Range a minimum of four of – pinholes, sawtooth, static, orange peel, substrate movement, blocking, pre-conditioning treatment.

3.3 Solve machine problems to ensure that job requirements are met.

Range pinholes, stencil breakdown, blocking; plus a minimum of any two of – sawtooth, static, ink reticulation, orange peel, off-contact, machine calibration.

3.4 Solve ink problems to ensure that job requirements are met.

Range stencil breakdown, ink drying (curing), blocking; plus a minimum of any three of – sawtooth, static, ink reticulation, ink adhesion, ink and substrate compatibility, UV light intensity, orange peel, problems identified through the use of quality control guides and equipment.

Replacement information	This unit standard replaced unit standard 6152, unit standard 6153, and unit standard 6154.
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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	30 August 1999	31 December 2025
Review	2	21 February 2005	31 December 2027
Review	3	30 March 2023	N/A
Revision	4	27 February 2025	N/A

Consent and Moderation Requirements (CMR) reference	0013
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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.