

Title	Make ready and print single colour for flat sheet screen printing		
Level	3	Credits	40

Purpose	People credited with this unit standard are able to: check documentation and confirm requirements for the job are available; demonstrate knowledge of product bar code printing; prepare substrates for screen printing; set the screen for single colour flat sheet printing; prepare screen printing tools and place in the press; take the first prints and make adjustments; print single colour flat sheet work in position; and complete post-press tasks.
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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 documentation refers to the documentation that is used in the workplace that contains the instructions and requirements for a particular production job. This may include but is not limited to workplace orders, production orders, workplace specifications, samples, lay cards.

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 as set down by the print workplace.

Specifications refer to a detail that defines an object being made; commonly communicated by annotated and dimensioned drawings; by written description, or by other communication media. External references may also be used to specify objects such as tables or industry standards.

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 16795, *Prepare, handle and store substrates required for screen printing*; Unit 341, *Carry out routine and preventive maintenance common to the printing industry*; and Unit 5131, *Wash up for screen printing*, before being assessed against this unit standard.
- 4 **Assessment information**
Candidates undertaking assessment against this unit standard must provide evidence of normal colour vision.

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

Check documentation and confirm requirements for the job are available.

Performance criteria

- 1.1 Check job documentation to ensure that all specifications for the process being undertaken are complete and report any discrepancies.
- Range quantity, press, special instructions.
- 1.2 Check required components against the job documentation and confirm their availability.
- Range may include but is not limited to – job samples or layouts, screens, stencils, film positives, ink, substrates.
- 1.3 Confirm equipment is available, as determined by the job documentation.

Outcome 2

Demonstrate knowledge of product bar code printing.

Performance criteria

2.1 Describe product bar coding in terms of format and functions.

Range format – country of origin, manufacturer, product, check number; functions – storing information and identifying individual products, pricing, recording stock.

2.2 Describe requirements for reproduction of product bar codes.

Range positioning, readability, printing tolerances, size, colour combinations, positive/negative bar codes.

2.3 Check product bar code tolerances to ensure correct reading.

Range may include but is not limited to – grey gauges, scanners, verifiers.

2.4 Describe processes for reporting product bar coding faults.

Range positioning, readability, printing tolerances, size, colour combinations, positive/negative bar codes.

Outcome 3

Prepare substrates for screen printing.

Performance criteria

3.1 Confirm that substrate meets the job specifications.

3.2 Calculate substrate quantity, including overs, and confirm quantity issued against the job specifications.

3.3 Condition substrates as required to avoid excess moisture content.

Outcome 4

Set the screen for single colour flat sheet printing.

Performance criteria

4.1 Touch up stencil ensuring all imperfections are removed.

4.2 Place screen into the press, lock into position, and position to the job.

Range lays set square, machine settings set to neutral.

4.3 Position image on the substrate with trim marks squared on sheet.

Range maximum tolerance $\pm 0.2\text{mm}$.

4.4 Mask out table area surrounding the sheet to prevent substrate movement.

Outcome 5

Prepare screen printing tools and place in the press.

Range screen printing tools – squeegee;
may include scraper.

Performance criteria

5.1 Describe characteristics of screen printing tools.

Range squeegee characteristics – shore hardness, material, blade edge, size;
scraper characteristics – material, size.

5.2 Check blade edges of screen printing tools for imperfections.

5.3 Sharpen squeegee and remove imperfections from screen printing tools.

Range removal methods may include – sanding, grinding, filing, cutting.

5.4 Place screen printing tools in the press to meet the job requirements and press specifications.

Range position, angle, pressure, stroke, grader angle.

Outcome 6

Take the first prints and make adjustments.

Performance criteria

6.1 Follow machine start up and shut down procedures during the print run.

6.2 Identify and report potential hazards for the equipment being used.

6.3 Ink up screen in amounts to meet the image requirements.

Range pressure, print height, spatula.

6.4 Take prints and confirm against job documentation for correct image transfer and position.

Range check against – job specifications, film positive, customer copy;
check for – position, colour, stencil, pressures, angles, quality of print, snap off, length of stroke, speed.

6.5 Select and set drying system most appropriate for the job.

Range may include but is not limited to – rack, wicket, jet air, drying tunnel, ultra-violet (UV), infra-red (IR).

6.6 Pass prints for production run, and obtain approval to run.

Range check against – job specifications, film positive, customer copy; check for – position, colour, stencil, pressures, angles, quality of print, snap off, length of stroke, speed, adhesion, cure.

6.7 Set counter ready for commencement of run.

Outcome 7

Print single colour flat sheet work in position.

Performance criteria

7.1 Print single colour work to meet the job specifications and maintain production standards and quality throughout the run.

7.2 Monitor ink and adjust throughout the print run to maintain the job specifications.

Range supply, viscosity, colour.

7.3 Maintain position throughout the print run to meet the job specifications.

7.4 Dry prints, undertake checks during the print run, and identify and report any faults.

Range faults caused by incorrect drying time, temperature and speed include – set off, block, ink adhesion failure, curling, substrate distortion, colour change.

7.5 Identify and report problems and faults encountered during the print run.

Range may include but are not limited to – smudging, colour variation, position, loss of detail, drying of ink in the screen, dust, set-off, change of viscosity, legibility, clarity, static, ink reticulation, orange peel, humidity, stencil breakdown, pin holes, substrate movement.

Outcome 8

Complete post-press tasks.

Performance criteria

8.1 Check quantity printed against job documentation before wash up is commenced.

8.2 Correct shut down sequence.

8.3 Complete job documentation.

Range may include but is not limited to – job sheets, time sheets, electronic data storage.

8.4 Note amendments and variations on job documentation for future reference.

8.5 Carry out post-press tasks as required by the job specifications.

Range indicate lay and grip edge, knock up and sort job, file film positive, file sample.

8.6 Prepare printed substrate for forwarding to the next production process.

Range drying, packaging, further processes.

Replacement information	This unit standard, unit standard 5139, unit standard 5140, unit standard 5141, unit standard 5142, and unit standard 5143 replaced unit standard 345, unit standard 347, and unit standard 348.
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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	23 August 1995	31 December 2025
Review	2	23 August 1995	31 December 2025
Revision	3	20 July 1998	31 December 2025
Review	4	30 August 1999	31 December 2025
Review	5	21 February 2005	31 December 2027
Review	6	30 March 2023	N/A
Revision	7	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.