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**PRINTING - SCREEN**  
**Make ready and print single colour for  
formed shapes screen printing**

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<b>level:</b>	<b>3</b>
<b>credit:</b>	<b>40</b>
<b>planned review date:</b>	March 2009
<b>sub-field:</b>	Printing
<b>replacement information:</b>	This unit standard, unit standard 5138, unit standard 5139, unit standard 5140, unit standard 5141, and unit standard 5143 replaced unit standard 345, unit standard 347, and unit standard 348.
<b>purpose:</b>	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 formed shapes printing; prepare squeegee (and scraper if available) and place in the press; take the first prints and make adjustments; print single colour formed shapes work in position; and complete post-press tasks.
<b>entry information:</b>	<p>Prerequisite: Unit 340, <i>Demonstrate knowledge of safe working practices in the printing and graphic pre-press industries</i>, or demonstrate equivalent knowledge and skills.</p> <p>Recommended: Unit 16795, <i>Prepare, handle and store substrates required for screen printing</i>; Unit 341, <i>Carry out routine and preventive maintenance common to the printing industry</i>; and Unit 5131, <i>Wash up for screen printing</i>; or demonstrate equivalent knowledge and skills.</p>
<b>accreditation option:</b>	Evaluation of documentation and visit by NZQA and industry.
<b>moderation option:</b>	A centrally established and directed national moderation system has been set up by Competenz.

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**special notes:**

- 1 All workplace practices must meet any applicable and recognised codes of practice, and documented workplace health, safety, and environmental procedures for personal, product, workplace health, safety, and environmental matters, and the obligations required under current law including the Health and Safety in Employment Act 1992, Hazardous Substances and New Organisms Act 1996, Resource Management Act 1991, Privacy Act 1993 and their subsequent amendments.
- 2 *Workplace practices* refer to the documented procedures for the machine and/or workplace.
- 3 Candidates undertaking assessment against this unit standard must provide evidence of normal colour vision. Further information on policy for colour vision can be obtained from Competenz, PO Box 9005, Newmarket, Auckland 1149.

## **Elements and Performance Criteria**

### **element 1**

Check documentation and confirm requirements for the job are available.

### **performance criteria**

- 1.1 Job documentation is checked to ensure that all specifications for the process being undertaken are complete and any discrepancies are reported in accordance with workplace practices.

Range: quantity, press, special instructions.

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- 1.2 Components required for the job are checked against the job documentation and their availability confirmed.
- Range: may include but is not limited to – job samples or layouts, screens, stencils, film positives, ink, substrates.
- 1.3 Availability of equipment, as determined by the job documentation, is confirmed.

**element 2**

Demonstrate knowledge of product bar code printing.

**performance criteria**

- 2.1 Product bar coding is described 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 Requirements for reproduction of product bar codes are outlined.
- Range: positioning, readability, printing tolerances, size, colour combinations, positive/negative bar codes.
- 2.3 Product bar code tolerances are checked in accordance with workplace practices to ensure correct reading.
- Range: may include but is not limited to – grey gauges, scanners, verifiers.
- 2.4 Processes for reporting product bar coding faults are described in accordance with workplace practices.
- Range: positioning, readability, printing tolerances, size, colour combinations, positive/negative bar codes.

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**element 3**

Prepare substrates for screen printing.

**performance criteria**

- 3.1 Substrate is confirmed as meeting the requirements of the job specifications.
- 3.2 Substrate quantity, including overs, is calculated and quantity issued is confirmed against the job specifications.
- 3.3 Substrates are conditioned, as necessary, to avoid excess moisture content.  
Range: corona discharge, flaming.

**element 4**

Set the screen for single colour formed shapes printing.

**performance criteria**

- 4.1 Stencil is touched up ensuring all imperfections are removed.
- 4.2 Screen is masked as required for the job, and areas where most abrasion will occur are taped out.
- 4.3 Screen is placed into position on the press, locked up, and positioned to the job.

**element 5**

Prepare squeegee (and scraper if available) and place in the press.

**performance criteria**

- 5.1 Squeegee and scraper characteristics are described.  
Range: squeegee characteristics – shore hardness, material, blade edge, size;  
scraper characteristics – material, size.

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- 5.2 Blade edges of the squeegee and scraper are checked for imperfections.
- 5.3 Squeegee is sharpened ensuring all imperfections are removed.
- 5.4 Scraper imperfections are removed in accordance with workplace practices.
- Range: sanding, grinding, filing, cutting.
- 5.5 Squeegee and scraper are placed in the press to meet the requirements of the job and press specifications.
- Range: position, angle, pressure, stroke.

**element 6**

Take the first prints and make adjustments.

**performance criteria**

- 6.1 Machine start up and shut down procedures are followed during the print run in accordance with machine operating manual, workplace practices and occupational health and safety requirements.
- 6.2 Potential hazards for the equipment being used are identified and reported in accordance with workplace practices.
- 6.3 Screen is inked up in amounts to suit the requirements of the image.
- Range: pressure, print height, spatula.
- 6.4 Prints are taken and confirmed against job sample or layout for correct image transfer and position.
- 6.5 Drying system most appropriate for the job is selected and set.
- Range: any of the following as available in the workplace – jet air, drying tunnel, ultra-violet (UV), infra-red (IR).

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- 6.6 Prints are passed for production run, and approval to run obtained, in accordance with workplace practices.
- 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 Counter is set ready for commencement of run.

**element 7**

Print single colour formed shapes work in position.

**performance criteria**

- 7.1 Single colour work is printed to meet the requirements of the job specifications and ensuring that production standards and quality are maintained throughout the run.
- 7.2 Ink is monitored and adjusted throughout the print run to maintain the requirements of the job specifications.
- Range: supply, viscosity, colour.
- 7.3 Position is maintained throughout the print run to meet the requirements of the job specifications.
- 7.4 Prints are dried, checks are made during the print run, and any faults are recognised and reported in accordance with workplace practices.
- Range: faults caused by incorrect drying time, temperature and speed include – set off, ink adhesion failure, substrate distortion, colour change.

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7.5 Problems and faults encountered during the print run are recognised and reported in accordance with workplace practices.

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

**element 8**

Complete post-press tasks.

**performance criteria**

8.1 Quantity printed is checked against job documentation before wash up is commenced.

8.2 Correct shut down sequence is followed in accordance with machine operating manual, workplace practices and occupational health and safety requirements.

8.3 Job documentation is completed in accordance with workplace practices.

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

8.4 Amendments and variations are noted on job documentation for future reference in accordance with workplace practices.

8.5 Post-press tasks are carried out as required by the job specifications and in accordance with workplace practices.

Range: sort job, file film positive, file sample.

8.6 Printed substrate is prepared for forwarding to the next production process.

Range: drying, packaging, further processes.

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**Comments on this unit standard**

Please contact [Competenz info@competenz.org.nz](mailto:Competenz info@competenz.org.nz) if you wish to suggest changes to the content of this unit standard.

**Please Note**

Providers must be accredited by the Qualifications Authority or a delegated inter-institutional body before they can register credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be accredited by the Qualifications Authority before they can register credits from assessment against unit standards.

Accredited providers and Industry Training Organisations assessing against unit standards must engage with the moderation system that applies to those standards.

Accreditation requirements and an outline of the moderation system that applies to this standard are outlined in the Accreditation and Moderation Action Plan (AMAP). The AMAP also includes useful information about special requirements for providers wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

This unit standard is covered by AMAP 0005 which can be accessed at <http://www.nzqa.govt.nz/site/framework/search.html>.