

Produce screens, and make stencils using the direct emulsion system, for screen printing

Level 3

Credits 12

Purpose People credited with this unit standard are able to: check documentation and confirm requirements for the job are available; check film positives for faults; select screens to suit the job; select stencils to suit the job; prepare screens for the stencils; make stencils using the direct emulsion system; and make final preparation to screens ready for printing.

Subfield Printing

Domain Printing - Screen

Status Registered

Status date 21 February 2005

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Entry information Prerequisite: Unit 340, *Demonstrate knowledge of safe working practices in the printing and graphic pre-press industries*, or demonstrate equivalent knowledge and skills.

Recommended: Unit 21328, *Demonstrate industry knowledge for screen printing*, or demonstrate equivalent knowledge and skills.

Accreditation Evaluation of documentation and visit by NZQA and industry.

Standard setting body (SSB) Competenz

Accreditation and Moderation Action Plan (AMAP) reference 0005

This AMAP can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

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.

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.
- 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, frames, mesh, film positives, ink, substrates.
- 1.3 Availability of equipment, as determined by the job documentation, is confirmed.

Element 2

Check film positives for faults.

Performance criteria

- 2.1 Reasons for checking film positives are explained.

Range density, emulsion side, image resolution definition, trap.
- 2.2 Film positives are checked for any imperfections and errors, and faults found are rectified or reported in accordance with workplace practices.

Element 3

Select screens to suit the job.

Performance criteria

- 3.1 Different kinds of screen frames are listed, and their characteristics and uses described.
- Range frames – wooden, steel, aluminium, self-stretching;
characteristics – cost, weight, strength, solvent resistance, corrosion resistance.
- 3.2 Characteristics and uses of mesh are described.
- Range may include but is not limited to – nylon, polyester, metal, carbon fibre, combinations of these;
characteristics – film deposit, substrate, static control, warp, weft, mesh count, tension stability, flexibility, durability, chemical resistance.
- 3.3 Methods of stretching mesh to achieve the required tension are described.
- Range manual, mechanical, pneumatic.
- 3.4 Factors affecting the way mesh is stretched are explained.
- Range mesh material, mesh count, tension control, angle.
- 3.5 Screens are selected to meet the requirements of job and press specifications.

Element 4

Select stencils to suit the job.

Performance criteria

- 4.1 Stencil systems are described, and the work each system is most suited to explained.
- Range capillary, indirect, direct.
- 4.2 Stencils are selected to suit the requirements of the job specifications.
- Range consider – film deposit, substrate, ink, quality of print required, run length, mesh material, mesh count.

Element 5

Prepare screens for the stencils.

Performance criteria

- 5.1 Screen size and mesh count meet the requirements of the job specifications.
- 5.2 Screens are pre-treated to ensure stencil adhesion is achieved.
- Range chemical, mechanical.
- 5.3 Screens are degreased using degreasing agents, and in accordance with the manufacturer's and/or supplier's instructions.
- 5.4 Faults found when preparing the screens are rectified in accordance with workplace practices.
- Range may include but is not limited to – poor reclaiming, poor screen preparation, unsuitable screen size, unsuitable mesh count, poor adhesion.

Element 6

Make stencils using the direct emulsion system.

Performance criteria

- 6.1 Screens are coated with direct emulsion to ensure that an even coating is achieved.
- 6.2 Coated screens are dried using the method available in the workplace.
- 6.3 Film positives are checked to ensure that they read suitably for the job and are laid up in position on the screen.
- 6.4 Stencils are exposed using the method available in the workplace.
- Range any of – laser, mercury vapour, xenon, metal halide.
- 6.5 Stencils are washed out and dried in accordance with workplace practices.
- Range may include but is not limited to – pressure of water, incomplete wash out, incomplete image, drying temperature.

Element 7

Make final preparation to screens ready for printing.

Performance criteria

- 7.1 The reasons for 'spotting' and 'blocking out' the stencil, and taping the inside edges are explained.
- Range water based inks, solvent based inks.
- 7.2 Stencils are checked for imperfections, spotted, and blocked out.
- 7.3 Tape is applied to the inside edges of the screen frames to prevent ink seepage.

Please note

Providers must be accredited by NZQA, or an inter-institutional body with delegated authority for quality assurance, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be accredited by NZQA 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 organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

Comments on this unit standard

Please contact Competenz info@competenz.org.nz if you wish to suggest changes to the content of this unit standard.