



Australian Government

Department of Education, Employment and Workplace Relations

ICPPR441C Set up for complex pad printing

Revision Number: 1

ICPPR441C Set up for complex pad printing

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to set up for complex pad printing.
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Application of the Unit

Application of the unit	This unit requires the individual to set up pad printing machines for multicoloured or non-routine print jobs. The individual will set up manual pre- and post-treatment processes, conduct a proof run and adjust settings to ensure production speeds are attained.
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Confirm non-routine job specifications	1.1. Job requirements are read and interpreted from job documentation or production control system 1.2. Set up is planned and carried out correctly in minimum time with minimum wastage 1.3. Availability of all job related components is checked
2. Install tampons (printing pads) into machine	2.1. Appropriate tampons are selected according to non-routine job specifications/requirements 2.2. Tampons are secured into machine
3. Set up fixtures onto machine bed or conveyor	3.1. Appropriate fixtures are selected and secured to xy table or conveyor jig plates 3.2. Adjust height of machine bed to suit size of object to be printed 3.3. Adjust xy table of machine bed to suit position of image on object
4. Select and prepare inks and additives	4.1. Inks , and additives are selected according to non-routine job specifications and end-user requirements 4.2. Quality and suitability of inks and additives are checked and appropriate action is taken 4.3. Inks and additives are prepared according to OHS requirements, and manufacturer's/supplier's instructions with suitable precautions to minimise waste 4.4. Correct colour and weight/volume of ink is mixed and prepared to match the requirements of the non-routine job specification and the printing process 4.5. Formulation of the ink, colour match and the approved colour are appropriately recorded 4.6. Inks and additives are appropriately labelled, handled and stored according to manufacturer's/supplier's instructions to prevent damage and hazards to personnel and prolong shelf life
5. Set up machine for complex pad printing	5.1. Plate holders are set up and adjusted for register according to job specifications 5.2. Appropriate plates and plate holders are selected and plates are secured into plate holders 5.3. Tampons are set up and adjusted according to job specifications 5.4. Spatula and doctor blade are set up and adjusted according to the pad printing process and job

ELEMENT	PERFORMANCE CRITERIA
	specifications OR 5.5. Ink cups are set up and adjusted according to job specifications
6. Set up pre- and post-treatment in-line processes	6.1. In-line loading is set up to suit non-routine object and according to job specifications 6.2. In-line <i>pre-treatment</i> is set up to suit non-routine object and according to job specifications 6.3. In-line drying is set up to suit non-routine object and according to job specifications 6.4. In-line ejection is set up to suit non-routine object and according to job specifications
7. Conduct proof run	7.1. Material to be used for proof is organised correctly 7.2. Machine is operated according to manufacturer's and enterprise procedures to produce a specified proof 7.3. Proof is visually inspected and/or tested or laboratory testing organised according to enterprise procedures 7.4. Production does not commence without client OK or authority where appropriate 7.5. Results are interpreted and adjustments are carried out according to product and machine specifications to determine adjustment requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- OHS in relation to operating machinery such as safely switching off machinery before cleaning is started
- communication of ideas and information by interpreting the job brief and providing advice to internal or external clients about options and limitations
- collecting, analysing and organising information by collecting and analysing data about printing process, machine specifications and performance to calculate appropriate adjustments for the job
- planning and organising activities by providing information about time and materials requirements for production scheduling
- teamwork when cooperating with other workers and coordinating the production unit to ensure efficient operation
- mathematical ideas and techniques by calculating substrate requirements, cliché and tampon position, and pressures
- problem-solving skills by recognising proofing faults and calculating adjustments necessary to meet job specifications
- use of technology by using monitoring equipment and computerised production records

Required knowledge

- different substrate groups and suggest the correct ink type for each group
- plastic subgroups for the purpose of ink selection
- adjustments made to the process colour inks for correct colour balance
- methods of improving opacity of a light coloured ink on a dark substrate
- determining the correct pad shape for (given) applications
- effect that pad shape and hardness have on print quality
- effect that commonly be seen at the contact point of the nipple of a pad in a large solid print, and how can it be avoided
- preparing a new pad for its first printing
- determining the correct plate type for (given) applications
- difference between steel and photopolymer plates for process printing
- reasons for mis-registered images and how can they be corrected
- OHS concerns that are there when setting presses and doctor blades
- adjustments to the machine so that the doctor blade is operating correctly
- effect of a damaged doctor blade
- types of doctor blades and explain their applications
- OHS concerns that are there when pre- and post-treating substrates
- common pre- and post-treatment methods for different substrates and their

REQUIRED SKILLS AND KNOWLEDGE

importance

- causes and solutions for common print problems (eg hairlines around image, loss of density in the centre of a solid image, fine lines of ink running through image, distortion of image, picking up ink from substrate by subsequent pads, washed out images, loss of fine lines in images, inconsistent colour)
- machine manuals, safety and other documentation that are relevant to this task and where they are kept and information that is included in these documents

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the ability to:

- set up pad printing machines for non-routine print jobs. The individual will set up manual pre- and post-treatment processes and conduct a proof run and adjust settings to ensure production speeds are attained
- demonstrate use of computerised control, monitoring and data entry systems if available and appropriate
- demonstrate an ability to find and use information relevant to the task from a variety of information sources
- set up a machine for complex pad printing on TWO occasions (if possible on different substrates) according to manufacturer's and job specifications, enterprise procedures and the Performance Criteria
- evidence for assessment may be gathered from assessment of the unit of competency alone or through an integrated assessment activity.

Context of and specific resources for assessment

Assessment must ensure:

- assessment may take place on the job, off the job or a combination of these. Off the job assessment must be undertaken in a closely simulated workplace environment
- a pad printing machine.

Method of assessment

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:

- direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate.

Guidance information for assessment

Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended:

- ICPPR342C Produce complex pad printed product.

Range Statement

RANGE STATEMENT	
<p>The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.</p>	
<i>Non-routine</i> may include:	<ul style="list-style-type: none"> non-routine within this context relates to the set up and production of print runs. The set up of equipment and production involves a significant amount of deviation from using standard equipment settings. It also involves significant problem solving and the development of new criteria and procedures for performing current practices. It does not refer to a job that an individual does only occasionally.
<i>Machines</i> may include:	<ul style="list-style-type: none"> a range of pad printing machines with manual, semi-automated, fully automated or computerised operation.
<i>Inks/coatings</i> may include:	<ul style="list-style-type: none"> range of standard inks commonly used in multicoloured printing.
<i>Colour matching systems</i> may include:	<ul style="list-style-type: none"> use of visual colour assessment to match basic standard colours and/or Pantone shades under controlled lighting conditions.
<i>Pre and post-treatment processes</i> may include:	<ul style="list-style-type: none"> range of pre- and post-treatment techniques used in pad printing.
<i>Design</i> may include:	<ul style="list-style-type: none"> multicoloured, complex graphics and text. Critical tight registration, fit and position.
<i>Substrate types</i> may include:	<ul style="list-style-type: none"> range of substrates within the major categories of paper, wood, glass (ceramics), plastics, metal.
<i>Substrate handling</i> may include:	<ul style="list-style-type: none"> manual handling.

Unit Sector(s)

Unit sector	
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Competency field

Competency field	Printing
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Co-requisite units

Co-requisite units		