



Australian Government

Department of Education, Employment and Workplace Relations

ICPPR342C Produce complex pad printed product

Revision Number: 1

ICPPR342C Produce complex pad printed product

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to produce complex pad printed product.
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Application of the Unit

Application of the unit	This unit requires the individual to operate a pad printing machine ensuring an efficient non-routine production flow that maintains product quality standards. Any production problems are rectified with minimum downtime. The machine is correctly shut down and cleaned according to OHS guidelines.
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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. Maintain non-routine pad printing process	1.1. Location of objects into fixtures is monitored and adjusted if necessary 1.2. Printing plates condition is monitored to ensure the quality of printed product meets the standard of the approved proof 1.3. Printing pads condition is monitored and maintained to ensure the quality of printed product meets the standard of approved proof 1.4. Spatulas and doctor blades are monitored and adjusted to ensure quality of printed product meets the standard of approved proof OR 1.5. Ink cups are monitored and adjusted to ensure quality of printed product meets the standard of approved proof 1.6. Printing ink viscosity is monitored and adjusted to ensure quality of printed product meets the standard of approved proof
2. Maintain in-line systems	2.1. In-line loading is monitored and adjusted to ensure quality of printed product meets the standard of approved proof 2.2. In-line pre-treatment is monitored and adjusted to ensure quality of printed product meets the standard of approved proof 2.3. In-line drying is monitored and adjusted to ensure quality of printed product meets the standard of approved proof 2.4. In-line ejection is monitored and adjusted to ensure quality of printed product meets the standard of approved proof
3. Maintain non-routine production process	3.1. Production process is operated in association with fellow workers and according to company specifications and planned daily schedule 3.2. Production is maintained within OHS requirements and company and manufacturer's specifications 3.3. Manual and/or automatic control is used as per specification 3.4. Performance is monitored and verified using the process control system according to enterprise procedures 3.5. Ink performance, colour, register and position of print are monitored and adjusted throughout

ELEMENT	PERFORMANCE CRITERIA
	production run 3.6. Production difficulties are anticipated and preventive action is taken to prevent occurrence by timely intervention 3.7. Process adjustments to eliminate problems are reported according to enterprise procedures 3.8. Waste is sorted according to enterprise procedures
4. Identify and rectify faults	4.1. Problem in pad printing machine operation is identified and reported according to enterprise procedures 4.2. Adjustments or corrections are carried out according to specified procedures and consistent with operator's skill level 4.3. Pad printing machine operation is checked to ensure correct operation 4.4. Faulty performance of equipment is identified and reported according to enterprise procedures
5. Conduct shutdown of production process	5.1. Correct shutdown sequence is followed according to manufacturer's specifications and enterprise procedures 5.2. Shutdown is conducted in association with fellow workers and in compliance with OHS requirements 5.3. Unused ink is correctly labelled and stored according to manufacturer/supplier specifications and enterprise procedures 5.4. Solid and liquid waste is removed from operating area and recycled or disposed of, where required, according to regulatory requirements and enterprise procedures 5.5. All product is removed from operating area 5.6. Machine faults requiring repair are identified and reported to designated person according to enterprise procedures 5.7. Repair/adjustment is verified prior to resumption of operations
6. Clean and wash up printing machine at end of print run	6.1. Plates and pads are cleaned ready for next run 6.2. Inking system is washed up ready for next run, and liquid waste is disposed of according to company and regulatory requirements 6.3. Pre- and post-treatment units are cleaned ready for next run

ELEMENT	PERFORMANCE CRITERIA
	6.4. Production records or other documentation are accurately completed where required by enterprise procedures

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 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 maintaining the production process in association with others
- mathematical ideas and techniques by calculating substrate requirements, plate 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

- major OHS concerns when operating this machine
- where the MSDSs are stored and what information do they contain
- different machine cycle modes
- how the colour density of a light image on a dark substrate can be improved by selection of a different machine cycle mode
- special cycle modes that are available on the machine and their application
- determining if the ink has been mixed to the correct viscosity
- correcting ink viscosity during production
- causes of unreleased ink remaining on the printing pad and how you identify them
- how the addition of a catalyst affects the pot life of ink and what other factors affect pot life
- recognising a damaged pad
- correct method of cleaning a pad during production
- in multicoloured printing effect of different pad shapes for different colours
- pre- and post-treatment requirements
- determining the time the ink should take to cure before scratch and adhesion tests can be performed
- method that can be used to check for correct pre-treatment of polypropylene during production

REQUIRED SKILLS AND KNOWLEDGE

- ensuring that drying conditions are correct for the product
- print problem identification and correction
- effects that will be visible in the image if the ink viscosity is incorrect
- identifying the cause of incorrect registration and prevent its recurrence
- cause a fine coating of ink over the whole cliché surface
- machine manuals, safety and other documentation that are relevant to this task and where are they 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:

- operate a pad printing machine ensuring an efficient non-routine production flow that maintains product quality standards. Any production problems are rectified with minimum downtime. The machine is correctly shut down and cleaned according to OHS guidelines
- 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
- produce TWO complex pad printing jobs (if possible on different substrates) according to 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, for example:

EVIDENCE GUIDE

- ICPPR441C Set up for complex pad printing.

Range Statement

RANGE STATEMENT	
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.	
<i>Inks/coatings</i> may include:	range of standard inks commonly used in multicoloured printing.
<i>Machines</i> may include:	a range of pad printing machines with manual, semi-automated, fully automated or computerised operation.
<i>Colour matching systems</i> may include:	use of visual colour assessment to match basic standard colours and/or Pantone shades under controlled lighting conditions.
<i>Design</i> may include:	- multicoloured, complex graphics and text. Critical tight registration, fit and position - pre- and post-treatment processes - range of pre- and post-treatment techniques used in pad printing.
<i>Substrate types</i> may include:	range of substrates within the major categories of paper, wood, glass (ceramics), plastics, metal.
<i>Substrate handling</i> may include:	manual handling.
<i>Non-routine</i> may include:	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.

Unit Sector(s)

Unit sector	
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Competency field

Competency field	Printing
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Co-requisite units

Co-requisite units		