



Australian Government

Department of Education, Employment and Workplace Relations

ICPPR551C Set up for specialised relief printing

Revision Number: 1

ICPPR551C Set up for specialised relief printing

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to set up for specialised relief printing that requires a certain amount of problem solving and experimentation with the substrate and press settings.
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Application of the Unit

Application of the unit	This unit requires the individual to set up reel- or sheet-fed plate, cylinder or rotary printing machines for specialised print jobs. The individual will 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 specialised job specifications	1.1. Job requirements are read and interpreted from job documentation or production control system 1.2. Availability of all job related components is checked
2. Plan and carry out specialised set up	2.1. Specialised job specifications are identified and analysed 2.2. Specialised set up requirements are determined 2.3. Specialised set up is completed in minimum time with minimum wastage
3. Set up reel system (OR Element 3)	3.1. Unwind and rewind reels are set up, evaluated and adjusted according to job specifications 3.2. Webbing procedures are carried out and web-control system is set up, evaluated and adjusted according to job specifications 3.3. Reels are spliced/joined according to job specifications 3.4. Printed web viewing devices are set up, evaluated and adjusted according to job specifications 3.5. Folder and sheeters are set up, evaluated and adjusted according to job specifications 3.6. Set off/marketing prevention devices are set up, evaluated and adjusted according to job specifications
4. Set up sheet system (OR Element 2)	4.1. Feeder and delivery sections are set up, evaluated and adjusted according to job specifications 4.2. Sheet pick-up and transportation system is set up, evaluated and adjusted according to job specifications 4.3. Transfer and control systems are set up, evaluated and adjusted according to job specifications 4.4. Substrate is added to and removed from process according to job specifications 4.5. Set off/marketing prevention devices are set up, evaluated and adjusted according to job specifications
5. Evaluate, select and prepare inks and additives	5.1. Inks , dyes or additives are evaluated according to end-user requirements and job specifications 5.2. Inks, dyes and additives are selected according to end-user requirements and job specifications 5.3. Inks, dyes and additives are prepared according to

ELEMENT	PERFORMANCE CRITERIA
	OHS requirements, and manufacturer's/supplier's instructions with suitable precautions to minimise waste 5.4. Correct colour and weight/volume of ink are mixed and prepared according to the requirements of the printing process and job specifications 5.5. Formulation of the ink, colour match and the approved colour are appropriately recorded 5.6. Inks, dyes 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
6. Set up machine for specialised relief printing	6.1. Appropriate relief plates are selected and secured to the machine 6.2. Relief polymer plates/forme are set up and adjusted according to job specifications (platen) 6.3. Relief polymer cylinders are set up and adjusted according to job specifications (platen) 6.4. Impression is set up and adjusted according to job specifications (platen and rotary) 6.5. Inking system is set up and adjusted according to the requirements of the relief process and job specifications (platen and rotary) 6.6. Drying system is set up and adjusted according to job specifications
7. Conduct specialised proof run	7.1. Material to be used for specialised proof is organised correctly 7.2. Machine is operated according to manufacturer's specifications and enterprise procedures to produce a specialised proof 7.3. Specialised proof is visually inspected and/or tested or laboratory testing is organised according to enterprise procedures 7.4. Production does not commence without client approval or authority where appropriate 7.5. Results are interpreted and adjustment changes are carried out according to product and machine specifications
8. Troubleshoot machinery and material problems	8.1. Corrective or preventive action is recommended and implemented where appropriate 8.2. Changes are communicated to relevant personnel in

ELEMENT	PERFORMANCE CRITERIA
	a logical and easily understood manner 8.3.Changes are monitored to confirm improvement to production efficiency 8.4.Ongoing problems are reported according to 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 job
- planning and organising activities by evaluating the special job specifications when determining 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 determining adjustments to meet job specifications
- use of technology by using monitoring equipment and making adjustments

Required knowledge

- need to ensure that the job specifications are read and properly understood
- production problems that could eventuate by not reading and understanding the job specifications
- responsible person to discuss any production problems
- importance of the hardness of the printing plate
- faults that may be detected on new plates
- type of solvents that should be used on photopolymer plates
- meaning of the term V-block mounting
- V-block mounting
- the purpose of binding plates after mounting
- checks that are performed prior to cylinder installation
- importance of keeping machine frames and unit slides cleaned
- OHS precaution that must be observed when installing printing cylinders in the machine
- optimum print sequence
- visual aid on the plate that identifies the colour of ink to be used
- precautions that were taken to ensure that the plate/cylinders were not damaged during installation
- OHS precaution that must be observed when webbing up the machine
- determining the position of the reel

REQUIRED SKILLS AND KNOWLEDGE

- effect if the brake tension is not set correctly
- function of the "Dancer" roller on a web machine
- function of nip rollers
- effect if the web is not spiced correctly
- major OHS concerns when setting up the sheet transportation system
- cause of more than one sheet to pick up in the feeder
- essential accurate feeder set up
- position of the sheet prior to being transferred to the printing unit
- determining which front lays to use
- type of substrate that would require additional front lays to be engaged
- need for additional front lays when printing this type of substrate
- OHS precaution that must be observed when setting up the delivery
- control of the in the rewind unit
- function of a slitter on a web machine
- problems that could be attributed to a blunt knife when sheeting
- remedial steps that can be taken if there is a possibility of the ink marking in the rewind
- OHS precaution that must be observed when removing sheets from the delivery
- cause of sheets to be delivered incorrectly
- adjustments that would be necessary if changing from lightweight to heavyweight stocks
- sheet release into the delivery
- problems resulting from the excessive use of anti set off spray powder
- cause of printed sheets to set off in the delivery
- reducing the possibility of set off in the delivery
- air blast assistance to sheet delivery
- OHS precautions that must be observed when preparing inks and additives
- details that are necessary to check an ink's suitability for the printing process
- special end-use requirements that may be necessary
- additives and their use in inks
- use of a spectrophotometer to assess the colour of an ink
- formula for calculating the correct quantity of lithographic ink
- print fault that will occur if excessive driers are mixed into the ink
- precautions that you observe to minimise waste when preparing the ink
- shelf life of most inks
- conditions that are relevant to the storage of inks and additives
- conventions that should be adhered to when labelling mixed inks
- major OHS concerns when setting up the machine
- level of packing required in the tympan
- amount of printing pressure required

REQUIRED SKILLS AND KNOWLEDGE

- ideal condition of the tympan
- achieving the correct top sheet tension when fitting a new tympan
- print faults that can occur if the tympan is not tensioned correctly
- order eccentric or concentric roller adjustments should be made
- width of the contact stripe between two rollers when setting the rollers
- ink duct setting
- ideal ink duct sweep setting
- recommended degrees shore hardness for forme rollers
- main reason for blistering on a heatset machine
- types of ink drying/curing systems
- curing the ink using the drying unit
- operation of the true inch function fitted to some machines
- problems that may cause the machine to keep stopping
- checks that are necessary prior to engaging the impression
- checks that are performed when running the machine
- the effect the position of certain guards has on the operation of the machine
- communicating the steps involved in operating the machine to other team members
- aids that are available for the testing of the machine proof
- tests that are necessary for this job
- testing location
- function of a polarisation filter in a densitometer
- ideal conditions for inspecting the proof
- need to use visual aids on the printed sheets
- cause of a halo effect on the image
- methods that are available to check and adjust ink colour and consistency
- adjustments that may have caused mis-register
- adjustments that are made to position the image laterally
- adjustments that are made to position the image circumferentially
- effect of changing the colour sequence on the final colour cast
- procedure to lengthen the print length on this type of press
- procedure to shorten the print length on this type of press
- difference between mechanical and optical dot gain
- cause of excessive mechanical dot gain
- responsibility for the final say in the "OK" of the job
- in-line processes that can be used in specialised pad printing
- 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 reel- or sheet-fed platen, cylinder or rotary printing machines for specialised print jobs. The individual will 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 relief printing machine for specialised printing on TWO occasions (if possible using different substrates and if possible including at least TWO in-line processes) 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
- reel- or sheet-fed platen, cylinder or rotary 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,

EVIDENCE GUIDE

for example:

- ICPPR352C Produce complex relief printed product
- ICPPR451C Set up for complex relief 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>Specialised</i> may include:	specialised within this context relates to the set up and production of print runs that involve new products, or a new mix of substrates and inks that requires a certain amount of problem solving and experimentation with the substrate and press settings. The set up of equipment and production involves the development of new set up and production approaches based on solving technical problems arising from new product or equipment combinations.
<i>Substrate handling</i> may include:	wide and narrow reel, and large and small sheet handling systems.
<i>Inks/coatings</i> may include:	range of inks commonly used in colour printing, including standard and special colours.
<i>Colour matching systems</i> may include:	use of densitometers and spectrophotometry.
<i>Machines</i> may include:	range of platen, cylinder and rotary machines with manual, semi-automated, fully automated or computerised process control.
<i>Design</i> may include:	3 or more colours, complex graphics and text. Critical "tight" registration, fit and position, registration should be at least that required for four-colour process work.
<i>Substrate types</i> may include:	range of substrates within the major categories of paper, pressure sensitive material, board, plastics and related films, or metal.

Unit Sector(s)

Unit sector	
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Competency field

Competency field	Printing
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Co-requisite units

Co-requisite units		