



Australian Government

Department of Education, Employment and Workplace Relations

ICPPR394A Produce complex relief printed product

Revision Number: 1

ICPPR394A Produce complex relief printed product

Modification History

Not applicable.

Unit Descriptor

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

Application of the unit	This unit requires the individual to operate a platen, cylinder or rotary printing machine ensuring an efficient non-routine production flow that maintains product quality standards. It involves anticipating and rectifying any production problems with minimum downtime and ensuring the machine is correctly shutdown and cleaned according to occupational health and safety (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 operation of reel system	1.1. Reel stand and rewind section are monitored and adjusted to maintain correct tension and to ensure no marks, blemishes or damage to finished product and to ensure efficient continuous operation 1.2. Web control system is monitored and adjusted to ensure correct tension and accurate continuous positioning of the web for efficient operation 1.3. Substrate is added to and removed from the process according to job instructions 1.4. Sheeting section is monitored and adjusted to ensure quality and efficient product delivery 1.5. Set-off/marketing prevention system is monitored and adjusted to ensure the quality of the printed product meets the standard of the approved proof
2. Maintain operation of sheet system	2.1. Feeder and delivery are monitored and adjusted to ensure continuous and efficient feeding to machine 2.2. Sheet pick-up and transport system is monitored and adjusted to ensure accurate and continuous sheet handling and efficient operation 2.3. Transfer systems are monitored and adjusted to ensure correct and continuous sheet handling and efficient operation 2.4. Substrate is added to and removed from process according to job instructions
3. Maintain complex relief printing process	3.1. Relief polymer forme or plate cylinder condition is monitored and adjusted to ensure the quality of the printed product meets the standard of the sample sheet 3.2. Relief polymer impression surface condition is monitored and adjusted to ensure the quality of the printed product meets the standard of the sample sheet 3.3. Relief polymer inking system is monitored and adjusted to ensure the quality of the printed product meets the standard of the sample sheet 3.4. Drying systems are monitored and adjusted to ensure the quality of the printed product meets the standard of the approved proof
4. Maintain production process	4.1. Production process is operated in association with fellow workers and according to company specifications and planned daily schedule 4.2. In-line printing/converting/binding/finishing processes are monitored and adjusted to ensure the

ELEMENT	PERFORMANCE CRITERIA
	quality of the product meets the standard of the approved proof 4.3. Production is maintained within OHS requirements and company and manufacturer's specifications 4.4. Manual and/or automatic control is used according to specification 4.5. Performance is monitored and verified using the process control system according to enterprise procedures 4.6. Ink performance, colour, register and embellishment of print are monitored and adjusted throughout production run 4.7. Production difficulties are anticipated and preventive action is taken to prevent occurrence by timely intervention 4.8. Process adjustments to eliminate problems are reported according to enterprise procedures 4.9. Faulty performance of equipment is identified and reported according to enterprise procedures 4.10. Waste is sorted according to enterprise procedures
5. Identify and rectify problems	5.1. Problem in relief machine operation is identified and reported according to enterprise procedures 5.2. Faulty performance of equipment is identified and reported according to enterprise procedures 5.3. Adjustments or corrections are carried out according to specified procedures 5.4. Relief machine operation is checked to ensure correct operation
6. Conduct shutdown of production process	6.1. Correct shutdown sequence is followed according to manufacturer's specifications and enterprise procedures 6.2. Shutdown is conducted in association with fellow workers and in compliance with OHS requirements 6.3. Unused ink is correctly labelled and stored according to manufacturer/supplier specifications and enterprise procedures 6.4. Solid and liquid waste is removed from operating area and recycled or disposed of, where required, according to regulatory requirements and enterprise procedures 6.5. Machine faults requiring repair are identified and

ELEMENT	PERFORMANCE CRITERIA
	reported to designated person according to enterprise procedures 6.6.Repair/adjustment is verified prior to resumption of operations
7. Clean and wash up printing machine at end of print run	7.1.Cylinders, plate and roller surfaces are cleaned ready for next run 7.2.Inking system is washed up ready for next run, and liquid waste is disposed of according to company and regulatory requirements 7.3. In-line printing/converting/binding/finishing units are cleaned ready for next run 7.4.Reel feed, transportation and delivery systems are disengaged and cleaned ready for next run 7.5.Sheet feed, transport and delivery systems are disengaged and cleaned ready for next run 7.6.Production records or other documentation are accurately completed where required by enterprise procedures 7.7.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

- OHS skills for operating machinery, such as safely switching off machinery before cleaning is started
- communication skills for interpreting the job brief and providing advice to clients about options and limitations
- collecting, analysing and organising skills for collecting and analysing data about printing process, machine specifications and performance to calculate appropriate adjustments for the job
- planning and organising skills for providing information about time and material requirements for production scheduling
- teamwork skills for maintaining the production process in association with others
- numeracy skills for calculating substrate requirements, plate position and pressures
- problem-solving skills for recognising proofing faults and calculating adjustments necessary to meet job specifications
- technical skills for monitoring equipment and computerised production records

Required knowledge

- reel transportation and web control:
 - major OHS concerns when setting up the reel transportation system
 - causes of reel to wandering
 - causes of the web to break at the unwind unit
 - print faults resulting from the reel being run out of centre
 - possible faults in the unwind section that could cause a web break
- sheet transportation and transfer at the feeder:
 - major OHS concerns when setting up the sheet transportation system
 - result of worn suckers at the feeder suction head
 - type of two-sheet detection on the machine
 - amount of movement the sheet should have when being registered by the side lay
 - causes of mis-register of the sheet feeder
 - visible signs of the sheet being registered in the feeder
 - gripper malfunction of sheet control and transfer
 - sheet transfer mechanisms require adjusting
 - causes of the feeder stack to becoming uneven
 - result of the feeder stack not being loaded level
 - reel delivery for rewinding and sheeting

REQUIRED SKILLS AND KNOWLEDGE

- OHS risks associated with rewinding and sheeting
- safety feature is in the delivery system if the web jams up
- reasons for sheet cut-off wander
- effect of poorly adjusted nip rollers when rewinding and sheeting
- sheet delivery:
 - effect machine speed has on sheet delivery
 - advantage of spraying moving sheets with anti set-off powder in the delivery
 - items in the delivery that could cause marking of the printed image
 - remedial steps necessary to eliminate marking of the printed image
 - faults that could result from incorrectly set grippers in the transfer section of a machine
 - devices that need to be adjusted to maintain sheet control in the delivery
- printing unit:
 - result if the plate lifts at the grip edge during a print run
 - build-up of ink on the impression cylinder affecting the printed product
 - causes of the ink leaking back in the duct
 - problem of paper surface picking being rectified
 - causes of diminished impression during the print run
 - causes of the plate surface prematurely wearing during production
- drying unit:
 - eating or drinking near the machine when using UV inks
 - link between driers and set-off and marking
 - what causes UV ink to dry
 - causes of the substrate blistering
 - effect of incorrect drying temperature on the finished product
- in-line processes:
 - major OHS concerns when operating cutting devices
 - checking the consistency of the cutting and creasing unit
 - result of excessive pressure on the slitters
 - benefit of die cutting using a rotary die
 - advantages of using a perforation wheel to perforate
- maintaining production process:
 - affect of inadequate communication within the work team on a relief printing machine
 - safety features within the organisation and in maintaining effective production
 - ramifications if machine guards are removed and/or micro switches are disconnected on a machine
 - legal responsibility for the removal of machine guards and/or disconnection of micro switches

REQUIRED SKILLS AND KNOWLEDGE

- measurement other than optimum solid ink density that can be measured to assess print quality
- most accurate method of checking register during a production run
- actions to take when production problems are anticipated
- actions to take to eliminate further processing of unacceptable printed product
- affect on a stack of paper if the relative humidity is increased in the press room
- procedure to care for a newly delivered skid of paper to the press room
- reasons for sorting waste
- advantage of keeping reusable waste
- client liaison:
 - industry standards to be applied to enhance effective communication with the client
 - necessary procedures that the client should follow to 'OK' a printed product
- relief printing machine operating problems:
 - when it is necessary to call service personnel to correct a machine problem
 - what enterprise procedures are in place to report any machine operating problems
- shutdown procedures:
 - result if correct shutdown procedures were not followed
 - correct shutdown procedures to be conducted with fellow workers
 - advantages that result from proper labelling and storage of excess inks and materials
 - importance if printed product being clearly labelled prior to removal from the press room
- cleaning and washing up the printing unit:
 - OHS concerns to be observed when handling ink
 - safety precautions to be observed when cleaning the printing cylinders
 - cleaning and washing up techniques for the printing unit prior to the next print run
 - procedures for storing plates so as to minimise damage
- cleaning feed, transportation, delivery and in-line sections:
 - OHS precautions to be observed when cleaning these sections of the machine
 - maintaining a clean substrate handling section of the machine
- completing production records:
 - completed records used in the final analysis of the job
 - benefits of comprehensive records when considering the production of future jobs
- information sources:
 - machine manuals, safety and other documentation relevant to the production of

REQUIRED SKILLS AND KNOWLEDGE

complex relief printed products

- other sources of available information

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 platen, cylinder or rotary printing machine ensuring an efficient non-routine production flow that maintains product quality standards
- anticipate and rectify any production problems with minimum downtime
- correctly shutdown and clean machine according to OHS guidelines
- use computerised control, monitoring and data entry systems if available and appropriate
- find and use information relevant to the task from a variety of information sources
- manipulate embellishment tools and operations
- monitor production output and make necessary adjustments to maintain print quality on a relief printing machine whilst producing a complex print on two occasions (if possible using different substrates and if possible including at least two in-line processes) according to job specifications and enterprise procedures.

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
- access to relevant facilities and equipment, such as platen, cylinder or rotary printing machines
- use of culturally appropriate processes and techniques appropriate to the language and literacy capacity of learners and the work being performed.

Method of assessment

The following assessment method is appropriate for this unit:

- direct questioning combined with review of portfolios of evidence

EVIDENCE GUIDE	
	• third party workplace reports of on-the-job performance by the candidate • practical demonstration by the candidate when producing a complex relief printed product.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • ICPPR451C Set up for complex relief printing. For valid and reliable assessment of this unit, evidence should be gathered over a period of time through a range of methods for assessment to indicate consistent performance.

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>Substrate</i> may include:	• range of substrates within the major categories of: • paper • pressure sensitive material • board • plastics • related films • metal.
<i>Machine</i> may include:	• range of platen • cylinder and rotary machines with manual, semi-automated, fully automated or computerised process control.
<i>Handling</i> may include:	• wide and narrow reel, and large and small sheet handling systems.
<i>Ink</i> may include:	• range of inks commonly used in 3 or more colour printing, including: • standard • special colours.
<i>In-line</i> may include:	• minor processes that are integral to this competency can include basic in-line operations, such as perforating, numbering, date coding, slitting top cutting or one up die cutting, foiling and embossing

Unit Sector(s)

Unit sector	
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Competency field

Competency field	Printing
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Co-requisite units

Co-requisite units		