



Australian Government

ICPPRN521 Set up for specialised gravure printing

Release: 1

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Modification History

Release	Comments
Release 1	This version first released with ICP Printing and Graphic Arts Training Package Version 1.0.

Application

This unit describes the skills and knowledge required to set up for specialised gravure printing.

It applies to individuals who work outside standard job routines and who have the skills to experiment and make on-the-job adjustments to substrates and press settings.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Printing

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Confirm specialised 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. Plan and carry out specialised set up	2.1 Specialised job specifications are identified and analysed 2.2 Special set up requirements are determined 2.3 Specialised set up is completed in minimum time with minimum wastage
3. Set up reels	3.1 Unwind and rewind reels are set up and adjusted according to

ELEMENT	PERFORMANCE CRITERIA
	job specifications 3.2 Webbing procedures are carried out according to job specifications 3.3 Web-control system is set up, evaluated and adjusted according to job specifications 3.4 Reels are spliced/joined according to job specifications 3.5 Printed web viewing devices are set up, evaluated and adjusted according to job specifications 3.6 Folder and sheeter are set up, evaluated and adjusted according to job specifications 3.7 Set off / marking prevention devices are set up, evaluated and adjusted according to job specifications
4. Select and prepare inks and additives	4.1 Inks, dyes or additives are evaluated with reference to specialised requirements 4.2 Inks, dyes or additives are selected according to job specifications 4.3 Inks, dyes and additives are prepared according to work health and safety (WHS) requirements, and manufacturer's/supplier's instructions with suitable precautions to minimise waste 4.4 Correct colour and weight/volume of ink are mixed and prepared according to job specifications and the printing process 4.5 Formulation of ink, colour match and approved colour are appropriately recorded 4.6 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 to prolong shelf life
5. Set up machine for specialised gravure printing	5.1 Gravure cylinders are selected, installed, set up and adjusted according to job specifications 5.2 Impression roller is set up and adjusted according to job specifications 5.3 Inking system/doctor blade is set up and adjusted according to the gravure process and job specifications 5.4 Drying system is set up and adjusted according to job specifications
6. Conduct specialised proof run	6.1 Material to be used for proof is organised correctly 6.2 Machine is operated according to manufacturer's specifications and enterprise procedures to produce a specified proof

ELEMENT	PERFORMANCE CRITERIA
	6.3 Proof is visually inspected and/or tested or laboratory testing is organised according to enterprise procedures 6.4 Production does not commence without client approval or authority where appropriate 6.5 Results are interpreted and evaluated with adjustments carried out according to product and machine specifications
7. Troubleshoot machinery and material problems	7.1 Corrective or preventive action is recommended and implemented where appropriate 7.2 Changes are communicated to relevant personnel in a logical and easily understood manner 7.3 Changes are monitored to confirm improvement in production efficiency 7.4 Ongoing problems are reported according to enterprise procedures

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

Skill	Performance Criteria	Description
Reading	1.1, 2.1, 3.1-3.7, 4.2-4.4, 4.6, 5.2-5.4, 6.2, 6.5	Recognises and interprets text to establish job requirements from information contained within relevant instructions, procedures and specifications
Writing	4.5, 4.6, 6.4, 7.2, 7.4	- Completes workplace records and labels accurately and according to requirements - Considers context and audience when composing texts
Oral Communication	6.4, 7.2, 7.4	Participates effectively in spoken interactions using appropriate vocabulary, questioning and listening to gain approvals, report problems or provide information
Numeracy	2.3, 4.4	Interprets and analyses a range of mathematical information used in familiar and routine tasks
Navigate the world of work	4.3, 4.5, 4.6, 5.1-5.4, 6.2-6.4, 7.4	- Complies with legislative requirements and follows organisational policies and procedures relevant to own role - Recognises boundaries of own role responsibilities

Interact with others	6.4, 7.2, 7.4	- Collaborates with others to complete tasks according to requirements - Follows accepted communication practices and protocols when seeking approvals or reporting problems
Get the work done	1.2, 1.3, 2.1-2.3, 3.1-3.7, 4.1-4.4, 4.6, 5.1-5.4, 6.1-6.3, 6.5, 7.3, 7.4	- Plans, evaluates, identifies and assembles resources required to complete tasks - Determines priorities and sequences steps involved in complex tasks with a focus on production efficiency - Monitors results to determine whether requirements are met and to identify opportunities for improvement - Takes responsibility for addressing predictable and unpredictable problems in familiar work contexts - Uses familiar digital systems and tools to access, organise, analyse and display information relevant to role - Reads data from electronic monitoring and control systems

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
ICPPRN521 Set up for specialised gravure printing	ICPPR521C Set up for specialised gravure printing	Updated to meet Standards for Training Packages	Equivalent unit

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a74b7a0f-a253-47e3-8be0-5d426e24131d>

Assessment Requirements for ICPPRN521 Set up for specialised gravure printing

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Performance Evidence

Evidence of the ability to:

- safely set up a gravure printing machine for a specialised job on TWO occasions using different substrates according to manufacturer's specifications, enterprise procedures and the performance criteria
- complete a proof run and adjust settings to ensure production speeds are attained
- find and use information relevant to the task from a variety of information sources.

Note: If a specific volume or frequency is not stated, then evidence must be provided at least once.

Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must:

- explain why it is important that job specifications are read and properly understood
- discuss production problems that could eventuate if job specifications are not read and properly understood
- identify who to discuss any production problems with
- list work health and safety (WHS) precautions for installing printing cylinders on the machine
- explain how to determine the optimum print sequence
- identify the visual aid on the cylinder that shows the colour of ink to be used
- list precautions to ensure cylinders are not damaged during installation
- discuss WHS precautions for webbing up the machine
- describe how to determine the position of the reel
- explain what happens if brake tension is not set correctly
- outline the function of the 'dancer' roller on a web machine
- explain what happens if the web is not spliced correctly
- describe how the particular web viewing device works

- explain the principle of electrostatic assist (ESA) roller operation on the gravure printing machine
- identify the type of substrate to use on the ESA roller
- list WHS precautions for setting up delivery
- explain how the web is controlled in the rewind unit
- describe the outcome of incorrect rewind tension
- describe remedial steps to take if there is a possibility of ink marking in the rewind
- list problems attributable to a blunt knife when sheeting
- explain the function of air blast play in the delivery of sheets
- list WHS precautions for preparing inks and additives
- outline details to check for an ink's suitability for the printing process
- explain why additives are used in gravure inks
- discuss the range, in seconds, for Zahn cup measurements
- describe the effect foaming has in a Zahn cup when measuring ink viscosity
- explain why pigmented ink is brought to operating temperature before correcting viscosity
- list advantages of using automatic viscosity controllers
- explain precautions to minimise waste when preparing ink
- discuss shelf life of most inks
- describe conditions relevant to storage of inks and additives
- explain conventions for labelling mixed inks
- list WHS factors for setting up the machine
- describe the function of chill rollers on a machine
- explain the main advantage of gauging up and dry register prior to printing a job
- discuss the result of excess printing pressure
- explain how to determine pressure to be applied to the doctor blade
- outline possible print faults that caused by excessive overspill of air from the inter-colour drier
- discuss the recommended air ratio for efficient inter-colour drying
- list advantages of using high-velocity air in the drying system
- explain the cause of doctor blade wear on a gravure printing unit
- outline possible options for reducing doctor blade wear
- describe how to determine optimum make ready speed for the job
- explain how to communicate steps involved in make ready to other team members
- discuss the need to grade drying speeds of each progressive colour, so that first-down colours dry faster than subsequent colours
- explain the cause of a decrease in web tension
- outline results of increasing rewind tension after the roll has been partially rewound
- discuss the major cause of a telescopic roll
- explain how to test metallised film to find out the correct side to print on
- describe how to measure the metallised surface for coating thickness
- explain the effect of annealing on aluminium foil
- discuss the purpose of using thermal imaging face stocks
- explain how substrates are metallised

- list client requirements for bar codes
- describe print characteristics related to excessive printing pressure
- explain what causes picking when printing multi-coloured work
- describe possible print faults that result from using an over-reduced ink
- list causes of moire patterns when printing by the gravure process
- describe the instrument to be used to identify retained solvent trapped in the print
- explain the purpose of taking dyne readings
- explain the purpose of the crinkle test when testing an ink
- describe print faults that result from a worn doctor blade
- discuss the effect of using ink returning from the ink fountain when checking viscosity for ink while using ink pumps
- outline problems that result from excessive use of slow solvents
- discuss why laminating inks, once printed, appear dull and easy to scratch
- describe the result of excessive print area tension
- identify problems the printer may associate with cold seals
- identify who has responsibility for the final say in the OK of the job
- identify machine manuals, safety and other documentation relevant to this task, and where they are kept and discuss the information in them.

Assessment Conditions

Gather evidence to demonstrate consistent performance in conditions that are safe and replicate the workplace. Noise levels, production flow, interruptions and time variances must be typical of those experienced in the printing field of work and include access to a gravure printing machine.

Assessors must satisfy NVR/AQTF assessor requirements.

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