



Australian Government

ICPPRN4130 Set up for complex flexographic 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 4.0.

Application

This unit describes the skills and knowledge required to set up machines for non-routine flexographic printing. It includes the ability to conduct a proof run and adjust settings to ensure production speeds are attained.

It applies to individuals working as print machinists in the printing and graphic arts industry. They prepare material, set up, monitor and operate equipment and machinery, apply solutions to a defined range of problems associated with the print medium, and analyse and evaluate information from a variety of sources. They may also provide leadership and guidance to others with some limited responsibility for the output of others.

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. Prepare for job	1.1 Identify job requirements 1.2 Set up required printing machinery according to manufacturer specifications and work health and safety (WHS) requirements 1.3 Confirm availability of all job components
2. Set up reel transportation and delivery system on web-fed machine	2.1 Reels are checked for treatment levels, coatings and printing side, and age of product 2.2 Secure unwind reels on reel shaft

ELEMENT	PERFORMANCE CRITERIA
	2.3 Position reels on unwind stand 2.4 Web press according to non-routine job specifications 2.5 Centre and set edge guide 2.6 Set tension according to substrate requirements
3. Select and prepare inks and solvents	3.1 Select inks and solvents according to end-user requirements and confirm they meet quality requirements 3.2 Prepare inks and solvents according to manufacturer specifications 3.3 Mix and prepare colour and volume of ink to match requirements of the printing process 3.4 Record ink formula and approved colour drawdowns 3.5 Label, handle and store inks and solvents according to manufacturer specifications and hazardous liquids storage regulations
4. Set up machine for complex flexographic printing	4.1 Install and mount required flexographic plate cylinders, sleeves and mounting sheets and make register adjustments as required 4.2 Gauge and pre-set plate cylinders to impression as required 4.2 Select rollers according to individual colour and plate reproduction requirements 4.4 Select ink metering system for each unit 4.5 Set up inking system and set roller nips and blades 4.6 Adjust viscosities according to job specifications 4.7 Select air volume and drier temperature curing units according to requirements for inks, substrate and solvents 4.8 Air volume is adjusted between colours to maximise drying and minimise air overspill
5. Set up in-line units for basic process(es)	5.1 Set up minor in-line units are set up for basic process(es) 5.2 Provide assistance in set-up of major in-line units
6. Conduct proof run	6.1 Set print impressions to minimum kiss impression 6.2 Set web tensions for unwind, between stations and rewind 6.3 Confirm drying meets substrate requirements 6.4 Adjust viscosities according to colour requirement at proof speed and check against colour matching system 6.5 Inspect and test proof as required according to enterprise

ELEMENT	PERFORMANCE CRITERIA
	procedures 6.6 Seek client approval and authority prior to the production run as required
7. Readjust settings to production speed	7.1 Interpret production speed print results and make adjustments to press, ink and substrate settings as required 7.2 Splice web at production speed and obtain samples for quality inspections according to enterprise procedures 7.3 Document press setting and store samples

Foundation Skills

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

Skill	Description
Writing	Completes records according to workplace requirements
Numeracy	Interprets and analyses a range of mathematical information used in familiar and routine tasks
Self-management	- Complies with enterprise procedures relevant to own role - Implements actions according to instructions, making adjustments if necessary
Teamwork	- Collaborates with others to complete tasks according to requirements - Follows accepted communication practices and protocols when seeking approval
Planning and organising	Takes responsibility for planning and organising own workload using analytical processes to decide on a course of action, and assembles resources required
Problem solving	Identifies and takes responsibility for addressing predictable, and some less predictable, problems in familiar work contexts
Technology	Reads data from electronic monitoring and control systems

Unit Mapping Information

Supersedes and is equivalent to ICPPRN413 Set up for complex flexographic printing.

Links

Companion Volume Implementation Guide is found on VETNet -

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

Assessment Requirements for ICPPRN4130 Set up for complex flexographic printing

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Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- set up a flexographic printing machine for a complex job on two occasions according to manufacturer and job specifications and enterprise procedures.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- enterprise procedures, manufacturer specifications and work health and safety (WHS) risks and requirements for:
 - mounting and proofing flexographic plates
 - installing printing cylinders or sleeves
 - webbing up the machine and setting up the machine and delivery system
 - slitting on the machine
 - preparing and handling inks and additives
- production problems arising from not reading or understanding job specifications
- features, functions, and common faults for photopolymer plates, including:
 - advantages of thinness in processing printing
 - faults on new plates
 - types of solvents required
 - plate mounting procedures
- key features, functions, procedures, and common faults of web-fed machines and their transportation and delivery systems
- flexographic printing procedures, key features and adjustment parameters for common issues
- inks used in the printing process, their key qualities, functions, and common issues
- labelling and storage procedures of inks and additives, and ink shelf lives

- the PIV unit, its function and adjustment procedures
- the purpose or function of:
 - plasticisers and additives in flexographic inks
 - air blast in sheet delivery
 - using water treatment additives in a central impression drum and chill roller coolant system
- the procedure for:
 - determining reel position
 - graduating drying speeds of each progressive colour
- the issues arising from the following errors, and their causes:
 - incorrect unwind and rewind tension
 - excessive lay-on roller or slitter pressure
 - using an over-reduced ink
 - excessive final drying temperatures when printing polypropylene film
 - excessive print area tension and print pressure
 - excessive use of slow solvents
 - telescopic roll
 - picking when printing multi-coloured work
 - lateral streaks in uneven printing
- checks and precautions required:
 - for minimising waste when preparing ink
 - on plates, cylinders and gears, including before and after installation
 - for ink viscosity while using ink pumps
- the advantages of:
 - centring all machine controls
 - gauging up and dry register prior to printing a job
- benefits of optical mounting and cushion mounts
- cold seals, procedures for forming them and common issues
- method through which substrate is pulled into the machine
- special end-use requirements
- zahn cups, their function and measurements, and issues that may arise in their use
- the angle chamber blades should be set at
- anilox rollers, their function, features, setup procedures and common issues that may arise
- jobs printed using a hexagonal cell configuration
- factors affecting drying rate of liquid and aqueous inks
- UV lamps, their operating range and precautions required
- hole punching procedures, their functions and key precautions
- instruments for identifying retained solvent trapped in print
- manufacturer manuals, enterprise procedure and work health and safety documentation, including their location and purpose.

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:

- special purpose tools, equipment and materials
- flexographic press.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

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