



**Australian Government**

# **Assessment Requirements for ICPPRN451**

## **Set up for complex relief 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. |

## Performance Evidence

Evidence of the ability to:

- set up reel or sheet-fed platen, cylinder or rotary printing machines for non-routine print jobs
- conduct a proof run and adjust settings to ensure production speeds are attained
- correctly set up a relief printing machine for complex printing on TWO occasions (if possible using different substrates and including at least two in-line processes) according to manufacturer's and job specifications, enterprise procedures and work health and safety (WHS) requirements.

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

## Knowledge Evidence

Evidence of the ability to:

- identify job requirements, and production problems that could eventuate by not reading and understanding job specifications
- identify who to discuss any production problems with to
- identify importance of relief plates, why hardness of the printing plate is important, and faults that may be detected on new plates
- identify type of solvents to use on photopolymer plates
- outline the purpose of binding plates after mounting, and explain V-block mounting
- list checks to perform prior to cylinder installation
- outline importance of machine frames, and why unit slides need to be kept clean
- identify the optimum print sequence
- name the visual aid on the plate that identifies the colour of ink to be used

### For reel systems only

- outline WHS precautions for installing printing cylinders in the machine
- identify precautions to ensure plate/cylinders are not damaged during installation
- outline the reel transportation system used on a web-fed machine, and the WHS precautions for when webbing up the machine
- identify implications if the web is not spiced correctly
- describe the process of determining position of the reel
- outline implications if the brake tension is not set correctly
- describe the function of the 'dancer' roller on a web machine and the function of nip rollers
- outline the reel delivery system on a web-fed machine, and the WHS precautions for when setting up the reel delivery system
- identify the function of web control in the rewind unit, and the slitter on a web machine
- identify problems attributable to a blunt knife when sheeting
- describe remedial steps if there is a possibility of ink marking in the rewind
- list the main reason for blistering on a heat set machine
- outline WHS precautions when slitting on the machine, and other operations that can be performed with in-line units
- describe the machine position for in-line processing units and \precautions for setting up in-line processing units
- list reasons to top cut a printed product, and benefits of embossing in-line

### For sheet systems only

- outline the sheet transportation system on a sheet-fed machine, and WHS precautions for setting up the sheet transportation system
- identify what causes more than one sheet to pick up in the feeder and describe why accurate feeder set up is essential
- outline the process for determining position of the sheet prior to being transferred to the printing unit
- outline the process for determining which front lays to use and the types of substrate that require additional front lays to be engaged, and why they are required
- describe the sheet delivery system on a sheet-fed machine, what causes sheets to be delivered incorrectly, and WHS precautions for removing sheets from the delivery
- describe adjustments needed if changing from lightweight to heavyweight stocks
- identify the process for determining sheet release into the delivery
- outline problems from excessive use of anti-set off spray powder
- identify what causes printed sheets to set off in the delivery
- identify how the possibility of set off in delivery can be reduced and how air blast assists sheet delivery
- outline packing required in the tympan, and the ideal condition of the tympan
- identify the process for determining printing pressure

- outline how the correct top sheet tension is achieved when fitting a new tympan, and print faults that can occur if the tympan is not tensioned correctly
- identify how to lengthen print length on this type of press, and to shorten the print length
- outline WHS concerns related to preparation of inks and additives, and details required to check inks' suitability for the printing process
- outline why it might be necessary to mix an additive into ink and any special end-use requirements that may be necessary
- outline how a spectrophotometer can be used to assess ink colour, and formula for calculating the correct quantity of ink in relief printing
- identify print faults if excessive driers are mixed into ink, and precautions to minimise waste when preparing ink
- identify the shelf life of most ink and the conditions relevant to storage of inks and additives
- list conventions for labelling mixed inks
- identify the process for setting up the printing machine and major WHS concerns
- name the order eccentric or concentric roller adjustments should be made and the width of the contact stripe between two rollers
- outline the process for determining ink duct setting, and the ideal setting
- name recommended degrees shore hardness for forme rollers
- describe types of ink drying/curing systems and how the drying unit cures ink
- state what happens if there is excessive pressure when top cutting and excessive pressure when cutting and creasing
- describe the effect of differing tooth counts on perforated products
- outline problems of solving proofing and adjustment
- outline the operation of the true inch function fitted to some machines, and problems that may cause the machine to keep stopping
- outline checks necessary prior to engaging the impression, and checks to be performed when running the machine
- describe the effect position of certain guards has on operation of the machine
- outline steps involved in operating the machine communicated to other team members
- name aids available for testing the machine proof, where testing should take place, and tests necessary for each job
- name the function of a polarisation filter in a densitometer
- describe ideal conditions for inspecting the proof
- explain why it is necessary to use visual aids on the printed substrate
- describe causes of a halo effect on the image
- outline methods to check and adjust ink colour and consistency
- describe adjustments that may cause mis-register
- describe adjustments to position the image laterally and circumferentially
- explain how changing colour sequence can effect the final colour cast
- identify causes of excessive mechanical dot gain and the difference between mechanical and optical dot gain
- describe the process for final approval before a print run

- identify machine manuals, safety and other documentation relevant to this task, where are they kept, information included in these documents, and other sources of available information.

## **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
- reel or sheet-fed platen, cylinder or rotary printing machine.

Assessors must satisfy NVR/AQTF assessor requirements.

## **Links**

Companion Volume implementation guides are found in VETNet -

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