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## Overview

This standard is for gravure printers with responsibility for setting up gravure printing units on web presses. The standard involves the set-up of the machine for printed work that meets the quality required by the customer with the minimum of waste materials.

A multi-unit machine is one that prints two or more colours in a single pass through the machine. It includes the make-ready and the identification and correction of associated print faults, that occur during set-up, whether they are caused by machine or materials.

Multi-unit gravure printing machines have many possible configurations and features. This standard requires a gravure printer to be able to set up on multiple-unit presses. It is possible that the printer could be working as part of a team. The printer must have a full working knowledge of multi-unit presses, including issues that arise from the transfer of substrate between units.

Practical ability must be demonstrated in setting up the press to produce printed work to a commercially acceptable standard. This must be done on different substrates and covering a sufficient range of printed work to show full competence to set up a multi-colour gravure machine. This should include a variety of different kinds of images, in the context of multiple units printing process colour and/or combined spot colours.

This standard requires a gravure printer to be able to set up and maintain gravure printing units on a web-fed printing machine. The printer needs to have a full working knowledge of gravure printing units, including issues that arise from the transfer of substrate between units, ink strength, trapping and drying, achieving and maintaining ink densities for inks on different substrates, and colour control.

The printer must be able to set-up multi-colour work. The printer must be able to check and assess the quality of print under correct viewing conditions against an approved proof and make whatever adjustments are necessary to the press to achieve and maintain the quality required. On more modern machines, integral colour control hardware and software is installed, allowing the printer to check continually that ink densities, dot measurements or spectral colour meet recognised standards and/or are consistent with company standards. The printer is required to be familiar with colour

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standards and how such standards are maintained. If equipment for this purpose is in use in the company, then the printer must be capable of operating and understanding it.

As well as making ready unit(s) for particular jobs, the printer must also be able to undertake routine maintenance of the unit to ensure it prints to an acceptable quality. Often this will be checked with reference to known quality standards.

## Performance criteria

You must be able to:

### Select and prepare the plate cylinders

1. check you have all the details required and approval to start work
2. check you have enough materials of the right type to meet specifications
3. report to your manager, if the material provided is not correct or sufficient following standard operating procedures
4. check machines and your work area are safe and ready for production
5. check the condition of the gravure cylinders is suitable for production and meets imposition specifications
6. fit the cylinder into the printing units to meet specifications
7. check cylinder matches the image size following standard operating procedures

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Set up substrate transport system

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8. select web for production to meet specifications
9. use reel handling equipment in a safe manner
10. position web centrally on reel stands following standard operating procedures
11. web up press following the web path required to meet specifications
12. check reel unwind is meeting the in-feed requirements following standard operating procedures
13. position web detectors to meet specifications
14. test the substrate transfer system to confirm it runs without breaking following standard operating procedures
15. set the impression pressure for the thickness of substrate to be printed following standard operating procedures

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Set and adjust the units inking system to suit print profile

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16. set doctor blades pressures following standard operating procedures
17. set pressure of cylinders to impression cylinder following standard operating procedures
18. introduce inks to the printing units following standard operating procedures
19. run the ink through the inking system following standard operating procedures

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Set press to match pass sheet standard

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20. set, test and adjust impression pressures so clean, even print is produced
21. position images to meet specifications
22. adjust machine settings to meet specifications and quality standards
23. report to your manager if circumstances beyond your control prevent you from producing a pass sheet to the required standard
24. obtain a "pass sheet" that meets company standards
25. identify and rectify faults that occur with machines and consumables following standard operating procedures

## Knowledge and understanding

You need to know and understand:

### Law and regulations

1. your legal duties for health and safety in the workplace as defined by the relevant health and safety legislation
2. your duties and responsibilities for health and safety as defined by any specific legislation covering your job role
3. workplace policies and procedures
4. working practices
5. hazards and risks in the workplace, their assessment and the action to take to deal with them
6. hazards and risks in your own job, their assessment and the action to take to deal with them - including relevant regulations on the safe handling of equipment and materials.
7. manufacturer's health and safety requirements relevant to your job
8. Personal Protective Equipment used
9. how to stop machinery in the event of an emergency

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### Communication

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*10. how to communicate with colleagues, customers and suppliers*

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### Workplace policy and practice

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*11. workplace objectives, priorities, standards and procedures*

*12. the range of work carried out in the workplace*

*13. the working practices existing in the workplace*

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### The identification and assessment of printing options

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*14. the stages in the printing process from pre-press to printed product*

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### Time and Resources

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*15. the different types of resource, including labour, materials, machinery*

*16. the relationship between resource usage and profitability*

*17. how to maximise productivity*

*18. the relationship between productivity and competitiveness*

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### The operation of equipment

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- 19. range of adjustments and settings on gravure printing units*
- 20. operating practices and procedures for gravure printing units*
- 21. use of colour control equipment, including densitometers and spectrophotometers*

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#### Printing

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- 22. principles of gravure printing\**

#### The causes and treatment of common faults

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- 23. raw material faults*
- 24. processing (printing) faults*
- 25. machine faults*

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#### Administrative procedures

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- 26. recording and reporting*
- 27. product labelling*

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#### Environmental

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- 28. legal requirements for the classification, storage, carriage and disposal of waste*
- 29. environmental legislation that covers processes in your company*
- 30. existence of any national or international standards on environmental management*

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#### Quality Assurance and Control

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- 31. main features of quality assurance and quality control systems*
- 32. techniques for controlling quality, including inspection, testing, sampling, use of input and output controls*
- 33. equipment for controlling quality in machine printing*
- 34. light standards for viewing and assessing colour print*

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#### Problem Solving

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- 35. types of problems that may need to be solved*
- 36. sources of information*
- 37. techniques for solving complex problems*

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38. *techniques for assessing machine faults*

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Materials

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39. types and characteristics of paper, board and other commonly used substrates

40. types and characteristics of inks and coatings

41. how to maintain the quality of materials during storage and handling

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Proofing

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42. principal types of proof and their role in the printing process

GQAMP284

Control the set-up of gravure printing units on multi-unit gravure press



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