ICPPP430C Manage colour

Revision Number: 1

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Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to manage colour in pre-press operations to ensure that proofs, monitors and final products match.

Application of the Unit

Application of the unit	This unit requires the individual to manage colour in pre-press operations to ensure that proofs, monitors and final products match.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

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.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify colour requirements	1.1. Printing conditions are determined to identify colour management requirements 1.2. Printer's requirements are established to guide the provision and use of ICC colour profiles
2. Fingerprint press if printing in a controlled environment	2.1. Suitable *test charts* are selected 2.2. Test chart is printed with standard ink densities on a range of stock including non-standard types such as yellow parchment 2.3. Densitometer and/or *spectrophotometer* is used to examine printed test charts and generate colour profile for that press and that stock
3. Calibrate digital proofing device	3.1. Proofer is linearised for required stock 3.2. Digital test file (eg IT8 chart) is obtained 3.3. Test file is printed on a *proofing* device and on the type of press that will be used in order to obtain a proof for both film and direct to plate technologies 3.4. Results are measured with a spectrophotometer 3.5. Results are used to generate output profile that allows for dot gain, GCR, UCR, total gradients and black values
4. Create different monitor profiles using colour tuning package	4.1. A densitometer with screen suction device, if available, and/or appropriate *software* (OR) are used 4.2. Contrast (white level) and brightness are set 4.3. RGB and CMYK ICC profiles are applied 4.4. Jobs on screen are viewed through appropriate profiles
5. Calibrate scanner	5.1. Test chart (eg IT8) is loaded 5.2. Scanner input profiling software is used to calibrate scanner (OR) 5.3. All settings are put to zero (0) 5.4. Test chart is scanned and digital proof is outputted 5.5. Spectrophotometer is used to measure proof and ICC profile as generated ICC profile is loaded into scanning software
6. Calibrate digital camera	6.1. Standard lighting conditions are set up 6.2. ICC target is photographed and digital proof is outputted 6.3. Spectrophotometer is used to measure proof and ICC

ELEMENT	PERFORMANCE CRITERIA
	profile as generated
	6.4. ICC profile is loaded into digital camera software
7. Carry out maintenance	7.1. Whole system is checked every two to three months
	7.2. Monitor calibrations are checked monthly
	7.3. Digital proofing devices are checked at least every time ink or paper stock is changed
8. Use colour profiles	8.1. Appropriate profiles are used to ensure that colour on *monitors*, proofs and final product match as closely as possible
	8.2. In a *controlled environment* press fingerprint for final output is used, otherwise digital proofer profile is used
	8.3. Colour wedges are included in all files and outputs

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

- OHS in relation to operating machinery such as safely switching off machinery before cleaning is started
- communication of ideas and information by printing a test file on proofer
- collecting, analysing and organising information by determining printing conditions in order to identify colour management requirements
- planning and organising activities by clarifying colour requirements before generating a proof
- teamwork when maintaining the production process in association with others
- mathematical ideas and techniques by using densitometry, spectrophotometry and colour profiles
- problem-solving skills by diagnosing and correcting colour problems
- use of technology by using software and hardware correctly to ensure consistency of output

Required knowledge

- OHS issues need to be considered when managing colour for pre-press
- measuring light intensity and colour temperature
- standard lighting conditions for matching colour
- effects different lighting conditions have on using a monitor, proofing and printing
- difference between RGB and CMYK colour
- theory behind UCR and the effect it has   on an image
- theory behind GCR and the effect it has on an image
- densitometry and spectrophotometry measure
- ICC profiles and why are they used
- ICC profiles and how they affect output
- factors that influence selection of highlight and shadow aim points
- grey balance requirements to be determined prior to applying colour correction
- factors that determine the requirements for colour correction
- use of different ink densities for different stocks
- standard ink densities for different types of job
- effects different stocks have on colour reproduction
- effects different inks have on colour reproduction for proofing and final production
- effects the age and configuration of the press (eg 2-colour vs 4-colour) have on colour reproduction
- type of press and what printing process are being used for final output
- strengths and limitations with respect to colour reproduction of different printing

REQUIRED SKILLS AND KNOWLEDGE

processes

- common problems for colour management and how can they be solved
- including an ICC profile in a PDF file
- affect using the wrong profile has on output
- sources of information about colour management

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: • managing colour in pre-press operations to ensure that proofs, monitors and final products match • demonstrate an ability to find and use information relevant to the task from a variety of information sources • a portfolio that demonstrates all criteria have been met. This should include evidence of THREE jobs with final product printed on various stocks and matching digital proofs on simulated stock. Monitors should also be checked to ensure that they have different loaded profiles that match jobs. There should also be evidence of colour management system maintenance 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.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

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.	
Test charts may include:	• 3 and 4-colour neutrals • CMYK colour scales and a range of colour patches.

Spectrophotometers may include:	• range of strip reader style devices including
	  • Gretag
	  • Macbeth
	  • Xwrite.

Proofing systems may include:	• range of digital proofing systems used in the industry.
Software may include:	• range of industry colour applications including colour management software (eg Colorsync), profile creating software, scanner profiling software (eg Colortone Pro, Scan Open), densitometry and spectrophotometry software.
Monitors may include:	• range of monitors used in the pre-press sector.
Controlled environment may include:	• a controlled environment is one in which temperature and humidity are controlled, the press to be used for the job is known as is, preferably, the printer.
Printing processes may include:	• all printing processes.

Unit Sector(s)

Unit sector	

Competency field

Competency field	Pre-press

Co-requisite units

Co-requisite units		