



Technical and Vocational Education and Training (TVET) Council



**Occupational Standards  
of Competence**

# **Graphics Communications Pre-Press**

## **Level 2**

Hastings House West, Balmoral Gap, Christ Church

Telephone: (246) 435-3096    Fax: (246) 429 2060    E-mail: [office@tvetcouncil.com.bb](mailto:office@tvetcouncil.com.bb)

Published by:  
The Technical and Vocational Education and Training Council  
Hastings House West  
Balmoral Gap  
Christ Church  
BARBADOS, W.I.  
Tel: (246) 435-3096  
Fax: (246) 429-2060  
Email: [office@tvetcouncil.com.bb](mailto:office@tvetcouncil.com.bb) Website: [www.tvetcouncil.com.bb](http://www.tvetcouncil.com.bb)

Every effort has been made to ensure that the information contained in this publication is true and correct at the time of publication. However, the TVET Council's products and services are subject to continuous development and improvement and the right is reserved to change products and services from time to time. The TVET Council cannot accept any liability for any loss or damage arising from the use of information in this publication.

© TVET Council 2015

## **ACKNOWLEDGEMENTS**

The Technical and Vocational Education and Training Council would like to thank the following for their contribution to the development of this document.

City and Guilds Institute of London  
Australian Government – Department of Education and Workplace Relations

### **Members of the Working Group**

Mr. Damian Bennett	Caribbean Label Crafts Ltd.
Mr. Davidson Christmas	Dynamic Colour
Ms. Debra Hope	External Consultant, Technical and Vocational Education and Training (TVET) Council
Mr. Victor Layne	Samuel Jackman Prescod Polytechnic (SJPP)
Mr. Stephen Massiah	Government Printery
Mr. Philip Millington	Samuel Jackman Prescod Polytechnic (SJPP)
Mr. Nicolas Skeete	COT Holdings Ltd.

**Qualification Overview**

**NVQB**

**in**

**Graphics Communications  
Pre-Press**

**Level 2**

### Qualification Overview

Graphics Communications is the study of the processes used in the printing industry to exchange information in a visual form, such as words, drawings, photographs or a combination of these. Many different methods are used to transfer and process the images before printing them onto a substrate.

Pre-press is the term used to describe all of the processes that occur before printing and finishing. Some of these tasks include type-setting, copy editing, marking up, proofing, proof-reading, screening and imposition.

### Who is this qualification for?

The qualification is designed for individuals who work within a commercial production environment as operators on press machines and are involved in the setting up and running, maintenance and wash down of single and multi-colour production machines. It should be taken by persons who are trained to deal with routine press printing assignments. Candidates at this level must have some personal autonomy and require minimum supervision. They are also required to collaborate with others to achieve work objectives.

Like all NVQs, this qualification is competence based. This means that it is linked to the candidates' ability to competently perform a range of tasks connected with their work. Candidates must plan a programme of development and assessment with their assessor and compile a portfolio of evidence to prove that they are competent in their work role.

### Jobs in the occupational area

Some of the job roles in the graphics communications industry include:

- Illustrator
- Production manager
- Estimator
- Art director
- Bindery worker
- Database manager
- Engineer
- Materials handler
- Marketing specialist

## **A04802 - APPROVED NATIONAL VOCATIONAL QUALIFICATION STRUCTURE**

### **GRAPHICS COMMUNICATIONS PRE-PRESS – LEVEL 2**

To achieve a full award, candidates must complete all twelve (12) mandatory units.

<b><u>Mandatory Units (All must be completed)</u></b>	<b><u>CODES</u></b>
<b>1. Follow safe work practices</b>	<b>U78402</b>
1.1 Plan to work	
1.2 Prepare to work	
1.3 Follow safe work practices	
<b>2. Communicate and work with others</b>	<b>U78502</b>
2.1 Share information on own job role	
2.2 Develop and maintain working relationships	
2.3 Contribute to workgroup activities	
2.4 Deal with issues, problems and conflicts	
<b>3. Keep equipment clean and in working order</b>	<b>U78602</b>
3.1 Keep printing equipment clean	
3.2 Keep printing equipment in working order	
<b>4. Handle, transport and store materials</b>	<b>U78702</b>
4.1 Identify and select materials	
4.2 Handle and transport materials	
4.3 Store materials	
<b>5. Send and receive digital files</b>	<b>U78802</b>
5.1 Send digital files electronically	
5.2 Receive digital files electronically	
<b>6. Create digital images using scanning techniques</b>	<b>U78902</b>
6.1 Select scanning approach	
6.2 Prepare equipment and materials	
6.3 Produce and save scanned images	
<b>7. Plan and produce edited images</b>	<b>U79002</b>
7.1 Decide on the imaging approach	
7.2 Produce edited images	

- 8. Create digital artwork for print** **U79102**
- 8.1 Prepare layout of documents for print
  - 8.2 Set text to typographical specifications
  - 8.3 Import and use images in digital artwork
  - 8.4 Proof and correct digital artwork for print
- 9. Output digital image carriers for print** **U79202**
- 9.1 Impose images electronically
  - 9.2 Prepare images for processing
  - 9.3 Produce and process image carrier
- 10. Make lithographic printing plates** **U79302**
- 10.1 Identify and obtain required materials for printing plates
  - 10.2 Produce lithographic printing plates
  - 10.3 Develop lithographic printing plates
  - 10.4 Clean up
- 11. Prepare and load sheet-fed and roll-fed substrates** **U79402**
- 11.1 Maintain condition of substrates
  - 11.2 Stack and load sheet-fed substrates
  - 11.3 Load roll-fed substrates
  - 11.4 Clean up
- 12. Operate digital printing machines** **U79502**
- 12.1 Prepare machines for production
  - 12.2 Operate a digital printing machine

**U78402****Follow safe work practices**

## Unit Descriptor:

This unit describes the knowledge, skills and attitudes required to plan, prepare and work safely in the printing environment. Basic maintenance and housekeeping of the work area within the scope of the candidate are also included.

**ELEMENT****PERFORMANCE CRITERIA**

*To be competent you must achieve the following:*

- |                               |   |
|-------------------------------|---|
| 1. Plan to work               | <ul style="list-style-type: none"> <li>1.1 Plan work in accordance with relevant legislation, codes of practice and organizational procedures.</li> <li>1.2 Review plans with relevant personnel.</li> <li>1.3 Carry out pre-work checks and work area assessments before starting work.</li> <li>1.4 Review safe work methods before undertaking work.</li> <li>1.5 Correctly identify <b>personal protective equipment</b> for the job according to organizational procedures.</li> </ul> |
| 2. Prepare to work            | <ul style="list-style-type: none"> <li>2.1 Identify <b>hazards</b> in the work area.</li> <li>2.2 Take appropriate actions to correct <b>hazards</b> identified, within the scope of your responsibility.</li> <li>2.3 Report <b>hazards</b> which cannot be corrected to appropriate personnel.</li> <li>2.4 Test <b>personal protective equipment</b> before use.</li> </ul>  |
| 3. Follow safe work practices | <ul style="list-style-type: none"> <li>3.1 Follow correct work procedures and instructions for ensuring safety according to organizational procedures.</li> <li>3.2 Observe <b>duty of care</b> requirements at all times.</li> </ul>   |



- 3.3 Adhere to occupational safety and health plans according to organizational procedures.
- 3.4 Correctly use **personal protective equipment** according to manufacturers' and organizational procedures.
- 3.5 Adhere to **ergonomic principals** as stated.
- 3.6 Correctly use tools, equipment and materials at all times according to manufacturers' instructions.
- 3.7 Deal with **emergencies** within your scope of responsibility, according to organizational procedures.
- 3.8 Promptly report accidents to designated personnel.
- 3.9 Keep work area clean during the work process.

**RANGE STATEMENT**

*All range statements must be assessed:*

**1. Personal protective equipment:**

- Overalls
- Safety shoes/boots
- Face masks/respirators
- Goggles
- Gloves
- Hard hats/helmets
- Ear protection

**2. Hazards:**

- Biological
- Environmental
- Chemical
- Physical
- Psychological
- Ergonomic

**3. Duty of care:**

- Legal responsibility to do everything reasonably practicable to protect others from harm
- Own responsibility to comply with safe work practices, including activities that require licences, tickets or certificates of competency

**4. Ergonomic principles:**

- Manual handling/lifting
- Workstation design

**5. Emergencies:**

- Evacuation
- Explosions, fires, bomb threats
- Natural disasters
- Accidents
- Security emergencies

**UNDERPINNING KNOWLEDGE AND SKILLS**

*You need to know and understand:*

1. How to interpret relevant legislation, codes and organizational procedures when planning for work in the printing environment.
2. How to communicate work plans with relevant personnel.
3. How to identify hazards when making pre-work checks and work area assessments and what steps to take to control those that are within your area of responsibility.
4. What personal protective equipment is needed for your job and how to use and test them correctly.
5. What are common workplace hazards and the safety measures to deal with these hazards.
6. What is the duty of care, within the scope of your responsibility.
7. What are the different ergonomic techniques and how they should be used.
8. What are the organizational and manufacturers' requirements for storing, maintaining and using tools and equipment.
9. What are the organization's safety and emergency plans and procedures to be followed.
10. What is the importance of keeping your work area clean and how this impacts on the efficiency of your work.

## EVIDENCE GUIDE

*For assessment purposes:*

### (1) Critical Aspects of Evidence

Candidates must prove that they can carry out **all** of the elements, meeting **all** the performance criteria, range and underpinning knowledge **on more than one occasion**. This evidence must come from a real work environment.

### (2) Method of Assessment

Assessors should gather a range of evidence that is valid, sufficient, current and authentic.

Evidence may be collected in a variety of ways including:

- Oral questioning
- Observation
- Written evidence (case study, projects, assignments)
- Witness testimony

### (3) Context of Assessment

This unit may be assessed on the job, off the job or a combination of both. Where assessment occurs off the job, that is, the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by a candidate working alone or as part of a team. The assessment environment should not disadvantage the candidate.

The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, products and manufacturing specifications, codes, standards, manuals and reference materials.

Simulation **should not be used**, except in exceptional circumstances where natural work evidence is unlikely to occur.

**U78502****Communicate and work with others**

Unit Descriptor:

This unit describes the knowledge, skills and attitudes required to communicate and work effectively with others in the printing environment. The candidate should be a skilled worker with limited autonomy and working with a team.

**ELEMENT****PERFORMANCE CRITERIA**

*To be competent you must achieve the following:*

- |   |   |
|---|---|
| 1. Share information on own job role          | 1.1 State relevant <b>information</b> linked to your job role which needs to be shared with <b>workgroup members</b> .        |
|   | 1.2 Share <b>information</b> with colleagues using different <b>methods of communication</b> .                                |
|   | 1.3 Explain the importance of sharing relevant <b>information</b> .   |
| 2. Develop and maintain working relationships | 2.1 Develop and maintain good working relationships with <b>workgroup members</b> .   |
|   | 2.2 Identify responsibilities and duties in relation to <b>workgroup members</b> .  |
|   | 2.3 Undertake activities in a manner that promotes cooperation and good relationships.  |
|   | 2.4 Take into account time and resource constraints in fulfilling the work requirements of self and others.                   |
|   | 2.5 Confirm that constructive <b>feedback</b> provided by others in the workgroup is encouraged, acknowledged and acted upon. |
| 3. Contribute to workgroup activities         | 3.1 Provide <b>support to team members</b> to ensure workgroup goals are met.   |
|   | 3.2 Constructively contribute to workgroup goals and tasks according to organizational requirements.                          |

- 3.3 Share **information** relevant to work with **workgroup members** to ensure designated goals are met.
- 3.4 Identify and plan **strategies and opportunities for improvement** of the workgroup in liaison with workgroup.
- 4. Deal with issues, problems and conflicts
  - 4.1 Respect differences in personal values and beliefs and their importance in the development of relationships.
  - 4.2 Identify and appropriately respond to linguistic and cultural differences in communication styles.
  - 4.3 Identify issues, problems and conflict encountered in the workplace.
  - 4.4 Obtain assistance from **workgroup members** when issues, problems and conflict arise.
  - 4.5 Suggest possible ways of dealing with issues, problems and conflict as appropriate and refer to the appropriate person.

**RANGE STATEMENT**

*All range statements must be assessed:*

**1. Information:**

- Acknowledgement of satisfactory and unsatisfactory performance
- Assistance for colleagues
- Clarification of the organization's preferred methods of task completion
- Workplace hazards, risks and controls

**2. Workgroup members:**

- Management
- Colleagues (peers)
- External members
- Coach/mentor

**3. Methods of communication:**

- Written
- Electronic
- Verbal

**4. Feedback:**

- Performance appraisals
- Internal and external clients
- Personal/reflective behaviour strategies

**5. Support to team members:**

- Problem-solving
- Providing feedback
- Assisting with tasks
- Coach/mentor

**6. Strategies and opportunities for improvement:**

- Career planning/development, for example, through formal/informal learning programmes, internal/external training, personal study
- Coaching, mentoring and supervision, for example, skills recognition/initial assessment, performance appraisals, work experience/exchange opportunities, workplace skills assessment

**UNDERPINNING KNOWLEDGE AND SKILLS**

*You need to know and understand:*

1. What information linked to your job role needs to be shared with colleagues.
2. Why sharing information with colleagues is important.
3. Why good working relationships are important.
4. What problems can be experienced when developing and maintaining good working relationships with colleagues and how to suggest solutions.
5. What is the relevant legislation from all levels of government that may affect aspects of business operations such as anti-discrimination legislation, ethical principles, codes of practice, privacy laws and occupational safety and health (OSH).
6. What are your responsibilities and duties and those of the workgroup.
7. How to promote cooperation and good relationships.
8. What are the time and resource constraints to take into consideration when fulfilling work requirements.
9. How and when to encourage, acknowledge and act upon feedback.
10. How and when to provide support to team members to achieve goals.
11. How to contribute to workgroup goals.
12. What are personal values and beliefs and why they should be respected.
13. What are linguistic and cultural differences.
14. How to identify and respond to issues, problems and conflicts.



## EVIDENCE GUIDE

*For assessment purposes:*

### (1) Critical Aspects of Evidence

Candidates have to prove that they can carry out **all** of the elements, meeting **all** the performance criteria, range and underpinning knowledge **on more than one occasion**. This evidence must come from a real work environment.

### (2) Methods of Assessment

Assessors should gather a range of evidence that is valid, sufficient, current and authentic.

Evidence may be collected in a variety of ways including:

- Observation
- Written/oral questioning
- Written evidence
- Witness testimony
- Professional discussion

Questioning techniques should not require language, literacy or numeracy skills beyond those required in this unit of competency.

### (3) Context of Assessment

This unit may be assessed on the job, off the job or a combination of both. Where assessment occurs off the job, that is, the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by a candidate working alone or as part of a team. The assessment environment should not disadvantage the candidate.

The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

Simulation **should not be used**, except in exceptional circumstances where natural work evidence is unlikely to occur.

**U78602****Keep equipment clean and in working order**

Unit Descriptor:

This unit describes the knowledge, skills and attitudes required to keep printing equipment clean and in working order within the printing industry. It includes basic maintenance and problem-solving.

**ELEMENT****PERFORMANCE CRITERIA**

*To be competent you must achieve the following:*

- |   |   |
|---|---|
| 1. Keep printing equipment clean            | <ul style="list-style-type: none"> <li>1.1 Obtain and use cleaning equipment and materials in accordance with manufacturers' and company guidelines.</li> <li>1.2 Remove build-up of materials and dust in or around the machine.</li> <li>1.3 Use <b>personal protective equipment</b> in accordance with company guidelines and legislation.</li> <li>1.4 Dispose of used cleaning agents and waste materials in accordance with environmental regulations.</li> <li>1.5 Check machine to ensure it is safe to operate and that guards are fitted in accordance with manufacturers' and company guidelines after cleaning.</li> </ul> |
| 2. Keep printing equipment in working order | <ul style="list-style-type: none"> <li>2.1 Identify lubrication points, follow the manufacturers' recommended lubrication schedules and use the recommended <b>types of lubricants</b>.</li> <li>2.2 Lubricate machines in accordance with company schedules.</li> <li>2.3 Examine machinery for worn or defective components.</li> <li>2.4 Check and replace <b>filters</b> as required.</li> </ul>  |

- 2.5 Restore machines to safe operating condition after replacing components or performing lubrication.

**RANGE STATEMENT**

*All range statements must be assessed:*

**1. Personal protective equipment:**

- Safety hand and footwear
- Eye, face and ear protection
- Barrier cream and cleansing soaps
- Protective clothing, for example, overalls, uniforms, aprons

**2. Types of lubricants:**

- Liquid
- Solid

**3. Filters:**

- Air
- Oil
- Dust

**UNDERPINNING KNOWLEDGE AND SKILLS**

*You need to know and understand:*

1. How and from whom to obtain maintenance plans and schedules
2. How to record removal and replacement of components and lubrication of machinery.
3. How to carry out the cleaning and/or replacement of filters.
4. What are the types of machine faults that need to be referred to a responsible person.
5. What are the list of consumables that are likely to require periodic replacement.
6. What are the list of components that have been replaced and the method and tools used.
7. When and how to isolate machinery to carry out the cleaning process.
8. What is the purpose of lubricants.
9. What are the different types of lubricants recommended by manufacturers.
10. What is the purpose of a lubricant schedule.
11. What are the reasons for and benefits of regular cleaning and maintenance of machinery.
12. What are the various types of filters and their uses.

## EVIDENCE GUIDE

*For assessment purposes:*

### (1) Critical Aspects of Evidence

Candidates have to prove that they can carry out **all** of the elements, meeting **all** the performance criteria, range and underpinning knowledge **on more than one occasion**. This evidence must come from a real work environment.

### (2) Methods of Assessment

Assessors should gather a range of evidence that is valid, sufficient, current and authentic.

Evidence may be collected in a variety of ways including:

- Observation
- Written/oral questioning
- Written evidence
- Witness testimony
- Professional discussion

Questioning techniques should not require language, literacy or numeracy skills beyond those required in this unit of competency.

### (3) Context of Assessment

This unit may be assessed on the job, off the job or a combination of both. Where assessment occurs off the job, that is, the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by a candidate working alone or as part of a team. The assessment environment should not disadvantage the candidate.

The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

Simulation **should not be used**, except in exceptional circumstances where natural work evidence is unlikely to occur.

## U78702

## Handle, transport and store materials

Unit Descriptor:

This unit describes the knowledge, skills and attitudes required to identify, transport and store materials within the print working environment.

**ELEMENT****PERFORMANCE CRITERIA**

*To be competent you must achieve the following:*

- |                                   |   |
|-----------------------------------|---|
| 1. Identify and select materials  | 1.1 Locate materials according to organizational procedures.<br><br>1.2 Identify materials by their labels and identification markings.<br><br>1.3 Check materials and their markings against job sheet.<br><br>1.4 Select the type and quantity of materials required. |
| 2. Handle and transport materials | 2.1 Safely handle materials in accordance with <b>company guidelines</b> .<br><br>2.2 Safely transport materials using the appropriate <b>transportation methods</b> and equipment as specified in <b>company guidelines</b> .  |
| 3. Store materials                | 3.1 Position or store materials in accordance with organizational procedures.<br><br>3.2 Accurately complete records according to <b>company guidelines</b> .   |

**RANGE STATEMENT**

*All range statements must be assessed:*

**1. Company guidelines:**

- Health and safety legislation
- Standard operating procedures
- Manufacturers' guidelines

**2. Transportation methods:**

- Land
- Air
- Sea



**UNDERPINNING KNOWLEDGE AND SKILLS**

*You need to know and understand:*

1. How to locate and identify materials.
2. What are the different methods of transporting materials.
3. How to handle, transport and store materials.
4. How materials can be damaged during handling and transportation.
5. What types of personal injury can occur through incorrect handling and transportation of materials.
6. What factors to consider when positioning or storing materials.
7. What are the difficulties and/or hazards that can be encountered when positioning or storing materials.
8. What are the possible solutions to the difficulties and or/hazards which can be encountered in positioning or storing materials.
9. How to accurately keep records.

---

**EVIDENCE GUIDE**

*For assessment purposes:*

**(1) Critical Aspects of Evidence**

Candidates have to prove that they can carry out **all** of the elements, meeting **all** the performance criteria, range and underpinning knowledge **on more than one occasion**. This evidence must come from a real work environment.

**(2) Methods of Assessment**

Assessors should gather a range of evidence that is valid, sufficient, current and authentic.

Evidence may be collected in a variety of ways including:

- Observation
- Written/oral questioning
- Written evidence
- Witness testimony
- Professional discussion

Questioning techniques should not require language, literacy or numeracy skills beyond those required in this unit of competency.

**(3) Context of Assessment**

This unit may be assessed on the job, off the job or a combination of both. Where assessment occurs off the job, that is, the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by a candidate working alone or as part of a team. The assessment environment should not disadvantage the candidate.

The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

Simulation **should not be used**, except in exceptional circumstances where natural work evidence is unlikely to occur.

**U78802****Send and receive digital files**

Unit Descriptor:

This unit describes the knowledge, skills and attitudes required to send and receive digital files including e-mail attachments, over a telecommunications network by Integrated Services Digital Network (ISDN) through a virtual private network and similar permanent connections.

**ELEMENT****PERFORMANCE CRITERIA**

*To be competent you must achieve the following:*

- |   |  |
|---|--|
| 1. Send digital files electronically    | <ul style="list-style-type: none"> <li>1.1 Confirm files in the format required by customer and the size suitable for sending.</li> <li>1.2 Confirm that the transmission method is suitable for the files to be sent to the customer and takes into account the customer's preferences, speed of transmission, security and cost.</li> <li>1.3 Confirm that information accompanying the digital files is clear, accurate and sufficiently detailed for the customer.</li> <li>1.4 Send files to <b>relevant persons</b>.</li> <li>1.5 Complete records on the transmission as required according to company procedures.</li> </ul> |
| 2. Receive digital files electronically | <ul style="list-style-type: none"> <li>2.1 Confirm <b>digital communications systems</b> as operational and ready to receive incoming files.</li> <li>2.2 <b>Pre-flight</b> incoming files in accordance with company guidelines.</li> <li>2.3 Confirm and receive required files.</li> <li>2.4 Save received files in accordance with company guidelines.</li> <li>2.5 Receive and accurately complete records of the files according to company guidelines.</li> </ul>   |

---

**RANGE STATEMENT**

*All range statements must be assessed:*

**1. Relevant persons:**

- Supervisor/team leader
- Customer

**2. Digital communication systems:**

- Cloud
- E-mail
- Internet
- FTP (File Transfer Protocol)

**3. Pre-flighted:**

- File type
- Size
- Quality
- Colour space

**UNDERPINNING KNOWLEDGE AND SKILLS**

*You need to know and understand:*

1. Which files are to be sent that are in the required format of the customer and are of a suitable size for transmission.
2. What are the various methods of transmission and under what conditions they are used.
3. Why information accompanying digital files need to be detailed, clear and accurate for the customer.
4. How to send files to relevant persons.
5. What are the company procedures for completing records on transmissions.
6. What are the various types of digital communication systems.
7. How to confirm that digital communication systems are operational and ready to receive incoming files.
8. How to pre-flight incoming files in accordance with company guidelines.
9. How to confirm and save received files in accordance with company guidelines.
10. How to complete records of files received in accordance with company guidelines.

---

## EVIDENCE GUIDE

*For assessment purposes:*

### (1) Critical Aspects of Evidence

Candidates have to prove that they can carry out **all** of the elements, meeting **all** the performance criteria, range and underpinning knowledge **on more than one occasion**. This evidence must come from a real work environment.

### (2) Methods of Assessment

Assessors should gather a range of evidence that is valid, sufficient, current and authentic.

Evidence may be collected in a variety of ways including:

- Observation
- Written/oral questioning
- Written evidence
- Witness testimony
- Professional discussion
- Examination of end product

Questioning techniques should not require language, literacy or numeracy skills beyond those required in this unit of competency.

### (3) Context of Assessment

This unit may be assessed on the job, off the job or a combination of both. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by a candidate working alone or as part of a team. The assessment environment should not disadvantage the candidate.

The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

Simulation **should not be used**, except in exceptional circumstances where natural work evidence is unlikely to occur.

## U78902

## Create digital images using scanning techniques

Unit Descriptor:

This unit describes the knowledge, skills and attitudes required to convert analogue material into digital form. It covers all aspects of scanning, including detailed intervention where automatic settings do not give the required result.

**ELEMENT****PERFORMANCE CRITERIA**

*To be competent you must achieve the following:*

- |    |                                 |     |  |
|----|---------------------------------|-----|--|
| 1. | Select scanning approach        | 1.1 | Make and assessment of the suitability of the material for scanning.                                       |
|    |                                 | 1.2 | Make an assessment of the scanner operations necessary to produce the required output.                     |
|    |                                 | 1.3 | Check available scanners to confirm they produce the quality of output to meet customer requirements.      |
|    |                                 | 1.4 | Select suitable scanning equipment for the material to be scanned and the output required.                 |
| 2. | Prepare equipment and materials | 2.1 | Carry out low-resolution scanning necessary to establish the required software values.                     |
|    |                                 | 2.2 | Apply the required software values for the material to be scanned and the output required.                 |
|    |                                 | 2.3 | Select and correctly use tools and equipment in accordance with <b>company guidelines</b> and legislation. |
|    |                                 | 2.4 | Clean selected scanner and materials according to manufacturers' and <b>company guidelines</b> .           |
|    |                                 | 2.5 | Handle the material to be scanned in accordance with safety and health and <b>company guidelines</b> .     |

- 2.6 Load the material to be scanned according to manufacturers' instructions.
3. Produce and save scanned images
  - 3.1 Produce **scanned images** according to the required image profiles and customer requirements.
  - 3.2 Produce **scanned images** which are free of **unwanted effects**.
  - 3.3 Assess **scanned images** against customer requirements and workplace standards.
  - 3.4 Detect problems with the **scanned images** and identify the probable causes.
  - 3.5 Maintain confidentiality of customer material.
  - 3.6 Save **scanned image** data files in the required **format**.



**RANGE STATEMENT**

*All range statements must be assessed:*

**1. Company guidelines:**

- Legislation including health and safety
- Codes of practice
- Standard operating procedures

**2. Scanned images:**

- Illustrations, photographs, charts, diagrams and art work (tear sheet)
- Artwork, for example, decorative borders and ornaments
- Text

**3. Unwanted effects:**

- Physical defects — fingerprints, dust damage and scratches
- Newton's rings
- Moiré patterning from screened originals
- Pixelization
- Posterization
- Halo effects

**4. Format:**

- TIFF (Tag Image File Format)
- JPEG (Joint Photographic Expert Group)
- EPS (Encapsulation Postscript)
- BMP (Bitmap)
- GIF (Graphics Interchange Format)
- PNG (Portable Network Graphics)

**UNDERPINNING KNOWLEDGE AND SKILLS**

*You need to know and understand:*

1. How to make an accurate assessment of the suitability of the materials for scanning and what scanner operations are necessary to produce the required output.
2. How to check that the scanners available will produce the quality of output to meet customer requirements.
3. How to select suitable scanning equipment for the material to be scanned and the output required.
4. How to carry out any low-resolution scanning necessary to establish the required software values.
5. How to select and apply the required software values for the material to be scanned and the output required.
6. How to select tools and equipment in accordance with company guidelines and legislation.
7. How to clean selected scanner and materials according to organizational procedures and manufacturers' guidelines.
8. How to handle material to be scanned in accordance with safety and health guidelines.
9. How to load material to be scanned with regard to alignment and positioning.
10. How to produce scanned images that meet job requirements and required image profiles.
11. How to produce images that are free of unwanted effects.
12. How to assess scanned images against customer requirements and workplace standards.
13. How to identify and correct problems which affect the quality of the scanned image, for example, physical defects, Newton's rings, moiré patterning, pixelization, posterization and halo effects.
14. Why it is important to maintain the confidentiality of customer material.
15. How to save scanned image data files in the required format.

---

**EVIDENCE GUIDE**

*For assessment purposes:*

**(1) Critical Aspects of Evidence**

Candidates have to prove that they can carry out **all** of the elements, meeting **all** the performance criteria, range and underpinning knowledge **on more than one occasion**. This evidence must come from a real work environment.

**(2) Methods of Assessment**

Assessors should gather a range of evidence that is valid, sufficient, current and authentic.

Evidence may be collected in a variety of ways including:

- Observation
- Written/oral questioning
- Written evidence
- Witness testimony
- Professional discussion
- Examination of end product

Questioning techniques should not require language, literacy or numeracy skills beyond those required in this unit of competency.

**(3) Context of Assessment**

This unit may be assessed on the job, off the job or a combination of both. Where assessment occurs off the job, that is, the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by a candidate working alone or as part of a team. The assessment environment should not disadvantage the candidate.

The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

Simulation **should not be used**, except in exceptional circumstances where natural work evidence is unlikely to occur.

## U79002

## Plan and produce edited images

Unit Descriptor:

This unit describes the knowledge, skills and attitudes required to edit digital images. It covers the process of retrieving, editing, converting and archiving production output.

**ELEMENT****PERFORMANCE CRITERIA**

*To be competent you must achieve the following:*

- |                                   |   |
|-----------------------------------|---|
| 1. Decide on the imaging approach | 1.1 Confirm that elements of the job specifications are available according to organizational procedures.   |
|                                   | 1.2 Select hardware and <b>software</b> to match the editing requirements.  |
|                                   | 1.3 Check the <b>elements</b> to be combined in the editing process for compatibility and make a decision on how to treat elements that are not compatible. |
| 2. Produce edited images          | 2.1 Import the required image <b>elements</b> into the editing software.  |
|                                   | 2.2 Produce <b>edited</b> images to suit the requirements of the job and meet job specifications.   |
|                                   | 2.4 Check the content and quality of the <b>edited</b> images against customer requirements and organizational standards.                                   |
|                                   | 2.5 Take prompt action to make customer amendments.   |
|                                   | 2.6 Maintain confidentiality of customer material.  |
|                                   | 2.7 Save <b>edited</b> image data files in the required and appropriate format following organizational procedures.   |

**RANGE STATEMENT**

*All range statements must be assessed:*

**1. Software:**

- Word processing, photo-editing, drawing, page make-up
- Scanning, colour management, electronic imposition
- Portable document format (PDF) creation
- RIP, pre-flighting, files transfer, for example, e-mail, the internet, ISDN

**2. Elements:**

- Illustrations
- Digital
- Ornaments

**3. Edited:**

- Physical size
- File size
- Content
- Colour
- Sharpness
- Brightness (exposure)
- Contrast
- Colour space - RGB, CMYK and greyscale
- Output resolution

**UNDERPINNING KNOWLEDGE AND SKILLS**

*You need to know and understand:*

1. How to confirm that all elements of the job are available, for example, photos (digital or hard copy).
2. Which hardware and software is most suitable for the editing to be carried out.
3. How to check the compatibility of the elements to be combined in the editing process.
4. How to treat any elements that are not compatible.
5. How to import the required image into the editing software.
6. How to edit images to suit the requirements of the job in terms of physical size, file size, content, colour, sharpness, brightness, contrast, colour space, output resolution and colour value.
7. How to save edited image data files in the required and appropriate format according to company procedures.
8. How to action customers' amendments.
9. What are the requirements for ensuring a secure means of archiving digital and conventional prints.
10. What are the company procedures for communicating with customers.
11. How to operate image editing equipment and software.

## EVIDENCE GUIDE

*For assessment purposes:*

### (1) Critical Aspects of Evidence

Candidates have to prove that they can carry out **all** of the elements, meeting **all** the performance criteria, range and underpinning knowledge **on more than one occasion**. This evidence must come from a real work environment.

### (2) Methods of Assessment

Assessors should gather a range of evidence that is valid, sufficient, current and authentic.

Evidence may be collected in a variety of ways including:

- Observation
- Written/oral questioning
- Written evidence
- Witness testimony
- Professional discussion
- Examination of end product

Questioning techniques should not require language, literacy or numeracy skills beyond those required in this unit of competency.

### (3) Context of Assessment

This unit may be assessed on the job, off the job or a combination of both. Where assessment occurs off the job, that is, the candidate is not in productive work, an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by a candidate working alone or as part of a team. The assessment environment should not disadvantage the candidate.

The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

Simulation **may be used** within the work environment where natural work evidence is unlikely to occur.

**U79102****Create digital artwork for print**

Unit Descriptor:

This unit describes the knowledge, skills and attitudes required to create digital artwork and prepare the layout of documents, including images and text. Knowledge and skills to proofread and problem-solve are also required.

**ELEMENT****PERFORMANCE CRITERIA**

*To be competent you must achieve the following:*

- |   |   |
|---|---|
| 1. Prepare layout of documents for print    | 1.1 Obtain and check the job specifications according to organizational procedures.   |
|   | 1.2 Agree on the number of colours to be used in print job in line with the job specifications.   |
|   | 1.3 Identify, locate and retrieve data, text and graphics required for the job.   |
|   | 1.4 Select or create an appropriate template for the style of document according to company procedures.                                   |
|   | 1.5 Confirm the page size, orientation, margins, columns, headers and footers to produce a balanced presentation throughout the document. |
|   | 1.6 Select typefaces appropriate to the style of document and customer specifications.  |
|   | 1.7 Save templates and originals to preserve their integrity and comply with organizational requirements.                                 |
| 2. Set text to typographical specifications | 2.1 Use <b>input devices and online sources</b> to import and capture image files to meet the job requirements.                           |
|   | 2.2 Retain the required text formatting when importing original text files.   |
|   | 2.3 Use automated checking software to eliminate spelling and other errors.   |



- 2.4 Check the document against the job requirements and the typographical specification.
    - 2.5 Create digital artwork according to **approved techniques**.
    - 2.6 Format text to the job requirements.
    - 2.7 Select printable colours and apply to the text.
  3. Import and use images in digital artwork
    - 3.1 Use **input devices** to import and capture image files.
    - 3.2 Choose an appropriate **file format**, image resolution which is suitable for the printing method to be used to print the document.
    - 3.3 Resize images to fit available space on the page.
    - 3.4 Rotate, crop and overlay digital artwork to create images suitable for the purpose and customer's requirements.
4. Proof and correct digital artwork for print
  - 4.1 Output and check **proof** for suitability.
  - 4.2 Review the document for possible faults before submission.
  - 4.3 Submit the **proof** for review according to printing industry standards.
  - 4.4 Amend the existing file according to the alterations marked on the **proof**.
  - 4.5 Save intermediate and final files to preserve their integrity and comply with organizational requirements.
  - 4.6 Obtain authorization before releasing the work for print.

## RANGE STATEMENT

*All range statements must be assessed:*

### 1. Input devices:

- External storage devices
- Peripheral equipment (scanner, camera)
- Online transfer, for example, cloud storage, e-mail, internet, File Transfer Protocol (FTP)

### 2. File formats:

- TIFF (Tag Image File Format)
- JPEG (Joint Photographic Expert Group)
- EPS (Encapsulation Postscript)
- BMP (Bitmap)
- GIF (Graphics Interchange Format)
- PNG (Portable Network Graphics)

### 3. Proof:

- Low resolution - laser output, inkjet
- High resolution - chromalin
- Digital proofing - hard and soft copy

### 4. Approved techniques:

- Bleeding
- Safety margins
- Colour space - CMYK (Cyan, magenta, yellow and black)
- 300 DPI print resolution

**UNDERPINNING KNOWLEDGE AND SKILLS**

*You need to know and understand:*

1. How to obtain and check job specifications.
2. How to decide on the number of colours that will be used in the print job.
3. How to identify, locate and retrieve data, text and graphics required for the job.
4. How to select and create a template that is appropriate for the style of document.
5. How to confirm page size, orientation, margins, columns, headers and footers to produce a balanced presentation throughout the document.
6. How to select typefaces appropriate for the style of document.
7. How to use input devices to import and capture image files to meet the job requirements.
8. How to import and capture image files from online sources.
9. How to retain required text formatting when importing original text files.
10. How to check documents to eliminate spelling and other errors, ensure layout is correct and that correct typefaces have been used.
11. How to align and justify text and use effects to bold, italic, underline, indent and align.
12. How to select and apply printable colours to text.
13. How to select a file format and image resolution which is suitable for the printing method to be used to print a document.
14. How to resize images to fit the available space on a page.
15. How to output and check a proof for suitability.
16. How to save templates and originals to preserve their integrity and comply with the organization's requirements.
17. What are the organizational arrangements and requirements for the safety, security and storage of customers' work.
18. What checks must be carried out to ensure the artwork is suitable for proofing.
19. What are the types of proofreaders' marks and their meanings.

20. How to review documents for possible faults with images such as low resolution, poor colour, sizing or text wrapping problems before submission.
21. How to amend existing files in line with alterations marked on the page, for example, data, text and image.
22. How to save intermediate and final files to preserve their integrity.
23. How to obtain authorization before releasing the work for print.

## EVIDENCE GUIDE

*For assessment purposes:*

### (1) Critical Aspects of Evidence

Candidates have to prove that they can carry out **all** of the elements, meeting **all** the performance criteria, range and underpinning knowledge **on more than one occasion**. This evidence must come from a real work environment.

### (2) Methods of Assessment

Assessors should gather a range of evidence that is valid, sufficient, current and authentic.

Evidence may be collected in a variety of ways including:

- Observation
- Written/oral questioning
- Written evidence
- Witness testimony
- Professional discussion
- Examination of end product

Questioning techniques should not require language, literacy or numeracy skills beyond those required in this unit of competency.

### (3) Context of Assessment

This unit may be assessed on the job, off the job or a combination of both. Where assessment occurs off the job, that is, the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by a candidate working alone or as part of a team. The assessment environment should not disadvantage the candidate.

The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

Simulation **may be used** where natural work evidence is unlikely to occur.

## U79202

## Output digital image carriers for print

Unit Descriptor:

This unit describes the knowledge, skills and attitudes required to produce image carriers for printing, utilizing digital system technology.

**ELEMENT****PERFORMANCE CRITERIA**

*To be competent you must achieve the following:*

- |                                      |   |
|--------------------------------------|---|
| 1. Impose images electronically      | 1.1 Obtain the job specifications according to company procedures.  |
|                                      | 1.2 Select the appropriate <b>imposition scheme</b> according to job specifications.                        |
|                                      | 1.3 Retrieve or create the imposition to ensure it meets the requirements of the imposition scheme.         |
|                                      | 1.4 Identify and correct data, system and software problems that will affect the production of impositions. |
| 2. Prepare images for processing     | 2.1 Decompress and save job files according to company procedures.  |
|                                      | 2.2 Check job files to confirm compatibility with the imaging <b>software</b> to be used.                   |
|                                      | 2.3 Set the required output <b>parameters</b> to meet the job specification.                                |
|                                      | 2.4 Load the required <b>image carrier</b> into the <b>output device</b> .                                  |
|                                      | 2.5 Check the <b>output device</b> to ensure it is calibrated and prepared for operation.                   |
| 3. Produce and process image carrier | 3.1 Send data to the output device.   |
|                                      | 3.2 Process the <b>image carrier</b> after imaging as required.   |

- 3.3 Check output to ensure that it meets the job requirements for quality and specification.
- 3.4 Store the finished output according to company guidelines.
- 3.5 Keep records for **quality assurance** and administrative purposes according to company procedures.
- 3.6 Archive digital files in accordance with company procedures.

## RANGE STATEMENT

*All range statements must be assessed:*

### 1. Imposition scheme:

- Quantity required
- Working size of the job
- Paper size
- Printing machine sizes and the number available
- The type of printing machine to be used
- Colour fall (where appropriate)
- Method of finishing

### 2. Software:

- Word processing
- Photo-editing or drawing
- Page make-up
- Scanning
- Colour management
- Electronic imposition
- Portable Document Format (PDF) creation
- Raster Image Process (RIP)
- Pre-flighting
- Files transfer, for example, e-mail, the internet, ISDN

### 3. Parameters:

- Separations settings
- Screen ruling and dot type
- Resolution
- Screen angle
- Orientation
- Position on the image carrier
- Register or other marks
- Right/wrong reading
- Emulsion up/down

### 4. Image carriers:

- Plates for lithographic printing
- File masters for digital printing (large and small formats)



**5. Output device:**

- Continuous Data Protection (CPD)
- Image setter (in-line and off-line)
- Digital printing equipment, for example, format print, proofing devices

**6. Stored:**

- Hardcopy
- Electronically

**7. Quality Assurance:**

- Arrangements for dealing with non-conforming products
- Arrangements for internally auditing the quality system and procedures
- Calibration and machine maintenance

**UNDERPINNING KNOWLEDGE AND SKILLS**

*You need to know and understand:*

1. How to obtain job specifications.
2. What factors should be considered when selecting an appropriate imposition scheme.
3. How to match an imposition template to the imposition scheme requirements.
4. How to identify and correct data systems and software problems that affect the production of impositions.
5. How to decompress and save job files according to company procedures.
6. How to check job files to confirm compatibility with the imaging software to be used.
7. How to set the required output parameters to meet job specifications.
8. How to load the required image carrier into the output device.
9. How to check the output device to ensure it is calibrated and prepared for operation.
10. How to send data to the output device.
11. How to process the image carrier after imaging.
12. What to check to ensure that the output meets the job requirements for quality and specifications.
13. How to store the finished output according to company guidelines.
14. What records should be kept for quality assurance and administrative purposes, according to company procedures.
15. How to archive digital files in accordance with company procedures.

## EVIDENCE GUIDE

*For assessment purposes:*

### (1) Critical Aspects of Evidence

Candidates have to prove that they can carry out **all** of the elements, meeting **all** the performance criteria, range and underpinning knowledge **on more than one occasion**. This evidence must come from a real work environment.

### (2) Methods of Assessment

Assessors should gather a range of evidence that is valid, sufficient, current and authentic.

Evidence may be collected in a variety of ways including:

- Observation
- Written/oral questioning
- Written evidence
- Witness testimony
- Professional discussion
- Examination of end product

Questioning techniques should not require language, literacy or numeracy skills beyond those required in this unit of competency.

### (3) Context of Assessment

This unit may be assessed on the job, off the job or a combination of both. Where assessment occurs off the job, that is, the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by a candidate working alone or as part of a team. The assessment environment should not disadvantage the candidate.

The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

Simulation **may be used** in a realistic workplace environment.

## U79302

## Make lithographic printing plates

Unit Descriptor:

This unit describes the knowledge, skills and attitudes required to make lithographic printing plates and store them for reuse.

**ELEMENT****PERFORMANCE CRITERIA**

*To be competent you must achieve the following:*

- |   |  |
|---|--|
| 1. Identify and obtain required materials for printing plates | 1.1 Identify and obtain the required <b>materials</b> for platemaking according to the job specifications.   |
|   | 1.2 Identify and obtain the required digital files, film and <b>materials</b> for exposing the plate to meet the job specifications.   |
| 2. Produce lithographic printing plates                       | 2.1 Check the imaging and exposure and prepare any on-line processing <b>equipment</b> for operation.  |
|   | 2.2 Load the plate into the imaging and exposure <b>equipment</b> in accordance with the manufacturer's instructions.  |
|   | 2.3 Commence the imaging and exposure of the plate in accordance with company guidelines.  |
| 3. Develop lithographic printing plates                       | 3.1 Develop the plate on completion of imaging and exposure to meet job specifications.  |
|   | 3.2 Check the plate for correct exposure and completeness of image, and confirm that it is free from damage in accordance with the manufacturer's instructions and company procedures. |
| 4. Clean up   | 4.1 Clear the work area and dispose of, <b>reuse or recycle materials</b> in accordance with legislation and standard operating procedures.  |

- 4.2 Clean, check, maintain and store plant, tools and **equipment** in accordance with manufacturers' requirements and standard operating procedures.
- 4.3 Comply with the procedures for completing work and notify relevant persons that work has been completed.

**RANGE STATEMENT**

*All range statements must be assessed:*

**1. Materials:**

- Plates, for example, aluminium, polyester, paper, film
- Chemicals, for example, activator, stabilisers, gum arabic, developer

**2. Equipment:**

- Image setter (direct imaging)
- Plate burner
- Film processor

**3. Re-used or recycled:**

- Solids
- Liquids

**UNDERPINNING KNOWLEDGE AND SKILLS**

*You need to know and understand:*

1. What are the required type, quantity and quality of materials available to meet the job specifications.
2. How to expose the plates according to job specifications.
3. What are the required files and materials for exposing the plate.
4. How to check imaging and exposure.
5. How to make online processing equipment ready for operation.
6. What are the manufacturers' and company requirements for loading the plate into the imaging and exposure equipment.
7. What are the company's guidelines for imaging and exposing plates.
8. What are the development processes for plates after completion of imaging and exposure.
9. How to check plates for completeness and correct exposure and confirm that they are free from damage.
10. What are the required type, quantity and quality of materials available to meet the job specifications.
11. How to expose the plates according to job specifications.
12. What are the required files and materials for exposing the plate.
13. How to check imaging and exposure.
14. How to make online processing equipment ready for operation.
15. What are the manufacturer's and company's requirements for loading the plate into the imaging and exposure equipment.
16. What are the company's guidelines for imaging and exposing plates.
17. What are the development processes for plates after completion of imaging and exposure.
18. How to check plates for completeness and correct exposure and confirm that they are free from damage.

## EVIDENCE GUIDE

*For assessment purposes:*

### (1) Critical Aspects of Evidence

Candidates have to prove that they can carry out **all** of the elements, meeting **all** the performance criteria, range and underpinning knowledge **on more than one occasion**. This evidence must come from a real work environment.

### (2) Methods of Assessment

Assessors should gather a range of evidence that is valid, sufficient, current and authentic.

Evidence may be collected in a variety of ways including:

- Observation
- Written/oral questioning
- Written evidence
- Witness testimony
- Professional discussion
- Examination of end product

Questioning techniques should not require language, literacy or numeracy skills beyond those required in this unit of competency.

### (3) Context of Assessment

This unit may be assessed on the job, off the job or a combination of both. Where assessment occurs off the job, that is, the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by a candidate working alone or as part of a team. The assessment environment should not disadvantage the candidate.

The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

Simulation **may be used** in a realistic workplace situation.



**U79402****Prepare and load sheet-fed and roll-fed substrates**

Unit Descriptor:

This unit describes the knowledge, skills and attitudes required to prepare and load sheet-fed and roll-fed substrates in a printing environment. It includes knowledge of stacking and storage.

**ELEMENT****PERFORMANCE CRITERIA**

*To be competent you must achieve the following:*

- |    |   |     |   |
|----|---|-----|---|
| 1. | Prepare sheet fed and roll fed substrates | 1.1 | Protect substrates for print from physical damage, deterioration and store to minimize the effects of humidity and temperature changes according to <b>company procedures</b> . |
|    |   | 1.2 | Identify substrates for print according to their type, intended use and job requirements (for example, for job or stock).   |
|    |   | 1.3 | Use pallet moving equipment in accordance with manufacturer's and <b>organizational guidelines</b> .  |
| 2. | Stack and load sheet-fed substrates       | 2.1 | Check and identify sheet <b>substrates</b> in accordance with job specifications.   |
|    |   | 2.2 | Unwrap sheet <b>substrates</b> using <b>tools</b> and equipment in accordance with <b>organizational guidelines</b> .   |
|    |   | 2.3 | Aerate sheet <b>substrates</b> to eliminate related feeding problems.   |
|    |   | 2.4 | Stack sheet <b>substrates</b> into the machine feeder ensuring an even pile is maintained.  |
|    |   | 2.5 | Protect printed stacks from damage and deterioration according to operational procedures.   |

3. Load roll-fed substrates
  - 3.1 Check and identify roll **substrates** in accordance with the job specifications.
  - 3.2 Unwrap roll **substrates** using **tools** and equipment in accordance with company guidelines.
  - 3.3 Inspect roll **substrates** for defects to eliminate related feeding problems.
  - 3.4 Load roll **substrates** into the machine feeder.
  - 3.5 Protect printed stacks or rolls from damage and deterioration according to operational procedures.
  
4. Clean up
  - 4.1 Clear work area and dispose of, **reuse or recycle materials**, in accordance with legislation and standard operating procedure.
  - 4.2 Clean, check, maintain and store plant, tools and equipment in accordance with manufacturers' requirements and standard operating procedure.
  - 4.3 Apply work completion procedures and notify relevant personnel that work is finished.

**RANGE STATEMENT**

*All range statements must be assessed:*

**1. Company procedures:**

- Avoiding damage to the materials or surrounding objects
- Security of materials
- Ease of access for further work

**2. Organizational guidelines:**

- Handling equipment
- Manual handling techniques
- Personal protective equipment
- Health and safety, for example, method of transportation, handling, storing

**3. Substrates:**

- Paper
- Board
- Plastic
- Clear film
- Linen
- Book cloth
- Foil

**4. Tools:**

- Knife
- Wire cutter

**UNDERPINNING KNOWLEDGE AND SKILLS**

*You need to know and understand:*

1. What are the different types of substrates.
2. How to protect substrates for print from physical damage and deterioration.
3. How to store substrates in an environment that will minimize the effects of changes to humidity and temperature.
4. How to identify substrates for print in respect to their type and intended use.
5. How to use pallet jack moving equipment in accordance with manufacturer's and company guidelines.
6. What tools and equipment to use when unwrapping substrates.
7. Why sheet-fed substrates need to be aerated before use.
8. How to stack the substrate into the machine feeder to ensure an even pile is maintained.
9. How to protect printed stacks and rolls from damage or deterioration.
10. How to load roll substrates into the machine feeder.
11. How to inspect roll substrates to eliminate related feeding problems.

## EVIDENCE GUIDE

*For assessment purposes:*

### (1) Critical Aspects of Evidence

Candidates have to prove that they can carry out **all** of the elements, meeting **all** the performance criteria, range and underpinning knowledge **on more than one occasion**. This evidence must come from a real work environment.

### (2) Methods of Assessment

Assessors should gather a range of evidence that is valid, sufficient, current and authentic.

Evidence may be collected in a variety of ways including:

- Observation
- Written/oral questioning
- Written evidence
- Witness testimony
- Professional discussion

Questioning techniques should not require language, literacy or numeracy skills beyond those required in this unit of competency.

### (3) Context of Assessment

This unit may be assessed on the job, off the job or a combination of both. Where assessment occurs off the job, that is, the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by a candidate working alone or as part of a team. The assessment environment should not disadvantage the candidate.

The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

Simulation **may be used** where natural work evidence is unlikely to occur.

## U79502

## Operate digital printing machines

Unit Descriptor:

This unit describes the knowledge, skills and attitudes required to operate digital printing machines in a production environment for internal and external customers.

**ELEMENT****PERFORMANCE CRITERIA**

*To be competent you must achieve the following:*

- |                                       |  |
|---------------------------------------|--|
| 1. Prepare machines for production    | <ul style="list-style-type: none"> <li>1.1 Obtain and check job specifications according to <b>company procedures</b>.</li> <li>1.2 Confirm required type, quantity and quality of <b>materials</b> as available to meet the job specifications.</li> <li>1.3 Accurately identify printing and post-printing requirements of the job.</li> <li>1.4 Check machine and work areas to ensure they are safe and ready for production.</li> <li>1.5 Download or print digital job file(s) to the digital printing machine so that the print output meets the job specifications.</li> <li>1.6 Adjust machine and print download settings to achieve the required job specifications and quality standards.</li> </ul> |
| 2. Operate a digital printing machine | <ul style="list-style-type: none"> <li>2.1 Operate digital printing machine at the required speed and in accordance with the manufacturer's and <b>company procedures</b>.</li> <li>2.2 Maintain the supply of <b>materials</b> and consumables throughout the run.</li> <li>2.3 Check quality standards and job specifications to confirm they are met.</li> </ul>  |

- 2.4 Use diagnostic techniques to correct faults in equipment using recommended tools and equipment according to **company procedures**.
- 2.5 Record production and **quality assurance** details according to company requirements.

**RANGE STATEMENT**

*All range statements must be assessed:*

**1. Company procedures:**

- Legislation
- Standard operating procedures
- Health and safety procedures

**2. Materials:**

- Substrates, for example, paper, board, plastic
- Inks, for example, toners, UV based, water
- Coatings, for example, gloss, matt, satin

**3. Quality assurance:**

- Control of suppliers, receiving goods in, detailed operating procedures
- A system for tracing production and controlling documentation
- Arrangements for dealing with non-conforming products
- Arrangements for internally auditing the quality system and procedures
- Calibration and machine maintenance



**UNDERPINNING KNOWLEDGE AND SKILLS**

*You need to know and understand:*

1. How to obtain and check job specifications.
2. What are the required type, quantity and quality of materials available to meet the job specifications.
3. How to identify the printing and post-printing requirements of the job.
4. When the machine and work area are safe and ready for production.
5. How to download and print digital job file(s) to the digital printing machine.
6. How to make adjustments to the machine settings and print profile settings to achieve the required job.
7. How to identify and use the required materials and consumables for the specific printing machine.
8. How to maintain the supply of materials and consumables throughout the run.
9. What are the quality standards for the job specifications and how to check that they are met
10. What are the company procedures for recording production and quality assurance details.
11. What is the company procedure for the disposal of waste.
12. What are the codes of practice and legislation governing the disposal of printing waste and other material.
13. How to clean, check, maintain and store plant, tools and equipment.
14. How to complete work and notify personnel.
15. What are appropriate diagnostic techniques for each piece equipment.
16. How to use appropriate diagnostic tools and equipment.
17. What are the occupational safety and health procedures, codes of practice, standard operating procedures and legislative requirements guiding diagnostics and repair.
18. Who are the persons to consult for diagnostics and repair or for referrals.
19. What are the procedures for commissioning and decommissioning equipment for diagnostics and repair.

## EVIDENCE GUIDE

*For assessment purposes:*

### (1) Critical Aspects of Evidence

Candidates have to prove that they can carry out **all** of the elements, meeting **all** the performance criteria, range and underpinning knowledge **on more than one occasion**. This evidence must come from a real work environment.

### (2) Methods of Assessment

Assessors should gather a range of evidence that is valid, sufficient, current and authentic.

Evidence may be collected in a variety of ways including:

- Observation
- Written/oral questioning
- Written evidence
- Witness testimony
- Professional discussion
- Examination of end product

Questioning techniques should not require language, literacy or numeracy skills beyond those required in this unit of competency.

### (3) Context of Assessment

This unit may be assessed on the job, off the job or a combination of both. Where assessment occurs off the job, that is, the candidate is not in productive work, an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by a candidate working alone or as part of a team. The assessment environment should not disadvantage the candidate.

The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

Simulation **should not be used**, except in exceptional circumstances where natural work evidence is unlikely to occur.

**Assessment methods**

The methods which can be used to determine competence in performance and underpinning knowledge.

**Assessors**

The Assessor's role is determine whether evidence presented by a candidate for assessment within the programme, meets the required standard of competence in the relevant unit or element. The Assessor needs to be competent to assess to national standards in the area under assessment.

**Approved Centre**

Organization/Centre approved by the TVET Council to offer full National Vocational Qualifications.

**Case Studies**

In situations where it is difficult for workplace assessment to take place, case studies can offer the candidate an opportunity to demonstrate potential competence.

A case study is a description of an actual or imaginary situation presented in some detail. The way the case study is presented will vary depending upon the qualification, but the most usual methods are written, taped or filmed.

The main advantage of a case study is the amount of evidence of underpinning knowledge they can generate and the specific nature of the evidence produced.

**Competence**

In the context of vocational qualifications, competence means: the ability to carry out prescribed activities to nationally pre-determined standards in an occupation. The definition embraces cognitive, practical and behavioural skills, underpinning knowledge and understanding and the ability to react appropriately in contingency situations.

**Element**

An element is a description of an activity which a person should be able to do. It is a description of an action, behaviour or outcome which a person should be able to demonstrate.

**Explanation of NVQ Levels**

NVQs cover five (5) levels of competence, from entry level staff at Level 1 through to senior management at Level 5.

**Level**

**2**

**Glossary of Terms**

**Level 1 - Entry Level**

Recognizes competence in a range of varied work activities performed in a variety of contexts. Most work activities are simple and routine. Collaboration with others through work groups or teams may often be a requirement. Substantial supervision is required especially during the early months evolving into more autonomy with time.

**Level 2 - Skilled Occupations:**

Recognizes competence in a broad range of diverse work activities performed in a variety of contexts. Some of these may be complex and non-routine and involve some responsibility and autonomy. Collaboration with others through work groups or teams and guidance of others may be required.

**Level 3 - Technician and Supervisory Occupations:**

Recognizes competence in a broad range of complex, technical or professional work activities performed in a wide variety of contexts, with a substantial degree of personal responsibility and autonomy. Responsibility for the work of others and the allocation of resources are often a requirement. The individual is capable of self-directed application, exhibits problem solving, planning, designing and supervisory capabilities.

**Level 4 - Technical Specialist and Middle Management Occupations:**

Recognizes competence involving the application of a range of fundamental principles and complex techniques across a wide and unpredictable variety of contexts. Requires very substantial personal autonomy and often significant responsibility for the work of others, the allocation of resources, as well as personal accountability for analysis, diagnosis, design, planning, execution and evaluation.

**Level 5 - Chartered, Professional and Senior Management Occupations:**

Recognizes the ability to exercise personal professional responsibility for the design, development or improvement of a product, process, system or service. Recognizes technical and management competencies at the highest level and includes those who have occupied positions of the highest responsibility and made outstanding contribution to the promotion and practice of their occupation.

**External Verifier**

The External Verifier is trained and appointed by the TVET Council and is competent to approve and ensure an approved Centre's quality of provision.

**Internal Verifier**

The Internal Verifier acts in a supporting role for Assessors to ensure consistent quality of assessment and competence. They need to be competent to assess to national standards in the area under assessment.

## **NVQ**

National Vocational Qualifications (NVQs) are work-based qualifications that assess an individual's competence in a work situation and certify that the individual can perform the work role to the standards expected in employment.

NVQs are based on national occupational standards of competence drawn up by standards-setting bodies known as Industry Lead Bodies. The standards describe the level and breadth of performance that is expected of persons working in the industry or sector which the NVQ covers.

## **NVQ Coordinator**

Within each approved Centre offering NVQs, there is a centre contact who has overall responsibility for the operation and administration of the NVQ system.

## **Observation**

Observation of the candidate carrying out his/her job in the workplace is the assessment method recommended in the vast majority of units and elements. Observation of staff carrying out their duties is something that most supervisors and managers do every day.

## **Performance criteria**

Performance criteria indicate what is required for the successful achievement of an element. They are descriptions of what you would expect to see in competent performance.

## **Product of Work**

This could be items produced during the normal course of work, which can be used for evidence purposes such as reports, menus, promotional literature, training plans, etc.

## **Questioning**

Questioning is one of the most appropriate ways to collect evidence to assess a candidate's underpinning knowledge and understanding.

Questioning can also be used to assess a candidate in those areas of work listed in the range which cannot be assessed by observation. Guidance on when this assessment method can be used is given in the assessment guidance of each individual element.

As an assessment method, questioning ensures you have all of the evidence about a candidate's performance. It also allows you to clarify situations.

## Level

# 2

## Glossary of Terms

### Range statements

The range puts the element of competence into context. A range statement is a description of the range of situations to which an element and its performance criteria is intended to apply.

Range statements are prescriptive therefore each category must be assessed.

### Role-plays

Role-plays are simulations where the candidate is asked to act out a situation in the way he/she considers “real” people would behave. By using role-play situations to assess a candidate you are able to collect evidence and make a judgment about how the candidate is most likely to perform. This may be necessary if the range specified includes a situation in which the candidate is unlikely to find himself/herself in the normal course of their work, or where the candidate needs to develop competence, before being judged competently, for example, in a disciplinary situation,

### Simulations

Where possible, assessment should always be carried out by observing **natural performance** in the workplace. **Simulated performance**, however, can be used where specified to collect evidence about an aspect of the candidate’s work which occurs infrequently or is potentially hazardous; for example, dealing with fires.

By designing the simulated situation, briefing the candidate and observing his/her performance, you will be able to elicit evidence which will help you judge how a candidate is **most likely** to perform in real life.

### Supplementary evidence

Supplementary evidence can be used to confirm and support performance evidence. Types of supplementary evidence include witness testimonies, reports, journals or diaries, records of activities, personal statements, simulation (see note in glossary).

### Underpinning knowledge

Underpinning knowledge indicates what knowledge is essential for a person to possess in order to successfully achieve an element and prove total competence.

### Units

A unit of competence describes one or more activities which form a significant part of an individual’s work. Units are accredited separately but in combination can make up a vocational qualification. There are three categories of units:

**Mandatory units** - are core to a qualification and must to be completed.

**Optional units** - candidates must choose the required number of individual units, specified in the qualification structure, to achieve the qualification.

**Additional units** - are units which the candidate can undertake but are not a requirement to achieve a qualification

### **Work-based projects**

Work-based projects are a useful way for you to collect evidence to support any decision you make about a candidate's performance. They are particularly appropriate in determining the level of a candidate's underpinning knowledge and understanding where it may be insufficient to rely only on questioning observation.

A project often involves the identification of a solution to a specific problem identified by you and/or the candidate (such as looking at ways to redress a recent drop in sales), or may be a structured programme of work built around a central situation or idea (such as the introduction of a new job rostering process).