



Australian Government

ICPKNW319 Apply knowledge and processes of converting paper-based products

Release: 1

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Modification History

Release	Comments
Release 1	This version first released with ICP Printing and Graphic Arts Training Package Version 1.0.

Application

This unit describes the skills and knowledge required to work in or deal with the sacks and bags area or other similar paper converting areas of the printing industry.

It applies to individuals working in or dealing with the paper converting area of the printing industry, such as sack and bag making and cartons, who have the ability to work as part of a team.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Holistic knowledge

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Apply knowledge of printing industry	1.1 Printing industry terminology and vocabulary are used correctly 1.2 New technology and new work processes are monitored and implemented when required 1.3 Trends within printing industry are monitored, on an ongoing basis, to inform personal work practices
2. Apply knowledge of government Acts and regulations	2.1 Basic principles and obligations involved in copyright, work health and safety (WHS), environmental protection, access and equity, and industrial awards are applied

ELEMENT	PERFORMANCE CRITERIA
3. Apply knowledge of pre-press processes	3.1 Principles behind pre-press functions such as image production (typesetting, scanning, graphic arts camera), image combining (manual and electronic), image output (film, plates, direct to press) and digital workflow are identified and used in production process where applicable 3.2 Different types of images (line, half-tone) and their uses are investigated 3.3 Qualities of main material types of paper, ink, adhesive, wax and plastic films and extrusion are investigated and used to inform product development choices 3.4 Different output settings (screen rulings, angles, shapes) and how they affect final product are identified 3.5 Different types of output required for different printing processes are identified 3.6 Different output devices (film setters, plate setters, analogue proofs, digital proofs) are identified
4. Apply knowledge of printing processes	4.1 Basic principles of printing processes (lithography, relief, flexography, gravure, pad printing, screen printing, digital and electronic printing) are used to inform production processes 4.2 Types of jobs and products for which each process is appropriate are identified and used to inform production decisions 4.3 Capabilities and limitations of each process are investigated and used to inform production decisions
5. Apply knowledge of converting and finishing processes	5.1 Basic characteristics of converting and finishing processes (guillotining, flat-bed and rotary cutting, collating, folding, adhesive, mechanical and thermal fastening) are identified and used to inform production processes 5.2 Types of jobs and products for which each process is appropriate are identified and used to inform production processes
6. Apply detailed knowledge of paper and printing processes	6.1 Relationship of different paper sizes is used to inform production processes 6.2 Different weights, callipers, bulk, density and opacity of paper and how they affect pre-press, printing and finishing operations and end uses are investigated and used to inform production processes 6.3 Paper grain and how it affects pre-press, printing and finishing operations is used to inform production processes 6.4 Moisture content, porosity and ink absorbency and how they

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	affect pre-press, printing and finishing operations are investigated and used to inform production processes 6.5 Gloss, smoothness and surface strength and how they affect pre-press, printing and finishing operations are investigated and used to inform production processes 6.6 Permanence, durability and acidity and alkalinity of paper and how they affect pre-press, printing and finishing operations and end uses are investigated and used to inform production processes 6.7 Bursting strength, folding endurance, tensile strength and tearing resistance and how they affect printing and finishing operations and end uses are investigated and used to inform production processes 6.8 Paper behaviour and how it affects different production processes is investigated and used to inform production decisions 6.9 Effect of combining paper with adhesive, wax and plastic films on production processes is investigated and used to inform production decisions
7. Apply detailed knowledge of paper grades and colours	7.1 Paper types and grades and end uses for each type and grade are used to inform production processes 7.2 International paper sizes (IPS) system, its basis and relationship of different paper sizes are used to inform production processes where appropriate 7.3 Differences between wood pulp, rag and recycled papers and appropriate end uses are identified and used to inform production processes 7.4 Colour matching processes are used to inform production processes 7.5 Effect of different paper colours on printing operations is used to inform production processes
8. Apply detailed knowledge of paper handling and storage procedures	8.1 Ideal storage conditions for different types and grades of paper are investigated and used to inform production procedures 8.2 Advantages and disadvantages of different packing and delivery systems are investigated and used to inform production procedures
9. Apply basic knowledge of costs of production	9.1 Main cost elements (fixed, capital, variable) in production are investigated and applied in workplace 9.2 Information required to accurately cost jobs and means of collecting it (manual and computerised) are identified and applied

ELEMENT	PERFORMANCE CRITERIA
	in workplace 9.3 Ways of minimising use of materials without affecting quality of output are identified and applied in workplace 9.4 Ways of maximising efficiency of capital and human resources are investigated and applied in workplace
10. Apply knowledge of production management requirements and systems	10.1 Types of information that need to be exchanged between different stages of production to facilitate production efficiency are identified and applied in workplace 10.2 Systems (manual and computerised) that can be used to exchange information are identified and applied in workplace 10.3 Basic principles of efficient production management are applied in workplace

Foundation Skills

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

Skill	Performance Criteria	Description
Reading	1.3	Researches and comprehends information in a range of text types from various sources
Oral Communication	1.1	Participates effectively in spoken interactions using correct technical and enterprise specific vocabulary
Numeracy	6.1, 6.2, 9.1-9.4	Interprets and analyses a range of mathematical information that is used in familiar and routine tasks
Navigate the world of work	1.2, 1.3, 2.1, 7.2, 8.1, 8.2	- Maintains knowledge of the printing industry required for current role - Complies with standards and legislative requirements - Follows organisational policies and procedures relevant to own role
Get the work done	1.2, 1.3, 2.1, 2.2, 3.1-3.6, 4.1-4.3, 5.1, 5.2, 6.1-6.9, 7.1-7.5, 8.1, 8.2, 9.1-9.4, 10.1-10.3	- Determines priorities and sequences the steps involved in clearly defined, familiar tasks and identifies and assembles the resources required - Makes decisions by considering benefits, costs, risks and feasibility from a broad range of perspectives - Recognises the potential of new approaches to enhance work practices

		• Responds to predictable problems and implements standard or logical solutions related to the role in the immediate work environment • Demonstrates a sophisticated understanding of principles, concepts, language and practices associated with the digital world
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Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
ICPKNW319 Apply knowledge and processes of converting paper-based products	ICPKN319C Apply knowledge and processes of converting paper-based products	Updated to meet Standards for Training Packages	Equivalent unit

Links

Companion Volume implementation guides are found in VETNet -

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

Assessment Requirements for ICPKNW319 Apply knowledge and processes of converting paper-based products

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Performance Evidence

Evidence of the ability to:

- use appropriate vocabulary and terminology in written and oral communications with tradespeople, colleagues, management or clients
- apply relevant legislative and workplace requirements when completing tasks
- keep up to date with trends in the printing industry
- identify image types, output settings, output requirements and output devices for different jobs
- make product development and production choices by considering qualities of main material types, job and product requirements
- apply the correct process for a converting or finishing job
- use a colour management system to determine colour requirements for a print job
- research and use appropriate substrates for different print jobs
- accurately plan, cost and document a print job.

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

Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must:

- describe legislative and enterprise requirements that affect work practice
- describe the relationship of different paper sizes
- explain paper grain and how it affects pre-press, printing and finishing operations
- describe ideal storage conditions for different types and grades of paper
- describe the basic characteristics of the following converting and finishing processes:
 - guillotining
 - flat-bed and rotary cutting
 - collating

- folding
- adhesive
- mechanical and thermal fastening
- describe the basic principles of the following printing processes:
 - lithography
 - relief
 - flexography
 - gravure
 - pad printing
 - screen printing
 - digital and electronic printing
- describe the range of substrates used for each printing process
- describe the basic principles behind the following pre-press functions:
 - image production (typesetting, scanning, graphic arts camera)
 - image combining (manual and electronic)
 - image output (film, plates, direct to press)
- explain the main cost elements in pre-press production
- explain the basic principles of efficient production management.

Assessment Conditions

Gather evidence to demonstrate consistent performance in conditions that are safe and replicate the workplace. Noise levels, production flow, interruptions and time variances must be typical of those experienced in the printing industry and include access to:

- special purpose tools, equipment and materials
- industry software packages.

Assessors must satisfy NVR/AQTF assessor requirements.

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