

Title	Demonstrate knowledge of and process vector and raster graphics files for sign production		
Level	4	Credits	30

Purpose	<p>This unit standard is for people working in the signmaking industry.</p> <p>People credited with this unit standard are able to: demonstrate knowledge of graphic files; and process vector and raster graphic files for sign production.</p>
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Classification	Sign Making > Sign Making - Core
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Available grade	Achieved
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Guidance Information

- 1 Legislation, regulations and/or industry standards relevant to this unit standard include but are not limited to the:
Health and Safety at Work Act 2015.

Any new, amended or replacement Acts, regulations, standards, codes of practice, guidelines, or authority requirements or conditions affecting this unit standard will take precedence for assessment purposes, pending review of this unit standard.

- 2 File extension acronyms used:
- AI* Adobe illustrator file
 - BMP* Bitmap
 - CDL* Signlab vector graphics file
 - CDR* Corel vector graphics file
 - CPT* Corel photo paint file
 - DXF* Drawing exchange file
 - EPS* Encapsulated postscript vector graphics file
 - FS* Flexisign file
 - GIF* Graphics interchange format
 - HPGL* HP graphics language plotter file
 - JPEG* Joint photographic expert group
 - PDF* Portable document format
 - PNG* Portable network graphic
 - PSD* Photoshop document
 - RAW* Camera raw image file
 - SVG* Scaleable vector graphics file
 - TIFF* Tagged image file format

3 Definitions

CNC – refers to Computer Numeric Control systems.

Raster file – dot matrix pixel data structure representing an image.

Service information – refers to the recommended use and maintenance of machinery, tools and equipment by the manufacturer or supplier.

Workplace procedures – refer to organisation policies and procedures that are documented in memo, electronic, or manual format and available in the workplace, and are consistent with manufacturer's requirements. They may include but are not limited to – standard operating procedures, site specific procedures, site safety procedures, equipment operating procedures, quality assurance procedures, product quality specifications, references, approved codes of practice, housekeeping standards, environmental considerations, on-site briefings, supervisor's instructions, and procedures to comply with legislative and local body requirements relevant to the signmaking sector.

4 Range

Candidates must provide evidence of a minimum of five jobs.

Outputs may include but are not limited to – CNC cut, printed material, vinyl cuts, digital output.

5 Assessment information

Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with applicable service information, workplace procedures and legislative requirements.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of graphic files for sign production.

Performance criteria

1.1 Explain differences between vector and raster graphic types and compare advantages and disadvantages.

1.2 Identify and explain job criteria indicating suitability of vector graphics for sign production.

Range includes – source file manipulation/creation, output device requirements.

1.3 Identify and explain job criteria indicating suitability of raster graphics for sign production.

Range includes – source file manipulation/creation, output device requirements.

1.4 Identify and explain job criteria indicating suitability of combined vector and raster graphics for sign production.

Range source file manipulation/creation, output device requirements.

1.5 Explain the use of techniques and software selection considerations for vector and raster graphic origination and manipulation.

Range techniques – digital photography, scanning, vectorising, rasterising;
software may include but is not limited to – adobe illustrator, acrobat photoshop, adobe acrobat, corel draw, corel photopaint, proprietary sign software such as sign lab and flexisign.

1.6 Identify file types and graphic type from their file extension acronym. Explain file type, attributes and limitations.

Range graphic type – vector, raster, combined vector/raster;
file types – AI, BMP, CDL, CDR, CPT, DXF, EPS, FS, GIF, HPGL, JPEG, JPEG2000, PDF, PNG, PSD, RAW, SVG, TIFF.

1.7 Explain the handling of text elements by graphic software, and when to convert text to paths.

Outcome 2

Process vector graphic files for sign production.

Performance criteria

2.1 Build a new vector file from scratch using vector software tools.

Range shape tools, pen tools, grouping, combining and welding tools, node editing tools, distortion and effect tools, layers, swatches, strokes and fills, gradients and blends.

2.2 Convert a raster file to a vector file.

Range vector software tracing tools, manual digitisation methods.

Outcome 3

Process raster graphic files for sign production.

Performance criteria

3.1 Explain raster image resolution quality factors to determine sign production image requirements.

Range factors – viewing distance, file size to resolution relationship, limitations of increasing resolution, lossy compression methods, effects of high compression ratios on image quality.

3.2 Edit a photographic raster image to meet production requirements.

Range cropping, changing resolution, manipulating contrast levels and saturation, sharpening and blurring tools.

Planned review date	31 December 2027
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	20 April 2017	31 December 2025
Review	2	29 September 2022	N/A

Consent and Moderation Requirements (CMR) reference	0013
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact the Hanga-Aro-Rau Manufacturing, Engineering and Logistics Workforce Development Council qualifications@hangaarorau.nz if you wish to suggest changes to the content of this unit standard.