

40138 Produce a drawing set for structural components for construction using 2D computer-aided design software

Kaupae Level	4
Whiwhinga Credit	5
Whāinga Purpose	<p>This skill standard recognises the skills required to produce a drawing set for structural components using 2D computer-aided design (CAD) software for a construction context.</p> <p>This skill standard aligns with the detailing pathway for the construction industry and may be relevant for steel, precast concrete, and timber structure detailing qualifications.</p>

Hua o te ako me Paearu aromatawai | Learning outcomes and assessment criteria

Hua o te ako Learning outcomes	Paearu aromatawai Assessment criteria
1. Use 2D CAD-practices to produce a drawing of a structure and its components.	a. The drawing is dimensionally and accurately produced and represents a structure and its components.
	b. Efficient use of CAD software interface, tools and functionalities is demonstrated.
2. Use 2D CAD practices to produce a drawing set of a structure and its components.	a. The drawing set produced complies with industry standard.
	b. An annotated, dimensionally accurate and functionally dimensioned drawing set is produced.

Pārongo aromatawai me te taumata paearu | Assessment information and grade criteria

Assessment specifications:

CAD software is used to produce a drawing set that accurately represents a structure and its components to industry standard.

Industry standard refers to accepted conventions described by standards noted in the Resources section of this skill standard.

2D drawing produced using CAD defines a structure, component or connection using 3rd angle orthographic projection.

A set includes a title page and index, plan, elevation, and side elevation views arranged in 3rd angle projection, detail views and 3D view of the object.

A structure refers to a system of connected parts designed to bear loads, resist forces, and provide stability and support for buildings or other engineered infrastructure.

Ngā momo whiwhinga | Grades available

Achieved.

Ihirangi waitohu | Indicative content

CAD system

- CAD software types.
- Interface, tools and functionalities.

Drawing types and organisation

- Drawing types – general arrangements (mark plans), assembly, part & sequencing of drawing sets, fabrication, construction.
- Steel drawings.
- Concrete drawings.
- Drawing set organisation and compilation.

Drawing practices

- Title blocks.
- Scale and dimensions.
- Legibility.
- Layer organisation.
- Symbols.
- Detailed annotation sections and cross referencing, view titles, dimensions, scales, notes, welds.
- Dimensioning standards.
- Line styles.
- Grid and alignment.
- Revision control
- Hatching/shading.
- Layers and colours.

Templates and printing

- Line & text formatting from templates.
- Publishing and printing.

Rauemi | Resources

Refer to the Structural Detailing Programme Guidance document available from qualifications@waihangaarau.nz.

[AS/NZS 1100.501 Technical Drawing Part 501: Structural engineering drawing.](#)

[ISO 128-2:2022 Technical product documentation \(TPD\) — General principles of representation — Part 2: Basic conventions for lines.](#)

[ISO 128-3:2022 Technical product documentation \(TPD\) — General principles of representation — Part 3: Views, sections and cuts.](#)

Pārongo Whakaū Kounga | Quality assurance information

Ngā rōpū whakatau-paerewa Standard Setting Body	Waihanga Ara Rau Construction and Infrastructure Workforce Development Council
Whakaritenga Rārangi Paetae Aromatawai DASS classification	Planning and Construction > Construction > Core Planning and Construction
Ko te tohutoro ki ngā Whakaritenga i te Whakamanatanga me te Whakaōritenga CMR	0048

Hātepe Process	Putanga Version	Rā whakaputa Review Date	Rā whakamutunga mō te aromatawai Last date for assessment
Rēhitatanga Registration	1	26 September 2024	N/A
Kōrero whakakapinga Replacement information	N/A		
Rā arotake Planned review date	31 December 2029		

Please contact Waihanga Ara Rau Construction and Infrastructure Workforce Development Council at qualifications@waihangaararau.nz to suggest changes to the content of this skill standard.