

Title	Manually produce and interpret engineering sketches under supervision		
Level	2	Credits	4

Purpose	People credited with this unit standard are able to, under supervision, manually produce and interpret engineering sketches, and confirm the interpretation and preparation of engineering sketches.
----------------	--

Classification	Mechanical Engineering > Engineering Drawing and Design
-----------------------	---

Available grade	Achieved
------------------------	----------

Explanatory notes

1 References

Sketches must be in accordance with the following Standards, or international equivalent:

AS 1100.101:1992, *Technical drawing – General principles*;

AS 1100.201:1992, *Technical drawing – Mechanical engineering drawing*.

An abridgement of these standards, suitable for the purposes of this unit standard, is SAA/SNZ HB1: 1994, *Technical Drawing for students*. Available from Standards New Zealand.

2 Definitions

Aided – a means of producing two-dimensional engineering sketches with the aid of appropriate guiding instruments (such as ruler, set-square, and compass, but excluding computer software), and requiring the precise calculations of angles and dimensions.

Freehand – a means of producing two-dimensional engineering sketches without the aid of guiding instruments, and involving the estimation of angles and dimensions.

Interpretation – the explanation in practical terms of features shown graphically in the sketch. Typically this would involve re-sketching the object in an alternative projection.

Pictorial – either isometric, general oblique, or single point perspectives.

Orthographic – the projection of an object in which the line of sight is perpendicular to the plane of projection and is a means of representing a three-dimensional object in two dimensions.

3 Assessment information

- This unit standard covers production and interpretation of engineering sketches used within the engineering industries. Sketching and interpretation at this level includes sketching in orthographic and pictorial projections and may include but are not limited to hydraulic cylinders, mounting brackets, guards, jigs, duct transitions, pipe joints, bolted flanged joints, turned components, and assemblies of typically not more than five major parts.

- Sketches presented as evidence must show a mix of sketching techniques. This will typically involve a minimum of three freehand and two aided sketches. The sketches must also contain a minimum of four of the following shapes: rectangle; round (circle); cylinder; cone; ellipse; pyramid.

Outcomes and evidence requirements

Outcome 1

Manually produce engineering sketches under supervision.

Evidence requirements

- 1.1 Objects to be sketched are identified and measured to meet job requirements.
- 1.2 Sketches produced communicate job requirements.
Range unambiguous, in proportion, clear.
- 1.3 Dimensions and related notes meet job requirements.

Outcome 2

Interpret engineering sketches under supervision.

Range includes – orthographic from pictorial, pictorial from orthographic.

Evidence requirements

- 2.1 Sketches are identified and interpreted to meet job requirements.
- 2.2 Baseline and datum points are identified to meet job requirements.
- 2.3 Detailed dimensions and related notes are interpreted to meet job requirements.

Outcome 3

Confirm the interpretation and preparation of engineering sketches under supervision.

Evidence requirements

- 3.1 Sketches are checked to ensure compliance with job requirements.
Range orientation, proportion, dimensions, related notes.
- 3.2 Any non-conformance is corrected to meet job requirements.

Planned review date	31 December 2016
----------------------------	------------------

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	31 October 1994	31 December 2011
Revision	2	14 April 1997	31 December 2011
Revision	3	5 January 1999	31 December 2011
Revision	4	23 May 2001	31 December 2011
Review	5	26 July 2004	31 December 2011
Rollover and Revision	6	20 March 2009	31 December 2016
Review	7	17 November 2011	N/A

Consent and Moderation Requirements (CMR) reference

0013

This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Please note

Providers must be granted consent to assess against standards (accredited) by NZQA, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be granted consent to assess against standards by NZQA before they can register credits from assessment against unit standards.

Providers and Industry Training Organisations, which have been granted consent and which are assessing against unit standards must engage with the moderation system that applies to those standards.

Requirements for consent to assess and an outline of the moderation system that applies to this standard are outlined in the Consent and Moderation Requirements (CMR). The CMR also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

Comments on this unit standard

Please contact Competenz qualifications@competenz.org.nz if you wish to suggest changes to the content of this unit standard.