

Title	Manually produce dimensioned sketches of site measures to communicate fabrication requirements		
Level	3	Credits	5

Purpose	People credited with this unit standard are able to: manually produce freehand detailed dimensioned sketches of site measures to communicate all fabrication job requirements, manually produce aided dimensioned sketches of site measures to communicate all fabrication job requirements, and verify produced sketches to be accurate for the purpose of manufacturing site measure components.
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Classification	Mechanical Engineering > Heating, Ventilating, and Air Conditioning
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Available grade	Achieved
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Guidance Information

- 1 Legislation and standards relevant to this unit standard:
Health and Safety at Work Act 2015.
- 2 References
SAA/SNZ HB1:1995 *Technical drawing for students*. Available from Standards New Zealand.
Boundy, A. W. 2011. *Engineering Drawing*, 8th ed., McGraw-Hill Inc. Australia.
- 3 Definitions
Aided refers to the production of engineering sketches with the aid of appropriate guiding instruments (such as rule, set-square, and compass, but excluding computer software), and requiring the precise representation of angles and dimensions.
Freehand refers to the production of engineering sketches without the aid of guiding instruments, and involving the estimation of angles and dimensions.
Orthographic refers to a projection representing a three-dimensional object in two dimensions with a number of plane views, each of which includes two of the object's three dimensions of length, breadth and depth.
Pictorial refers to isometric and oblique projections.
Site measures refers to the skill required to custom measure a component of a mechanical building services or air conditioning system so that the component can be fabricated successfully off site and can be successfully integrated into the layout of existing installed duct, pipework and plant on a jobsite.

- 4 Range
All drawings to be unambiguous, in proportion, and clear; using plan view, elevation view, sectional view and three dimensional views to convey all required information to produce the object drawn.
- 5 Assessment information
a. Evidence given must be within the context of mechanical building services.
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Outcomes and performance criteria

Outcome 1

Manually produce freehand detailed dimensioned sketches of site measures to communicate all fabrication job requirements.

Range must include at least one of each standard parallel offset, square to round, staggered offset.

Performance criteria

- 1.1 Freehand detailed dimensioned orthographic sketches are drawn from site measures.
- 1.2 Freehand detailed dimensioned pictorial site measure sketches are drawn from site measures.

Outcome 2

Manually produce aided dimensioned sketches of site measures to communicate all fabrication job requirements.

Range must include two of each standard parallel offset, square to round, staggered offset.

Performance criteria

- 2.1 Aided orthographic engineering sketches are drawn from site measures.
- 2.2 Aided pictorial engineering site measures sketches are drawn from site measures.

Outcome 3

Verify produced sketches to be accurate for the purpose of manufacturing site measure components.

Range sketches produced from outcome 1 and 2.

Performance criteria

- 3.1 Dimensions positioning are verified in relation to shape of site measure.

- 3.2 Included detail is verified to enable manufacturing of site measure components.
- 3.3 Non-conformance is corrected before sketches are finalised for manufacturing of site measure components.
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Planned review date	31 December 2026
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	26 August 2021	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 Competenz qualifications@competenz.org.nz if you wish to suggest changes to the content of this unit standard.