

Title	Install farm plant and equipment		
Level	4	Credits	10

Purpose	<p>This standard is for people engaged in the installation of farm plant and equipment, which could include milking systems, effluent systems, irrigation and water systems.</p> <p>People credited with this unit standard are able to plan and prepare for farm plant and equipment installation, install farm plant and equipment, test installation and complete documentation</p>
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Classification	Mechanical Engineering > Dairy Systems Engineering
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Available grade	Achieved
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Explanatory notes

1 References

The Health (Drinking Water) Amendment Act 2007

Farm Dairy Effluent (FDE) Design Code of Practice. Available at

<http://www.dairynz.co.nz/publications/environment/farm-dairy-effluent-fde-design-code-of-practice/>

Farm Dairy Effluent (FDE) Design Standards. Available at

<http://www.dairynz.co.nz/publications/environment/farm-dairy-effluent-fde-design-standards/>.

Guidelines for the design of safe external rotary milking platforms, Issued by New Zealand Milking & Pumping Trade Association Inc. Available at

http://www.nzmqta.co.nz/anytime/pdf_files/anytime5493f5162cdfbp314.pdf

New Zealand Food Safety Authority, *NZCP1: Code of Practice for the Design and Operation of Farm Dairies version 5*. Available at

<http://www.foodsafety.govt.nz/elibrary/industry/dairy-nzcp1-design-code-of-practice/amdt-2.pdf>

Ministry of Health 2008, *Drinking-water Standards for New Zealand 2005*, revised 2008. Ministry of Health. ISBN 978-0-478-31809-8 (print) ISBN 978-0-478-318-4 (online)

National Environmental Standard (NES) for Sources of Human Drinking Water.

Available at <http://mfe.govt.nz/laws/standards/drinking-water-source-standard.html>

Worksafe New Zealand. *Guidelines for Guarding Principles and General Safety for Machinery*. Wellington: Department of Labour, 1995.

2 Definitions

Ancillary services – services required for the proper operation of the machines such as electricity supply, plumbing, water source, water storage, refrigeration, drainage, and lighting.

Enterprise procedures – the documented procedures used by the organisation carrying out the work and applicable to the tasks being carried out. They may include but are not limited to – standard operating procedures, site safety procedures, equipment operating procedures, standards, guidelines, regulations, codes of practice, quality assurance procedures, housekeeping standards, charging of time and materials, management of drawings and documentation, procedures for the handling and disposal of materials and waste, procedures to comply with legislative and local body requirements.

Farm plant and equipment – the machinery and components required to provide a functioning dairy shed system, milking system, effluent system, irrigation system, or water reticulation system.

Installation - new installations or upgrades.

Job specifications – instructions relevant to the safe completion of a specific task, such as technical specifications, assembly instructions, drawings, parts lists, material specifications, standards, codes of practice, test and commissioning procedures, and verbal instructions.

3 Assessment information

- a All activities must comply with relevant legislative and/or regulatory requirements and standards.
- b All activities must demonstrate safe working practices.
- c Any foundations and footings required are expected to have been completed prior to commencement of machine and equipment installation.
- e Connections to electrical and sanitary plumbing services are not covered by this unit standard.

4 Range

- a Typical farm plant and equipment such as vacuum pumps, compressors, drive units, blowers, motor units, pulsation units, plant washing equipment, milk transport systems, plate heat exchangers, milk filters, pipe work systems & fittings; pneumatic equipment, pumps, pressure systems & equipment, controllers, filters, valves tanks, mixers, separators, dosing systems, irrigators & pipe works & fittings, rotating screens, teat spray systems, pressure & vacuum controls rotary glands, water heaters, chilling units, cleaning systems, washdown systems, irrigator systems.
- b Evidence of three different installations is required.

Outcomes and evidence requirements

Outcome 1

Plan and prepare for farm plant and equipment installation.

Evidence requirements

- 1.1 Job specification is analysed and all stages of the work planned in accordance with enterprise procedures.
- 1.2 Suitability of site for installation is confirmed using appropriate measuring equipment.

- Range suitability may include but is not limited to: space, dimensions, footings.
- 1.3 Alterations, where required, are arranged in accordance with enterprise procedures.
- Range alterations may include but not limited to - beds and frameworks, fitting of spacers, relocation of brackets, alignment of holes.
- 1.4 Ancillary services are arranged to meet installation requirements.
- 1.5 Plant and equipment are inspected and compared with inventory and job specification, and discrepancies reported in accordance with enterprise procedures.
- 1.6 Plant and equipment are cleaned in accordance with job specifications and enterprise procedures.
- Range examples of cleaning methods may include but are not limited to – approved chemicals, steam, scraping, compressed air, power tools, grit blasting, high pressure water, heat.
- 1.7 Factors from the installation that may affect safety and the environment are identified and addressed.

Outcome 2

Install farm plant and equipment.

Evidence requirements

- 2.1 Components of plant and equipment are installed sequentially in final position and secured in accordance with job specifications and enterprise procedures.
- 2.2 Plant and equipment are positioned, levelled, aligned, coupled, and connected to ancillary services if required in accordance with job specifications and enterprise procedures.
- 2.3 Installations meet requirements of appropriate certification authorities where required such as local Territorial Authority and Fonterra Risk Management Programme (RMP).
- 2.4 Lubricants, if required, are applied in accordance with job specifications and enterprise procedures.
- 2.5 Debris is cleared and site is left clean and safe in accordance with enterprise procedures.

Outcome 3

Test installation and complete documentation.

Evidence requirements

- 3.1 Installation tests are carried out in accordance with job specifications, and adjustments made where necessary.
- 3.2 Installation documentation is completed in accordance with job specifications and enterprise procedures.

Planned review date	31 December 2020
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	15 October 2015	N/A

Consent and Moderation Requirements (CMR) reference	CMR 0013
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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.