



Australian Government

Department of Education, Employment and Workplace Relations

AHCIRG311A Install low volume irrigation components

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This Unit covers the process of installing low volume irrigation systems and defines the standard required to: organise resources for installation work; set out and prepare site; install irrigation components; complete installation work; and assist in commissioning irrigation systems.

Application of the Unit

This Unit applies to skilled workers in the irrigation servicing, food and fibre production and amenity horticulture industries, and is likely to be carried out under routine supervision within enterprise guidelines.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This Unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a Unit of Competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Organise resources for installation of a <i>low volume irrigation system</i>	1.1 Materials, tools, equipment and machinery are selected according to the irrigation system design requirements and enterprise work procedures 1.2 The construction site for the irrigation system and construction method is identified according to the site and irrigation system plans and enterprise work procedures 1.3 Parts and equipment delivered to site are checked according to system drawings and specifications 1.4 Pre-operational and safety checks are carried out on tools, equipment and machinery according to manufacturer specifications and enterprise work procedures 1.5 Occupational Health and Safety (OHS) hazards are identified, risks assessed, controls implemented and reported to the supervisor 1.6 Suitable safety and personal protective equipment (PPE) are selected, used and maintained 1.7 Water supply is checked to ensure that it is compatible with system specifications
2 Set out and prepare site	2.1 Measurement and marking out of irrigation lines are consistent with the plan 2.2 Trenches, where constructed, are at the specified depth without damage to services, facilities, features and established plants 2.3 Equipment operation and work practices conform to enterprise and legislative OHS requirements 2.4 Regulations and legislation relevant to the situation are observed 2.5 Work practices reflect sustainable horticulture principles and respond to local community requirements
3 Install <i>low volume irrigation components</i>	3.1 Plan is interpreted and, where applicable, contractors are supervised and work is monitored to conform to the plan 3.2 Components are assembled and connected according to the plan, and joints are completed and tested according to manufacturer specifications 3.3 Fittings and valves are fitted and adjusted to the requirements of the installation plan, and all joints are secured according to enterprise guidelines 3.4 A clean and safe work area is maintained while installation work is carried out 3.5 Tools appropriate to the task being undertaken are chosen and used according to guidelines and safe working practices are employed.
4 Complete installation	4.1 The system configuration and capacity matches the

- work
- installation plan
- 4.2 The site is restored and waste material is removed from the site and disposed of in an environmentally aware and safe manner according to enterprise work procedures
- 4.3 Tools, equipment and machinery are cleaned, maintained and stored according to enterprise work procedures
- 5 Assist in commissioning a low volume irrigation system
- 5.1 Pumping system is connected
- 5.2 Start-up sequence is in accordance with operations manual
- 5.3 System is flushed as required
- 5.4 Operating faults are identified and corrective actions taken according to the operations manual
- 5.5 Work outcomes are recorded or reported to the supervisor according to enterprise work procedures

Required Skills and Knowledge

This section describes the skills and knowledge required for this Unit.

Required skills include:

Ability to:

- identify hazards and implement safe work procedures
- organise resources for installation work
- set out and prepare site
- install low volume irrigation components
- complete installation work
- perform start up and commissioning tasks
- implement and follow relevant enterprise OHS and environmental policies and procedures
- use literacy skills to read, interpret and follow organisational policies and procedures, follow sequenced written instructions, record information collected accurately and legibly, and select and apply procedures for a range of tasks
- use oral communication skills/language competence to fulfil the job role as specified by the organisation, including questioning techniques, active listening, clarifying information and consulting with supervisors as required
- use numeracy skills to estimate, calculate and record routine workplace measures
- use interpersonal skills to work with and relate to people from a range of cultural, social and religious backgrounds and with a range of physical and mental abilities.

Required knowledge includes:

Knowledge of:

- methods and techniques of low volume irrigation
- components of a low volume irrigation system
- characteristics and operation of pipes, joints, valves, micro jets and drippers
- operation of pumps and water flow rates
- soil characteristics
- behaviour of water on varying terrain and soil types
- soil water retention testing techniques
- water quality and water filtration techniques
- calculations for installing irrigation systems
- environmental impacts of installing irrigation systems
- OHS legislation and enterprise OHS procedures.

Evidence Guide

<p>The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.</p>	
<p>Overview of assessment</p>	
<p>Critical aspects for assessment and evidence required to demonstrate competency in this Unit</p>	<p>The evidence required to demonstrate competency in this Unit must be relevant to workplace operations and satisfy holistically all of the requirements of the performance criteria and required skills and knowledge and include achievement of the following:</p> <ul style="list-style-type: none"> • organise resources for installation work • set out and prepare site • install irrigation components • complete installation work • assist in commissioning irrigation systems.
<p>Context of and specific resources for assessment</p>	<p>Competency requires the application of work practices under work conditions. Selection and use of resources for some worksites may differ due to the regional or enterprise circumstances.</p>

Range Statement

The range statement relates to the Unit of Competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

<i>Low volume irrigation systems</i> may include:	systems that operate under comparatively low volume and pressure including micro irrigation, pop-ups at less than 0.1 litres/second, and drippers.
<i>Low volume irrigation components</i> may include:	<ul style="list-style-type: none"> • pump (flow rate and head requirement) • filter system • pressure gauges • backflow preventer • pressure regulator valves • fertiliser injector • flowmeter • block valve • air and vacuum release valves • main and sub-main lines • flushing manifold • connectors • lateral lines or tapes • emitters • controllers.

Unit Sector(s)

Irrigation