



Australian Government

Department of Education, Employment and Workplace Relations

NWP233B Construct and install water distribution assets

Revision Number: 2

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Modification History

NWP233B Release 2: Layout adjusted. No changes to content.
NWP233B Release 1: Primary release.

Unit Descriptor

This unit of competency describes the outcomes required to construct and install water distribution assets.

Application of the Unit

This unit supports the attainment of skills and knowledge required for field and operational staff with responsibility for ensuring that water distribution assets are constructed and installed in a safe and timely manner.

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 required performance needed to demonstrate achievement of the element. Where <i>bold italicised</i> text is used, further information is detailed in the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Plan and prepare for construction and installation.	1.1 Determine work requirements for construction and installation of water distribution system pipes and assets from plans, specifications and instructions. 1.2 Perform site checks according to legislative and organisational requirements to prevent damage to other utilities. 1.3 Select and check equipment and tools to meet safety and work requirements of task and site. 1.4 Select, fit and use personal protective equipment.
2 Construct and install distribution assets, pipes and associated fittings.	2.1 Excavate and prepare trenches according to specifications and legislative and organisational requirements. 2.2 Lay bedding or foundation according to specifications. 2.3 Inspect pipes and fittings, and lay or join according to manufacturer guidelines and organisational requirements. 2.4 Install or place prefabricated components according to manufacturer guidelines and legislative and organisational requirements. 2.5 Backfill excavations according to specifications.
3 Confirm work quality.	3.1 Check constructed and installed distribution assets, pipes and fittings to ensure that specifications are met. 3.2 Check water quality testing results to ensure that organisational requirements are met.
4 Finalise work.	4.1 Check, maintain and store equipment, tools and materials according to manufacturer guidelines and organisational procedures. 4.2 Restore work site to meet environmental and organisational requirements. 4.3 Complete workplace records and as constructed drawings, and process as required.

Required Skills and Knowledge

This describes the essential skills and knowledge and their level, required for this unit.

Required skills:

- lay and join pipes
- install associated fittings and components
- identify and respond to operational problems
- interpret plans, instructions and standard operating procedures
- perform work-related calculations
- follow procedures and standards
- use safety and personal protective equipment
- use tools and machinery
- identify hazards
- give and receive instructions
- communicate with others
- use literacy skills in regard to verbal and written communication in the workplace
- work effectively as part of a team

Required knowledge:

- OHS procedures
- personal work site safety procedures
- risk factors and potential hazards of construction and installation processes
- electrical safety for disconnection and changing meters and fittings
- equipment operation, capacity and limitations
- effects of weather and conditions on operation of site or plant
- environmental aspects of construction and installation
- component parts
- shoring and levelling
- construction procedures
- conditions for connection to live water mains
- pipes and fittings
- disinfection procedures

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, the range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The candidate should demonstrate the ability to construct and install water distribution system assets by:

- planning work and preparing work site safely
- constructing and installing assets according to specifications and instructions
- checking quality of work and ensuring water quality standards
- clearing the work site
- completing documentation

Context of and specific resources for assessment

Access to the workplace and resources including:

- documentation that should normally be available in a water industry organisation
- relevant codes, standards and government regulations

Where applicable, physical resources should include equipment modified for people with disabilities.

Access must be provided to appropriate learning and assessment support when required.

Assessment processes and techniques must be culturally appropriate, and appropriate to the language and literacy capacity of the candidate and the work being performed.

Validity and sufficiency of evidence requires that:

- competency will need to be demonstrated over a period of time reflecting the scope of the role and the practical requirements of the workplace
- where the assessment is part of a structured learning experience the evidence collected must relate to a number of performances assessed at different points in time and separated by further learning and practice
- a decision of competence only taken at the point when the assessor has complete confidence in the person's competence over time and in various contexts
- all assessment that is part of a structured learning experience must include a combination of direct, indirect and supplementary evidence
- where assessment is for the purpose of recognition (RCC/RPL), the evidence provided will need to be authenticated and show that it represents competency

demonstrated over a period of time

- assessment can be through simulated project-based activity and must include evidence relating to each of the elements in this unit

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. Add any 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.

Work requirements may include:

- location and extent of job
- risk assessment recommendations
- involvement of subcontractors
- equipment specifications
- materials specifications
- utilities location procedures
- environmental protection requirements
- boundary protection, signage and traffic management

Water distribution system pipes and assets may include:

- water mains
- services
- valves
- meters
- pipes, including:
 - polyvinyl chloride (PVC)
 - polyethylene
 - mild steel cement lined
 - ductile iron cement lined
 - cast iron
 - copper
 - glass reinforced piping
- fittings, including:
 - jointing systems for pipe types, e.g. gibault
 - tapping bands
 - tension bands
 - solvent joins
 - compression ring joints
 - bolted flanges
 - cathodic protection
- structures, including:
 - meter pits
 - person access pits
 - regulators
 - erosion barriers

- Equipment and tools*** may include:
- head walls
 - thrust blocks
 - personal protective equipment
 - hand and power tools
 - lifting and winching equipment
 - mechanical excavation equipment
 - pneumatic and motorised equipment, including:
 - compressors
 - pneumatic spades and attachments
 - motorised cutting equipment
 - communication equipment
- Legislative and organisational requirements*** may include:
- relevant federal and state or territory legislation and regulations
 - codes of practice, associated standards and guidance material
 - documented organisational policies, manuals and induction programs
 - relevant community planning and development agreements, such as land care agreements

Unit Sector(s)

Not applicable.

Competency field

Collection and distribution.