



Australian Government

Department of Education, Employment and Workplace Relations

NWP250B Construct and install wastewater pipelines

Revision Number: 2

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Modification History

NWP250B Release 2: Layout adjusted. No changes to content.
NWP250B Release 1: Primary release.

Unit Descriptor

This unit of competency describes the outcomes required to construct and install wastewater collection assets.

Application of the Unit

This unit supports the attainment of skills and knowledge required for field staff with specific responsibility for ensuring that wastewater pipelines 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 construction and installation of collection pipelines.	1.1 Determine work requirements for construction and installation from plans, specifications and instructions. 1.2 Perform site check to prevent damage to other utilities according to legislative and organisational requirements. 1.3 Select and check equipment and tools required to meet safety requirements of task and site. 1.4 Identify potential risks to public and environment, and take appropriate steps to minimise and eliminate risks.
2 Construct and install collection pipelines.	2.1 Select, fit and use personal protective equipment. 2.2 Excavate and prepare trenches according to specifications and legislative and organisational requirements. 2.3 Lay bedding or foundation according to specifications. 2.4 Select and lay or join pipes and fittings to grade according to manufacturer guidelines and organisational requirements. 2.5 Backfill excavations according to specifications.
3 Review construction and installation of collection assets.	3.1 Check constructed or installed collection pipes and fittings to ensure specifications are met. 3.2 Check, maintain and store equipment, tools and materials according to manufacturer guidelines and organisational procedures. 3.3 Restore work site to meet environmental and organisational requirements. 3.4 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:

- install components specified for wastewater collection system, including requirements for protection
- construct appropriate assets
- install junctions and side lines
- identify and respond to operational problems
- use communication systems
- follow plans, instructions, standards and standard operating procedures
- perform work-related calculations
- use safety equipment and personal protective equipment
- use tools and machinery
- identify hazards
- give and receive instructions
- work effectively as part of a team
- use literacy skills in regard to verbal and written communication in the workplace
- communicate with customers and other employees

Required knowledge:

- OHS procedures
- personal work site safety
- risk factors and potential hazards of construction and installation processes
- equipment operation, capacity and limitations
- safe use of lasers
- use of automatic levels
- basic levelling techniques
- profiles and boning rods
- pipe laying techniques
- effects of weather and conditions on operation of site or plant
- environmental aspects of construction and installation
- component parts
- shoring and levelling
- construction and installation procedures and materials

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 wastewater collection system pipelines by:

- planning work and preparing work site safely
- constructing and installing pipes according to specifications and instructions
- checking quality of work
- clearing 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 should only be made 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

Questioning will be undertaken in a manner appropriate to the skill levels of the operator and cultural issues that may affect responses to the questions, and will reflect the requirements of the competency and the work being performed.

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
- material specifications
- utilities' location procedures
- environmental protection requirements
- boundary protection
- signage and traffic management

Equipment and tools may include:

- hand and power tools
- lifting and winching equipment
- mechanical excavation equipment
- levering equipment
- pneumatic and motorised equipment, including:
 - compressors
 - pneumatic spades and attachments
 - motorised cutting equipment
 - pipes and associated fittings
 - on- and off-road vehicles
 - portable pumps
 - pipe laying laser
 - rotating laser
- profiles
- automatic level
- communication equipment
- breathing apparatus
- gas detection equipment
- rescue equipment
- appropriate personal protective equipment
- relevant federal and state or territory legislation and regulations
- codes of practice, associated standards and guidance material
- documented organisational policies, manuals and induction programs

Legislative and organisational requirements may include:

Pipes may include:

- relevant community planning and development agreements, such as land care agreements
- vitrified clay
- reinforced concrete
- polyvinyl chloride (PVC)
- polyethylene
- cast iron
- ductile iron cement lined
- glass reinforced piping
- mild steel cement lined

Fittings may include:

- jointing systems for pipe types, e.g. gibault
- tension bands
- solvent cement joints
- compression ring joints
- bolted flanges
- cathodic protection
- electrofusion
- butt welding

Unit Sector(s)

Not applicable.

Competency field

Collection and distribution.