



Australian Government

UEGNSG330A Coat Metallic Pipelines

Release 1

UEGNSG330A Coat Metallic Pipelines

Modification History

This unit is a revised version of the UEG11 unit UEGNSG301A Coat gas pipelines

Unit Descriptor

Unit Descriptor

1) Scope:

1.1) Descriptor

This unit covers the inspection, testing and coating of steel pipelines in a utilities industry workplace in accordance with relevant legislation, code, regulations and procedures.

It encompasses the use of testing and application equipment; coatings used; coating defect assessment surveys; MSDS information and safe handling of chemicals/flammable liquids.

Application of the Unit

Application of the Unit 2)

This competency standard shall apply to any safe work site where steel pipelines are located, subject to all Workplace Health and Safety (WHS) / Occupational Health and safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an entry level AQF 2 competency for new entrants in the gas industry. It is suitable for employment-based programs under an approved contract of training.

Licensing/Regulatory Information

License to practice 3)

During Training:

Competency development activities are subject to regulations directly related to licensing, occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace Health and Safety / Occupational Health and safety (OHS), gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of persons who can operate certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) 4)

Competencies 4.1)

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A Apply Workplace Health and Safety regulations, codes and practices in the gas industry

UEGNSG005A Prepare to work in the gas industry

UEGNSG132A Carry out basic work activities in a gas industry work environment

Literacy and numeracy skills 4.2)

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills 5)

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT

PERFORMANCE CRITERIA

1 Prepare to coat metallic pipelines

- 1.1 WHS/OHS and environmental measures for the site are identified, obtained and understood.
- 1.2 Relevant requirements and established procedures for the work are provided and discussed with relevant persons to establish and confirm the work schedule
- 1.3 WHS/OHS, environmental and sustainable energy policies and procedures are received and

ELEMENT	PERFORMANCE CRITERIA
	confirmed
	1.4 Hazards are identified and reported to relevant persons to assess the risks and implement control measures according to established procedures
	1.5 Scope of responsibility under the relevant work permit and/or relevant notification is received and confirmed with relevant persons according to requirements and established procedures
	1.6 Equipment, plant, tools and personal protective equipment needed to coat metallic pipelines are identified, obtained and checked for operation and safety
	1.7 Appropriate persons are consulted to ensure the work is coordinated effectively with others involved.
	1.8 Materials, plans, diagrams, drawings and resources required for the job are confirmed and obtained in accordance with established procedures
	1.9 Relevant responsibilities associated with First Aid and other related work safety procedures for an incident at the worksite are checked and confirmed.
	1.10 Third party issues are referred to appropriate persons in accordance with established procedures.
	1.11 Site preparation , safety plan and the work schedule are confirmed in accordance with established procedures
2 Coat metallic pipelines	2.1 WHS/OHS risk control measures, schedule of work and standard operating procedures for carrying out the work are followed.
	2.2 Appropriate materials, tools, equipment and measuring devices are selected and used correctly and safely.
	2.3 Hazardous activities such as lifting, climbing, working in confined spaces, excavations,

ELEMENT	PERFORMANCE CRITERIA
	trenches, and use of power tools, techniques and practices are conducted safely in accordance with given instructions and to requirements.
2.3	Existing pipeline coatings are visually inspected to determine condition in accordance with established procedures
2.4	Pipeline coating is tested to determine its condition in accordance with requirements and established procedures
2.5	Pipeline is prepared for coating in accordance with established procedures
2.6	Pipeline is coated where required in accordance with established procedures
2.7	Work is carried out efficiently, to the required standard without waste of materials or damage to apparatus, circuits, the surrounding environment or services and using sustainable energy principles.
2.8	Hazard warnings and safety signs are recognised and hazards are assessed and OHS/WHs risks and incidents are reported to the immediate authorised persons for directions according to established procedures
2.9	Procedures for referring non-routine events to the immediate authorised persons for directions are followed.
2.10	Routine quality checks of the work are carried out undertaken in accordance with work instructions.
3 Complete work and relevant documentation	3.1 WHS/OHS risk control work completion measures and procedures are followed.
	3.2 Appropriate persons are notified of completion of the work according to established procedures.
	3.3 Work site is rehabilitated, cleaned up and made safe in accordance with established procedures

ELEMENT**PERFORMANCE CRITERIA**

- 3.4 Waste materials are disposed of safely and environmentally in accordance with procedures/policies.
- 3.5 Tools, equipment and any surplus resources and materials are cleaned, checked and securely stored
- 3.6 Work completion documentation is completed and provided to appropriate persons in accordance with established procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for the coating metallic pipelines.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

KS01-G330A Metallic pipeline coatings

Evidence shall show an understanding of inspecting, testing and coating of steel pipelines in a utilities industry workplace in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Pipeline coatings

- purpose,
- types,
 - petroleum based wraps
 - epoxy
 - paints
 - PE jackets and sleeves
 - coal tar enamel, include issues with old types that used asbestos
 - rock (protection) jacket
- applications
- properties and characteristics
- MSDS
 - Specific environmental and OHS requirements of coating substance
 - Safety issues of working in trenches and confined spaces

T2. Cathodic Protection

- overview
- faults and effects
 - stray electrical currents
 - damage to coatings

T3. Pipeline preparation/stripping

- techniques
- tools
- Pipeline coating
- techniques
- tools

REQUIRED SKILLS AND KNOWLEDGE

- application

T4. Testing pipeline coatings

- requirements
- procedures
- tools and equipment

T5. Pipeline coating defect assessment methods:

- Pipe to soil Off potential measurement
- Data logging
- CP surveys and audits
- Interference testing
- Interference from DC rail traction
- Drainage Bonds (DB)
- TRAD units
- Bond checks

T6. Pipeline coating irregularities, deviations or problems

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of the unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

8.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2) Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines UEG11'. Evidence shall also comprise:

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
 - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
 - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
 - Demonstrate an understanding of the required skills and knowledge as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
 - Demonstrate an appropriate level of skills enabling employment
 - Conduct work observing the relevant anti-discrimination legislation, regulations, policies and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below.
 - Coat metallic pipelines in accordance with relevant legislation, code, regulations and procedures as described in 9.) Range Statement and including:

Range of tools/equipment/materials/procedures/workplaces/other variables		
Group	The minimum number of	Item List

	items on which skill is to be demonstrated	
A. Equipment/ tools	At least 4	• Abrasive blasting equipment • Low voltage/high voltage "Holiday" detectors • Paint thickness coating gauges and meters • Pipe wrapping machines • Spray painting equipment • Abrasive blast comparators and standards • Densitometers • Heating torch
B. Procedures	All	• Visual inspection of pipeline coatings • Testing pipeline coatings • Safe handling procedures for a range of dangerous and toxic chemicals and compounds • OHS and environmental legislative requirements associated with the use, application and disposal of coating materials • Coating defect assessment and application methods
C, Unplanned events	At least one occasion	Respond to an unplanned event by drawing on essential knowledge and associated skills to

		provide appropriate solutions incorporated in the holistic assessment with the above listed items
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Context of and specific resources for assessment

8.3)

This unit contains Employability Skills

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- WHS/OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in coating gas pipelines.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the Key Competencies.

Method of assessment

8.4)

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified required Skills and Knowledge are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required skills and knowledge described in this unit.

Concurrent assessment and

8.5)

There are no recommended concurrent assessments with this

relationship with other units unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG132A	Carry out basic work activities in a utilities industry work environment
UEGNSG140A	Apply with environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
BSBFLM312B	Contribute to team effectiveness
BSBFLM303C	Contribute to effective workplace relationships

Range Statement

RANGE STATEMENT

9) This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

This Competency Standard Unit shall be demonstrated in relation to the coating of metallic pipelines in accordance with relevant legislation, code, regulations and procedures.

This will include the use of appropriate tools, equipment and materials to test the existing coating, assess the defects, and prepare and coat the pipework.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Testing and application equipment
- Coatings
- Coating defect assessment
- MSDS

Unit Sector(s)

Utilities Industry

Competency Field

Competency Field 11)

Utilities