

Unit of Competency CPCPMS3031

Fabricate and install steel pressure piping

Application

This unit specifies the skills and knowledge required to determine installation requirements and to fabricate up to DN50, install and test steel pressure piping.

It applies to pipe systems with operating pressures not exceeding 1750 kPa and 200°C.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Prerequisite Unit

CPCPCM2043 Carry out WHS requirements

Elements and Performance Criteria

1. Identify installation requirements.	<p>1.1 Access, read and determine steel pressure pipe installation requirements from job specifications, relevant Australian Standards, codes, manufacturer's specifications and jurisdictional requirements.</p> <p>1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.</p>
2. Prepare for work.	<p>2.1 Create a materials list and collect materials.</p> <p>2.2 Select and check serviceability of appropriate tools, equipment and personal protective equipment (PPE).</p>
3. Fabricate, install and test pipe system.	<p>3.1 Set out pipework configuration.</p> <p>3.2 Perform installation of fixings and supports to manufacturer requirements, job plans, specifications and workplace requirements.</p> <p>3.3 Fabricate and joint pipe system according to job plans, specifications and manufacturer requirements for mechanical type joints.</p> <p>3.4 Perform installation of pipe system in specified location without damage or distortion to pipework or surrounding environment or other services.</p> <p>3.5 Perform testing of pipe system.</p> <p>3.6 Complete documentation according to relevant regulatory requirements and or workplace requirements.</p>
4. Clean up.	<p>4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.</p> <p>4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure according to workplace procedures.</p>

Foundation skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPMS3031A Fabricate and install steel pressure piping.

Links

Companion Volume Implementation Guide:

<https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPMS3031 Fabricate and install steel pressure piping

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- applying pipe cutting and welding skills by using oxy-acetylene and arc welding equipment for piping up to DN50 and must include:
 - butt welding a pipe joint in DN40 piping in the fixed horizontal position
 - welding DN40 and 50 mild steel branch joints
 - constructing a DN80 header with DN20, 40 and 50 branch joints using the oxy-acetylene method
 - welding 50 mm and 80 mm flanges to mild steel pipe
 - welding blank ends into DN80 mild steel pipe
- fabricating, installing and testing a DN40 steel pipeline from a supply point to an outlet, incorporating two changes of direction with one position butt welded with oxy welding, plus an arc welded flange incorporating a branch for testing purposes
- testing completed task to ensure required pressure and the soundness of all joints within the system.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- the characteristics and the application of approved materials and components for the fabrication and installation of pressure piping
- processes, procedures and techniques of:
 - installation of steel pressure piping
 - calculating material quantities
- pressure, flow rates, temperature requirements and properties of conveyed materials including:
 - cutting and welding gases
 - mechanical joint systems and fittings with variable diameters up to DN100
 - steel pipes
 - threaded pipe fittings
 - weldable pipe fittings
- how to access relevant information, including codes and standards
- tools, materials and equipment used to fabricate and install steel pressure piping
- work health and safety (WHS) requirements to fabricate and install steel pressure piping.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

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