

Apprenticeship Standard for: Maritime Pipeworker

The following standard reflects employers' requirements for the skills, knowledge and behaviours expected from someone to be competent in the job role.

Occupational Profile

The Pipeworker role involves working from engineering drawings, data and documentation in order to undertake the fabrication, installation, testing, commissioning and removal of fluid power and domestic pipe systems on ships and submarines in defence and commercial shipping. This can include systems associated with propulsion, machinery, weapons, reactor and auxiliary (such as water, air conditioning and power generation). It requires knowledge and expertise in the use of common and specialist pipe forming machine and hand tools. The Pipeworker will use a variety of measuring and diagnostic processes to ensure individual components and assemblies meet the required specification. They must comply with statutory regulations, organisational safety requirements and be expected to work both individually and as part of a team. They will work with minimum supervision, taking responsibility for the quality and accuracy of the work they undertake and be proactive in finding solutions to problems and identifying improvements to business processes.

Essential Occupation Requirements (all in a Maritime context) - Knowledge

1. An understanding of mathematical techniques, formula and calculation applied in the fabrication, repair and installation of maritime pipe systems.
2. An understanding of engineering technology and principles applied in the design, build, operation and maintenance of maritime vessels.
3. How to correctly select and use hand and mechanical tools and jigs used in fabrication, repair and installation of maritime pipe systems.
4. Understanding how the improvement of processes and procedures used by a Pipeworker in the Maritime Industry can be more efficient and effective.
5. Knowledge of common and specialist pipe material (ferrous, non ferrous and non metallic) used in the pipework area of the Maritime Industry.
6. Understanding of the principles of brazing, welding and other hot working techniques used in the fabrication, repair and installation of pipework systems.
7. An understanding of quality, safety, health and environment as applied working in the Maritime Industry.

Essential Role Requirements (all in a Maritime context) - Skills

1. Comply with quality, safety, health, and environmental regulations related to the Maritime Industry.
2. Read, analyse and interpret engineering data, drawings and documentation used in the design, build and repair of maritime vessels.
3. Measure and mark out to enable the fabrication of pipework using a variety of materials (ferrous, non ferrous and non metallic) and processes (to include taking wire templates and jigs, setting to boards etc).
4. Use hand and machine tools to cut, drill, shape and finish components to the required engineering tolerances.
5. Fabricate, install and repair pipe systems in a maritime environment.
6. Apply assembly and installation techniques (such as brazing, welding, mechanical fasteners, seals, gaskets, jointing materials and methods) on maritime vessels.
7. Undertake testing, inspection and diagnostic activities on pipework systems on maritime vessels, making adjustments where applicable.
8. Undertake planned, corrective maintenance and survey activities on pipework components and systems.
9. Consider sustainability and environmental impacts when making safety, quality and cost decisions.

Employee Behaviours

Modern Engineering organisations require their employees to have a set of behaviours that will ensure success both in their role and in the overall company objectives. The required behaviours are:

- **Health, Safety and Environment:** committed to their own and their colleagues wellbeing at work and the wider environment
- **strong work ethic:** motivated; proactive; committed
- **dependability and responsibility:** punctual; reliable
- **positive attitude:** constructive thinking; optimism; motivated to succeed
- **team player:** able to work and interact effectively within a team and committed to equality & diversity
- **effective communication:** spoken; listening; body language; presentation; written
- **adaptability:** able to adjust to change
- **honesty and integrity:** truthful; sincere and ethical
- **self-motivation:** self-starter; able to make independent decisions & lead own professional development
- **personal commitment:** prepared to make a personal commitment to the industry.

Entry - Individual employers will set the selection criteria for their apprenticeships. Candidates will typically have 4 GCSEs at Grade C or equivalent, including Mathematics, English and a Science.

Duration of Apprenticeship - Typically 42 to 48 months (timescales may reduce if an apprentice has prior relevant experience/ qualifications on entry).

Qualifications and Development - Apprentices without level 2 English and Mathematics will need to achieve this level prior to completion of the apprenticeship.

After a period of foundation skills and technical knowledge development all apprentices will be required to achieve the following qualifications (**working titles -currently in development**):

- Level 2 Maritime Pipework (Foundation Competence)
- Level 2 Maritime Pipework (Foundation Technical Knowledge).

After a further period of skills and technical knowledge development all apprentices will be required to achieve the following qualifications (**working titles - currently in development**):

- Level 3 Maritime Pipework (Development Competence)
- Level 3 Maritime Pipework (Development Technical Knowledge).

All the qualification requirements in the foundation and development phases are mandatory outcomes for the completion and final certification of the apprenticeship. Each qualification has a core and options approach and employers will select the most applicable pathway and unit options to meet their business requirements. Further detail can be found in the Employer Occupational Brief which is an annex to the Assessment Plan. There will be an assessment at the end of the development phase where the apprentice will need to demonstrate full competence against the knowledge, skills and behaviours set out in the standard and Employer Occupational Brief. On successful completion of the employer endorsement phase (sign off) apprentices will be then be put forward to be awarded their apprenticeship completion certificate by a recognised industry endorsed third party.

Link to Profession registration - This apprenticeship is recognised by the Institution of Engineering & Technology (IET) and the Institute of Mechanical Engineers (IMechE) at 'Engineering Technician' Level.

Level - This apprenticeship standard is at Level 3.

Review date - This apprenticeship standard will be reviewed after 3 years.