

40036**Carry out preventive maintenance tasks on plant or equipment in an engineering environment**

Kaupae Level	3
Whiwhinga Credit	5
Whāinga Purpose	<p>This skill standard is for people who want to perform effective preventive maintenance tasks on equipment to ensure safe and efficient operation, reducing the risk of unplanned downtime and costly repairs.</p> <p>This skill standard can be used in any engineering programme leading to qualifications and micro-credentials at Level 3 and above.</p>

Hua o te ako me Paearu aromatawai | Learning outcomes and assessment criteria

Hua o te ako Learning outcomes	Paearu aromatawai Assessment criteria
1. Perform clean-down procedures, ensuring that equipment or plant and the surrounding area maintain optimal performance and safety, and minimise environmental impact.	a. Clean equipment or plant and its surroundings by using the correct tools and following established procedures, maintaining optimal performance and safety as per manufacturer and workplace procedures.
	b. Carry out safe disposal of waste generated during equipment or plant operations.
	c. Follow safety guidelines to minimise the impact of waste on the workplace and the environment.
2. Conduct routine preventive maintenance on equipment or plant to extend its lifespan.	a. Perform routine maintenance tasks, including inspections, lubrication, and component replacements, following maintenance schedules and manufacturer guidelines.
	b. Follow safety guidelines regarding lock-out tag-out procedures and policies before undertaking servicing.
3. Collect data on equipment or plant to aid in predictive maintenance work and required shutdown scheduling.	a. Collect data during servicing activities, including equipment or plant performance metrics, wear and tear observations, and calibration results.
	b. Identify equipment or plant performance trends and communicate findings to the supervisor.

4. Perform inspections of equipment or plant, consumables, and componentry.	a. Identify signs of wear, damage, defects, or misalignment.
	b. Communicate and report findings to the supervisor.
	c. Clarify required corrective actions and seek approval to undertake work.
	d. Perform approved corrective actions to ensure safe and efficient operations.

Pārongo aromatawai me te taumata paearu | Assessment information and grade criteria

Assessment specifications

- Evidence presented for assessment against this skill standard must be consistent with safe work practices and be in accordance with applicable industry standards, workplace procedures and legislative requirements.
- Evidence must demonstrate the learner's competence to undertake the skills and knowledge under limited supervision detailed in this skill standard.
- A variety of forms of evidence is accepted, such as photos, signed observation sheets, video recordings, written reports, oral presentations, etc.
- Use of appropriate, safe facilities, equipment, and resources to undertake assessment tasks effectively and safely.
- Practical assessment tasks must be verified and signed by a verifier who has relevant current industry expertise.

Preventive maintenance on equipment or plant chosen must show evidence of the following:

- Clean up of waste produced by equipment or plant.
- Lubrication of parts.
- Component or consumable replacement.
- Safely adjust equipment or plant to maintain safe and effective use.
- Collect three lots of data on the same equipment or plant to show work done and wear and tear.

Definitions

- *Engineering environment* refers to the encompassing conditions, both physical and contextual, wherein engineering tasks or activities occur, directly or indirectly influencing and being influenced by its surroundings.
- *Industry standards* refer to adherence to guidelines set by professional bodies to ensure consistency, quality, and safety, complying with industry regulations and best practices.
- *Legislative requirements* refer to laws enacted by government bodies to ensure worker safety, rights, and welfare, covering areas such as health and safety, employment rights, and environmental protection, with compliance avoiding legal consequences and penalties.

- *Safe work practices* refer to practices that minimise risks to workers' health and safety, following government WorkSafe legislation. This includes identifying and mitigating risks, providing protective gear and training, and fostering a safety-conscious culture.
- *Workplace procedures* refer to established protocols for smooth operations, dictating task performance and safety measures, promoting consistency and productivity in a safe work environment.

Ngā momo whiwhinga | Grades available

Achieved.

Ihirangi waitohu | Indicative content

Maintenance Strategies and Procedures

- Understanding preventive, predictive, and reactive maintenance
- Implementing preventive maintenance practices
- Machine maintenance procedures
- Identifying signs of wear, damage, or misalignment.

Corrective Actions and Adjustments

- Taking corrective actions in preventive maintenance
- Adjustments to measuring equipment
- Maintenance of measuring devices.

Safety and Handling

- Ensuring safe handling of equipment
- Following safety protocols in preventive maintenance
- Lockout-Tagout procedures and protocols
- Material Safety Data Sheets (MSDS) compliance

Cleaning and Waste Management

- Cleaning procedures for equipment and surroundings
- Waste disposal in operations
- Adhering to environmental regulations for waste disposal.

Data Collection and Decision-Making

- Data collection during servicing activities
- Utilizing data-driven decision-making for maintenance and improvements

Maintenance Documentation and Standards

- Maintenance schedules and guidelines
- Calibration procedures and standards under supervision
- Following manufacturers' guidelines, certifications, and warranties.

Rauemi | Resources

- Health and Safety at Work Act 2015 and supporting Regulations.
<https://www.legislation.govt.nz/act/public/2015/0070/latest/DLM5976660.html>
- WorkSafe New Zealand (2014). The Best Practice Guidelines for the Safe Use of Machinery. Available from <https://www.worksafe.govt.nz/topic-and-industry/manufacturing/safe-use-of-machinery/>
- Managing health and safety WorkSafe NZ. Available from <https://www.worksafe.govt.nz/managing-health-and-safety/>

Pārongo Whakaū Kounga | Quality assurance information

Ngā rōpū whakatau-paerewa Standard Setting Body	Hanga-Aro-Rau Manufacturing, Engineering and Logistics Workforce Development Council
Whakaritenga Rārangi Paetae Aromatawai DASS classification	Engineering and Technology > Mechanical Engineering > Engineering Core Skills
Ko te tohutoro ki ngā Whakaritenga i te Whakamanatanga me te Whakaōritenga CMR	0013

Hātepe Process	Putanga Version	Rā whakaputa Review Date	Rā whakamutunga mō te aromatawai Last date for assessment
Rēhitatanga Registration	1	30 May 2024	N/A
Kōrero whakakapinga Replacement information	N/A		
Rā arotake Planned review date	31 December 2029		

Please contact Hanga-Aro-Rau Manufacturing, Engineering, and Logistics Workforce Development Council qualifications@hangaarorau.nz to suggest changes to the content of this skill standard.