Title	**Demonstrate knowledge of, and recommend, automotive component corrosion prevention methods**		
Level	**5**	**Credits**	**7**

Purpose	People credited with this unit standard are able to demonstrate knowledge of: corrosion types and effects; corrosion inhibitor and protection devices; measures to take to protect automotive components from the effects of corrosion; and demonstrate knowledge of procedures to prevent corrosion and make recommendations to prevent corrosion.

Classification	Motor Industry > Automotive Administration

Available grade	Achieved

Guidance Information

1 The following legislation must be consulted where applicable:
Land Transport Rule: Vehicle Repair 1998, Rule 34001;
Land Transport Rule: Frontal Impact 2001, Rule 32006/1;
Land Transport Rule: Frontal Impact Amendment 2005, Rule 32006/2;
Land Transport Rule: Frontal Impact Amendment 2008, Rule 32006/3.

2 Land Transport Rules are produced for the Minister of Transport by NZ Transport Agency. These rules are available online at https://www.nzta.govt.nz/.

3 Definition
Service information may include but is not limited to – technical information of a vehicle, machine, or product detailing operation; installation and servicing procedures; manufacturer instructions and specifications; technical terms and descriptions; and detailed illustrations. This can be accessed in hard copy or electronic format and is normally sourced from the manufacturer.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of corrosion types and effects.

Performance criteria

1.1 Types of corrosion affecting automotive components are described according to the vehicle, machine and/or the component manufacturers' service information.

Range galvanic, electrolytic, oxidation.

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1.2 Causes and effects of corrosion on automotive components are described according to the vehicle, machine, vessel and/or the component manufacturers' service information.

Range general wastage, pitting, velocity effects including cavitation, selective dezincification, stress corrosion and hydrogen embrittlement, corrosion fatigue.

1.3 The appearance of corrosion on automotive components is identified.

Range: ferrous and non-ferrous metals.

Outcome 2

Demonstrate knowledge of corrosion inhibitor and protection devices.

Performance criteria

2.1 The characteristics of engine cooling system inhibitors are described according to the manufacturers' specifications.

Range changes in temperature, composition of corrosion inhibitors, deposit reduction, compatibility, performance life.

2.2 The principle of sacrificial protection and its application is described as applied to the vehicle, machine and engine componentry.

2.3 The use of compatible metals of similar galvanic series and the insulation requirements of dissimilar metals are identified where such metals are in contact with each other.

2.4 The use of protective primer, paint and sealer on automotive components is explained according to the manufacturers' specifications.

Outcome 3

Demonstrate knowledge of measures to take to protect automotive components from the effects of corrosion.

Performance criteria

3.1 The importance of following the vehicle, machine and/or the engine manufacturers' specifications regarding coolant inhibitor is identified.

Range protection to engine components, cooling system performance.

3.2 The purpose of applying protection treatment to the vehicle and machine body components before and after assembly and/or repairs is identified.

Range reinstatement of manufacturer's protection, avoidance of corrosion, job standards, component life.

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3.3 The storage requirements to combat corrosion of automotive components are identified.

Range sealed packages, lubrication, protective coatings, storage environment.

Outcome 4

Demonstrate knowledge of procedures to prevent corrosion and make recommendations to prevent corrosion.

Performance criteria

4.1 The need for corrosion protection is identified according to the type of material affected, surrounding environment, intended use, and legislative requirements.

Range may include but is not limited to – vehicle, machine and/or vessel exterior and interior components, panels, and structures.

4.2 Procedures to prevent corrosion are identified.

Range may include but is not limited to – vehicle, machine and/or vessel specifications, corrosion prevention material manufacturers' specifications, repair manuals.

4.3 Written recommendations are made to management on the corrosion prevention measures required to protect the vehicle, machine and/or the vessel components, panels and structures.

Range may include but is not limited to – components affected, measures to take, specifications required, degree of protection, costs (labour and material), on-going service requirements, adherence to legislation.

Planned review date	31 December 2023

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	9 November 1993	31 December 2020
Review	2	4 October 1996	31 December 2020
Review	3	26 February 1999	31 December 2020
Review	4	16 December 2004	31 December 2020
Review	5	30 August 2018	N/A

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Consent and Moderation Requirements (CMR) reference	0014

This CMR can be accessed at http://www.nzqa.govt.nz/framework/search/index.do.

Comments on this unit standard

Please contact MITO New Zealand Incorporated info@mito.org.nz if you wish to suggest changes to the content of this unit standard.

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