

Title	Demonstrate knowledge of vehicle bodywork construction		
Level	4	Credits	6

Purpose	This theory-based unit standard is for people who work in the motor industry. People credited with this unit standard are able to demonstrate knowledge of: vehicle body construction characteristics; body materials used on vehicles; body sealers and adhesives used on vehicles; and body protection treatments for vehicles.
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Classification	Motor Industry > Vehicle Bodywork
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Available grade	Achieved
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Guidance Information

- 1 Legislation and references
Performance of the outcomes of this unit standard must comply with the following:
Health and Safety at Work Act 2015;
Land Transport Rules.
- 2 Any new, amended or replacement Acts, regulations, standards, codes of practice, guidelines, or authority requirements or conditions affecting this unit standard will take precedence for assessment purposes, pending review of this unit standard.

Land Transport Rules are available online at <https://www.nzta.govt.nz/>.
- 3 Definitions
Company requirements refer to instructions to staff on policy and procedures which are documented in memo or manual format and are available in the workplace. These requirements include but are not limited to – company specifications and procedures, work instructions, manufacturer specifications, product quality specifications and legislative requirements.
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 may be accessed from the manufacturer.
- 4 Assessment
Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with applicable manufacturer's specifications, service information, company and legislative requirements.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of vehicle body construction characteristics.

Performance criteria

- 1.1 The purpose of a vehicle body is described.
- Range safety protection of occupants, comfort, weather protection, physical, structural.
- 1.2 Body shell construction methods are described.
- Range the assembly of box sections and panels by – spot welding, oxy-acetylene welding, gas metal arc welding (GMAW), MIG welding, gas metal arc (GMA) brazing, bolts, construction adhesives, rivets, hemmed, clinched.
- 1.3 The purpose of jigs and body dimensions and specifications are described.
- Range assembly, safety, standards, repairs.
- 1.4 Vehicle manufacturer occupant and pedestrian protection safety features are identified in relation to vehicle body crash energy management and design.
- 1.5 Panel attachment methods are described.
- Range adhesive, bolt on.
- 1.6 The purpose of water channelling, air ducting, and air flow entry and exit are described.
- Range corrosion protection, occupant comfort.

Outcome 2

Demonstrate knowledge of body materials used on vehicles.

Range may include but is not limited to – mild steel, stainless steel, high tensile steel grade types, aluminium alloy, laminated steel, plastic-synthetic resins, fibre reinforced plastics, glass, plastic-metal hybrid, magnesium.
minimum evidence of five materials is required.

Performance criteria

- 2.1 The location of body material types on a vehicle is identified.

2.2 The reasons for using different materials on a vehicles body is described.

Range may include but is not limited to – strength of vehicle, corrosion resistance, occupant safety, repair, cosmetic, protection of panels, energy absorption capability.
minimum evidence of four is required.

2.3 The identification of materials is described in accordance with material coding stamp markings.

Outcome 3

Demonstrate knowledge of body sealers and adhesives used on vehicles.

Performance criteria

3.1 The use of wax injection is identified.

Range corrosion protection on initial construction, replacement after repair.

3.2 The purpose and application of sealers, sealants, and adhesives to body components are explained.

Range pliable types, rubber, urethane;
body integrity – water and dust entry, exhaust and engine fumes, corrosion protection, prevention of moisture entrapment, non-conductive and conductive, acoustic properties.

Outcome 4

Demonstrate knowledge of body protection treatments for vehicles.

Range galvanising panels, phosphate treatment, electroplating, primer, colour coats, wax coating.

Performance criteria

4.1 The purpose of applying protection treatment to vehicle bodies before and after assembly is described.

4.2 The protection treatment processes, and how they are applied during the vehicle assembly line process, are described.

4.3 Action taken to reinstate protection coating after damage is explained.

Planned review date	31 December 2027
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	29 October 1993	31 December 2018
Review	2	4 October 1996	31 December 2018
Review	3	26 February 1999	31 December 2018
Review	4	25 February 2008	31 December 2018
Review	5	21 April 2016	31 December 2027
Review	6	8 December 2016	31 December 2027
Review	7	25 May 2023	N/A

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 Hanga-Aro-Rau Manufacturing, Engineering and Logistics Workforce Development Council qualifications@hangaarorau.nz if you wish to suggest changes to the content of this unit standard.