

Title	Demonstrate knowledge of vehicle paint technology		
Level	4	Credits	4

Purpose	This unit standard is for people who are employed in the automotive refinishing industry. People credited with this unit standard are able to demonstrate knowledge of motor vehicle paint coatings, paint ingredients and their application, and paint manufacturers' testing requirements.
----------------	--

Classification	Motor Industry > Automotive Refinishing
-----------------------	---

Available grade	Achieved
------------------------	----------

Guidance Information

- 1 Legislation and references
Performance of the outcome of this unit standard must comply with the following:
Hazardous Substances and New Organisms Act 1996
Health and Safety at Work Act 2015
Spray Coating Regulations 1962.
- 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.
- 3 Reference should be made to the following paint testing standards:
Paint Research Association testing standards www.pra-world.com;
ASTM Book of standards www.astm.org;
Caltrans Equipment Quality Standards
<http://www.dot.ca.gov/equipment/QualityStandards/EquipmentQualityStandards.html>.
- 4 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.
Suitable tools and equipment refer to industry approved tools, and equipment that are recognised within the industry as being the most suited to complete the task in a professional and competent manner with due regard to safe working practices.

5 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 (this includes the knowledge and/or use of suitable tools and equipment).

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of motor vehicle paint coatings.

Performance criteria

1.1 Purposes of paint materials are explained.

Range includes but is not limited to – anti-corrosion, protection, reflection, visual, body sound deadening.

1.2 Types of undercoats and their functions used on motor vehicles are described.

Range includes but is not limited to – primer, primer surfacer, anti-corrosion, etch primers, plastic primers, primer filler, electrodepositing (E-coating), e-coat replacement products; epoxy, solvent, waterborne, ultra-violet primers. sealers/isolators; anti-chip/ texture coatings; two pack, single pack; powder coating.

1.3 Kinds of top coats used on motor vehicles are described.

Range includes but is not limited to – solid colours, clear over solid colours, metallic colours, pearl colours; two pack, single pack; tri colours, tinted clear coats concept car development products, solvent, waterborne, ultra-violet products.

Outcome 2

Demonstrate knowledge of paint ingredients and their application.

Performance criteria

2.1 The basic ingredients of paints are identified and their functions described.

Range binder/resin, pigment, solvent, waterborne.

2.2 The types of binder or resins and their functions are described.

Range includes but is not limited to – single pack, two pack, acrylic, alkyd, epoxy, polyurethane, polyester.

2.3 The types of pigments and their functions are described.

Range includes but is not limited to – coloured, metallic, pearl, anti-corrosion, special effects.

2.4 The types of solvents and their functions are described.

Range includes but is not limited to those used in – two pack paints and single pack paints; thinners, reducers.

2.5 The types of additives and their functions are described.

Range includes but is not limited to – drying agents, flow agents, plasticiser, abrasion resistant agents, thickening agents, hardener, extender.

Outcome 3

Demonstrate knowledge of paint manufacturers' testing requirements.

Performance criteria

3.1 Purpose of testing paint materials is explained.

Range includes but is not limited to – adhesion, durability, corrosion, resistance to chemicals, abrasion, acid rain, ultraviolet, volatile organic compound (VOC) content.

3.2 Paint manufacturers' testing methods are described.

Range includes but is not limited to – ultraviolet testing, abrasion testing, anti-corrosion testing, adhesion testing. testing for – humidity, weathering, hardness, flexibility, chemical resistance, impact resistance, colour quality and gloss, opacity, permeability to water, stain resistance.

Planned review date	31 December 2027
----------------------------	------------------

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	16 December 2004	31 December 2018
Review	2	18 August 2016	31 December 2027
Review	3	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.