

<b>Title</b>	<b>Demonstrate knowledge of the components, properties, and possible defects of industrial surface coatings</b>		
<b>Level</b>	<b>3</b>	<b>Credits</b>	<b>5</b>

<b>Purpose</b>	<p>This specialist unit standard is for people working in the coatings area of the painting and decorating sector.</p> <p>People credited with this unit standard are able to demonstrate knowledge of: the components of industrial surface coatings; the process by which industrial surface coatings dry and harden; the properties of industrial surface coatings; the reasons and the remedies for failure in industrial surface coatings attributed to component failure; and the reasons and the remedies for failure in industrial surface coatings attributed to substrate.</p>
----------------	--

<b>Classification</b>	Construction Trades > Painting and Decorating
-----------------------	---

<b>Available grade</b>	Achieved
------------------------	----------

### Guidance Information

- 1 Legislation and references relevant to this unit standard include – Health and Safety in Employment Act 1992; Resource Management Act 1991; Hazardous Substances and New Organisms Act 1996; available at <http://legislation.govt.nz>; AS/NZS 2311:2009 *Guide to the painting of buildings*, available at <http://www.standards.co.nz/>.
- 2 Definition  
*Industrial surface coatings* are primarily two pack coating systems.

### Outcomes and performance criteria

#### Outcome 1

Demonstrate knowledge of the components of industrial surface coatings.

Range includes – intumescent, chemical, resistant, marine, heavy-duty protective, heat resistant.

**Performance criteria**

- 1.1 Industrial surface coatings are described in terms of their components.
- Range includes – pigments, extenders, fillers, binders, thinners, additives, catalysts.
- 1.2 Components are described in terms of their functions.
- 1.3 Components are described in terms of their performance characteristics.
- Range includes – durability, application, film attribute.
- 1.4 Hazardous materials are explained in terms of the type of hazard.
- Range hazardous materials include – pigments, extenders, fillers, binders, thinners, additives, catalysts.

**Outcome 2**

Demonstrate knowledge of the process by which industrial surface coatings dry and harden.

**Performance criteria**

- 2.1 The methods by which industrial surface coatings dry and harden are described.
- Range includes – oxidation, evaporation, polymerisation.
- 2.2 Atmospheric influences that affect drying conditions are identified and described in terms of their effect.
- Range includes – temperature, humidity, pollutants.
- 2.3 Substrate influences which affect drying conditions are identified and described in terms of their effect.
- Range includes – temperature, composition, reactivity.
- 2.4 Convertible and non-convertible industrial surface coatings are described in terms of their characteristics.

**Outcome 3**

Demonstrate knowledge of the properties of industrial surface coatings.

**Performance criteria**

- 3.1 Industrial surface coatings are described in terms of their properties.
- Range includes – opacity, consistency, flow, adhesion, elasticity, drying time, gloss, spreading rate, durability, container stability.
- 3.2 Container stability defects are described in terms of their effects.
- Range includes – skinning, fattening, livering, settling, flocculation, separation, gelling.

**Outcome 4**

Demonstrate knowledge of the reasons and the remedies for failure in industrial surface coatings attributed to component failure.

Range includes – bleeding, cracking, crazing, chalking, discolouration, loss of gloss, retarded drying, floating, yellowing, mould, mildew, blistering.

**Performance criteria**

- 4.1 Failures in industrial surface coatings that can be attributed to component failure are identified and described.
- 4.2 Remedies for failures in industrial surface coatings that can be attributed to component failure are described.

**Outcome 5**

Demonstrate knowledge of the reasons and the remedies for failure in industrial surface coatings attributed to substrate.

Range includes – bleeding, saponification, efflorescence, cissing, sinkage, flashing, flaking, rusting, bleaching, adhesion, blistering.

**Performance criteria**

- 5.1 Failures in industrial surface coatings that can be attributed to the substrate are identified and described.
- 5.2 Remedies for failures in industrial surface coatings that can be attributed to the substrate are described.

---

**This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.**

**Status information and last date for assessment for superseded versions**

Process	Version	Date	Last Date for Assessment
Registration	1	1 February 1993	31 December 2012
Review	2	4 July 1995	31 December 2012
Review	3	30 November 1996	31 December 2012
Revision	4	8 April 1999	31 December 2012
Review	5	27 January 2003	31 December 2012
Review	6	18 August 2011	31 December 2016
Review	7	19 February 2015	31 December 2026
Review	8	24 April 2025	31 December 2028

<b>Consent and Moderation Requirements (CMR) reference</b>	0048
--	------

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