

<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>
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<b>Classification</b>	Construction Trades > Painting and Decorating
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<b>Available grade</b>	Achieved
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### Explanatory notes

- 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 evidence requirements

#### Outcome 1

Demonstrate knowledge of the components of industrial surface coatings.

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

**Evidence requirements**

- 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.

**Evidence requirements**

- 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.

**Evidence requirements**

- 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.

**Evidence requirements**

- 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.

**Evidence requirements**

- 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.

<b>Planned review date</b>	31 December 2019
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**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	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	0048
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

**Please note**

Providers must be granted consent to assess against standards (accredited) by NZQA, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be granted consent to assess against standards by NZQA before they can register credits from assessment against unit standards.

Providers and Industry Training Organisations, which have been granted consent and which are assessing against unit standards must engage with the moderation system that applies to those standards.

Requirements for consent to assess and an outline of the moderation system that applies to this standard are outlined in the Consent and Moderation Requirements (CMR). The CMR also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

**Comments on this unit standard**

Please contact the Building and Construction Industry Training Organisation [info@bcito.org.nz](mailto:info@bcito.org.nz) if you wish to suggest changes to the content of this unit standard.