

<b>Title</b>	<b>Conduct surface treatment of steels</b>		
<b>Level</b>	<b>5</b>	<b>Credits</b>	<b>8</b>

<b>Purpose</b>	People credited with this unit standard are able to: prepare for and carry out surface treatment of steels; and test steel and document results.
----------------	--

<b>Classification</b>	Mechanical Engineering > Engineering - Materials
-----------------------	--

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

---

### Explanatory notes

- 1 References  
Health and Safety at Work Act 2015 and supporting Regulations.  
Resource Management Act 1991.
- 2 Definitions  
*Heat treatment consumables* – items that may include but are not limited to: carburising and nitriding media, quenching media, oxy-acetylene gas.  
*Personal protective equipment* – include but is not limited to protective clothing, gloves, safety glasses, headwear, footwear, gas masks.  
*Safety devices* – include but are not limited to extractor fans.  
*Surface treatment* – induction-hardening, case-hardening, laser, and electron beam hardening techniques.  
*Tool steels* – die steels and high-speed steels.  
*Workplace procedures* – procedures used by the organisation carrying out the work and applicable to the tasks being carried out. They may include but are not limited to – standard operating procedures, site safety procedures, equipment operating procedures, codes of practice, quality management practices and standards, procedures to comply with legislative and local body requirements.
- 3 Range  
Evidence required of a minimum of two different surface treatments.

---

### Outcomes and evidence requirements

#### Outcome 1

Prepare for surface treatment of steels.

#### Evidence requirements

- 1.1 Surface treatment equipment and consumables are prepared in accordance with workplace procedures.

1.2 Personal protective equipment and safety devices appropriate to the surface treatment are used in accordance with workplace procedures.

1.3 Steel is prepared for surface treatment in accordance with surface treatment type and end use requirements.

1.4 Sources of information on steels are identified and related to end use of steel.

Range: includes but is not limited to – workplace procedures, manufacturer’s specifications (hard copy, electronic), national and international standards.

**Outcome 2**

Carry out surface treatment of steels.

**Evidence requirements**

2.1 Surface treatment is carried out in accordance with specimen type and workplace procedures.

2.2 Waste materials are disposed of in accordance with legislative requirements and workplace procedures.

**Outcome 3**

Test steel and document results.

**Evidence requirements**

3.1 Inspection and testing of steel following treatment is completed to confirm modified structure and metal condition.

Range: includes but is not limited to – hardness testing, inspection for fracture or crazing, distortion.

3.2 Quality control checks are performed and faults reported in accordance with workplace procedures.

3.3 Documentation for surface treatment is completed in accordance with workplace procedures.

<b>Replacement information</b>	This unit standard replaced unit standard 22801.
--------------------------------	--

<b>Planned review date</b>	31 December 2021
----------------------------	------------------

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

Process	Version	Date	Last Date for Assessment
Registration	1	17 November 2011	31 December 2017
Review	2	8 December 2016	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	0013
--	------

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 Competenz on [qualifications@competenz.org.nz](mailto:qualifications@competenz.org.nz) if you wish to suggest changes to the content of this unit standard.