

<b>Title</b>	<b>Prepare and use a crane with a fixed or hanging leader and hammer for piling and foundation operations</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>16</b>

<b>Purpose</b>	People credited with this unit standard are able to: prepare a crane with a fixed or hanging leader and hammer, and associated equipment for piling and foundation operations; carry out piling and foundation operations using a fixed or hanging leader and hammer; de-rig the leader and hammer, re-rig the crane, and functionally test the crane for routine crane use, and complete documentation; and carry out daily and weekly safety and maintenance checks of crane, leaders, and hammers.
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<b>Classification</b>	Cranes > Crane Operation
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<b>Available grade</b>	Achieved
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<b>Entry information</b>	
<b>Critical health and safety prerequisites</b>	Unit 15757, <i>Use, install and disestablish proprietary fall arrest systems when working at height</i> or demonstrate equivalent knowledge and skills.

### Explanatory notes

- 1 Definition  
The definition of a *crane* is as given in the Health and Safety in Employment (Pressure Equipment, Cranes, and Passenger Ropeways) Regulations 1999.
- 2 Assessment  
Assessment must be carried out in a crane workplace or equivalent.
- 3 All tasks are to be carried out in accordance with the equipment manufacturers' requirements and company standards and procedures based on industry requirements in:
  - a company quality management systems;
  - b health and safety requirements and guidelines consistent with the Health and Safety in Employment Act 1992 (HSE Act);
  - c equipment manufacturers' operating instructions;
  - d government and local government legislation, regulations, and bylaws;
  - e *Crane Safety Manual*, published by the Crane Association of New Zealand (Inc), PO Box 25 156, Panama Street, Wellington 6146;

- f *Approved Code of Practice for Load-Lifting Rigging*, published by the Department of Labour, available at <http://www.dol.govt.nz>;
  - g *Approved Code of Practice for Cranes*, published by the Department of Labour, available at <http://www.dol.govt.nz>.
- 4 HSE Act Codes of Practice are available from the Department of Labour website, <http://www.osh.dol.govt.nz>.
- 5 The equipment is used for driving piles such as steel, concrete, and timber, or caissons and sheet piles. With the exception of the air hammer, the equipment is not able to extract piles.

## Outcomes and evidence requirements

### Outcome 1

Prepare a crane with a fixed or hanging leader and hammer, and associated equipment for piling and foundation operations.

Range associated equipment may include but is not limited to – compressor, helmets and packers, pile hammer packers, dolly.

### Evidence requirements

- 1.1 Crane is confirmed as suitable for piling and foundation operations in accordance with the crane operating manual, the type of work to be carried out, and company procedures.
- 1.2 Site safety checks and associated precautions are taken and hazard control measures implemented prior to commencement of piling activities in accordance with company procedures.
- Range site checks of - environment, people present, equipment, services, personal protective equipment of authorised personnel, proximity and effect on adjacent buildings and services.
- 1.3 Piling and foundation operation attachments provided are checked and confirmed in accordance with the type of work to be carried out.
- 1.4 Crane is rigged for piling and foundation operations in accordance with crane and equipment manufacturer's requirements and company procedures.
- Range includes but is not limited to - boom mounted to leader, fit of hammer, helmet and packers, leader length, pile length.
- 1.5 Siting of the crane and the sequence of procedures are planned in consultation with authorised personnel in accordance with site requirements.
- Range authorised personnel may include but are not limited to – client representatives, on-site supervisor, engineer.

**Outcome 2**

Carry out piling and foundation operations using a fixed or hanging leader and hammer.

Range one of – sheet pile, 'H' pile, timber pile, tube pile.

**Evidence requirements**

- 2.1 Potential hazards and consequences of hazards are identified, and hazard control measures are described in accordance with company procedures, and engineer's site recommendations.
- Range stability of crane, slippage of pile, personal protective equipment, working at height, disintegration of pile, failure of ropes or load.
- 2.2 Procedures for the erection of the pile including hoisting (raising and lowering), are carried out in accordance with crane equipment manufacturer's requirements and company procedures.
- 2.3 The cranes ability to support the combined weight of leader and hammer during piling and foundation operations is assessed in accordance with crane load charts and company procedures.
- 2.4 Signals are identified and agreed in accordance with company procedures and *Crane Safety Manual*
- 2.5 Pile is driven in accordance with company procedures.
- Range stability of crane after recoil, personal protective equipment, working at height.
- 2.6 Precautions and hazards when handling and driving, and techniques for driving concrete piles are described in accordance with company procedures.

**Outcome 3**

De-rig the leader and hammer, re-rig the crane, and functionally test the crane for routine crane use, and complete documentation.

**Evidence requirements**

- 3.1 Leader and hammer are de-rigged, and crane is re-rigged for other crane use in accordance with crane and equipment manufacturer's requirements and company procedures.
- 3.2 Functional test is conducted in accordance with crane and equipment manufacturer's requirements and company procedures, prior to the crane being returned to routine crane activities.

3.3 Documentation is completed in accordance with company procedures.

Range may include but is not limited to – logs, records, job sheets, crane equipment inventories, maintenance requests.

#### Outcome 4

Carry out daily and weekly safety and maintenance checks of crane, leaders and hammers.

#### Evidence requirements

4.1 Daily safety and maintenance checks of crane, leaders, and hammers are carried out in accordance with crane and equipment manufacturer's requirements and company procedures.

4.2 Weekly safety and maintenance checks of crane, leaders, and hammers are carried out in accordance with crane and equipment manufacturer's requirements and company procedures.

<b>Planned review date</b>	31 December 2016
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#### Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	23 February 2004	30 June 2013
Review	2	20 May 2008	30 June 2013
Review	3	15 March 2012	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	0025
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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.

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**Comments on this unit standard**

Please contact The Skills Organisation at [reviewcomments@skills.org.nz](mailto:reviewcomments@skills.org.nz) if you wish to suggest changes to the content of this unit standard.