Title	**Demonstrate knowledge of safety when lifting loads in engineering installation, maintenance, and fabrication work**		
Level	**2**	**Credits**	**2**

Purpose	This unit standard is for people working in a mechanical engineering environment where lifting materials and components are part of their work. People credited with this unit standard are able to demonstrate knowledge of safety checks to be carried out before and safety when lifting loads.

Classification	Mechanical Engineering > Engineering Core Skills

Available grade	Achieved

Explanatory notes

1 References
Health and Safety at Work Act 2015 and supporting regulations.
WorkSafe New Zealand. Approved Code of Practice for Load-lifting Rigging available from http://www.worksafe.govt.nz/worksafe/information-guidance/all-guidance-items/acop-load-lifting-rigging.
Metal Industry Guidelines for Safe Work, Section 4 – Lifting and Moving available from http://www.acc.co.nz/PRD_EXT_CSMP/groups/external_ip/documents/publications_promotion/wpc114254.pdf.

2 Definitions
Accepted industry practice refers to approved codes of practice and standardised procedures accepted by the wider mechanical engineering industry sectors as examples of best practice.
Lifting appliance – any appliance capable of being operated by mechanical, manual, or other means to raise or lower a load in a vertical or near vertical plane, and includes any lifting tackle.
Lifting tackle – any sling, shackle, swivel, ring, hook or other appliances, including lifting beams, frames and spreaders, used in connection with a lifting appliance or from the hook of a crane.
Load – mechanical engineering and or fabrication materials and components to be lifted and moved.
Published guidelines – includes codes of practice and guidelines listed above in the references.
WLL refers to the working load limit, the maximum working load designed by the manufacturer. This term is now used instead of SWL (safe working limit).

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, safety procedures, equipment operating procedures, codes of practice, quality management practices and standards, procedures to comply with legislative and local body requirements.

3 Assessment information
Examples/evidence given must meet applicable workplace procedures and accepted industry practice, and must be in accordance with published guidelines.

Outcomes and evidence requirements

Outcome 1

Demonstrate knowledge of safety checks to be carried out before lifting loads.

Evidence requirements

1.1 Methods to establish the weight of the load are described.

Range includes but is not limited to – previous experience, markings/information on load, documentation and drawings, tables of weights, calculation.

1.2 The selection of a suitable sling is described for given lifting scenarios and sling selection tables.

Range evidence is required of a minimum of three different lifting scenarios.

1.3 Pre-use checks of lifting appliance and tackles are described.

Range includes but is not limited to – condition, consideration of weight, WLL, safety margin, centre of gravity, control of the load, obstructions, safe area of operation.

1.4 Basic hand signals for lifting loads are identified.

Range stop, emergency stop, hoist raise, lower.

Outcome 2

Demonstrate knowledge of safety when lifting loads.

Evidence requirements

2.1 Safe lifting and moving of materials and components is described.

Range includes but is not limited to – distractions, position of lifting appliance to lift, speed of lift, suspended loads, height of lift, control of load.

2.2 Safe completion of lifting is described.

Range includes but is not limited to – control and speed of landing, position of hook after detachment from load, brakes and emergency stops.

2.3 Visual checks of lifting slings are described.

Range types of slings – chain, wire rope, mesh, sling;
visual checks include but are not limited to – kinks, broken strands, bleed through, safety catches, general wear, damage to eyes or other end fittings.

2.4 The effect that sling leg angle has on safe lifting weight is explained using examples.

Range sling types – equal length 2 legged, multi-legged;
angles – 30, 60, 90, 120 degrees.

Planned review date	31 December 2021

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	19 January 2017	N/A

Consent and Moderation Requirements (CMR) reference	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 qualifications@competenz.org.nz if you wish to suggest changes to the content of this unit standard.