Title	**Design, erect, and dismantle advanced needle support systems for suspended scaffolding**		
Level	**5**	**Credits**	**15**

Purpose	This unit standard is for people who have intermediate scaffolding skills and who want to develop their scaffolding skills to an advanced level. People credited with this unit standard are able to: – demonstrate knowledge of advanced suspended scaffold needle support systems and their use; – design support systems and associated structures for needles from which to suspend a scaffold; – erect support systems to support an advanced suspended scaffold; – check the structure is compliant and complete a GPG inspection report; and – dismantle suspended scaffold needle support systems.

Classification	Lifting Equipment > Advanced Scaffolding

Available grade	Achieved

Guidance Information

1 This unit standard has been developed for learning and assessment on-job or off-job in a simulated environment.

2 All tasks must be carried out in accordance with:
- a quality management systems;
- b designer's requirements and manufacturers' operating instructions; legislation, regulations, bylaws, Health and Safety at Work Act 2015, and Health and Safety in Employment Regulations 1995;
- c the most up to date version of the *Good Practice Guidelines – Scaffolding in New Zealand* (GPG), 2016 available from https://www.worksafe.govt.nz/topic-and-industry/working-at-height/scaffolding-in-new-zealand/; and all subsequent amendments and replacements.

3 Definitions
Client refers to an individual or representative of a company who commissions a particular scaffold or scaffolding structure to be erected, or is an end user of the scaffold or scaffolding structure.
Restore or repair refer to the steps taken to ensure the end state of the supporting structure in accordance with site requirements.

Scaffold plan is a key design document prepared by the candidate and used as a basis for the erection of a particular scaffold.
Scaffolding is as defined in the GPG and in the Health and Safety in in Employment Regulations 1995.
Support system refers to the scaffolding (mobile or static), bracing, and ties used to hold in place and stabilise needles from which a scaffold is suspended. This system, and/or the needles themselves, are normally connected to the building or structure from or on which the suspended scaffold is erected. This is also referred to as the 'supporting structure'.
Suspended scaffold is capable of being raised or lowered. A working platform that cannot be raised or lowered is classified as a hanging scaffold, not a suspended scaffold.

4 Assessment
During assessment against this unit standard, the design, erection, and dismantling of scaffolds, suspended scaffolds, and scaffolding structures and components must take place under the supervision of a certified scaffolder who holds a current Certificate of Competence for the scaffolding concerned.

5 Evidence is required for at least three suspended scaffolding support systems. These are non-proprietary systems that require the construction of scaffolds for support of the needles and suspended structure. They should, however, include mixed proprietary scaffolding components and tube and fitting components. Tube and fitting components must therefore be included in each of the three suspended scaffolding support systems.

6 Recommended skills and knowledge
New Zealand Certificate in Scaffolding (Level 4) [Ref: 2632], or demonstrate equivalent knowledge and skills.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of advanced suspended scaffold needle support systems and their use.

Performance criteria

1.1 Identify needle support systems and describe suspended scaffolding situations in which they might be used in terms of their advantages and disadvantages.

Range may include but is not limited to – multi-directional support, access, need for additional bracing, point of attachment security, number of components, ability to vary the length, need for lateral bracing, strength of fixing components;
two advantages and two disadvantages for each of two situations per system.

1.2 Identify equipment associated with the use of needles in situations where they might be used, and describe its function in suspended scaffolding.

Range may include but is not limited to – wire and shackle restraints, counterweights, bolted supports, bracing, construction of standard and non-standard scaffolding structures to support needles and suspended elements.

1.3 Recommend needle bracing options for situations where they might be used.

Range may include but is not limited to – transverse bracing, wire and brace tie-backs, bolted supports, construction of standard and non-standard scaffolding structures for support.

Outcome 2

Design support systems and associated structures for needles from which to suspend a scaffold.

Performance criteria

2.1 Confirm suspended scaffolding requirements with the supervisor, client, or chartered professional engineer.

Range includes but is not limited to – establishing maximum load, placement in relation to support structures and mechanisms, needle type/s, attachment points, access and space for counterweighting and additional scaffolding for support.

2.2 Check the supporting structure for its capacity to support the suspended scaffold and associated support system and scaffolding components.

Range includes but is not limited to – confirmation of structural integrity, access points, the presence of and need for additional scaffolding structures for support, identification of attachment, tie and bracing points.

2.3 Determine design parameters, where necessary, meeting chartered professional engineer’s requirements.

Range includes but is not limited to – placement and nature of needles, supports, propping, counterweights and ties; the nature of supports for, and placement of, bracing and ties for supporting scaffold components; loading calculations; access; direction and magnitude of forces; regulatory requirements; safety margins.

2.4 Prepare design documents, including where necessary, advice from a chartered professional engineer.

Range includes – scaffold plan, gear list, and, where applicable, engineer's requirements;
may include but is not limited to –computer aided design printouts, work schedules, staffing allocation, WorkSafe New Zealand and local authority approvals, workplace-specific documentation.

2.5 Check where necessary, the scaffold plan and associated design documents by a chartered professional engineer and make adjustments as required.

Outcome 3

Erect support systems to support an advanced suspended scaffold.

Performance criteria

3.1 Recheck safety factors in accordance with the scaffold plan.

Range includes but is not limited to – attachment points, placement of needles, propping, counterweights, bracing and tie points and their structure for needles and any supporting scaffolding, load weights, bracing methods, direction and magnitude of forces.

3.2 Source the necessary equipment in accordance with the scaffold plan.

3.3 Position, secure, tie and brace needles and other suspended scaffold members in accordance with the scaffold plan.

3.4 Erect and brace subsequent components and scaffolding support structures in accordance with the scaffold plan.

Outcome 4

Check the structure is compliant and complete a GPG inspection report.

Performance criteria

4.1 Check the structure for compliance in accordance with the scaffold plan.

4.2 Complete a GPG inspection report.

4.3 Make changes to the structure to ensure compliance and amend the GPG inspection report accordingly.

4.4 Arrange for the structure, where necessary, to be inspected by a certificated scaffolder who has an appropriate certificate of competency, or by a chartered professional engineer, and make any necessary changes to the structure to ensure compliance.

Outcome 5

Dismantle advanced suspended scaffold needle support systems.

Performance criteria

5.1 Raise and secure suspended components and remove needles and associated support systems.

5.2 Detach needles and associated support systems from the supporting structure.

5.3 Lower components to the ground and prepare for transportation off-site.

5.4 Restore or repair attachment points.

Planned review date	31 December 2026

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	21 July 2011	31 December 2016
Review	2	16 July 2015	31 December 2025
Review	3	24 February 2022	N/A
Revision	4	24 August 2023	N/A

Consent and Moderation Requirements (CMR) reference	0003

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

Comments on this unit standard

Please contact the Waihanga Ara Rau Construction and Infrastructure Workforce Development Council qualifications@waihangaararau.nz if you wish to suggest changes to the content of this unit standard.