Title	**Design, erect, and dismantle scaffolding ties**		
Level	**4**	**Credits**	**6**

Purpose	People credited with this unit standard are able to: – demonstrate knowledge of scaffolding ties and their use; – design ties as part of scaffold plans; – erect ties and complete GPG inspection reports; and – dismantle scaffolding ties and repair attachment points.

Classification	Lifting Equipment > Elementary 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. Where supervision is required by law, the supervisor must hold the appropriate Certificate of Competence for the scaffolding work undertaken.

2 All tasks are to be carried out in accordance with:
- a quality management systems;
- b designer requirements and manufacturer operating instructions; and 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
A *tie* is a member or assembly of members used to tie a scaffold to a supporting structure.
Scaffolding is as defined in the GPG and in the Health and Safety in Employment Regulations 1995.
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.

4 Training and assessment
Competency for this unit standard must be demonstrated over a number of scaffolds sufficient to cover all the requirements of the range statement of outcomes 2, 3 and 4 – consistent with usual industry practice requirements. Competency may need to be demonstrated on a number of separate occasions for the same tie type to cover variations in componentry dimensions, complexity and interaction.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of scaffolding ties and their use.

Performance criteria

1.1 Identify and describe ties and scaffolding situations in which each might be used.

Range includes but is not limited to – rigid ties, box ties, lip/opening ties, reveal ties.

1.2 Describe the advantages of rigid ties.

Range may include but is not limited to – multi directional support, point of attachment security, fewer components, simplicity, ability to vary the length and strength of fixing components.

1.3 Define the maximum recommended tie spacing and where a situation means the maximum recommended tie spacing cannot be complied with.

Range options include but are not limited to – plan bracing at the level of the tie, additional transverse bracing, increasing the base width of the scaffold, (raker tubes and/or raker bays [also known as bolster bays] installation).

1.4 Recommend bracing options.

Range may include but is not limited to – plan bracing at the level of the tie, additional transverse bracing, increasing the base width of the scaffold (raker tubes and/or raker bays [also known as bolster bays] installation).

Outcome 2

Design ties as part of scaffold plans.

Range includes but is not limited to – rigid ties, box ties, lip/opening ties, reveal ties.

Performance criteria

2.1 Ascertain the nature and integrity of the supporting structure.

Range may include but is not limited to – documentary evidence, visual and physical examinations, strength testing.

2.2 Design the optimum type/s of ties to be used.

Range may include but is not limited to – the nature and integrity of the supporting structure, the nature of the scaffold and any additional attachments, optimum attachment points and their condition, the length and strength of fixing components, the availability and practicality of additional bracing.

2.3 Design and justify the optimum placement of ties.

Range may include but is not limited to – the type of tie/s used, recommended spacing, the nature of the scaffold and any additional attachments, the nature and integrity of the supporting structure, optimum attachment points and their condition, the length and strength of fixing components, the nature and placement of additional bracing.

2.4 Produce scaffold plans incorporating ties.

Range may include but is not limited to – tie placement and description consistent with the GPG, the impact of scaffolding attachments on tie type and placement (including screening, wind load and environmental load), intended use, engineer's requirements.

Outcome 3

Erect ties and complete GPG inspection reports.

Range includes but is not limited to – rigid ties, box ties, lip and/or opening ties, reveal ties.

Performance criteria

3.1 Erect and fit ties to scaffolds and the supporting structures in accordance with the scaffold plans.

3.2 Check ties for compliance in relation to the GPG inspection report, the scaffold plan and, where applicable, engineer's requirements.

3.3 Test anchors used for ties in accordance with the GPG reports.

3.4 Complete GPG inspection reports.

3.5 Make changes where structure is not compliant ensure compliance and amend the GPG inspection report accordingly.

Outcome 4

Dismantle scaffolding ties and repair attachment points.

Range includes but is not limited to – rigid ties, box ties, lip/opening ties, reveal ties.

Performance criteria

4.1 Detach ties from the supporting structure by level and in sequence in accordance with the scaffolding plans.

4.2 Restore or repair attachment points.

4.3 Detach ties from the scaffolds and remove tie components in accordance with the scaffold plans.

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	25 October 2007	31 December 2016
Review	2	16 July 2015	31 December 2019
Rollover and Revision	3	23 November 2017	31 December 2025
Review	4	24 February 2022	N/A
Revision	5	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 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.