Title	**Complete reinforcing requirements for steel fixing**		
Level	**3**	**Credits**	**10**

Purpose	People credited with this standard can: – connect and tie reinforcing for steel fixing; – complete covers and laps for reinforcing; – cut reinforcing for steel fixing; – complete reinforcing to meet the requirements of the quality plan; and – set up, assemble, and complete a basic reinforcing beam.

Classification	Concrete > Concrete Construction

Available grade	Achieved

Guidance Information

1 Legislation and standards relevant for this unit standard are:
- Building Act 2004;
- Health and Safety at Work Act 2015;
- Building Regulations 1992;
- NZS 3109:1997 *Concrete construction*;
- AS/NZS 4671:2019 *Steel for the reinforcement of concrete*.

2 Assessment
This unit standard must be assessed by a commercially competent practitioner who holds any required permits in workplace conditions that reflect:
- current health, safety, industry, and workplace requirements;
- industry requirements for commercially acceptable timeframes.

Evidence generated for assessment against this standard must be verified by a person who has current expertise in the building and construction or infrastructure trades and has had the opportunity to regularly observe the candidate in the workplace.

3 Work must be completed without injury to personnel or damage to products and equipment. Any required hazard control procedures must be in place and personal protective equipment must be used to meet regulatory and worksite requirements.

4 Evidence generated for assessment against this standard must reflect workplace and industry requirements specified in:
- health and safety plans;
- environmental plans;
- project documents;
- manufacturer's recommendations, specifications, and technical data sheets;
- applicable material safety data sheets.

5 Definitions
Basic reinforcing beam refers to a beam approximately 500mm high by 400mm wide.
Industry requirements may refer to but are not limited to relevant policies, processes, methodologies, industry codes of practice, site specific health and safety plans, standard operating procedures, site safety plans, quality plans, work plans, traffic management plans, contract work programmes, job safety analysis, safe work method statements, job instructions, manufacturer's requirements, contract specifications, manuals, and procedural documents.
Project documents are the structural drawings, specifications, and any quality assurance requirements specified by the main contractor or consultant.

Outcomes and performance criteria

Outcome 1

Connect and tie reinforcing for steel fixing.

Performance criteria

1.1 Reinforcing ties are completed in accordance with industry requirements.

Range reinforcing ties include – box, slash, looped box, looped sash, figure 8 tie.

1.2 Reinforcing ties are applied correctly in terms of the structure type and situation.

1.3 Ties are tensioned in terms of maintaining correct spacing.

1.4 Tie ends are completed, not projecting dangerously, and tie wire offcuts are removed from the pour area.

1.5 Ties are completed in good time ensuring correct application in accordance with the task.

Outcome 2

Complete covers and laps for reinforcing.

Performance criteria

2.1 Cover requirements are determined, and specified covers are maintained in accordance with industry requirements.

2.2 Spacers and chairs to structures are completed with sufficient distances to ensure cover is maintained.

23 Specified lap lengths are confirmed and completed in accordance with project documents.

2.4 Cranked lap bars are used correctly in terms of orientation.

2.5 Cover is maintained to all bars in accordance with industry requirements.

Outcome 3

Cut reinforcing for steel fixing.

Performance criteria

3.1 Preoperational safety checks on the cutting machine are completed in accordance with industry requirements.

3.2 Personal Protective Equipment (PPE) is worn during cutting operations.

3.3 Hazards identified during the use of powered cutting tools are demonstrated during cutting operations.

3.4 Cutting skills for vertical and horizontal bars are demonstrated during cutting operations.

Outcome 4

Complete reinforcing to meet the requirements of the quality plan.

Performance criteria

4.1 Location of bars on to marks and specified spacings are maintained in accordance with the quality plan.

4.2 Detailed items are identified, located, and completed in accordance with the quality plan.

Outcome 5

Set up, assemble, and complete a basic reinforcing beam.

Performance criteria

5.1 Required items are located in accordance with the detail sheet.

5.2 Bars are laid out in preparation for marking.

5.3 Marked top bars are selected and stirrups applied.

5.4 Stirrups are located to the marks and tied.

5.5 Marked bottom bars are installed and tied.

5.6 Beam is installed into correct position, covers maintained and correct chairs applied.

Planned review date	31 December 2027

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	25 August 2022	N/A

Consent and Moderation Requirements (CMR) reference	0048

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 at qualifications@waihanga.nz if you wish to suggest changes to the content of this unit standard.