

REGISTERED NATIONAL STANDARD

UNIT OF COMPETENCY



Title:	Place and fix reinforcement materials for brick and block work ¹				
TQF Level:	3	Credits:	4	Version:	1
National standard code:	NS146-03				
Associated qualification (and code):	National Certificate in Bricklaying and Blocklaying Level 3 QR-03-NQ-028-01-1005-26-01				
Approval date:	10 September 2026		Review date:	10 September 2031	
Purpose:	This unit describes the skills and knowledge required to place and fix reinforcement materials for concrete construction work. It covers planning and preparation, cutting, bending, placing, tying and securing reinforcement, checking reinforcement prior to concrete placement, and completing clean-up activities. The unit applies to concreters working as members of a construction team and is undertaken as part of broader concreting and building processes. All tasks must be performed in accordance with workplace requirements, work health and safety legislation, environmental regulations, industry best work practices, and Tonga National Building Code. This unit plays a critical role in ensuring the structural integrity, durability and compliance of reinforced concrete elements. In successfully completing this unit standard, learners are able to: • Prepare work areas and materials for reinforcement placement • Cut, bend, position, tie and secure reinforcement in accordance with engineering drawings and specifications • Ensure correct cover, spacing, overlap and alignment prior to concrete pouring • Apply OHS and environmental controls during reinforcement operations • Complete work activities efficiently as part of a construction team				

¹ Due to safety issues inherent in working with electricity and combustible substances, all training and assessment activities must be in accordance with Tonga National Building Code.

Learning Outcome 1 (LO1)	Prepare and organise reinforcement materials and tools for brick and block work
Performance standards	1.1 Review task specifications and check to ensure compliance to standards and Tonga National Building Code requirements; 1.2 Review occupational health and safety (OHS) requirements for the task; 1.3 Determine reinforcement materials for correct type, size, quality and quantities as detailed in plan and specifications; 1.4 Select tools and equipment, check for serviceability or faults.
Learning Outcome 2 (LO2)	Prepare for reinforcement placement
Performance Standards	2.1 Erect identified safety signage and barricades; 2.2 Select and use personal protective equipment (PPE); 2.3 Cut and bend reinforcement bars to job requirements; 2.4 Check formwork for completion and conformity to receive reinforcement.
Learning Outcome 3 (LO3)	Place and tie reinforcement
Performance standards	3.1 Place and position reinforcement bars in accordance with engineering drawings and specifications; 3.2 Tie reinforcement bars into position; 3.3 Secure reinforcement in position for adequate concrete cover spacing and overlap prior to concrete pour; 3.4 Cap off and protect ends of protruding reinforcement materials.
Learning Outcome 4 (LO4)	Clean up after placing and tying reinforcement materials
Performance standards	4.1 Clear the work area and dispose of waste following environmental requirements; 4.2 Clean tools and equipment, check for serviceability; 4.3 Report damage or faults to relevant personnel; 4.4 Store tools and equipment following workplace procedures; 4.5 Store materials for reuse or recycle following workplace procedures.

Pre-requisites	NS133-03 Apply <i>Occupational Health and Safety</i> (OHS) requirements, policies and procedures
Co-requisites	N/A
Underpinning skill and knowledge	The following skills and knowledge underpin this unit standard: <u>Skills:</u> Planning and Preparation • Reviewing and clarifying work tasks, drawings and reinforcement schedules • Interpreting job specifications, plans and engineering drawings • Confirming compliance with relevant legislation, codes of practice and workplace procedures • Identifying OHS hazards and environmental risks and applying appropriate controls • Selecting, checking and safely using plant, tools and equipment Reinforcement Placement • Checking reinforcement materials for correct type, size, quality and quantity • Cutting and bending reinforcing bars to required dimensions • Cutting reinforcement mesh sheets to size • Tying reinforcing bars and mesh to specified configurations • Installing bar chairs, spacers and ligatures to achieve required cover • Positioning and securing reinforcement materials accurately within formwork • Fixing cast-in components where required • Protecting protruding reinforcement to prevent injury or damage Communication and Work Practices

	• Communicating clearly with team members and supervisors • Reporting hazards, faults and non-conforming materials • Following workplace environmental and waste-management procedures • Cleaning, maintaining and storing tools and equipment <u>Knowledge:</u> Regulatory and Compliance • Jurisdictional OHS and environmental legislation relevant to reinforcement work • Job safety analyses (JSAs), safe work method statements (SWMSs) and safety data sheets (SDSs) • Requirements of the Tonga National Building Code and industry best work practices relating to reinforced concrete • Workplace procedures, documentation and reporting requirements Reinforcement Materials Selection • Types, size, characteristics and applications of reinforcement materials, including: • Deformed bars and plain bars • Mesh sheets of deformed and plain bars • Plain rods • Bar chairs, spacers and spacer/spreader assemblies • Ligatures and wire ties Tools and Equipment • Uses, care and limitations of tools and equipment, including: • Reinforcement benders • Mesh guillotines • Bolt cutters • Wire nippers and tie wire reels • Measuring tapes and rules • Safe operating procedures and basic maintenance requirements Reinforcement Techniques and Quality Requirements
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	• Techniques for cutting, bending, placing and fixing reinforcement • Requirements for reinforcement cover, spacing, overlap and alignment • Quality standards relating to reinforced concrete work • Inspection and checking procedures prior to concrete placement Workplace and Environmental Practices • Requirements for cleaning work areas and tools • Safe storage of reinforcement materials • Environmentally responsible waste disposal, recycling and reuse practices
Assessment requirements	<u>Assessment methods</u> may include more than one of the following: Direct Observation Assessment of learners while they are performing tasks in real time in a real simulated environment. • The learner performs practical tasks. • The assessor watches the learner complete these tasks against a checklist or performance standards. Assessor Requirements • Use a structured observation checklist aligned to performance standards • Observe multiple occasions to ensure consistency of competence. • Record evidence of safe work practices, correct use of equipment, etc. • Provide immediate feedback where appropriate. • Ensure conditions reflect real workplace standards. Oral Questioning Verbal questions asked to assess the learner's understanding of knowledge and reasoning. • Conducted during or after practical tasks. • Can be structured (planned questions) or informal (follow-up probing). Assessor Requirements • Ask questions that test underpinning knowledge • Use open-ended questions • Confirm learner understanding where practical performance is not enough. • Record responses clearly (notes or checklist). • Adjust language to suit learner literacy levels.

	Written Test A structured assessment requiring learners to provide written responses. • Short-answer questions, multiple choice, or case scenarios. • Typically conducted off-site or in a classroom environment. Assessor Requirements • Design questions that assess knowledge. • Ensure the test is clear, aligned to unit requirements and appropriate for language, literacy, numeracy levels • Mark responses using a marking guide or model answers. • Provide feedback and identify gaps in knowledge. • Ensure results reflect the learner's independent performance. Work-Based Activity Assessment conducted in a real workplace while the learner performs actual job tasks. • Learners complete normal workplace duties. • Evidence is collected over time. Assessor Requirements • Coordinate with workplace supervisors. • Gather evidence such as - Observation reports, Supervisor feedback, etc. • Verify that tasks meet unit performance standards. • Ensure authenticity (learner's own work). • Confirm competence across different situations and timeframes. Assessment should use a combination of the above methods to ensure sufficient, valid, authentic, and current evidence of competence in both skills and knowledge, in line with unit requirements. <u>Context of Assessment:</u> Competency is to be assessed in the workplace or a simulated workplace environment that accurately reflects a real workplace setting. Assessment is to comply with relevant regulatory or relevant standards' requirements. Assessment of essential knowledge will usually be conducted in an off-site situation.
Moderation arrangements	1. Training providers must have their own moderation system approved by TNQAB before accreditation is granted: a) Relevant internal moderation processes are documented;

	b) Assessment is planned for each unit, and moderation processes are integrated into such plan. 2. Unless specified elsewhere, external moderation is conducted by the National Qualifications unit of TNQAB for all unit components of a national qualification: a) Samples of assessed activities are submitted for moderation; b) Moderation (external) forms are available on request.
Resource requirements	1. Power point presentations on placing and tying reinforcements 2. Trainer's Guide 3. Learner's Guide 4. Videos 5. Plans and specifications 6. Tonga National building Code 7. Job Safety Analysis (JSA) 8. Reinforcement tools and materials 9. Reinforcement cutting and bending tools 10. Barricades and signage 11. Personal Protective Equipment 12. Structured assessment and evidence-collection tools 13. Two Tents (12x6m) 14. Water tank (1000L) on trailer 15. First aid kit
Requirements to complete this unit	There are four (4) Learning outcomes and seventeen (17) Performance Standards to measure competence. To demonstrate competence, the person studying this unit is: a. Required to demonstrate all LOs to the expected standards; b. Required to attain an Achieved Grade (Competent) to fulfil the requirements of the Unit Standard; c. Eligible to three (3) attempts to achieve the required competency within 14 days of the first attempt. Failure to achieve the required competency after three (3) attempts on the specific part of the assessment will require the person studying this Unit to re-enrol for the same Unit.

Important notes and definitions

Notes:

1. All training and assessment activities must be in accordance with Tonga National Building Code.
2. Assessors must comply with the Tonga national assessment and moderation requirements.

Definitions:

1. ***Bolt cutters*** refer to tool for cutting reinforcement steel.
2. ***Cover***: Distance between reinforcement and outer surface of concrete.
3. ***Fixing*** refers to securing reinforcement in its correct position.
4. ***JSEA (Job Safety and Environmental Analysis)*** refers to risk assessment process.
5. ***OHS (Occupational Health and Safety)*** refers to standards to ensure workplace safety.
6. ***Overlap (lap)*** refers to length where reinforcement bars overlap for strength continuity.
7. ***Protruding*** refers to reinforcement extending beyond the surface.
8. ***Reinforcement bender*** refers to tool used to bend steel bars.
9. ***Reinforcing bars (rebar)*** refers to steel bars used to strengthen concrete.
10. ***SDS (Safety Data Sheet)*** refers to information on handling hazardous substances.
11. ***Spacers*** refer to devices ensuring proper cover between reinforcement and formwork.
12. ***SWMS (Safe Work Method Statement)*** refers to document outlining safe procedures for high-risk tasks.
13. ***Tie wire*** refers to wire used to secure reinforcement bars together.
14. ***Tonga National Building Code*** refers to sets construction standards for Tonga
15. ***Wire nippers*** refer to tool for cutting tie wire.

Public comments on unit

Please contact TNQAB National Qualifications Unit (email EnquireNQ@tnqab.to or Telephone 28136) if you like to discuss or suggest changes to the details of this unit.