

REGISTERED NATIONAL STANDARD

UNIT OF COMPETENCY



Title:	Carry out concreting to simple forms ¹				
TQF Level:	3	Credits:	4	Version:	1
National standard code:	NS145-03				
Associated qualification (and code):	1. National Certificate in Bricklaying and Blocklaying Level 3 QR-03-NQ-028-01-1005-26-01 2. National Certificate in Wall and Floor Tiling Level 3 QR-03-NQ-028-03-1005-26-01				
Approval date:	10 September 2026		Review date:	10 September 2031	
Purpose:	This unit describes the skills and knowledge required to safely install simple formwork, place reinforcement, and place, screed and finish concrete for minor concrete works. The unit applies to the construction of simple slabs, pathways and other minor concrete elements in accordance with approved drawings and specifications. All work must be carried out in compliance with the Tonga National Building Code, work health and safety requirements and environmental regulations. The unit is intended for individuals with basic skills and knowledge who perform routine concreting tasks under the supervision or direction of more experienced workers. This unit supports entry-level construction roles and provides foundational concreting skills used across residential and light commercial construction. In successfully completing this unit standard, learners are able to: • Prepare work areas and substrates for concreting • Set up simple formwork and install vapour barriers • Select, inspect and use appropriate tools, equipment, materials and personal protective equipment (PPE) • Calculate material quantities and organize resources required for concreting • Place and secure reinforcing components • Place, compact, screed, finish and cure concrete to required specifications • Strip formwork and complete clean-up activities safely and efficiently				

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 concreting work
Performance standards	1.1 Read and interpret work instructions and plan sequence of work; 1.2 Plan all work to comply with the Tonga National Building Code, occupational health and safety and workplace requirements; 1.3 Select tools and equipment and report any faults; 1.4 Select and use personal protective equipment (PPE) for each task.; 1.5 Inspect work site, assess hazards and apply risk controls, including required signage and barricades; 1.6 Select materials and calculate quantities required for task.
Learning Outcome 2 (LO2)	Set up simple formwork and place reinforcing steel
Performance Standards	2.1 Prepare substrate; 2.2 Review formwork design from drawings; 2.3 Set up formwork; 2.4 Lay vapour barrier; 2.5 Place and tie reinforcement.
Learning Outcome 3 (LO3)	Place concrete
Performance standards	3.1 Clean formwork or excavation of excess material and debris before concrete placement; 3.2 Transport concrete by wheelbarrow; 3.3 Place and compact concrete in formwork; 3.4 Screed concrete to the alignment of formwork and specified datums; 3.5 Finish surface and cure of concrete to specifications.
Learning Outcome 4 (LO4)	Strip formwork and clean up
Performance standards	4.1 Unscrew timber components following stripping of formwork; 4.2 Clean and stack components and store for reuse or bundle for removal; 4.3 Clean up, meeting requirements for safety, waste disposal, materials handling and environmental protection; 4.4 Maintain and store tools and equipment and report any faults.

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 • Reading and interpreting work instructions, drawings and specifications • Planning and sequencing concreting tasks • Identifying site hazards and implementing OHS risk controls • Selecting and calculating material quantities for simple concrete works • Selecting tools and equipment, reporting faults Concreting and Construction • Preparing substrates for formwork and concrete placement • Set up simple timber or edge formwork to required alignment and level • Installing vapour barriers where required • Cutting, positioning and tying reinforcing bars and mesh • Placing bar chairs and spacers to achieve minimum cover • Transporting concrete using manual methods such as wheelbarrows • Placing and compact concrete to required depth and profile • Screeding concrete to established formwork lines and datums • Finishing concrete surfaces to specified finishes (e.g. broomed, trowelled, floated)

	• Curing OHS and Work Practices • Selecting and using appropriate personal protective equipment (PPE) • Using tools and equipment safely and correctly • Handling materials safely to prevent injury or damage • Cleaning, maintaining and storing tools and equipment • Managing waste and disposing of materials in an environmentally responsible manner <u>Knowledge:</u> Regulatory and Compliance • Tonga National Building Code requirements relevant to minor concreting works • Best work practices applicable to concreting and formwork • Workplace quality policies, procedures and standards • OHS requirements, including hazard identification and risk control Materials and Equipment Selection • Types and uses of tools and equipment used in simple concreting • Uses and characteristics of concreting materials, including: • Reinforcing bars and fabric mesh • Bar chairs, spacers and bracing • Formwork boards and edge forms • Vapour barriers Concreting Processes and Techniques • Concreting techniques, including placing, compact, screeding, floating and finishing • Surface finishing methods such as broomed, trowelled, machine-trowelled and wood-floated finishes • Simple concrete applications, including: • Pathways • Garden edges • Post holes • Minor slabs and aprons
--	---

	• Channels and beam thickeners Concrete Properties and Performance • Properties of concrete and how strength is achieved • Ingredients, proportions and mixing techniques • Methods for maintaining design strength during placement • Curing techniques and the effects of poor curing • Use and limitations of vibration and over-vibration Planning and Quality Control • Reading and interpreting plans, drawings and specifications • Calculating concrete volumes and material quantities • Quality requirements for concreting to simple forms • Environmentally sustainable material storage and waste management
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 <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 concreting to simple forms 2. Trainer's Guide 3. Learner's Guide 4. Videos 5. Plans and specifications 6. Tonga National Building Code 7. JSA 8. Formwork materials 9. Release agent and brush 10. Damp proof course 11. Reinforcement materials 12. Concreting materials 13. Concreting tools, plant and equipment 14. Concrete finishing tools 15. Barricades and signage 16. Personal Protective Equipment 17. Structured assessment and evidence-collection tools 18. First aid kit

	19. Reinforcement-bar Cutter and bender, tie tools 20. Levelling tools: • Laser • Dumpy
Requirements to complete this unit	There are four (4) Learning outcomes and twenty (20) Performance Standards to measure competence. To demonstrate competence, the person studying this unit is: - Required to demonstrate all LOs to the expected standards; - Required to attain an Achieved Grade (Competent) to fulfil the requirements of the Unit Standard; - 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	<u>Notes:</u> 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. <u>Definitions:</u> 1. <i>Aggregate</i> refers to sand, gravel, or crushed stone used in concrete. 2. <i>Bracing</i> refers to supports used to stabilise formwork. 3. <i>Compaction</i> refers to removal of air pockets in wet concrete. 4. <i>Cement</i> refers to binding material in concrete. 5. <i>Concrete</i> refers to mixture of cement, water, and aggregates used in construction. 6. <i>Cover</i> refers to distance between reinforcement and concrete surface. 7. <i>Curing</i> refers to the process of maintaining moisture for strength development. 8. <i>Edge forms</i> refer to boards forming the boundary of the concrete slab.

	9. <i>Finishing</i> refers to final surface treatment (e.g., broom, trowel). 10. <i>Floating</i> refers to moothing surface before finishing. 11. <i>Form stripping</i> refers to removal of formwork after concrete sets. 12. <i>Formwork</i> refers to temporary mould used to shape concrete. 13. <i>JSEA (Job Safety and Environmental Analysis)</i> refers to risk assessment process. 14. <i>Mix ratio</i> refers to proportion of materials in concrete mix. 15. <i>OHS (Occupational Health and Safety)</i> refers to standards to ensure workplace safety. 16. <i>Placing</i> refers to pouring concrete into formwork. 17. <i>Reinforcing bars (rebar)</i> refers to steel bars used to strengthen concrete. 18. <i>Screeding</i> refers to levelling concrete using a straight edge. 19. <i>SDS (Safety Data Sheet)</i> refers to information on handling hazardous substances. 20. <i>Simple forms</i> refer to basic structures such as pathways, slabs, and small concrete works. 21. <i>Slab</i> refers to flat horizontal concrete surface. 22. <i>Substrate</i> refers to surface on which concrete is placed. 23. <i>SWMS (Safe Work Method Statement)</i> refers to document outlining safe procedures for high-risk tasks. 24. <i>Tonga National Building Code</i> refers to sets construction standards for Tonga
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.