

REGISTERED NATIONAL STANDARD

UNIT OF COMPETENCY



Title:	Construct multi-thickness brick wall ¹				
TQF Level:	4	Credits:	5	Version:	1
National standard code:	NS157-04				
Associated qualification (and code):	National Certificate in Bricklaying and Blocklaying Level 4 QR-04-NQ-028-02-1005-26-01				
Approval date:	10 September 2026		Review date:	10 September 2031	
Purpose:	This unit describes the skills and knowledge required to lay a multi-thickness brick wall include selecting and using appropriate brick bond patterns and performing construction tasks on new or existing structures. The unit covers setting out work, calculating material quantities, laying multi-thickness walls in accordance with workplace and environmental requirements and Tonga National Building Code. It applies to brick and block layers working independently on new or existing structures who are expected to operate with responsibility in organising and completing assigned tasks. This unit supports bricklayers who are expected to take responsibility for assigned multi-thickness brick wall construction tasks and complete work independently while meeting Tonga National Building Code requirements In successfully completing this unit standard, learners are able to: • Interpret construction drawings, specifications, and standards for multi-thickness wall and pier construction • Plan and organise work activities, sequencing, and task priorities to achieve efficient construction outcomes • Apply OHS, environmental, and workplace procedures throughout brick and block multi-thickness wall construction • Identify and control hazards associated with masonry work, including manual handling, silica dust, and working at heights • Calculate material quantities and resource requirements using appropriate measurement techniques • Select and prepare tools, equipment, and materials suitable for multi-thickness masonry construction • Set out wall positions, brick bonds, and pier locations accurately.				

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.

	• Lay multi-thickness masonry walls using specified brick bond patterns to achieve structural stability • Mix and apply mortar to required quality and consistency for different brick and block applications • Maintain line, level, plumb, and square during construction of walls and piers • Finish joints to specified profile and clean brickwork surfaces to achieve required quality • Ensure work meets required tolerances and quality standards • Clean up work area and dispose of, reuse, or recycle materials according to environmental procedures • Maintain and store tools and equipment in safe and serviceable condition • Apply finishing techniques and ensure compliance with Tonga National Building Code.
Learning Outcome 1 (LO1)	Prepare and organise multi-thickness wall construction work
Performance standards	1.1 Read, interpret and apply multi-thickness wall construction requirements from plans, specifications, and Tonga National Building Code; 1.2 Follow requirements in workplace safety and environmental documentation and workplace procedures; 1.3 Use measurements and apply formulas to calculate material quantities; 1.4 Determine job priorities and sequence job tasks in consultation with others on site; 1.5 Identify potential hazards and determine and implement control measures; 1.6 Select and use personal protective equipment (PPE) appropriate for job; 1.7 Select equipment and tools and report damage or faults to relevant person; 1.8 Check conformity of materials against the specifications and place materials in preparation for the work.
Learning Outcome 2 (LO2)	Set out multi-thickness brick work
Performance Standards	2.1 Determine brick bond pattern from work plans; 2.2 Set out and mark position of interior brickwall; 2.3 Set out and mark position of exterior brickwall; 2.4 Set out rod to specified height and gauge.

Learning Outcome 3 (LO3)	Lay multi-thickness brick wall
Performance standards	3.1 Mix mortar quality and consistency to job requirements; 3.2 Lay walls straight, level and plumb; 3.3 Remove mortar residue prior to drying; 3.4 Finish joints to specified profile and depth; 3.5 Brush down and clean brickwork prior to mortar drying.
Learning Outcome 4 (LO4)	Clean up working area
Performance standards	4.1 Clear the work area and dispose waste following environmental requirements; 4.2 Clean tools and equipment; 4.3 Check for serviceability and report damage or faults; 4.4 Store and secure tools and equipment 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> Work Preparation Skills • Select, fit, and correctly use PPE. • Read, interpret, and apply plans, specifications, standards, and codes for multi-thickness wall and pier construction. • Interpret safety and environmental documentation and follow workplace procedures. • Use measurements and formulas to calculate material quantities. • Identify hazards and implement control measures. • Select, check, and maintain tools, plant, and equipment, reporting faults as needed. Setting Out Skills • Identify and apply brick bonds from plans.

	• Set out and mark positions of both brickwalls (multi-thickness). • Set out engaged and isolated piers to required gauge and height. Construction Skills • Mix mortar to correct consistency and quality. • Lay multi-thickness walls straight, level, and plumb. • Finish joints to required profile and depth. • Remove mortar residue and clean brickwork prior to drying. Workplace Housekeeping Skills • Dispose, reuse, or recycle materials according to environmental requirements. • Clean, check, store, and secure tools and equipment. <u>Knowledge:</u> Materials Selection and Construction Techniques • Characteristics, applications, and limitations of materials used for multi-thickness walls and piers. • Techniques for constructing multi-thickness walls and piers. • Methods for installing reinforcing, damp-proofing, drainage pipes, and weep holes. • Processes for laying bricks to specified bonds for structural stability. Brick Bond Patterns Knowledge of major bond patterns including: • Flemish, Flemish garden wall • English bond, English garden wall • Monk bond • Dutch bond • 1/3 bond • Stretcher bond Tools and Equipment Selection • Functional and operational features of plant, hand tools, and power tools used in masonry work. Workplace Safety
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	• Job safety and environmental analysis (JSEA). • Controls for working at heights. • Controls for hazardous manual tasks. • Dust suppression, silica exposure, and noise exposure requirements. Regulatory Requirements • Relevant and current building standards and codes for brick and blocklaying. • Key features of the Tonga National Building Code related to construction of multi-thickness walls. • Features of working drawings and specifications. • Environmental requirements for workplace processes and waste disposal
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>
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	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. 2. Trainer's Guide 3. Learner's Guide 4. Tonga National Building Code 5. Videos on multi-thickness brick wall construction 6. Plans and Specifications 7. Bricks suitable for multi-thickness walls 8. Mortar materials (cement, sand, lime, water) 9. Additives for mortar (plasticisers, bonding agents) 10. Reinforcement materials 11. Damp-proofing materials and drainage components (e.g., weepholes 12. Cleaning materials (e.g., acid solution for masonry cleaning) 13. Trowels 14. Brick hammer 15. Bolster 16. Jointing tools 17. Tape measures

	18. Levels (spirit level) 19. Squares 20. String lines and line pins 21. Bricklayers' profiles 22. Set-out rods or brickies' tape 23. Mixing equipment (manual or mechanical mixer) 24. Hand and power tools (including battery-operated tools) 25. PPE's 26. Site safety signage and barriers 27. JSEA (Job Safety and Environmental Analysis) 28. Structured assessment and evidence-collection tools 29. Laser (multi-dimensional) 30. Blum-bob
Requirements to complete this unit	There are four (4) Learning outcomes and twenty-one (21) 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	<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>Articulation Joint / Control Joint</i> refers to joint that allows movement in masonry due to expansion, contraction, or settlement.

2. **Bond** refers to the pattern of laying bricks or blocks to ensure strength and proper load distribution (e.g., stretcher bond).
3. **Brick Bond** refers to the pattern in which bricks are laid to ensure strength and stability. Common types include:
 - Dutch bond
 - English bond
 - Flemish bond
 - Stretcher bond
 - Monk bond
 - Tongan bond
4. **Brickwork Tolerances** refers to the acceptable limits of variation in masonry work
5. **Course** is a horizontal layer of bricks or blocks in a wall.
6. **Damp-proofing** refers to materials or techniques used to prevent moisture ingress into masonry structures.
7. **Gauge** is the vertical spacing of courses to ensure consistent height and alignment.
8. **Hierarchy of Control** is a system used to minimise workplace hazards, ranked from elimination to PPE.
9. **Jointing** refers to finishing the mortar joints to a specified shape and depth for structural and aesthetic purposes.
10. **JSEA (Job Safety and Environmental Analysis)** refers to risk assessment process.
11. **Level** refers to perfect horizontal alignment
12. **Line** refers to straight alignment along a length
13. **Loadbearing Wall** is a wall that supports structural loads from floors, roofs, or other elements.
14. **Mortar** is a mixture of cement, sand, lime, and water used to bond brick and block units together.
15. **Multi-thickness Wall** is a masonry wall constructed with more than one brick thickness to improve structural strength and load-bearing capacity.
16. **OHS (Occupational Health and Safety)** refers to workplace safety regulations and practices.
17. **Plumb** refers to perfect vertical alignment
18. **PPE (Personal Protective Equipment)** is a safety equipment such as helmets, boots, gloves, and high-visibility clothing.
19. **Profile** is a temporary vertical support used to guide accurate bricklaying and maintain alignment.
20. **Raking joints** - Removing mortar to create joint profile.

	21. 22. <i>Residue</i> refers to removing of unwanted modar. 23. <i>Set Out</i> refers to the process of marking positions and dimensions of walls and corners before construction begins. 24. <i>Silica dust</i> refers to hazardous dust produced during cutting masonry materials. 25. <i>Tonga National Building Code</i> is a set of technical provisions for the design and construction of buildings and structures in Tonga. 26. <i>Weephole</i> is an opening in brick and block that allows water to drain from cavities. 27. <i>Work area</i> refers to the particular section where tasks are performed at the work site.
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.