

REGISTERED NATIONAL STANDARD



UNIT OF COMPETENCY

Title:	Apply waterproofing process for tiling ¹				
TQF Level:	4	Credits:	4	Version:	1
National standard code:	NS172-04				
Associated qualification (and code):	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 apply waterproofing systems to internal wet areas in buildings. It covers the selection of appropriate waterproofing systems, preparation of substrates, application of membranes and sealants, and completion of finishing and clean-up activities. The unit applies to tiling workers who undertake waterproofing tasks independently and responsibility for organising and completing work. All tasks must comply with Tonga National Building Code, OHS requirements, manufacturer specifications, and environmental regulations. The unit emphasises correct waterproofing practices to ensure effective waterproof barriers, durability of structures, and prevention of water damage in internal wet areas. In successfully completing this unit standard, learners are able to: • Apply workplace safety, environmental, and quality requirements • Interpret drawings, specifications, and standards for waterproofing internal wet areas • Plan and organise waterproofing tasks, sequencing work efficiently • Apply OHS, environmental, and workplace procedures throughout the process • Identify and control hazards using JSA, SWMS, and safety data sheets • Select appropriate waterproofing systems compatible with site conditions and substrates • Calculate material quantities required for waterproofing applications				

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.

	• Inspect worksite conditions, including surface defects, moisture content, and drainage adequacy • Prepare substrates by cleaning, levelling, and priming surfaces • Install flashings, termination seals, and waterproofing accessories • Apply waterproofing membranes to required thickness and coverage as per specifications • Detail and seal joints, penetrations, and transitions to ensure continuous waterproofing • Install sealants and backing materials to construction joints • Inspect completed waterproofing systems for compliance with manufacturer and regulatory requirements • Report any movement joints to subsequent trades • Protect waterproofing membranes and sealants until completion of works • Clean up work areas and manage materials through reuse, recycling, or disposal • Maintain and store tools and equipment in safe and serviceable condition
Learning Outcome 1 (LO1)	Plan and prepare to apply waterproofing process to internal wet areas
Performance standards	1.1 Read and interpret scope of work and instructions; 1.2 Plan sequence of waterproofing work to comply with requirements; 1.3 Inspect work area, assess hazards and apply risk controls, including required signage and barricades; 1.4 Select and use personal protective equipment (PPE) as required for each stage of the waterproofing task; 1.5 Follow requirements of job safety analyses and safety data sheets; 1.6 Select tools and equipment; 1.7 Select materials required for waterproofing task; 1.8 Calculate material quantities, prepare and position them ready for use.
Learning Outcome 2 (LO2)	Select waterproofing system
Performance Standards	2.1 Locate internal structure to be waterproofed from drawings and specifications; 2.2 Check area for surface defects; 2.3 Select waterproofing suitable for substrate; 2.4 Confirm manufacturer requirements with site conditions.
Learning Outcome 3 (LO3)	Prepare substrate ready for waterproofing

Performance standards	3.1 Set out internal wet area and check alignment, fixtures and finished levels; <i>(Range for conformity with drawings and specifications.)</i> 3.2 Check substrate dampness for compatibility with system; 3.3 Check adequacy of drainage; 3.4 Prepare flashings and termination seals for installation to manufacturers' specifications; 3.5 Check that substrate has a uniform finish to manufacturers' instructions; 3.6 Report any movement joints to subsequent trades supervisor; 3.7 Clean and prepare substrate ready for waterproofing; 3.8 Prime substrate ready for waterproofing.
Learning Outcome 4 (LO4)	Apply waterproofing to internal wet area surfaces
Performance standards	4.1 Apply waterproofing system to prepared surface; <i>(Range in accordance to manufacturers' specifications.)</i> 4.2 Detail and stop waterproofing membrane; <i>(Range in accordance with system requirements.)</i> 4.3 Check completed waterproofing installation; <i>(Range in accordance with manufacturers' specifications.)</i> 4.4 Perform final inspection and completion activities; 4.5 Protect waterproofing membrane.
Learning Outcome 5 (LO5)	Apply sealants to construction joints
Performance standards	5.1 Select sealant for compatibility with application, substrate and finishes; 5.2 Install backing rods and/or release agents to prevent three-sided adhesion; 5.3 Apply sealant manufacturers' specifications, tool to required finish and allow to cure; 5.4 Perform final inspection and completion activities; 5.5 Protect sealant, in accordance with manufacturers' specifications.
Learning Outcome 6 (LO6)	Clean up work area
Performance standards	6.1 Clear the work area and dispose waste following environmental requirements;

	6.2 Clean tools and equipment; 6.3 Report damage or faults to relevant personnel; 6.4 Store tools and equipment following workplace procedures; 6.5 Store materials for reuse or recycle following workplace procedures.
Pre-requisites	NS133-03 Apply Occupational Health and Safety (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 drawings, specifications and work instructions • Planning waterproofing tasks in accordance with standards, OHS and environmental requirements • Selecting and correctly using personal protective equipment (PPE) • Identifying hazards and implementing appropriate risk control measures • Selecting, checking and maintaining tools and equipment Waterproofing Techniques • Locating and assessing internal wet areas to be waterproofed • Assessing substrate condition, soundness and moisture content • Selecting waterproofing systems compatible with substrates and site conditions • Preparing substrates, including cleaning, priming and ensuring uniform finish • Installing flashings, termination seals and water stops

	• Applying waterproofing membranes in accordance with manufacturers' specifications • Detailing penetrations, joints, fixtures and terminations • Applying sealants, including backing rods and tooling to finish Inspection and Completion • Checking waterproofing installations for conformity and completeness • Documenting movement joints for subsequent trades • Protecting membranes and sealants during curing • Cleaning work areas and safely disposing of or recycling materials • Storing tools and equipment correctly <u>Knowledge:</u> Regulatory and Compliance • Workplace best practices applicable to waterproofing internal wet areas • OHS requirements, including job safety analyses (JSA) and safety data sheets (SDS) • Workplace procedures and manufacturers' specifications for waterproofing systems Waterproofing Materials and Systems • Types and characteristics of waterproofing systems used in internal wet areas, including: ○ Cementitious membranes ○ Water-based and moisture-cured membranes ○ Sprayed liquid membranes ○ Sheet membranes (butyl, Ethylene Propylene Diene Monomer (EPDM), PVC, decoupling systems) • Ancillary materials such as adhesives, sealants, drainage flanges, penetration flashings and water stop Application Techniques and Processes • Preparation techniques for substrates and internal wet areas ○ Waterproofing around fixtures and penetrations, including: ○ Showers
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	○ Baths ○ Vanities ○ Toilets ○ Taps and service penetrations • Termination and flashing principles • Principles of water exclusion and moisture management Tools, Equipment and Quality • Types and uses of tools and equipment for waterproofing • Calculation of material quantities • Quality requirements and inspection criteria for internal wet area waterproofing • Environmentally responsible storage and waste management 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 2. Trainer's Guide 3. Learner's Guide 4. Tonga National Building Code 5. Videos on Applying waterproofing for tiling 6. Plans and Specifications 7. Waterproofing materials 8. Sheet membranes (PVC, EPDM, butyl) 9. Spray-applied membranes 10. Sealants and backing rods 11. Primers and bonding agents 12. Flashings and penetration seals 13. Drainage flanges and outlets 14. Water stops (e.g., hobs, bath surrounds) 15. Brushes 16. Rollers 17. Trowels

	18. Spray equipment 19. Tape measures 20. Levels 21. Mixing equipment 22. Cutting tools for membranes 23. Cleaning tools and finishing tools 24. Hand and power tools 25. Job Safety Environment Analysis (JSEA) 26. Safety Data Sheets (SDS) 27. PPEs 28. Structured assessment and evidence-collection tools
Requirements to complete this unit	There are six (6) Learning outcomes and thirty-five (35) 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. Backing Rod is a material inserted into joints to control sealant depth and prevent three-sided adhesion. 2. Decoupling is a method used to separate layers to prevent movement or cracking from affecting waterproofing. 3. Drainage Flange is a component that integrates waterproofing membranes with drainage outlets.

	4. <i>Environmental Requirements</i> refer to regulations and workplace procedures aimed at reducing environmental impact, including waste management and recycling. 5. <i>Flashing</i> is a material used to direct water away from vulnerable areas and joints. 6. <i>JSEA (Job Safety and Environmental Analysis)</i> – Process identifying hazards and environmental risks. 7. <i>Liquid Membrane</i> is a waterproofing material applied as a liquid that cures to form a flexible barrier. 8. <i>Dampness</i> refers to the level of water present in a substrate, affecting waterproofing performance. 9. <i>Penetration</i> is an opening in a surface for pipes or fixtures that must be sealed to maintain waterproofing. 10. <i>Primer</i> is a preparatory coating that improves adhesion of waterproofing materials. 11. <i>SDS (Safety Data Sheet)</i> is a document providing safety information about materials and chemicals. 12. <i>Sealant</i> is a flexible material used to seal joints and prevent water ingress. 13. <i>Sheet Membrane</i> refers to pre-formed waterproofing material applied in sheets and bonded to surfaces. 14. <i>Substrate</i> refers to the surface to which waterproofing is applied (e.g., concrete, masonry, sheet wall). 15. <i>Termination</i> refers to the point where the waterproofing membrane ends and must be sealed. 16. <i>Tolerance</i> refers to the allowable variation in construction dimensions or application thickness. 17. <i>Tonga National Building Code</i> is a set of technical standards governing the design and construction of buildings in Tonga. 18. <i>Water Stop / Hob</i> is a raised barrier that prevents water from flowing out of wet areas. 19. <i>Waterproofing</i> refers to the process of preventing water penetration into building structures. 20. <i>Waterproofing Membrane</i> refers to material applied to surfaces to create a continuous barrier against water. 21. <i>Wet Area</i> is an area exposed to water during normal use, such as bathrooms, showers, and laundries.
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.

