

REGISTERED NATIONAL STANDARD

UNIT OF COMPETENCY



Title:	Apply basic levelling procedures ¹				
TQF Level:	3	Credits:	4	Version:	1
National standard code:	NS142-03				
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 carry out levelling in a single plane to ensure accurate set-out of building components. It covers planning and preparing for levelling tasks, setting up and testing levelling devices, transferring heights, recording results, relevant to tasks. The unit applies to perform levelling tasks on residential and commercial sites, working as part of a team and using common levelling equipment such as spirit levels, optical or automatic levels, water levels, and laser levels This unit develops foundational competence required for setting out, accurate height transfer, and quality compliance across construction projects. In successfully completing this unit standard, learners are able to: • Accurately establish and transfer levels using a range of levelling devices. • Apply safe work practices, including hazard identification, correct use of PPE, and compliance with Job Safety Environment Analysis (JSEA), site safety plans and manufacturer specifications. • Interpret job requirements, set up levelling tools, and verify levelling device tolerances (e.g., reverse readings, two-peg test). • Record and document levelling results according to organisational procedures. • Work effectively as part of a team, using agreed verbal and non-verbal communication signals during levelling activities.				

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 for basic levelling relevant to work
Performance standards	1.1 Obtain and confirm job requirements are with relevant personnel, and applied to planning; 1.2 Determine work site conditions and hazards within scope of own role and reported according to workplace procedures; 1.3 Confirm health and safety requirements for levelling procedures and apply to planning; 1.4. Select levelling tools and equipment according to job requirements.
Learning Outcome 2 (LO2)	Set up levelling devices
Performance Standards	2.1 Set up levelling devices in accordance with manufacturer instructions; 2.2 Test levelling devices in accordance with manufacturer instructions, including two-peg test for automatic levels; 2.3 Record results of two-peg test for automatic levels determine inaccuracy and tolerance; 2.4 Rectify or report faults to relevant personnel to organisational requirements.
Learning Outcome 3 (LO3)	Use levelling devices
Performance standards	3.1 Determine heights or levels to be transferred/established from project plans or instructions for levelling procedures; 3.2 Use levelling devices in accordance with manufacturer instructions, including levelling device tolerance checks; 3.3 Apply levelling staffs accurately; 3.4 Transfer levels and heights shot to required location and marked and/or recorded to job requirements; 3.5 Record results of levelling procedure to organisational requirements.
Learning Outcome 4 (LO4)	Clean up devices and work area
Performance standards	4.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements. 4.2 Clean tools and equipment; 4.3 Check for serviceability and report damage or faults.

	4.4 Store and secure tools, equipment and materials 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 - Obtain and confirm job requirements with relevant personnel. - Inspect work site and identify hazards within own scope of work. - Identify OHS requirements and integrate them into planning. - Select levelling tools and equipment, check serviceability, and rectify or report faults. Levelling Operations - Identify required heights and levels from work instructions. - Set up levelling devices and check tolerance according to manufacturer specifications (e.g., two-peg test, reverse reading). - Shoot levels and transfer heights to specified locations. - Mark height/level points using chalk, nails, datum pegs or sketches. - Document levelling results accurately. Measurement and Numeracy - Interpret and calculate levelling readings. - Confirm accuracy of readings when moving levelling device locations. Teamwork and Communication - Use agreed communication signals (verbal and non-verbal) while working with team members. - Communicate effectively to ensure accuracy during levelling tasks. Work Finalisation and Housekeeping

	• Sort, remove or recycle materials according to statutory requirements. • Clean and maintain tools and equipment. • Store equipment safely per manufacturer specifications. <u>Knowledge:</u> Levelling Devices and Techniques • Characteristics, technical capabilities and limitations of: • laser levels and targets • spirit levels and straight edges • measuring tapes and rules • automatic/optical levels • plumb bobs • water levels • Levelling techniques including: • shooting levels • transferring levels • performing two-peg tests • recording ground, slab, drainage and set-out levels Levelling Calculations and Set-Out Processes • Methods of performing calculations associated with levelling. • Requirements for line, level and plumb in construction projects. • Processes for setting out levelling tasks and using data points. Safety Requirements • Site and equipment safety requirements related to levelling work. • Safe operating procedures, including: • hazard identification • emergency procedures (evacuation, first aid) • fitting and using PPE • complying with JSEA Construction Documentation and Terminology • Symbols and terminology used when interpreting construction plans.
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	Contents and purpose of JSEA, and site documentation relevant to levelling
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 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 Basic levelling 2. Trainer's Guide 3. Learner's Guide 4. Videos on Basic levelling 5. Learner guides 6. Chalk lines 7. Hammers 8. Marking equipment 9. Measuring tapes and rules, spirit levels and straight edges 10. Plumb bobs 11. Saws and saw stools 12. Signage for laser levelling 13. String lines and laser targets 14. Water levels, laser levels, optical levels and automatic levels 15. Tripod & staff 16. Level Booking Sheet 17. Wooden and steel pegs. 18. Structured assessment and evidence-collection tools
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	<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.

Definitions:

1. *Automatic/Optical Level* refers to a tripod-mounted optical instrument used to accurately transfer heights over distance.
2. *Datum* is a reference point or level from which all other heights are measured.
3. *Documentation Requirements* refer to organisational rules for recording, storing and reporting levelling results.
4. *Hazard Identification* refers to recognising site conditions that may cause harm and reporting them appropriately.
5. *Height or Level Mark* is a physical mark showing a measured height, such as chalk lines, nail marks, or marks on vertical surfaces.
6. *Job Safety Analysis (JSA)* refers to a process for identifying hazards and controls for specific levelling tasks.
7. *Laser Level* is an electronic levelling device that projects a laser beam to establish levels and heights.
8. *Level* refers to horizontal accuracy
9. *Levelling* refers to the process of establishing and transferring accurate heights or levels to ensure building components are set out correctly in a single plane.
10. *Levelling Staff/ Target* is a graduated rod or target used to read height measurements when using levelling devices.
11. *Levelling Tolerance* refers to the acceptable variation allowed when setting up and using levelling equipment, as specified by the manufacturer.
12. *Line* refers to straight alignment
13. *Occupational Health and Safety (OHS) Requirements* refer to safety rules and procedures that must be followed when carrying out levelling tasks.

14. *Personal Protective Equipment (PPE)* refers to safety equipment such as boots, hard hats, high-visibility clothing and eye protection.
15. *Plumb* refers to vertical accuracy
16. *Plumb Bob* refers to a weighted tool used to establish a true vertical reference.
17. *Recording Levels* refer to documenting levelling results accurately in workplace records or drawings.
18. *Required Level / Height* is the specified vertical position taken from drawings or work instructions.
19. *Reverse Reading* is a method used with a spirit level to check accuracy by reversing the level and comparing readings.
20. *Safe Work Method Statement (SWMS)* refers to a document describing how high-risk or technical tasks are carried out safely.
21. *Serviceability* refers to the condition of tools and equipment being safe, functional and suitable for use.
22. *Set-out* refers to marking the correct positions, lines and levels on a site based on drawings and specifications.
23. *Shooting Levels* refer to taking readings with a levelling device to determine height differences between points.
24. *Single Plane Levelling* refers to levelling work where heights are established on one horizontal plane.
25. *Site Clean-up* refers to clearing materials and waste from the work area after levelling is completed.
26. *Spirit Level* is a manual levelling device with a bubble vial used to check horizontal or vertical alignment.
27. *Straight Edge* is a rigid, straight tool used with a spirit level to check longer surfaces.
28. *Survey Peg/Datum Peg* is a fixed marker on site used as a reference for levels or height measurements.
29. *Tool Maintenance and Storage* refers to cleaning, checking and storing levelling equipment according to manufacturer specifications.
30. *Transfer of Heights* refers to moving a known level or height from one location to another accurately.

	31. <i>Two Peg Test</i> is a procedure used to check the accuracy of an automatic or optical level. 32. <i>Verbal and Non-Verbal Communication Signals</i> refer to agreed spoken instructions and hand signals used when working in levelling teams. 33. <i>Water Level</i> is a clear tube filled with water used to establish equal heights using water balance principles.
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.