Qualification Specification

ProQual Level 3 Diploma in Construction Materials Technology

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This qualification is part of ProQual's broad offer of qualifications in the Construction Occupational Skills Sector.

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Introduction

The ProQual Level 3 Diploma in Construction Materials Technology provides a nationally recognised qualification for individuals developing their knowledge and skills in construction materials testing, site investigation, and geotechnical practice. It supports those starting or progressing within technician roles, giving them the competence to work safely and effectively in both laboratory and site environments.

The aims of this qualification are:

- To provide learners with fundamental knowledge and skills required in construction materials testing and ground investigation.
- To develop competence in the safe use of equipment, sampling techniques, and laboratory/field testing methods.
- To support understanding of health, safety, and environmental requirements in construction materials context.
- To prepare learners for progression to more advanced study or employment in civil engineering, construction, or related technical roles.

The awarding body for this qualification is ProQual AB. This qualification has been approved for delivery in England. The regulatory body for this qualification is Ofqual, and this qualification has been accredited onto the Regulated Qualification Framework (RQF) and has been published in Ofqual's Register of Qualifications.

Qualification Profile

Qualification Title:	Level 3 Diploma in Construction Materials Technology
Qualification Number:	610/6897/4
Level:	3
Total Qualification Time (TQT):	620
Guided Learning Hours (GLH):	330
Assessment:	Pass/Fail
	Internally assessed and verified by centre staff
	External quality assured by ProQual verifier
Qualification Start Date:	15/01/2026
Qualification Review Date:	15/01/2029

Learner Profile

Candidates who complete this qualification should have as a minimum:

- 3 GCSE passes in Maths, English Language and Science or Technology.

Centres should carry out an initial assessment of candidate skills and knowledge to identify any gaps and help plan the assessment.

Candidates must be aged **at least 16 years old** on the day that they are registered for this qualification. Centres are reminded that no assessment activity may take place until a candidate has been registered.

Qualification Structure

This qualification consists of **6** mandatory units. Candidates must complete all mandatory units to complete this qualification.

Unit Number	Unit Title	Level	TQT	GLH
Mandatory Units – Candidates must complete **all** units in this group.				
F/651/8947	Health and Safety and Task Planning	3	80	40
H/651/8948	Distinguish CMT Equipment and Apparatus	3	90	50
J/651/8949	Concrete Technology	3	110	60
M/651/8950	Geotechnical Testing of Construction Materials	3	115	60
R/651/8951	Site and Ground Investigation Techniques	3	130	70
T/651/8952	Principles of Design in Construction Materials Technology	3	95	50

Centre Requirements

Centres must be approved to deliver this qualification. If your centre is not approved to deliver this qualification, please complete and submit the **ProQual Additional Qualification Approval Form.**

Materials produced by centres to support candidates should:

- Enable them to track their achievements as they progress through the learning outcomes and assessment criteria.
- Provide information on where ProQual's policies and procedures can be viewed.
- Provide a means of enabling Internal and External Quality Assurance staff to authenticate evidence.

Centres must have the appropriate equipment to enable candidates to carry out the practical requirements of this qualification.

Certification

Candidates who achieve the requirements for this qualification will be awarded:

- A certificate listing all units achieved, and
- A certificate giving the full qualification title:

ProQual Level 3 Diploma in Construction Materials Technology

Claiming certificates

Centres may claim certificates for candidates who have been registered with ProQual and who have successfully achieved the qualification. All certificates will be issued to the centre for successful candidates.

Unit certificates

If a candidate does not achieve all the units required for a qualification, the centre may claim a unit certificate for the candidate which will list all the units achieved.

Replacement certificates

If a replacement certificate is required a request must be made to ProQual in writing. Replacement certificates are labelled as such and are only provided when the claim has been authenticated. Refer to the Fee Schedule for details of charges for replacement.

Assessment Requirements

Each candidate is required to produce a portfolio of evidence which demonstrates their achievement of all the learning outcomes and assessment criteria for each unit.

Evidence can include:

- Observation report by assessor.
- Assignments/projects/reports.
- Professional discussion.
- Witness testimony.
- Candidate product.
- Worksheets.
- Knowledge tests.
- Photographic and/or video evidence of the candidate's practical work.
- Record of oral and written questioning.
- Candidate reflection on own practical work.
- Recognition of Prior Learning.

Candidates must demonstrate the level of competence described in the units. Assessment is the process of measuring a candidate's skill, knowledge and understanding against the standards set in the qualification.

An observation report and witness testimony are differentiated as follows:

- An **assessor's report** is completed by a qualified assessor who observes the candidate carrying out practical work. The assessor will make assessment decisions as they observe and record these in the report, alongside a commentary of what they observe.
- A **witness statement** is completed by a suitably qualified or experienced expert who observes the candidate carrying out practical work. The witness statement will contain **only** a commentary of what has been observed. An assessor must then use the witness statement, alongside any additional evidence to make assessment decisions.
- In all cases, an assessor's report is preferred as evidence over a witness statement as it is always better for an assessor to observe a candidate live.

Assessors may wish use to use a checklist or evidence matrix to organise and track the assessment outcomes that have been achieved, but these **do not**, in themselves, constitute evidence of achievement.

An assessor's report or witness statement alone is unlikely to be sufficient evidence of achievement. Reports and statements should always be accompanied by photographic and/or video evidence.

Where a knowledge-based assessment criteria is included within an otherwise competence-based learning outcome, it is expected that it be assessed within the context of the required practical competency.

A single piece of evidence may be used to cover multiple assessment criteria.

Evidence of practical skills may be demonstrated in a simulated environment, where appropriate.

Centres may use the appropriate ProQual Candidate Workbook to organise candidate evidence or may use their own portfolio templates.

Centre staff assessing this qualification must be **occupationally competent** and qualified to make assessment decisions. Assessors who are suitably qualified may hold a qualification such as, but not limited to:

- ProQual Level 3 Certificate in Teaching, Training and Assessment.
- ProQual Level 3 Award in Education and Training.
- ProQual Level 3 Award in Assessing Competence in the Work Environment.
- ProQual Level 3 Award in Assessing Vocational Achievement.

Candidate portfolios must be internally verified by centre staff who are **occupationally knowledgeable** and qualified to make quality assurance decisions. Internal verifiers who are suitably qualified may hold a qualification such as:

- ProQual Level 4 Award in the Internal QA of Assessment Processes and Practice.
- ProQual Level 4 Certificate in Leading the Internal QA of Assessment Processes and Practice.

Occupationally competent means capable of carrying out the full requirements contained within a unit. **Occupationally knowledgeable** means possessing relevant knowledge and understanding.

Enquiries, Appeals and Adjustments

Adjustments to standard assessment arrangements are made on the individual needs of candidates. ProQual's Reasonable Adjustments Policy and Special Consideration Policy sets out the steps to follow when implementing reasonable adjustments and special considerations and the service that ProQual provides for some of these arrangements.

Centres should contact ProQual for further information or queries about the contents of the policy.

All enquiries relating to assessment or other decisions should be dealt with by centres, with reference to ProQual's Enquiries and Appeals Procedures.

Units – Learning Outcomes and Assessment Criteria

Title:	Health and Safety and Task Planning			Level:	3
Unit Number:	F/651/8947	TQT:	80	GLH:	40

Learning Outcomes *The learner will be able to:*		Assessment Criteria *The learner can:*	
1	Interpret task requirements and develop a technical plan.	1.1	Identify task requirements from a range of technical documentation and briefings.
		1.2	Extract relevant information from drawings and other technical sources.
		1.3	Analyse the task solutions and requirements.
		1.4	Develop a technical task plan including: • Resource needs. • Works schedule. • Coordination with other trades.
2	Understand how to apply relevant Health and Safety legislation and guidance in a CMT environment.	2.1	Identify legislative standards and guidance relevant to CMT.
		2.2	Explain the responsibilities of individuals under Health and Safety legislation and workplace policies.
		2.3	Identify safe working procedures, signage, and symbols, including accident and emergency protocols.
		2.4	Identify appropriate sources of information for Health and Safety practices.
3	Conduct a risk assessment and implement safe working practices.	3.1	Identify common risks and hazards associated with CMT settings.
		3.2	Identify environmental and workplace factors that may affect safety.
		3.3	Carry out a risk assessment for a defined CMT task.

3	*Continued*	3.4	Implement safe housekeeping and manual handling practices in CMT settings.
		3.5	Select appropriate PPE and apply safe systems of work for CMT tasks.
4	Communicate plans, risks, hazards, and solutions to relevant personnel.	4.1	Identify appropriate communication methods to advise others of task information.
		4.2	Demonstrate task solution and safety requirements to others using suitable formats.
		4.3	Confirm and record task and safety communications in line with workplace procedures.

Additional Assessment Information

This unit focuses on equipping learners with the knowledge and practical skills to plan and carry out tasks safely and effectively in a CMT environment. Learners will develop the ability to interpret technical requirements, produce detailed task plans, and apply relevant health and safety legislation. The unit also enables learners to identify and assess risks, implement safe working practices, and communicate task details and safety measures clearly, ensuring professional standards are consistently met.

Learning Outcome 2 is **knowledge based**. This means that evidence is expected to take the form of candidate's written work and/or records of appropriate professional discussions.

Learning Outcomes 1, 3 and 4 are **competency based**. This means that the candidate is expected to perform the tasks, and demonstrate the level of competence, outlined in the assessment criteria.

Title:	Distinguish CMT Equipment and Apparatus			Level:	3
Unit Number:	H/651/8948	TQT:	90	GLH:	50

Learning Outcomes *The learner will be able to:*		Assessment Criteria *The learner can:*	
1	Identify and describe categories of CMT equipment, apparatus, and plant.	1.1	Identify the capabilities of a range of equipment and apparatus used in geotechnical testing and quality control.
		1.2	Describe the function and application of each category of equipment.
		1.3	Identify the operating procedures and user checks of each category of equipment.
		1.4	Identify the safety and warning notices, and storage requirements of each category of equipment.
2	Demonstrate the correct preparation, set-up, and operating principles of CMT equipment.	2.1	Prepare and configure equipment, tools, and plant for safe and effective use.
		2.2	Apply manufacturer's instructions and workplace procedures during set-up.
		2.3	Demonstrate knowledge of operating principles for selected equipment.
3	Select, handle, and manage trade material and consumables for CMT tasks.	3.1	Identify appropriate trade materials and consumables for a given CMT task.
		3.2	Identify organisational procedures to obtain, issue, and record required trade materials and consumables.
		3.3	Determine storage methods of materials and consumables, using safe and environmentally responsible practices.
		3.4	Demonstrate responsible disposal of surplus and waste consumables in accordance with workplace procedures and legal requirements.

4	Apply safe working practices in the operation of plant and equipment.	4.1	Carry out pre-use inspections and basic maintenance checks on plant and equipment, following workplace and manufacturer requirements.
		4.2	Operate plant and equipment safely, applying correct procedures for set-up, use, and shutdown.
		4.3	Apply safe systems of work during plant and equipment operations, including: • Risk assessment. • Control measures. • The correct use of PPE.
		4.4	Demonstrate safe methods of communication and coordination (e.g., with banksman, signallers) when using plant and equipment.
		4.5	Reinstate or make safe the work area on completion of plant and equipment operations.
5	Evaluate the suitability and limitations of CMT equipment, plant, and materials for specific tasks.	5.1	Assess equipment and materials for appropriateness to a given task.
		5.2	Identify limitations or constraints of selected equipment and materials.
		5.3	Make justified, evidence-based recommendations for the most suitable options.

Additional Assessment Information

This unit focuses on developing learners' understanding and practical skills in the use of CMT equipment, apparatus and plant. Learners will identify categories, functions, and safe operating procedures for a range of equipment, as well as prepare and operate them in line with manufacturer and workplace requirements. This unit also covers handling materials and consumables, applying safe working practices, and evaluating the suitability and limitations of equipment, ensuring learners can work safely and effectively in technical environments.

Learning Outcomes 1 is **knowledge based**. This means that evidence is expected to take the form of candidate's written work and/or records of appropriate professional discussions.

Learning Outcomes 2, 3, 4 and 5 are **competency based**. This means that the candidate is expected to perform the tasks, and demonstrate the level of competence, outlined in the assessment criteria.

Title:	Concrete Technology			Level:	3
Unit Number:	J/651/8949	TQT:	110	GLH:	60

Learning Outcomes *The learner will be able to:*		Assessment Criteria *The learner can:*	
1	Explain the properties and mix design requirements of concrete.	1.1	Identify the main constituents of concrete and describe their characteristics.
		1.2	Analyse how admixtures and additives influence fresh and hardened concrete.
		1.3	Compare different concrete mix specification types and justify their application.
		1.4	Apply recognised methods to determine basic concrete mix requirements.
2	Demonstrate safe and effective practices in the production and placement of concrete.	2.1	Identify hazards and risks associated with concrete production.
		2.2	Demonstrate safe working practices, including correct use of PPE and environmental protection measures.
		2.3	Demonstrate safe and effective methods for producing, transporting and placing concrete.
		2.4	Record observations during production and placement in line with workplace procedures.
3	Conduct and report testing of fresh and hardened concrete.	3.1	Prepare and handle concrete samples in accordance with recognised test requirements.
		3.2	Carry out standard tests on fresh concrete (e.g., consistency, workability).
		3.3	Carry out standard tests on hardened concrete (e.g., strength, density).
		3.4	Accurately record and present test results using appropriate formats.
4	Understand quality control requirements for concrete.	4.1	Identify quality control requirements for inspecting and verifying the condition of concrete constituents.

4	*Continued*	4.2	Explain how quality control testing supports specification compliance.
		4.3	Explain how corrective actions are applied when results fall outside tolerance.

Additional Assessment Information

This unit focuses on developing learners' knowledge and practical skills in concrete technology, from understanding mix design requirements to applying safe and effective practices in production and placement. Learners will gain experience in testing fresh and hardened concrete, recording and presenting results accurately, and applying quality control measures to ensure compliance with specifications. The unit equips learners with the ability to evaluate materials, processes, and outcomes, supporting safe, efficient, and high-quality concrete construction practices.

Learning Outcomes 1 and 4 are **knowledge based**. This means that evidence is expected to take the form of candidate's written work and/or records of appropriate professional discussions.

Learning Outcomes 2 and 3 are **competency based**. This means that the candidate is expected to perform the tasks, and demonstrate the level of competence, outlined in the assessment criteria.

Title:	Geotechnical Testing of Construction Materials			Level:	3
Unit Number:	M/651/8950	TQT:	115	GLH:	60

Learning Outcomes *The learner will be able to:*		Assessment Criteria *The learner can:*	
1	Describe the properties and classification of soils, rocks, and aggregates.	1.1	Identify key geological and engineering properties of soils, rocks, and aggregates.
		1.2	Explain how soils, rocks, and aggregates are classified for construction use.
		1.3	Describe the factors that influence the quality and performance of soils, rocks, and aggregates in construction applications.
2	Apply safe and effective practices, including quality control, in sampling and testing.	2.1	Identify safe working practices and quality control requirements with sampling and testing activities.
		2.2	Demonstrate safe methods of obtaining representative samples in accordance with workplace procedures.
		2.3	Carry out recognised laboratory and/or field tests on material samples to determine selected properties.
		2.4	Record, interpret, and report test results accurately.
		2.5	Demonstrate safe procedures for the handling, preparation, and storage of samples.
3	Explain the engineering applications of soils, rocks, and aggregates.	3.1	Identify common uses of soils, rocks, and aggregates in construction.
		3.2	Explain how material properties influence their suitability for engineering applications.
		3.3	Describe the implications of rock and soil mass characteristics for stability and construction.
4	Interpret test data for soils, rocks, and aggregates.	4.1	Collate and record test data using recognised methods and formats.

4	*Continued*	4.2	Identify factors that may cause variations in test data.
		4.3	Interpret results to determine key material properties in line with engineering requirements.
		4.4	Present findings clearly in a form suitable for engineering use.

Additional Assessment Information

This unit focuses on developing learners' knowledge and skills in geotechnical testing for construction applications. Learners will study the properties and classification of soils, rocks, and aggregates, and apply safe and effective practices in sampling, testing, and quality control. They will gain practical experience in conducting laboratory and field tests, handling and preparing samples, and interpreting test data. The unit equips leaners to present accurate findings and evaluate material suitability for engineering and construction purposes.

Learning Outcomes 1 and 3 are **knowledge based**. This means that evidence is expected to take the form of candidate's written work and/or records of appropriate professional discussions.

Learning Outcomes 2 and 4 are **competency based**. This means that the candidate is expected to perform the tasks, and demonstrate the level of competence, outlined in the assessment criteria.

Title:	Site and Ground Investigation Techniques			Level:	3
Unit Number:	R/651/8951	TQT:	130	GLH:	70

Learning Outcomes *The learner will be able to:*		Assessment Criteria *The learner can:*	
1	Explain the purpose and methods of site and ground investigation.	1.1	Explain the purpose for site and ground investigations carried out in construction projects.
		1.2	Identify common desk study and reconnaissance methods used prior to investigation.
		1.3	Describe typical intrusive and non-intrusive investigation techniques.
		1.4	Outline factors that influence the choice of investigation method.
2	Apply safe and effective practices during site and ground investigations.	2.1	Identify hazards and risks associated with investigation activities.
		2.2	Demonstrate safe systems of work, including correct use of PPE, during investigation tasks.
		2.3	Demonstrate appropriate methods for collecting data and samples.
		2.4	Record field observations accurately using workplace procedures.
3	Apply methods of investigating soils, rocks, and groundwater.	3.1	Outline key properties of soils, rocks, and groundwater relevant to investigation.
		3.2	Demonstrate methods used to obtain and prepare representative samples.
		3.3	Explain how intrusive and non-intrusive investigation methods are used to assess subsurface conditions.
		3.4	Document investigation data in accordance with recognised procedures.

4	Interpret, report, and apply quality control to ground investigation data.	4.1	Collate and evaluate data from multiple investigation methods.
		4.2	Identify factors that may cause variations in investigation results.
		4.3	Interpret investigation data to assess ground conditions and potential risks.
		4.4	Present investigation results clearly in an appropriate format (e.g., reports, specifications).
		4.5	Explain the importance of quality control and assurance in ground investigations.

Additional Assessment Information

This unit focuses on developing learners' understanding and practical skills in site and ground investigation for construction projects. Learners will explore the purpose, methods, and factors influencing investigation techniques, and apply safe and effective practices in the field. The unit covers soil, rock, and groundwater investigation methods, data collection, and quality control. Learners will also interpret and present results accurately, enabling them to support safe, informed decision making in construction and geotechnical environments.

Learning Outcome 1 is **knowledge based**. This means that evidence is expected to take the form of candidate's written work and/or records of appropriate professional discussions.

Learning Outcomes 2, 3 and 4 are **competency based**. This means that the candidate is expected to perform the tasks, and demonstrate the level of competence, outlined in the assessment criteria.

Title:	Principles of Design in Construction Material Technology			Level:	3
Unit Number:	T/651/8952	TQT:	95	GLH:	50

Learning Outcomes *The learner will be able to:*		Assessment Criteria *The learner can:*	
1	Explain the principles of the Construction Materials Technology (CMT) design process.	1.1	Outline the stages of the design process relevant to CMT.
		1.2	Identify the roles and responsibilities of personnel involved in supporting design recommendations.
		1.3	Describe the factors that influence design recommendations, including how material testing data informs design choices.
2	Identify materials and methods using in CMT design.	2.1	Explain the properties of materials commonly used in CMT design, including: • Soils. • Aggregates. • Bituminous mixtures.
		2.2	Identify test methods that provide data for material selection and design requirements.
		2.3	Explain how material characteristics influence design performance.
3	Explain the role of testing in supporting the design process.	3.1	Identify common testing methods used to confirm design suitability, including: • Compaction. • Shear. • Subgrade strength.
		3.2	Explain how test results are expressed, interpreted and applied in design decisions.
		3.3	Explain the importance of quality control when carrying out design-related testing.

4	Apply design principles to support practical CMT tasks through recommendations.	4.1	Apply design considerations to typical CMT tasks, including: • Pavements. • Road construction. • Foundations.
		4.2	Identify how environmental and operational factors affect design performance.
		4.3	Describe how design data is presented and communicated to support decision making in practice.
		4.4	Produce basic outputs (e.g., reports, schedules, or design notes) to support CMT design processes.

Additional Assessment Information

This unit focuses on developing learners' understanding of design principles within Construction Materials Technology (CMT). Learners will explore the stages of the design process, the role of personnel, and the factors influencing design recommendations. The unit covers material properties, testing methods, and the role of quality control in supporting design decisions. Learners will also apply design principles to practical CMT tasks by making informed recommendations and producing outputs that support professional decision making in construction design practice.

Learning Outcomes 1, 2 and 3 are **knowledge based**. This means that evidence is expected to take the form of candidate's written work and/or records of appropriate professional discussions.

Learning Outcome 4 is **competency based**. This means that the candidate is expected to perform the tasks, and demonstrate the level of competence, outlined in the assessment criteria.

Appendix One – Command Verb Definitions

The table below explains what is expected from each **command verb** used in an assessment objective. Not all verbs are used in this specification

Apply	Use existing knowledge or skills in a new or different context.
Analyse	Break a larger subject into smaller parts, examine them in detail and show how these parts are related to each other. This may be supported by reference to current research or theories.
Classify	Organise information according to specific criteria.
Compare	Examine subjects in detail, giving the similarities and differences.
Critically Compare	As with compare but extended to include pros and cons of the subject. There may or may not be a conclusion or recommendation as appropriate.
Describe	Provide detailed, information about a subject.
Discuss	Give a detailed account of a subject, including a range of contrasting views and opinions.
Explain	As with describe but extended to include causation and reasoning.
Identify	Select or ascertain appropriate information and details from a broader range of information or data.
Interpret	Use information or data to clarify or explain something.
Produce	Make or create something.
State	Give short, factual information about something.
Specify	State a fact or requirement clearly and in precise detail.

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