



Level 4 NVQ Diploma in

Verification of Ground Gas Protection Systems

Qualification Specification

Qualification Recognition Number: 603/3266/9

ABBE Qualification Code: DipGMVL418

May 2019

Why this document is being revised

This document has been revised by ABBE in May 2019. A summary of the changes made to this document is, as follows:

- New address added to 1.4

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1. ABBE

1.1 Introduction

ABBE, the Awarding Body for Building Education is a forward thinking organisation that offers a range of apprenticeships, qualifications, benefits and support.

ABBE is regulated by Ofqual for the delivery of a range of qualifications. Our qualifications are nationally recognised helping learners to achieve their full potential and ambitions.

The full range of qualifications can be found on our website.

1.2 Mission Statement

Our Values - Quality through Standards: Our aim is to provide a high quality experience by building a strong community of mutual support and trust. We can use our collective talents to build meaningful partnerships to help us all to achieve our goals. ABBE is a recognised Awarding Organisation with strong professional integrity.

Our Vision: Is that every learner is confident, successful and has the opportunity to achieve their full potential.

Our Mission: ABBE Educates, inspires and empowers learners

1.3 Qualification Specification

The aim of this specification is to provide learners and centres with information about the content of this qualification. This is a live document and, as such, will be updated when required.

1.4 Enquiries

Any enquiries relating to this qualification should be addressed to:

ABBE
Birmingham City University
University House
15 Bartholomew Row
Birmingham
B5 5JU

Telephone: 0121 331 5174
Email: abbeenquiries@bcu.ac.uk
Website: www.abbeqa.co.uk



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2. Qualification Information

2.1 Qualification Purpose

The purpose of the ABBE Level 4 NVQ Diploma in Verification of Ground Gas Protection Systems qualification is to provide the learner with the knowledge, understanding and skills required for those involved in independent verification.

This qualification is aimed at learners who wish to become third party verifiers of gas proof membrane installation. Independent testing and verification of these installations is an important and valuable role, where a high quality install is imperative. The degree and intensity of independent verification should reflect the assessed level of risk, the nature of the gas protection system, the quality of the product(s) and the competence of the installer.

2.2 Who could take this Qualification?

The ABBE level 4 NVQ Diploma in Verification of Ground Gas Protection Systems is available to experienced practitioners who are active in planning, implementing and reporting verification processes, or those who are occupationally experienced in gas membrane installation and workplace supervision in the ground gas sector.

2.3 Qualification Number

ABBE Level 4 NVQ Diploma in Verification of Ground Gas Protection Systems: 603/3266/9

2.4 Qualification Level

This qualification has been listed on the Regulated Qualifications Framework (RQF) at: Level 4

2.5 Total Qualification Time

This qualification is allocated Total Qualification Time (TQT) this includes Guided Learning (GL) expressed in hours, which indicates the number of hours of supervised or directed study time and assessment. Credit has also be allocated to this qualification.

- The Total Qualification Time (TQT) for this qualification is: 365
- Guided Learning (GL) for this qualification is: 117
- Credit Value: 37 credits

2.6 Progression

This qualification has been designed to encourage participation in education and training in other related areas by:

- establishing a framework of education and training for Gas Membrane Verifier assessors by:
 - encouraging those with expertise in other building services areas to qualify as an gas membrane verifier
 - providing opportunities for prospective gas membrane verifiers to achieve a nationally recognised level 4 qualification
 - defining the knowledge, understanding and skills learners need to undertake gas membrane verification

2.7 Age ranges

Pre 16	No
16-18	No
18+	Yes
19+	Yes



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2.8 Structure of the Qualification

To achieve this qualification, learners must achieve all seven mandatory units.

URN	Unit Name	Credit Value	Level
K/617/0687	Design Principles and Application for Construction in the Built Environment	6	4
M/617/0688	Materials for Construction in the Built Environment	5	4
K/617/0690	Health, Safety and Welfare in the Construction Environment	6	4
M/617/0691	Principles of Construction and Maintenance of Buildings	6	4
A/617/0693	Confirming Work Meets Quality Standards in the Workplace	4	4
F/617/0694	Verification and Inspection of Ground Gas Protection Systems	5	4
J/617/0695	Principles of Regulatory Control Procedures and Legislation	5	4

2.9 Barred Units

Units with the same title at different levels or units with the same content cannot be combined in the same qualification.

2.10 Language

ABBE qualifications and assessment materials will be provided through the medium of English.

2.11 Grading

This qualification is: Pass/Fail

2.12 Pre-course Procedures

This qualification is available to anyone who is capable of reaching the required standards. They have been developed free from any barriers that unfairly restrict access or progression thereby promoting equal opportunities.

The following pre-entry requirements apply to this qualification:

Learners will need to provide copies of their CV, qualifications certificates and prior evidence of Continued Professional Development (CPD) within the environmental sector and/or certification against National Occupational Standards in Gas Membrane Installation (VR612 & VR613).

2.13 Qualification Review Boards

Qualification Review Boards (QRBs) are set up for each qualification. The Boards are drawn from employers, centres, Higher Educational Institutes (HEIs) and others with a vested interest in the sector in which the qualification is used. The purpose of the QRB is to ensure that the content of the qualification and the proposed assessment methodology are fit for purpose and are appropriate to meet the requirements of the sector.

QRBs are ongoing and will be scheduled for specific points within the qualification lifetime; at the notional mid-point and again towards the review date of the qualification. During this process, the QRB will consider any feedback received on the performance of the qualification and will consider if the content, structure, purpose and assessment methodology remain appropriate to the needs of the sector. This will help to improve both our qualification and the specification.



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3. Qualification Unit(s)



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Unit 1: Design Principles and Application for Construction in the Built Environment

Reference Number: K/617/0687

Level: 4

Credit: 6

Unit Summary

This unit provides learners with the opportunity to develop knowledge and understanding of the design process and how the planning and design phases are coordinated and managed.

Relationship to Occupational Standards

This unit is underpinned by the COSVR Standard 764: Testing and verification of protection system for the building against hazardous ground gases.

Assessment Guidance

This unit can be assessed using the following method(s):

- Portfolio of evidence

Learning Outcome The learner will:	Assessment Criterion The learner can:
1. Understand the planning and design phases of the construction process	1.1 Explain the planning phase of construction projects with consideration of ground gases
	1.2 Explain the design phase of construction projects with the consideration of ground gases
	1.3 Evaluate how the planning and design phases are coordinated and managed
2. Understand the factors that affect the specification of materials and building services	2.1 Describe the factors that affect the specification of materials
	2.2 Describe the factors that affect the specification of building services
	2.3 Explain the financial implications of specifying materials and building services
3. Understand how environmental factors affect the planning and design phases of the construction process	3.1 Explain the environmental factors that affect construction projects
	3.2 Evaluate environmentally responsible methods for disposing of waste materials
	3.3 Evaluate environmentally responsible methods for promoting environmental efficiency
4. Understand the roles and responsibilities of all parties involved in construction projects	4.1 Explain the roles and responsibilities of all parties involved in the planning and design phase
	4.2 Explain the roles and responsibilities of all parties involved in the production phase



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	4.3 Evaluate the corporate and personal responsibilities of all parties involved in construction projects
5. Understand how technology affects the design and production phases of construction projects	5.1 Explain modern technology available to designers, planners and builders
	5.2 Evaluate the effect of technological advances on the various phases of construction projects
6. Understand how the construction and built environment sector impacts on the environment	6.1 Explain how the construction process impacts on the environment during the preconstruction stage
	6.2 Explain how the construction process impacts on the environment during construction
	6.3 Explain how the built environment impacts on the environment in the post-construction stage
7. Understand the local environmental impact of the construction and built environment sector	7.1 Explain the local environmental issues of concern to the construction and built environment sector
	7.2 Examine the methods used to address these issues



Unit 2: Materials for Construction in the Built Environment

Reference Number: M/617/0688

Level: 4

Credit: 5

Unit Summary

This unit provides learners with knowledge and understanding of the properties, structural behaviour and use of construction materials, and develops the skills needed to use scientific principles to solve construction problems.

Relationship to Occupational Standards

This unit is underpinned by the COSVR Standard 764: Testing and verification of protection system for the building against hazardous ground gases.

Assessment Guidance

This unit can be assessed using the following method(s):

- Portfolio of evidence

Learning Outcome The learner will:	Assessment Criterion The learner can:
1. Understand the properties and use of construction materials relevant to ground gas protection systems	1.1 Describe the properties of construction materials
	1.2 Evaluate the properties and uses of construction materials
	1.3 Justify the specification of construction materials regarding their performance in use
2. Understand the structural behaviour of construction materials relevant to ground gas protection systems	2.1 Explain the effects of loading structural materials
	2.2 compare the behaviour of timber, steel and reinforced concrete structural members against gas protection materials
3. Be able to apply scientific principles to the design and use of buildings	3.1 Relate scientific principles to human health levels
	3.2 Discuss the methods used to integrate building services into the overall building design



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Unit 3: Health, Safety and Welfare in the Construction Environment

Reference Number: K/617/0690

Level: 4

Credit: 6

Unit Summary

This unit enables learners to develop knowledge and understanding of health, safety and welfare legislation and effective health and safety policies. Learners will develop the skills needed to undertake risk assessments.

Relationship to Occupational Standards

This unit is underpinned by the COSVR Standard 764: Testing and verification of protection system for the building against hazardous ground gases.

Assessment Guidance

This unit can be assessed using the following method(s):

- Portfolio of evidence

Learning Outcome The learner will:	Assessment Criterion The learner can:
1. Understand the health, safety and welfare legislation applicable to the construction and built environment sector	1.1 Explain the use of approved codes of practice to ensure compliance with health and safety legislation
	1.2 Explain the responsibilities for providing welfare facilities on-site
	1.3 Evaluate the penalties for noncompliance with current health and safety at work legislation
2. Understand the main requirements of an effective health and safety policy	2.1 Analyse own organisation's health and safety policies and procedural documents
	2.2 Determine own training needs from given risk assessments, including on-site induction training and relevant sector certification
3. Understand hazard and risk identification in design and construction	3.1 Analyse a method of hazard identification using data supplied
	3.2 Identify the hazards associated with construction processes
	3.3 Explain the use of standard formats for identifying and recording hazards
	3.4 Explain how risk assessments are used to address significant hazards
4. Be able to review, revise and monitor risk assessments	4.1 Monitor and review risk assessments in light of changes to circumstances
	4.2 Evaluate changes in procedure or policy



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	4.3 Justify the effectiveness of the implemented changes
5. Be able to undertake risk assessments	5.1 Produce risk assessments for different workplaces and forms of work
6. Be able to maintain safe working practices when preparing to verify a ground gas protection system	6.1 Use personal protective equipment (PPE) safely when preparing to carry out the activity in accordance with legislation and organisational requirements
	6.2 Outline potential hazards associated with the resources and method of work
	6.3 State how emergencies should be responded to in accordance with organisational authorisation
	6.4 State why and when health and safety control equipment, should be used, relating to the work environment



Unit 4: Principles of Construction and Maintenance of Buildings

Reference Number: M/617/0691

Level: 4

Credit: 6

Unit Summary

This unit enables learners to gain knowledge and understanding of how the techniques of site investigation and evaluation can influence the design, construction and maintenance of buildings and their substructures

Relationship to Occupational Standards

This unit is underpinned by the COSVR Standard 764: Testing and verification of protection system for the building against hazardous ground gases.

Assessment Guidance

This unit can be assessed using the following method(s):

- Portfolio of evidence

Learning Outcome The learner will:	Assessment Criterion The learner can:
1. Understand the techniques used in site investigation and evaluation	1.1 Explain the techniques used to investigate and evaluate sites
	1.2 Compare the techniques used to investigate and evaluate soils
2. Understand how the techniques used in site investigation and evaluation influence the type of substructure	2.1 Explain how the classification and properties of soils affect substructure design
	2.2 Evaluate the effects of water, chemicals and contaminated soils on the design and construction of a substructure
3. Understand the types of superstructure design and construction	3.1 Evaluate the types of construction used for the superstructure of domestic buildings
	3.2 Evaluate the types of construction used for the superstructure of industrial and commercial buildings
	3.3 Evaluate how the installation of primary services affects the design of buildings
4. Understand the causes of decay and deterioration of ground gas protection systems	4.1 Explain the causes of decay and deterioration in buildings and building services
	4.2 Compare planned, cyclical and reactive maintenance works



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Unit 5: Confirming Work Meets Quality Standards in the Workplace

Reference Number: A/617/0693

Level: 4

Credit: 4

Unit Summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence, confirming work meets quality standards in the workplace within the relevant sector of industry.

Relationship to Occupational Standards

This unit is underpinned by the COSVR Standard 764: Testing and verification of protection system for the building against hazardous ground gases.

Assessment Guidance

This unit can be assessed using the following method(s):

- Portfolio of evidence

Learning Outcome The learner will:	Assessment Criterion The learner can:
1. Be able to identify quality standards from available information and clearly specify to the people responsible for their implementation	1.1 Explain the various types and source of quality standards applicable to the occupational work environment
	1.2 Describe the various methods for passing quality standards onto those responsible for their implementation
	1.3 Source and establish quality standards relevant to project requirements
	1.4 Inform those implementing the standards of the level of quality needed
2. Be able to regularly check that work conforms to the design requirements and the specified quality standards	2.1 Locate and inspect work done within the occupational work environment on a regular basis
	2.2 Compare inspection results against the design requirements to establish conformity with the scheduled quality standards
	2.3 Explain the methods available to check that the work and resources conforms to the design requirements and specified quality standards
	2.4 Carry out the work skills to set up, confirm, check, test measure, record and report installation outcomes
	2.5 Carry out all of the following: <ul style="list-style-type: none">▪ Seam test▪ Flat area test▪ Ventilation inspection



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	<p>2.6 Explain the following:</p> <ul style="list-style-type: none"> ▪ Tracer Gas ▪ Dielectric porosity ▪ Airlance ▪ Tensile Strength
<p>3. Be able to identify work that fails to meet the requirements and quality standards and implement corrective action</p>	<p>3.1 Describe the various methods for implementing corrective actions to work which does not meet quality standards</p>
	<p>3.2 Identify work which fails to meet required quality standards</p>
	<p>3.3 Explain the techniques and methods used to identify work that has failed to meet quality standards</p>
	<p>3.4 Plan and implement the required action needed to correct work not meeting specified quality standard</p>
<p>4. Be able to regularly inform decision makers about significant variations in quality standards</p>	<p>4.1 Advise decision makers on corrections undertaken using suitable formats that comply with organisational procedures</p>
	<p>4.2 Describe the methods used to inform decision makers about significant variations in quality standards</p>
	<p>4.3 Explain when action should be taken on typical variations in quality standards relative to the occupational work environment</p>
	<p>4.4 Prepare, complete and present validation plans and report</p>



Unit 6: Verification and Inspection of Ground Gas Protection Systems

Reference Number: F/617/0694

Level: 4

Credit: 5

Unit Summary

The aim of this unit is to illustrate the skills, knowledge and understanding required, to confirm competence in verifying ground gas protection systems in the workplace, within the relevant sector of industry.

Relationship to Occupational Standards

This unit is underpinned by the COSVR Standard 764: Testing and verification of protection system for the building against hazardous ground gases.

Assessment Guidance

This unit can be assessed using the following method(s):

- Portfolio of evidence

Learning Outcome The learner will:	Assessment Criterion The learner can:
1. Be able to interpret the given information relating to the work and resources when preparing to inspect a ground gas protection system	1.1 Interpret drawings, verification plans, specifications, schedules, method statements, risk assessments, site investigation reports & manufacturers' information relating to the work to be done
	1.2 Comply with information and/or instructions derived from risk assessments and method statements, relating to: <ul style="list-style-type: none">▪ safe use of health and safety control equipment▪ access equipment▪ storage & handling of materials, tools & equipment,▪ specific health risks
	1.3 State the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented
2. Understand how to comply with relevant legislation and official guidance when preparing to verify a ground gas protection system	2.1 Describe their responsibilities under current legislation and official guidance whilst working: <ul style="list-style-type: none">▪ in the workplace▪ below ground level▪ at height▪ with tools and equipment▪ with materials and substances▪ with movement/storage of materials▪ by manual handling and mechanical lifting



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	2.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operatives
3. Understand the required quantity and quality of resources for the methods of work to prepare to verify a ground gas protection system	3.1 Describe the characteristics, quality, uses, limitations and issues associated with the resources in relation to: <ul style="list-style-type: none"> ▪ Verification Plan & Process ▪ Test frequency ▪ Timing of visits ▪ Installed protection system ▪ Testing regimes ▪ Sub grade ▪ Ventilation
4. Understand how to minimise the risk of damage to the work and surrounding area when preparing to verify a ground gas protection system	4.1 Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions
	4.2 State why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance
5. Understand how to complete the work within the allocated time when preparing to verify a ground gas protection system	5.1 Explain why a project visit is imperative to completing the work
	5.2 State the purpose of the work programme and explain why deadlines should be kept in relation to: <ul style="list-style-type: none"> ▪ types of progress charts ▪ timetables and estimated times ▪ reports ▪ organisational procedures for reporting circumstances which will affect the work programme
6. Understand how to comply with the given contract information to prepare to verify ground gas protection systems	6.1 Describe how to apply safe work practices, follow procedures, report problems and establish the authority needed to: <ul style="list-style-type: none"> ▪ locate membrane position ▪ locate and protect services ▪ identify penetration points ▪ laying of venting strip and/or continuous venting media ▪ connection of venting media to connection and/or vent outlets ▪ use hand tools, power tools and equipment. ▪ working with other occupations



Unit 7: Principles of Regulatory Control Procedures and Legislation

Reference Number: J/617/0695

Level: 4

Credit: 5

Unit Summary

This unit enables learners to develop their knowledge and understanding of the principles of building control systems and their knowledge of the statutory regulations and procedures for enforcing building control regulations.

Relationship to Occupational Standards

This unit is underpinned by the COSVR Standard 764: Testing and verification of protection system for the building against hazardous ground gases.

Assessment Guidance

This unit can be assessed using the following method(s):

- Portfolio of evidence

Learning Outcome The learner will:	Assessment Criterion The learner can:
1. Understand the principles of regulatory control systems and the associated primary legislation	1.1 Explain the relevant primary legislation and its application to the control of construction works
	1.2 Compare the two systems of controlling construction projects
2. Understand the origins of the statutory regulations and controls in England and Wales	2.1 Describe the origins of planning control and the legislation that has resulted in the current system
	2.2 Describe the procedures for controlling construction projects, including the processes of submission and notification to a regulatory body
	2.3 Outline the uses and limitations of building control systems
3. Understand the requirements of regulatory controls and regulations for construction works	3.1 Explain how regulatory controls ensure basic provision and the achievement of minimum standards in the construction process
	3.2 Analyse the application of the planning regulations to building works up to and including medium-rise commercial, industrial and residential developments



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