

Level 2 Award in Safe Location and Avoidance of Underground Services (6038-01)

Version 1 (December 2017)

Qualification Handbook

Qualification at a glance

Subject area	Utilities
City & Guilds number	6038
Age group approved	16-19, 19+
Entry requirements	None
Assessment types	Assignment
Approvals	Approval application required
Support materials	Qualification handbooks Assessment pack
Registration and certification	Consult the Walled Garden/Online Catalogue for last dates

Title and level	GLH	TQT	City & Guilds qualification number	Ofqual accreditation number
Level 2 Award in Safe Location and Avoidance of Underground Services	12	14	6038-01	603/2768/6

Contents

Qualification at a glance	2
Contents	3
1 Introduction	4
Structure	5
Total Qualification Time	5
2 Centre requirements	6
Approval	6
Resource requirements	6
Learner entry requirements	7
Age restrictions	7
3 Delivering the qualification	8
Initial assessment and induction	8
Support materials	8
4 Assessment	9
Summary of assessment methods	9
5 Units	10
Structure of the units	10
Unit 201 Safe location and avoidance of underground services	11
Appendix 1 Sources of general information	17
Appendix 2 Useful contacts	19

1 Introduction

This document tells you what you need to do to deliver the qualification:

Area	Description
Who is the qualification for?	This qualification is for those individuals working in construction or associated industries that need to locate and avoid underground services.
What does the qualification cover?	This qualification covers the purpose of safe location and avoidance of underground services. It takes account of the need to use different types of service drawings. The qualification develops skills needed to identify, detect and mark out services and plan for these activities. Finally, the qualification covers the theory of methods of safe excavation.
What opportunities for progression are there?	Learners can progress to other qualifications such as: <ul style="list-style-type: none">• Streetworks Excavation and Reinstatement (6157)• Network Construction Operations (6028)• Working in Confined Spaces (6150)• Electrical Power Engineering (2339)• Winter Service Operations
Who did we develop the qualification with?	n/a
Is it part of an apprenticeship framework or initiative?	No.

Structure

To achieve the Level 2 Award in Safe Location and Avoidance of Underground Services (6038-01), learners must achieve

- Mandatory unit 201.

6038-201 Level 2 Award in Safe Location and Avoidance of Underground Services		
City & Guilds Unit Number	Unit Title	GLH
Mandatory		
201	Safe Location and Avoidance of Underground Services	12

Total Qualification Time

Total Qualification Time (TQT) is the total amount of time, in hours, expected to be spent by a Learner to achieve a qualification. It includes both guided learning hours (which are listed separately) and hours spent in preparation, study and assessment.

Title and level	GLH	TQT
6038-01 Level 2 Award in Safe Location and Avoidance of Underground Services	12	14

2 Centre requirements

Approval

To offer this qualification, full approval is required. New centres will need to gain both centre and qualification approval. Please refer to the Centre Manual - Supporting Customer Excellence for further information.

If your Centre is approved to offer the qualification 6157 Streetworks Excavation and Reinstatement, you will be given automatic approval.

Centre staff should familiarise themselves with the structure, content and assessment requirements of the qualifications before designing a course programme.

Resource requirements

Resources

The following resources are required to deliver the qualification effectively:

- Suitable service location drawings
- Cable avoidance equipment and ancillaries
- PPE
- Safety equipment
- Equipment deemed to be unsuitable
- Sufficient area to carry out practical activities
- Classroom
- Guidance documents
- Marking out equipment

Centre staffing

Staff delivering these qualifications must be able to demonstrate that they meet the following occupational expertise requirements. They should:

- be occupationally competent or technically knowledgeable in the area[s] for which they are delivering training and/or have experience of providing training. This knowledge must be to the same level as the training being delivered
- have recent relevant experience in the specific area they will be assessing
- have credible experience of providing training.

Centre staff may undertake more than one role, eg tutor and assessor or internal verifier, but cannot internally verify their own assessments.

Learner entry requirements

City & Guilds does not set entry requirements for these qualifications. However, centres must ensure that candidates have the potential and opportunity to gain the qualifications successfully.

Age restrictions

City & Guilds cannot accept any registrations for learners under 16 as these qualifications are not approved for learners under 16.

3 Delivering the qualification

Initial assessment and induction

An initial assessment of each candidate should be made before the start of their programme to identify:

- if the candidate has any specific training needs
- support and guidance they may need when working towards their qualifications
- any units they have already completed, or credit they have accumulated which is relevant to the qualifications
- the appropriate type and level of qualification.

We recommend that centres provide an induction programme so the candidate fully understands the requirements of the qualification[s], their responsibilities as a candidate, and the responsibilities of the centre. This information can be recorded on a learning contract.

Support materials

The following resources are available for these qualifications:

Description	How to access
Assignment pack	www.cityandguilds.com

Recording documents

City & Guilds has developed an assessment pack, including recording documentation which should be used for this qualification.

Although new centres are expected to use these forms, centres may devise or customise alternative forms, which must be approved for use by the external verifier, before they are used by candidates and assessors at the centre. Amendable (MS Word) versions of the forms are available on the City & Guilds website.

4 Assessment

Summary of assessment methods

Candidates must:

- Successfully complete one assignment

City & Guilds has written the assignment to use with this qualification, which includes:

- a practical task
- a closed book, short answer question knowledge test, including different versions.

Test Specification for Knowledge Test

The way the knowledge is covered by each test is laid out in the table(s) below:

Learning Outcome	Number of Marks	Weighting
Understand the purpose of safe location and avoidance of underground services	5	25%
Understand service drawings required when preparing to work on or near underground services	5	25%
Plan for safe location and avoidance of underground services	5	25%
Identify, detect and mark out underground services	3	15%
Understand methods of safe excavation of underground services	2	10%
Total	20	100

Recognition of prior learning (RPL)

Recognition of prior learning means using a person's previous experience, or qualifications which have already been achieved, to contribute to a new qualification.

For this qualification, RPL is **not** allowed.

5 Units

Structure of the units

These units each have the following:

- City & Guilds reference number
- Title
- Level
- Guided learning hours (GLH)
- Learning outcomes, which are comprised of a number of assessment criteria

Centres must deliver the full breadth of the range. For the practical assessments for this qualification, centres should ensure that there are sufficient resources to complete the tasks but are not required to use all the equipment or commodities in the range.

Unit 201

Safe location and avoidance of underground services

Unit Level:	2
Guided learning hours:	12
Unit aim:	The purpose of this unit is for learners to develop the skills and knowledge required to safely locate and avoid underground utilities and services. This includes the identification of underground services, interpretation of service documentation and skills required to scan, detect and mark out located services. The unit also includes a basic understanding of excavation activities.

Learning outcome

The learner will

1. Understand the purpose of safe location and avoidance of underground services

Assessment criteria

The learner can

- 1.1 Explain what is meant by a Safe System of Work
- 1.2 Describe the legislation and guidance related to location and avoidance of underground services
- 1.3 Explain **reasons** why excavations take place
- 1.4 Describe **consequences** of an underground service strike
- 1.5 State **client responsibilities** when commissioning work on underground services
- 1.6 State **contractor responsibilities** working on or near underground services

Range

Reasons

Fault finding, footing and foundation, investigation, new build/installations, emergency, diversions

Consequences

Death, injury, delays, cost implications, fines, HSE intervention, loss of reputation

Client responsibilities

Duty to make plans available, providing pre-construction information, employment of competent contractors as per legislation, provision of required permits

Contractor responsibilities

Employment of competent workers, provision of adequate information, instruction, training and supervision, provision of adequate equipment

Learning outcome

The learner will

2. Understand service drawings required when preparing to work on or near underground services

Assessment criteria

The learner can

- 2.1 Identify types of drawings for different **services**
 - 2.2 Describe types of **inaccuracies** that may be found in service drawings
 - 2.3 Interpret **data and detail** on service drawings
-

Range

Services

Gas, electricity, mains water, sewage, telecommunications

Inaccuracies

Out of date, not to scale, orientation of plan, services not marked, private connections, unauthorised connections, regional differences

Data and detail

Key, symbols, resolution, size, annotations, service connections

Learning outcome

The learner will

3. Plan for safe location and avoidance of underground services

Assessment criteria

The learner can

- 3.1 Carry out **risk assessments** on location area
 - 3.2 Interpret provided **documentation** for different **services**
 - 3.3 Select and use required **safety equipment**
 - 3.4 Select and confirm calibration of required **equipment** including **ancillaries**
 - 3.5 Confirm **equipment** functionality including **ancillaries, modes of operation** and **signal types**
 - 3.6 Apply **control measures** for faulty equipment including ancillaries
-

Range

Risk assessments

Five stages – Identify hazards, identify who may be harmed, management of risk (control measures), record, review

Documentation

Industry specific documentation, permits and licences, method statement

Services

Gas, electricity, mains water, sewage, telecommunications

Safety equipment

PPE, barriers and guarding systems

Equipment

Signal generator, cable avoidance tool

Ancillaries

Induction loop, sonde, property adaptor

Modes of operation

Power mode, radio mode, signal generator mode

Signal types

Passive signals, active signals,

Control measures

Select, inspect, reject, replace, report and escalate where necessary

Learning outcome

The learner will

4. Identify, detect and mark out underground services

Assessment criteria

The learner can

- 4.1 Use **operational modes** to carry out sweep searches of identified area using **location equipment**
- 4.2 Use operational modes to pinpoint service using location equipment
- 4.3 Use operational modes to trace service using location equipment
- 4.4 Mark out service location using measures appropriate to location

- 4.5 Confirm location results prior to excavation
 - 4.6 Store equipment and **ancillaries** safely and securely following use
-

Range

Operational modes

Power mode, radio mode, signal generator mode

Location equipment

Signal generator, cable avoidance tool

Ancillaries

Induction loop, sonde, property adaptor

Learning outcome

The learner will

- 5. Understand methods of safe excavation of underground services

Assessment criteria

The learner can

- 5.1 Describe **safety considerations** when excavating
 - 5.2 Explain **methods of safe exposure** of services when excavating
 - 5.3 Describe **methods of identifying** excavated services and their limitations
 - 5.4 Describe **reporting procedures** for location of unexpected services
 - 5.5 Identify potential **service indicators** that may be found during excavation
-

Range

Safety considerations

Selection of correctly insulated tools, avoidance of sharp excavation tools, first aid equipment, fire safety equipment, task specific PPE, ground type/stability

Methods of safe exposure

Hand dig, water jet, high velocity air jet, trial holes along with positive identification

Methods of identification

Colour, depth, identification markings, ducting, material type, service drawings

Reporting procedures

Stopping of work, visual inspection, making area safe, reporting upwards following site procedures, recording and marking on updated plans

Service indicators

Warning tape, tiles, changes in ground material and type (e.g. sand, gravel, shingle), marker posts.

Unit 201

Safe location and avoidance of underground services

Supporting Information

Suggestions for delivery format of content – lesson ideas

- Reviewing service plans of local area
- Inspection of range of utility materials – piping, cabling etc.
- Review of completed risk assessment documentation and completion of basic risk assessments

Delivery using simulated environments

- Practical activities should be carried out in suitable location where the candidate can demonstrate the location of a range of services, either on a live site or an area that closely resembles one.
- Service plans should include gas, water, electricity and telecommunications.
- Practical location activities should be carried out on a range of services commonly found during excavation work and identify both damaged and undamaged services.
- Sites should allow for the location of a minimum of two different traceable underground services for a run of at least 10 metres.
- Cable locator and service plans should include telecommunications, gas, water and electric cables.
- Personal protective and safety equipment must be used relevant to the operations being carried out

Resources

Guidance documents

- HSE guidance document - Avoiding danger from underground services (HSG47)
- NJU Group guidance document – Guidelines on the positioning of underground utilities' apparatus (Issue 3) Volume 2 National Joint Utilities Group 2010
- NJU Group guidance document – Guidelines on the positioning and colour coding of underground utilities' apparatus (Issue 6) Volume 1 National Joint Utilities Group 2012
- Specification for the reinstatement of openings in highways: A Code of Practice (Third edition) The Stationery Office 2010
- CIRIA Guidance Document - Trenchless and minimum excavation techniques: Planning and selection (SP147) Construction Industry Research and Information Association (CIRIA)
- Institution of Gas Engineers & Managers guidance document - 10 Trenchless techniques

Websites

- <http://www.hse.gov.uk/index.htm>
- <http://njug.org.uk/>

Appendix 1 Sources of general information

The following documents contain essential information for centres delivering City & Guilds qualifications. They should be referred to in conjunction with this handbook. To download the documents and to find other useful documents, go to the Centres and Training Providers homepage on www.cityandguilds.com.

Centre Manual - Supporting Customer Excellence contains detailed information about the processes which must be followed and requirements which must be met for a centre to achieve 'approved centre' status, or to offer a particular qualification, as well as updates and good practice exemplars for City & Guilds assessment and policy issues.

Specifically, the document includes sections on:

- The centre and qualification approval process
- Assessment, internal quality assurance and examination roles at the centre
- Registration and certification of candidates
- Non-compliance
- Complaints and appeals
- Equal opportunities
- Data protection
- Management systems
- Maintaining records
- Assessment
- Internal quality assurance
- External quality assurance.

Our Quality Assurance Requirements encompasses all of the relevant requirements of key regulatory documents such as:

- SQA Awarding Body Criteria (2007)
- NVQ Code of Practice (2006)

and sets out the criteria that centres should adhere to pre and post centre and qualification approval.

Access to Assessment & Qualifications provides full details of the arrangements that may be made to facilitate access to assessments and qualifications for candidates who are eligible for adjustments in assessment.

The **centre homepage** section of the City & Guilds website also contains useful information on such things as:

- **Walled Garden:** how to register and certificate candidates on line
- **Events:** dates and information on the latest Centre events
- **Online assessment:** how to register for e-assessments.

Centre Guide – Delivering International Qualifications contains detailed information about the processes which must be followed and requirements which must be met for a centre to achieve 'approved centre' status, or to offer a particular qualification.

Specifically, the document includes sections on:

- The centre and qualification approval process and forms

- Assessment, verification and examination roles at the centre
- Registration and certification of candidates
- Non-compliance
- Complaints and appeals
- Equal opportunities
- Data protection
- Frequently asked questions.

Appendix 2 Useful contacts

UK learners General qualification information	E: learnersupport@cityandguilds.com
International learners General qualification information	E: intcg@cityandguilds.com
Centres Exam entries, Certificates, Registrations/enrolment, Invoices, Missing or late exam materials, Nominal roll reports, Results	E: centresupport@cityandguilds.com
Single subject qualifications Exam entries, Results, Certification, Missing or late exam materials, Incorrect exam papers, Forms request (BB, results entry), Exam date and time change	E: singlesubjects@cityandguilds.com
International awards Results, Entries, Enrolments, Invoices, Missing or late exam materials, Nominal roll reports	E: intops@cityandguilds.com
Walled Garden Re-issue of password or username, Technical problems, Entries, Results, e-assessment, Navigation, User/menu option, Problems	E: walledgarden@cityandguilds.com
Employer Employer solutions, Mapping, Accreditation, Development Skills, Consultancy	E: business@cityandguilds.com
Publications Logbooks, Centre documents, Forms, Free literature	

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