



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

Version 1.1 (September 2024)

Qualification Handbook

Qualification at a glance

Subject area	Building and construction
City & Guilds number	6038
Age group approved	16+
Entry requirements	None
Assessment	Assignment
Grading	Pass/Fail
Approvals	Full approval required
Support materials	Qualification Handbook Assessment Pack
Registration and certification	Consult the Walled Garden/Online Catalogue for last dates

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

Version and date	Change detail	Section
1.0 Dec 2017	Initial version	All
1.1 Sep 2024	Handbook reviewed and updated to new template	Throughout

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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)• Confined Spaces (6160)• Electrical Power Engineering (2034)• Winter Service Operations (6159)
Who did we develop the qualification with?	N/A
Is it part of an apprenticeship framework or initiative?	No

Structure

To achieve the City & Guilds Level 2 Award in Safe Location and Avoidance of Underground Services, learners must achieve:

City & Guilds unit number	Unit title	GLH
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Mandatory units:

Learners must achieve the mandatory unit.

201	Safe Location and Avoidance of Underground Services	12
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Total Qualification Time (TQT)

Total Qualification Time (TQT) is the number of notional hours which represents an estimate of the total amount of time that could reasonably be expected for a learner to demonstrate the achievement of the level of attainment necessary for the award of a qualification.

TQT comprises of the following two elements:

- 1) the number of hours that an awarding organisation has assigned to a qualification for guided learning
- 2) an estimate of the number of hours a learner will reasonably be likely to spend in preparation, study or any other form of participation in education or training, including assessment, which takes place as directed by – but, unlike guided learning, not under the immediate guidance or supervision of – a lecturer, supervisor, tutor or other appropriate provider of education or training.

Title and level	GLH	TQT
City & Guilds Level 2 Award in Safe Location and Avoidance of Underground Services	12	14

Centre requirements

Approval

To offer this qualification, new centres will need to gain both centre and qualification approval. Please refer to the document **Centre Approval Process: Quality Assurance Standards** for further information.

If your centre is approved to offer the 6167 qualification you will be automatically approved to offer 6038-01. Please refer to the document **Centre Approval Process: Quality Assurance Standards** for further information.

Centre staff should familiarise themselves with the structure, content and assessment requirements of the qualification 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.

Continuing professional development (CPD)

Centres are expected to support their staff in ensuring that their knowledge remains current of the occupational area and of best practice in delivery, mentoring, training, assessment and quality assurance, and that it takes account of any national or legislative developments.

Quality assurance

Approved centres must have effective quality assurance systems to ensure optimum delivery and assessment of qualifications. Quality assurance includes initial centre approval, qualification approval and the centre's own internal procedures for monitoring quality. Centres are responsible for internal quality assurance and City & Guilds is responsible for external quality assurance. All external quality assurance processes reflect the minimum requirements for verified and moderated assessments, as detailed in the Centre Assessment Standards Scrutiny (CASS), section H2 of Ofqual's General Conditions. For more information on both CASS and City and Guilds Quality Assurance processes visit: the [What is CASS?](#) and [Quality Assurance Standards](#) documents on the City & Guilds website.

Standards and rigorous quality assurance are maintained by the use of:

- Internal quality assurance
- City & Guilds external quality assurance.

In order to carry out the quality assurance role, Internal Quality Assurers must

- have appropriate teaching and vocational knowledge and expertise
- have experience in quality management/internal quality assurance
- hold or be working towards an appropriate teaching/training/assessing qualification
- be familiar with the occupation and technical content covered within the qualification.

External quality assurance for the qualification will be provided by City & Guilds EQA process. EQAs are appointed by City & Guilds to approve centres, and to monitor the assessment and internal quality assurance carried out by centres. External quality assurance is carried out to ensure that assessment is valid and reliable, and that there is good assessment practice in centres.

The role of the EQA is to:

- provide advice and support to centre staff
- ensure the quality and consistency of assessments and marking/grading within and between centres by the use of systematic sampling
- provide feedback to centres and to City & Guilds.

Learner entry requirements

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

Age restrictions

This qualification is approved for learners aged 16 or above.

Access arrangements and reasonable adjustments

City & Guilds has considered the design of this qualification and its assessment in order to best support accessibility and inclusion for all learners. We understand however that individuals have diverse learning needs and may require reasonable adjustments to fully participate. Reasonable adjustments, such as additional time or alternative formats, may be provided to accommodate learners with disabilities and support fair access to assessment.

Access arrangements are adjustments that allow candidates with disabilities, special educational needs, and temporary injuries to access the assessment and demonstrate their skills and knowledge without changing the demands of the assessment. These arrangements must be made before assessment takes place.

Equality legislation requires City & Guilds to make reasonable adjustments where a disabled person would be at a substantial disadvantage in undertaking an assessment.

It is the responsibility of the centre to ensure at the start of a programme of learning that candidates will be able to access the requirements of the qualification.

Please refer to the Joint Council for Qualifications (JCQ) access arrangements and reasonable adjustments and access arrangements - when and how applications need to be made to City & Guilds. For more information documents are available on the City & Guilds website.

Delivering the qualification

Initial assessment and induction

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

- if the learner has any specific training needs
- support and guidance they may need when working towards their qualification
- the appropriate type and level of qualification.

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

Inclusion and diversity

City & Guilds is committed to improving inclusion and diversity within the way we work and how we deliver our purpose which is to help people and organisations develop the skills they need for growth.

More information and guidance to support centres in supporting inclusion and diversity through the delivery of City & Guilds qualifications can be found here:

[Inclusion and diversity | City & Guilds \(cityandguilds.com\)](https://www.cityandguilds.com)

Sustainability

City & Guilds are committed to net zero. Our ambition is to reduce our carbon emissions by at least 50% before 2030 and develop environmentally responsible operations to achieve net zero by 2040 or sooner if we can. City & Guilds is committed to supporting qualifications that support our customers to consider sustainability and their environmental footprint.

More information and guidance to support centres in developing sustainable practices through the delivery of City & Guilds qualifications can be found here:

[Our Pathway to Net Zero | City & Guilds \(cityandguilds.com\)](https://www.cityandguilds.com)

Centres should consider their own carbon footprint when delivering this qualification and consider reasonable and practical ways of delivering this qualification with sustainability in mind. This could include:

- reviewing purchasing and procurement processes (such as buying in bulk to reduce the amount of travel time and energy, considering and investing in the use of components that can be reused, instead of the use of disposable or single use consumables)
- reusing components wherever possible

- waste procedures (ensuring that waste is minimised, recycling of components is in place wherever possible)
- minimising water use and considering options for reuse/salvage as part of plumbing activities wherever possible.

Support materials

The following resources are available for this qualification:

Description	How to access
Assignment pack	www.cityandguilds.com

Assessment

Assessment of the qualification

Candidates must:

- successfully complete x1 assessment for the mandatory unit

Assessment types			
Unit	Title	Assessment method	Where to obtain assessment materials
201	Safe Location and Avoidance of Underground Services	Practical Task and Knowledge Test	www.cityandguilds.com

Assessment strategy

City & Guilds has written the following assessments to use with this qualification

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

Live assessments downloaded from the City & Guilds website, ie short answer question papers, are set by City & Guilds and administered by the centre when the candidate is ready. These assessments should be delivered by the centre under supervised conditions.

Assessments are marked by the centre using the marking guide provided in the relevant assessment materials which are available to download from www.cityandguilds.com. All assessment materials must be held securely by centres and not made available to candidates.

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.

RPL is not allowed for this qualification.

Test specifications

The way the knowledge is covered by the test is laid out in the table below:

Permitted materials: None

Graded: Pass/Fail

Test: 6038- 201	Duration: 30 minutes		
Unit	Outcome	Number of marks	Percentage %
201	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%

Units

Structure of the unit

These units each have the following:

- City & Guilds reference number
- title
- level
- guided learning hours (GLH)
- unit aim
- assessment type
- learning outcomes, which are comprised of a number of assessment criteria
- range statements
- supporting information

Guidance for delivery of the unit

This qualification comprises one **unit**. A unit describes what is expected of a competent person in particular aspects of their job.

The **unit** is divided into **learning outcomes** which describe in further detail the skills and knowledge that a candidate should possess.

Each **learning outcome** has a set of **assessment criteria** (performance and knowledge and understanding) which specify the desired criteria that must be satisfied before an individual can be said to have performed to the agreed standard.

Range statements define the breadth or scope of a learning outcome and its assessment criteria by setting out the various circumstances in which they are to be applied.

Supporting information provides guidance of the evidence requirement for the unit and specific guidance on delivery and range statements. Centres are advised to review this information carefully before delivering the unit.

Unit 201

Safe location and avoidance of underground services

Level:	2
GLH:	12
Assessment type:	Practical Task and Knowledge Test
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:

LO1 Understand the purpose of safe location and avoidance of underground services

Assessment criteria

The learner can:

AC1.1 Explain what is meant by a Safe System of Work

AC1.2 Describe the legislation and guidance related to location and avoidance of underground services

AC1.3 Explain **reasons** why excavations take place

AC1.4 Describe **consequences** of an underground service strike

AC1.5 State **client responsibilities** when commissioning work on underground services

AC1.6 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:

LO2 Understand service drawings required when preparing to work on or near underground services

Assessment criteria

The learner can:

AC2.1 Identify types of drawings for different **services**

AC2.2 Describe types of **inaccuracies** that may be found in service drawings

AC2.3 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:

LO3 Plan for safe location and avoidance of underground services

Assessment criteria

The learner can:

AC3.1 Carry out **risk assessments** on location area

AC3.2 Interpret provided **documentation** for different **services**

AC3.3 Select and use required **safety equipment**

AC3.4 Select and confirm calibration of required **equipment** including **ancillaries**

AC3.5 Confirm **equipment** functionality including **ancillaries, modes of operation** and **signal types**

AC3.6 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:

LO4 Identify, detect and mark out underground services

Assessment criteria

The learner can:

AC4.1 Use **operational modes** to carry out sweep searches of identified area using **location equipment**

AC4.2 Use operational modes to pinpoint service using location equipment

AC4.3 Use operational modes to trace service using location equipment

AC4.4 Mark out service location using measures appropriate to location

AC4.5 Confirm location results prior to excavation

AC4.6 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:

LO5 Understand methods of safe excavation of underground services

Assessment criteria

The learner can:

AC5.1 Describe **safety considerations** when excavating

AC5.2 Explain **methods of safe exposure** of services when excavating

AC5.3 Describe **methods of identifying** excavated services and their limitations

AC5.4 Describe **reporting procedures** for location of unexpected services

AC5.5 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

Suggested learning resources

Guidance documents

- HSE guidance document - Avoiding danger from underground services (HSG47) www.hse.gov.uk
- NJU Group guidance document – Guidelines on the positioning of underground utilities' apparatus (Issue 3) Volume 2 National Joint Utilities Group 2010 www.streetworks.org.uk
- NJU Group guidance document – Guidelines on the positioning and colour coding of underground utilities' apparatus (Issue 6) Volume 1 National Joint Utilities Group 2012 www.streetworks.org.uk
- Specification for the reinstatement of openings in highways: A Code of Practice (Third edition) The Stationery Office 2010 www.tso.co.uk
- 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

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 [Centre document library](#) on www.cityandguilds.com or click on the links below:

Centre Handbook: Quality Assurance Standards

This document is for all approved centres and provides guidance to support their delivery of our qualifications. It includes information on:

- centre quality assurance criteria and monitoring activities
- administration and assessment systems
- centre-facing support teams at City & Guilds/ILM
- centre quality assurance roles and responsibilities.

The Centre Handbook should be used to ensure compliance with the terms and conditions of the centre contract.

Centre Assessment: Quality Assurance Standards

This document sets out the minimum common quality assurance requirements for our regulated and non-regulated qualifications that feature centre-assessed components. Specific guidance will also be included in relevant qualification handbooks and/or assessment documentation.

It incorporates our expectations for centre internal quality assurance and the external quality assurance methods we use to ensure that assessment standards are met and upheld. It also details the range of sanctions that may be put in place when centres do not comply with our requirements or actions that will be taken to align centre marking/assessment to required standards. Additionally, it provides detailed guidance on the secure and valid administration of centre assessments.

Access arrangements: When and how applications need to be made to City & Guilds

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 document library](#) also contains useful information on such things as:

- conducting examinations
- registering learners
- appeals and malpractice.

Useful contacts

Please visit the [Contact us](#) section of the City & Guilds website.

City & Guilds

For over 140 years, we have worked with people, organisations and economies to help them identify and develop the skills they need to thrive. We understand the life-changing link between skills development, social mobility, prosperity and success. Everything we do is focused on developing and delivering high-quality training, qualifications, assessments and credentials that lead to jobs and meet the changing needs of industry.

We partner with our customers to deliver work-based learning programmes that build competency to support better prospects for people, organisations and wider society. We create flexible learning pathways that support lifelong employability because we believe that people deserve the opportunity to (re)train and (re)learn again and again – gaining new skills at every stage of life, regardless of where they start.

The City & Guilds community of brands includes Gen2, ILM, Intertrain, Kineo and The Oxford Group.

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