

# Level 2 Award in Tunnel Entry and Associated Emergency Procedures (6151-02)

September 2017 Version 2.1





## Qualification at a glance

<b>Subject area</b>	Confined Spaces
<b>City &amp; Guilds number</b>	6151
<b>Age group approved</b>	16+
<b>Assessment</b>	Assignment
<b>Fast track</b>	Not available
<b>Support materials</b>	Centre handbook Assessment pack
<b>Registration and certification</b>	Consult the Walled Garden/Online Catalogue for last dates

<b>Title and level</b>	<b>GLH</b>	<b>TQT</b>	<b>City &amp; Guilds number</b>	<b>Accreditation number</b>
Level 2 Award in Tunnel Entry and Associated Emergency Procedures	7	10	6151-02	600/6167/4

<b>Version and date</b>	<b>Change detail</b>	<b>Section</b>
1.1 June 2015	Age range update from 16-18+ to 18+ only.	Candidate entry requirements
1.2 August 2015	Age range update 16-18+ reinstated only.	Candidate entry requirements
2 August 2016	Assessment Criteria 7.11 amended TQT Added	Units Structure
2.1 September 2017	Added TQT and GLH details  Deleted QCF	Qualification at a Glance, Structure  Appendix



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# 1 Introduction

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

Area	Description
Who is the qualification for?	It is for candidates who work or want to work in the tunnelling industry during tunnel and or shaft construction activities
What does the qualification cover?	The qualification covers safe entry and emergency procedures in tunnels and shafts under construction.
Is the qualification part of a framework or initiative?	This qualification is part of an initiative to support competence in the tunnelling workforce
What opportunities for progression are there?	It allows candidates to progress into employment or to the following qualifications: <ul style="list-style-type: none"> <li>Tunnelling Operations Vocational Qualifications</li> </ul>

## Structure

To achieve the Level 2 Award in Tunnel Entry and Associated Emergency Procedures, learners must achieve 1 credit from the mandatory unit.

City & Guilds unit number	Unit title	Credit value	GLH	TQT
<b>Mandatory</b>				
201	Tunnel entry and associated emergency procedures	1	7	7

## 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
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Level 2 Award in Tunnel Entry and 7 10  
Associated Emergency  
Procedures



## 2 Centre requirements

### Approval

There is no fast track approval for this qualification; existing centres who wish to offer this qualification must use the **standard** Qualification Approval Process.

To offer this qualification, centres will need to gain both centre and qualification approval. Please refer to the *Centre Manual - Supporting Customer Excellence* 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

#### Centre staffing

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

- be occupationally competent or technically knowledgeable in the area for which they are delivering training and have creditable experience of providing training. This knowledge must be to the same level as the training being delivered
- have recent relevant and auditable experience of working/training in the tunnelling industry and environment

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

Advice and guidance about suitable trainers delivering course programmes or centres delivering this qualification can be obtained from TunnelSkills [The National Specialist Training Forum for the Tunnelling Industry]

#### Practical Element Resources

Centres must have access to a realistic tunnel environment or an approved simulated area to carry out the practical element of the assessment/assignment

## **Assessors and Internal Quality Assurer**

Centre staff should hold, or be working towards, the relevant Assessor/Internal Quality Assurer TAQA qualification for their role in delivering, assessing and verifying this qualification.

## **Continuing professional development (CPD)**

Centres must support their staff to ensure that they have current knowledge of the occupational area, that delivery, mentoring, training, assessment and verification is in line with best practice, and that it takes account of any national or legislative developments.

## **Candidate 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**

City & Guilds cannot accept any registrations for candidates under 16 as this qualification is not approved for under 16s.



## 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 qualification.
- any units they have already completed, or credit they have accumulated which is relevant to the qualification.
- 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, 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 this qualification:

Description	How to access
Centre Handbook	<a href="http://www.cityandguilds.com">www.cityandguilds.com</a>
Assessment Pack	<a href="http://www.cityandguilds.com">www.cityandguilds.com</a>
Sample assignments	<a href="http://www.cityandguilds.com">www.cityandguilds.com</a>





## 4 Assessment

Candidates must:

- successfully complete one assignment for each mandatory unit

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

- assignment, including two different versions of the knowledge element using multiple choice questions
- practical exercise that will allow candidates to demonstrate their skills

<b>Unit</b>	<b>Title</b>	<b>Assessment method</b>	<b>Where to obtain assessment materials</b>
201	Tunnel entry and associated emergency procedures	Assignment - The assignment covers the skills and knowledge in the unit. It is set by City & Guilds, delivered and marked by the tutor/assessor, and will be externally verified by City & Guilds to make sure it is properly carried out.	<a href="http://www.cityandguilds.com">www.cityandguilds.com</a>

### **Time constraints**

The following must be applied to the assessment of this qualification:

- Candidates must finish their assessment within their period of registration
- Assignments should take no longer than 2 hours. If they do, centres should consider why this is, and make sure that they are not trying to gather too much evidence.

### **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 allowed but must be tunnelling specific.



## 5 Units

### Availability of units

Below is a list of the learning outcomes for the mandatory unit.

### Structure of units

The unit has each of the following:

- City & Guilds reference number
- unit accreditation number (UAN)
- title
- level
- credit value
- guided learning hours
- unit aim
- endorsement by a sector or other appropriate body
- learning outcomes which are comprised of a number of assessment criteria.

## Unit 201

## Tunnel entry and associated emergency procedures

UAN:	F/504/2090
Level:	2
Credit value:	1
GLH:	7
Endorsement by a sector or regulatory body:	This unit is endorsed by Energy & Utility Skills.
Aim:	This unit aims to assess the candidates ability to apply the skills and knowledge required for carrying out work activities in tunnels and shafts where there may be a reasonably foreseeable specified risk. The unit also covers using tools & equipment safely and following safety procedures.

<b>Learning outcome</b>
The learner will: 1. Be able to prepare to work safely in confined spaces in tunnels and shafts
<b>Assessment criteria</b>
The learner can: 1.1 check all <b>equipment</b> is in good order prior to entry 1.2 obtain <b>authorisation</b> for entry and relevant health and safety <b>information</b> from designated personnel 1.3 ensure <b>monitoring equipment</b> is in place 1.4 test to confirm <b>communications systems</b> are working before commencing entry 1.5 describe their role within the team

<b>Range</b>
<b>Equipment</b> Fixed and portable gas monitor, access equipment, portable lamp, fixed lighting, communication devices, appropriate RPE for escape purposes, portable/fixed ventilation equipment, first aid equipment, fire prevention and protection equipment flood control, <b>Authorisation and information</b>

<p>risk assessment, safe system of work, method statement, emergency procedures, hygiene procedures, environmental protection procedures, evacuation plans, check in and check out procedures</p> <p><b>Monitoring equipment</b> Fixed and portable gas monitors, temperature monitors, dust monitors</p> <p><b>Communication Systems</b> Written, verbal, signalling, telephone, radio, mobile phone (surface use only), leaky feeder, air horns, chalk, whistles, and associated organisational devised code(s) of signals.</p>
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<b>Learning outcome</b>
The learner will: 2. Be able to enter and exit tunnels and shafts safely
<b>Assessment criteria</b>
The learner can: 2.1 check <b>atmospheric conditions</b> are safe 2.2 resolve any problems prior to entry with the designated personnel 2.3 enter and exit in line with <b>procedures</b>

<b>Range</b>
<b>Atmospheric conditions</b> composition of atmosphere, oxygen deficiency/excess, flammable gas, toxic gas, types of monitoring equipment, alarm levels
<b>Procedures</b> Safety awareness, access equipment, risk assessments and atmospheric conditions, method statements, job sheets, organisational procedures

<b>Learning outcome</b>
The learner will: 3. Be able to use escape respiratory protective equipment in accordance with manufacturers' specifications
<b>Assessment criteria</b>
The learner can: 3.1 adhere to all <b>procedures</b> regarding the carrying and use of <b>escape respiratory protective equipment (RPE)</b> 3.2 Check the effectiveness of the escape <b>RPE</b> for the job 3.3 examine the <b>RPE</b> prior to starting work and replace if it is defective 3.4 don the escape <b>RPE</b> to escape in an emergency

<b>Range</b>
<b>Procedures</b>

manufacturer's instructions, organisational procedures, appropriate settings for use  
**escape respiratory protective equipment (RPE)**  
filter, compressed air, chemical oxygen

#### Learning outcome

The learner will:

4. Be able to use equipment and tools safely and in accordance with manufacturers' instructions

#### Assessment criteria

The learner can:

- 4.1 perform **checks** on **equipment and tools** and **personal protective equipment (PPE)** to ensure they are suitable for the job
- 4.2 resolve problems with equipment and tools before and during use
- 4.3 follow manufacturers and employers instructions when using equipment
- 4.4 remove equipment and tools when work is finished
- 4.5 carry out after-use checks on equipment
- 4.6 use **Personal Protective Equipment** specified for the job

#### Range

##### Checks

No damage to equipment, calibration dates; pre-use checks (including self tests), conforms to manufacturers' instructions, inspection/maintenance records

##### Equipment and tools

Fixed and portable gas monitor, access equipment, portable lamp, fixed lighting, communication devices, appropriate RPE for escape purposes, portable/fixed ventilation equipment, first aid equipment, fire prevention and protection equipment flood control,

##### Personal Protective Equipment

High visibility clothing, gloves / gauntlets, safety helmets, footwear, light eye protection

#### Learning outcome

The learner will:

5. Be able to follow procedures and work safely

#### Assessment criteria

The learner can:

- 5.1 use different **methods of communication** which suit the work situation
- 5.2 follow working procedures to control access of people and vehicles around entry and egress points
- 5.3 resolve **problems** connected to the work with the designated personnel

- 5.4 follow employers' **safe working procedures** and manufacturers' equipment instructions
- 5.5 remedy unsafe activity, equipment, and environmental conditions immediately
- 5.6 monitor **atmospheric conditions** within tunnels and shafts regularly
- 5.7 control **risks** adequately which arise during working
- 5.8 respond to information from monitoring equipment
- 5.9 ensure the work area is safe when work is finished

<b>Range</b>
<p><b>Methods of communication</b> Written, verbal, signalling, telephone, radio, mobile phone (surface use only), leaky feeder, air horns, chalk, whistles, and associated organisational devised code(s) of signals.</p> <p><b>Problems</b> Breakdowns, faulty equipment, changes to agreed safe systems of work</p> <p><b>Safe working procedures</b> Risk assessments, job sheets, safe systems of work</p> <p><b>Atmospheric conditions</b> composition of atmosphere, oxygen deficiency, flammable gas, toxic gas, types of monitoring equipment, alarm levels</p> <p><b>Risks</b> Oxygen deficiency/excess, explosive atmospheres, toxic atmospheres, inrush of liquids / free flowing solids, extremes of temperature, diseases / personal injury - Serious injury to any person at work arising from a fire or explosion, the loss of consciousness of any person at work arising from an increase in body temperature, the loss of consciousness or asphyxiation of any person at work arising from gas, fume, vapour or the lack of oxygen, the drowning of any person at work arising from an increase in the level of liquid; the asphyxiation of any person at work arising from a free flowing solid or the inability to reach a respirable environment due to entrapment by a free flowing solid</p> <p><b>Personal Protective Equipment</b> High visibility clothing, gloves / gauntlets, safety helmets, footwear, light eye protection</p>

<b>Learning outcome</b>
The learner will:
6. Be able to deal with emergencies
<b>Assessment criteria</b>
The learner can:
6.1 Identify when an emergency occurs
6.2 follow emergency procedures immediately when a dangerous situation is identified by dynamic risk assessment
6.3 report the emergency incident and its <b>circumstances</b>
6.4 maintain <b>emergency communications</b>

<b>Range</b>
<p><b>Circumstances</b> Date, time, location, events leading up to emergency, those involved / affected, key instructions / messages received / given, action taken, arrival time for emergency services other specialists</p> <p><b>Emergency communications</b> Whistles, air horns, radios, telephones, signals</p>

<b>Learning outcome</b>
The learner will: 7. Understand procedures for working safely in tunnels and shafts
<b>Assessment criteria</b>
<p>The learner can:</p> <p>7.1 describe their responsibilities to comply with the main principles of health and safety and environmental legislation and regulations</p> <p>7.2 identify the approved <b>codes of practice and guidance for working</b> safely in tunnels, shafts and confined spaces</p> <p>7.3 identify potentially hazardous situations and different <b>types of hazards</b></p> <p>7.4 describe how emergency situations can arise in tunnels and shafts</p> <p>7.5 describe manufacturers' instructions relating to the use of <b>equipment</b></p> <p>7.6 describe manufacturers' instructions relating to the use of escape respiratory protective equipment</p> <p>7.7 describe methods for working as a member of a team</p> <p>7.8 describe the different roles and responsibilities when dealing with emergencies</p> <p>7.9 state procedures for dealing with injuries</p> <p>7.10 describe how to deal with irregularities and <b>abnormal situations</b></p> <p>7.11 identify types of <b>emergency situation</b> and the appropriate responses</p>

<b>Range</b>
<p><b>Codes of practice and guidance for working</b> BS6164 Safety in Tunnelling 2011,, Confined Space Regulations 1997</p> <p><b>Types of hazards</b> Oxygen deficiency/excess, explosive atmospheres, toxic atmospheres, fire, inrush of liquids / free flowing solids, extremes of temperature, diseases, plant/equipment failure, entrapment</p> <p><b>Equipment</b> Fixed and portable gas monitor, access equipment, portable lamp, fixed lighting, communication devices, appropriate RPE for escape purposes, portable/fixed ventilation equipment, first aid equipment</p>

**Abnormal situations**

Fire/smoke, hazardous atmospheric conditions, flooding, ground loss/collapse, unstable ground conditions, faulty plant and equipment, route of escape blocked, loss of ventilation, total darkness, serious injury

**Emergency Situations**

Refuge chambers, escape to surface

**Learning outcome**

The learner will:

8. Understand how to comply with relevant industry standards for working in tunnels and shafts

**Assessment criteria**

The learner can:

- 8.1 describe relevant **industry standards** for working in tunnels and shafts
- 8.2 identify the hazards and dangerous substances, associated with working in tunnels and shafts
- 8.3 describe **entry procedures** for tunnels and shafts
- 8.4 describe methods for carrying out real-time assessment of risks and hazards
- 8.5 describe procedures for using work authorizations and permits
- 8.6 identify procedures and methods of working suitable to shaft and tunnel environments and local conditions
- 8.7 describe methods of minimising the risks and hazards for the work to be carried out
- 8.8 describe how **ventilation systems** work
- 8.9 describe methods of reducing risk and injury
- 8.10 describe monitoring procedure for environmental **conditions** and work activity
- 8.11 describe **communication methods** which are suitable for use in tunnels and shafts
- 8.12 identify how to resolve problems speedily and with the designated personnel
- 8.13 describe methods for preparing and checking **equipment**
- 8.14 describe methods of ensuring **equipment and tools** are fit-for-purpose and how to use them safely
- 8.15 describe methods and techniques for using and wearing **personal protective equipment (PPE)**
- 8.16 describe how to prepare, check and use escape respiratory protective equipment
- 8.17 describe reporting systems for routine work activities and resolving problems
- 8.18 describe procedures for dealing with emergencies
- 8.19 describe **emergency communication and reporting systems**

**Range**



**Industry standards**

BS6164, confined space regulations 1997

**Entry procedures**

Tally systems, electronic system (e.g. swipe cards)

**Ventilation systems**

Natural, forced, exhausting

**Conditions**

Oxygen level, explosive atmospheres, toxic atmospheres, inrush of liquids / free flowing solids, temperature, air flow

**Communication methods**

Mobile phone (surface use only), radio, air horns, chalk, whistles, and associated organisational devised code(s) of signals, leaky feeder

**Equipment and tools**

Fixed and portable gas monitor, access equipment, portable lamp, fixed lighting, communication devices, appropriate RPE for escape purposes, portable/fixed ventilation equipment, first aid equipment

**Personal Protective Equipment**

High visibility clothing, gloves / gauntlets, safety helmets, footwear, light eye protection

**Emergency communication and reporting systems**

Tunnel phone, radio, air horns, whistles, and associated organisational devised code(s) of signals



## Appendix 1 Relationships to other qualifications

### Links to other qualifications

Mapping is provided as guidance and suggests areas of commonality between the qualifications. It does not imply that candidates completing units in one qualification have automatically covered all of the content of another.

Centres are responsible for checking the different requirements of all qualifications they are delivering and ensuring that candidates meet requirements of all units/qualifications.

This qualification has connections to the:

- Tunnelling Operations Vocational Qualifications

### Literacy, language, numeracy and ICT skills development

This qualification can develop skills that can be used in the following qualifications:

- Functional Skills (England) – see [www.cityandguilds.com/functionalskills](http://www.cityandguilds.com/functionalskills)
- Essential Skills (Northern Ireland) – see [www.cityandguilds.com/essentialskillsni](http://www.cityandguilds.com/essentialskillsni)
- Essential Skills Wales – see [www.cityandguilds.com/esw](http://www.cityandguilds.com/esw)



## Appendix 2 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](http://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:

- Regulatory Arrangements for the Qualifications and Credit Framework (2008)
- 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 such 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.

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## Useful contacts

<b>UK learners</b> General qualification information	E: <a href="mailto:learnersupport@cityandguilds.com">learnersupport@cityandguilds.com</a>
<b>International learners</b> General qualification information	F: +44 (0)20 7294 2413 E: <a href="mailto:intcg@cityandguilds.com">intcg@cityandguilds.com</a>
<b>Centres</b> Exam entries, Certificates, Registrations/enrolment, Invoices, Missing or late exam materials, Nominal roll reports, Results	F: +44 (0)20 7294 2413 E: <a href="mailto:centresupport@cityandguilds.com">centresupport@cityandguilds.com</a>
<b>Single subject qualifications</b> Exam entries, Results, Certification, Missing or late exam materials, Incorrect exam papers, Forms request (BB, results entry), Exam date and time change	F: +44 (0)20 7294 2413 F: +44 (0)20 7294 2404 (BB forms) E: <a href="mailto:singlesubjects@cityandguilds.com">singlesubjects@cityandguilds.com</a>
<b>International awards</b> Results, Entries, Enrolments, Invoices, Missing or late exam materials, Nominal roll reports	F: +44 (0)20 7294 2413 E: <a href="mailto:intops@cityandguilds.com">intops@cityandguilds.com</a>
<b>Walled Garden</b> Re-issue of password or username, Technical problems, Entries, Results, e-assessment, Navigation, User/menu option, Problems	F: +44 (0)20 7294 2413 E: <a href="mailto:walledgarden@cityandguilds.com">walledgarden@cityandguilds.com</a>
<b>Employer</b> Employer solutions, Mapping, Accreditation, Development Skills, Consultancy	E: <a href="mailto:business@cityandguilds.com">business@cityandguilds.com</a>

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## City & Guilds Group

The City & Guilds Group is a leader in global skills development. Our purpose is to help people and organisations to develop their skills for personal and economic growth. Made up of City & Guilds, City & Guilds Kineo, The Oxford Group and ILM, we work with education providers, businesses and governments in over 100 countries

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