

Level 2 Certificate in Construction Operations - General Construction (6709-22)

September 2017 Version 1.3



Qualification at a glance

Subject area	Construction
City & Guilds number	6709
Age group approved	16+18, 19+
Assessment	Multiple Choice, Assignment
Support materials	Centre handbook Assessor Guidance Task Manual
Registration and certification	Consult the Walled Garden/Online Catalogue for last dates

Title and level	GLH	TQT	City & Guilds number	Accreditation number
Level 2 Certificate in Construction Operations – General Construction	314	350	6709-22	600/8054/1

Version and date	Change detail	Section
1.1 July 2014	Centre staffing amended	Centre requirements
1.2 December 2015	Updated range for LO 1, 3 and 4 in unit 201	5. Units
1.3 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 learners who work or want to work as a General Construction Operator in the Construction sector.
What does the qualification cover?	<p>It allows learners to learn, develop and practise the skills required for employment and/or a career as a general construction operative.</p> <p>It covers the following skills:</p> <ul style="list-style-type: none">• Construction site protection barriers• Lay domestic drainage• Construct foundations, slabs and paths in concrete
Is the qualification part of a framework or initiative?	The qualification is a technical certificate within the Construction Civil Engineering Apprenticeship Framework.
What opportunities for progression are there?	<p>It allows learners to progress into employment or to the following City & Guilds qualifications:</p> <ul style="list-style-type: none">• Level 2 NVQ Diploma in Construction Operations

Structure

To achieve the **Level 2 Certificate in Construction Operations - General Construction (6709-22)**, learners must achieve **35** credits from the mandatory units listed below.

Unit accreditation no.	City & Guilds unit no.	Unit title	Credit value	Guided Learning Hours (GLH)
Mandatory				
A/504/6719	201/601	Health, safety and welfare in construction	7	70
Y/504/6999	202/602	Principles of building construction, information and communication	6	55
M/504/7009	227	Construction site protection barriers	4	36
K/504/7011	228	Lay domestic drainage	11	95
K/504/7008	229	Construct foundations, slabs and paths in concrete	7	58

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
Level 2 Certificate in Construction Operations – General Construction	314	350



2 Centre requirements

Approval

The approval process for Construction qualifications is available at our website. Please visit www.cityandguilds.com/construction for further information.

Resource requirements

Centres will have well equipped workshops with a comprehensive range of hand and portable power tools that meet current industry standards. All powered equipment should be well maintained and PAT certified. Facilities for grinding and sharpening hand tools will be available. Centres will have special designated areas within Construction operations workshops (cubicles or project areas) allowing candidates to practice the requirements of the units and carry out the Practical Assignments.

Centre staffing

All staff who assess (tutor/deliver) these qualifications must:

- have recent relevant experience in the specific area they will be teaching;
- be technically competent in the area for which they are delivering training and/or have experience of providing training;
- have a CV available demonstrating relevant experience and any qualifications held.

All staff who quality assure these qualifications must:

- have a good working knowledge and experience within the construction industry;
- have an established strategy and documentary audit trail of internal quality assurance;
- have a good working knowledge of quality assurance procedures;
- have a CV available demonstrating relevant experience and any qualifications held.

While the Assessor/Verifier (A/V) units/TAQA are valued as qualifications for centre staff, they are not currently a requirement for these qualifications. However, we encourage trainers and assessors to qualify to the current TAQA standard.

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.

Learner entry requirements

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

Age restrictions

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



3 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.
- 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 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.

Support materials

The following resources are available for this qualification:

Description	How to access
Assessor Guidance	www.cityandguilds.com
Task Manual	www.cityandguilds.com
Qualification approval form	www.cityandguilds.com/construction
SmartScreen	www.smartscreen.co.uk



4 Assessment

Unit	Title	Assessment method	Where to obtain assessment materials
201/601	Health, safety and welfare in construction	City & Guilds e-volve multiple choice test or on demand externally marked paper. The test covers all of the knowledge in the unit.	Examinations provided on e-volve, or question papers ordered via Walled Garden.
202/602	Principles of building construction, information and communication	City & Guilds e-volve multiple choice test or on demand externally marked paper. The test covers all of the knowledge in the unit.	Examinations provided on e-volve, or question papers ordered via Walled Garden.
227	Construction site protection barriers	Multiple choice question paper, covering knowledge outcomes. Practical assignment, covering performance outcomes. Both assessments are set by City & Guilds, delivered and marked by the tutor/assessor, and will be externally verified by City & Guilds to make sure they are properly carried out.	www.cityandguilds.com
228	Lay domestic drainage	Multiple choice question paper, covering knowledge outcomes. Practical assignment, covering performance outcomes. Both assessments are set by City & Guilds, delivered and marked by the tutor/assessor, and will be externally verified by City & Guilds to make sure they are properly carried out.	www.cityandguilds.com

Unit	Title	Assessment method	Where to obtain assessment materials
229	Construct foundations, slabs and paths in concrete	<p>Multiple choice question paper, covering knowledge outcomes.</p> <p>Practical assignment, covering performance outcomes.</p> <p>Both assessments are set by City & Guilds, delivered and marked by the tutor/assessor, and will be externally verified by City & Guilds to make sure they are properly carried out.</p>	www.cityandguilds.com

Test specifications

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

Test 1: Unit 201/601 Health, safety and welfare in construction
Duration: 1 hour

Unit	Outcome	Number of questions	%
201/601	1 Know the health and safety regulations, roles and responsibilities	7	17.5
	2 Know accident and emergency reporting procedures and documentation	5	12.5
	3 Know how to identify hazards in the workplace	7	17.5
	4 Know about health and welfare in the workplace	3	7.5
	5 Know how to handle materials and equipment safely	2	5
	6 Know about access equipment and working at heights	3	7.5
	7 Know how to work with electrical equipment in the workplace	4	10
	8 Know how to use personal protective equipment (PPE)	5	12.5
	9 Know the cause of fire and fire emergency procedures	4	10
	Total	40	100

Test 2: Unit 202/602 Principles of building construction, information and communication

Duration: 80 minutes

Unit	Outcome	Number of questions	%
202/602	1 Understand how to select types of building information	5	12.5
	2 Know about environmental considerations in relation to construction	5	12.5
	3 Understand the construction of foundations	7	17.5
	4 Understand construction of internal and external walls	9	22.5
	5 Know about construction of floors	4	10
	6 Know about construction of roofs	3	7.5
	7 Understand how to communicate in the workplace	7	17.5
	Total	40	100

Test 3: Unit 227 Construction site protection barriers

Duration: 30 minutes

Unit	Outcome	Number of questions	%
227	1 Understand how to install and maintain construction site barriers	12	80
	3 Know how to remove construction site barriers	3	20
	Total	15	100

Test 4: Unit 228 Lay domestic drainage
Duration: 45 minutes

Unit	Outcome	Number of questions	%
228	1 Know the types and purpose of domestic drainage systems	1	4
	2 Know how to select resources for laying domestic drainage	5	20
	4 Understand how to prepare ground for laying domestic drainage	4	16
	6 Know how to install and test drainage systems	15	60
	Total	25	100

Test 5: Unit 229 Construct foundations, slabs and paths in concrete
Duration: 1 hour

Unit	Outcome	Number of questions	%
229	1 Know how to set out for concreting work	9	30
	3 Know how to construct and secure formwork	9	30
	5 Understand how to place and finish concrete	12	40
	Total	30	100



5 Units

Structure of units

These units each have the following:

- City & Guilds reference number
- unit accreditation number (UAN)
- title
- level
- credit value
- guided learning hours
- unit aim
- learning outcomes which are comprised of a number of assessment criteria

Range explained:

Range gives further scope on what areas within an assessment criteria must be covered. The range in a unit **must** be taught to learners and parts of the range will be assessed.

Glossary of terms used in the units

The following key words and terms are used in the units.

Term	Definition
Abutment	Brickwork either side of the arch which supports the arch when it is completed
Accelerators	Additives used to speed up the initial setting processes of materials
Access Equipment	Equipment to aid access and working at elevated levels
Additives	Products used to speed up or slow down the setting processes of materials i.e. accelerators or retarders
Aggregate	The coarse material (usually gravel) used in mixing concrete
Air Brick	A perforated building block to allow ventilation through walls
Apron	A slightly projecting panel under a window opening, or the metal or lead cover below a chimney stack
Arris	Any straight edge of a brick formed by the junction of two faces
Backfill	Materials used to re-fill areas that have been excavated
Ballast	Usually coarse gravel
Balustrade	The rail, posts and vertical balusters along the edge of a stairway or elevated walkway

Barge-Board	A board covering the ends of the horizontal timbers of a roof which would otherwise be exposed at the gable end.
Bat	Part of a brick greater than one-quarter
Batching	The accurate proportioning of materials to produce a specified mix
Batter	A backward slope
Batter-board	A template used in setting out the batter of a wall. Often referred to as a 'profile' or a 'template'.
Beam-Filling	The brickwork between the ends of joists or beams
Bearing	The amount by which a piece of construction rests upon its support
Bed	Mortar upon which the brick is laid or bedded
Bed joint	A horizontal joint
Bedding	The process of laying in position a brick, piece of stonework, etc
Benching	Finishing process of laying in position a brick, piece of stonework, etc
Bevel	<ol style="list-style-type: none"> 1. Adjustable tool for marking various angles 2. Splayed or chamfered edge
Bill of Quantities	A detailed statement of work, prices, dimensions and other contractual details for a project
Block-Bonding	<ol style="list-style-type: none"> 1. Used in compound walls for binding the two skins together by fitting several courses of brickwork of one skin into a different number of courses of the other 2. Bonding wall into brick indent
Block Plan	A drawing to identify the proposed site in relation to the surrounding area
Bond/Bonding	The arrangement or pattern of laying bricks and blocks to spread the load through the wall, also for strength and appearance, for example Stretcher bond, English bond and Flemish bond
Boning	A method of determining a consistent gradient using boning rods
Brace	An inclined piece of framing lumber applied to wall or floor to strengthen the structure. Often used on walls as temporary bracing until framing has been completed
Bridged Cavity	Something that touches both skins of a cavity wall, i.e. lintel, tie wire, cavity liner, mortar droppings
British Standards	The British Standards Institute (BSI) develops and publishes standards in the UK
Broken Bond	The use of part bricks to make good a bonding pattern where full bricks will not fit in
Bulking	Occurs particularly in wet sand and ballast when wet but before saturation
Builders Square	A tool used for setting out right angles

Bullseye	A circular opening in brickwork formed with a complete ring of voussoirs
Camber	A very flat upward curve
Cantilever	A beam built into a wall and held down at one end and unsupported at the other
Cap or Capping	The top cover of a pier, wall, or chimney stack.
Cast-in-situ	Moulded in the position it will occupy permanently
Cavity Tray	Membrane placed over a bridged cavity, see bridged cavity
Cement	A material made by grinding calcined limestone and clay to a fine powder, which can be mixed with water and poured to set as a solid mass or used as an ingredient in making mortar or concrete
Cavity Walling	Walling built in two separate skins (usually of different materials) with a void held together by wall ties.
Construction Design Management (CDM)	CDM Regs define the legal duties on construction sites and places specific duties on clients, designers and contractors, to plan their approach to health and safety
Chase	A narrow recess cut in the brickwork (i.e. to take conduit or piping)
Chimney Breast	A projecting portion of an internal wall face which contains the fireplace and the flue
Chimney Stack	The part of a chimney containing the tops of the flues which passes through and projects above the roof
Chimney Throating	The portion of the flue just above the gathering over the fireplace.
Codes of Practice	The Approved Code of Practice (ACoP) gives practical advice for those involved in construction work
Collar joint	The joint between the concentric rings of brickwork of a double ring arch.
Common Brick	Bricks of medium quality used for ordinary walling work where no special face finish is required.
Concrete	Composed of cement, sand and stone, of varying size and in varying proportions.
Coping	The weathering feature on top of an external wall
Corbel	A support projecting from the face of the wall (usually brick or stone)
Corbelling	Building out from the face of a wall in successive projecting courses
Coring Hole	A temporary hole left in a cavity wall at ground level to enable mortar droppings to be removed from the cavity.
Creasing	Usually two courses of tiles built in beneath a coping
Curing	A process for bringing freshly placed concrete to required strength and quality by maintaining the humidity and temperature at specified levels for a given period of time.

Damp Proof Course (DPC)	A layer or strip of impervious material placed in a joint of a wall to prevent the passage of water
Damp Proof Membrane (DPM)	A layer or sheet of impervious material within or below a floor or vertically within a building to prevent the passage of mortar
Datum	A datum is a fixed point for reference levels, they may be permanent Ordnance Bench Marks (OBMs) or Temporary Bench Marks (TBMs)
Detached	A building not connected to others
Drip Groove	Small chase cut on the underside of the edge of a projection to throw off rain water.
Easing	The lowering of an arch centre for removal
Eaves	The horizontal exterior roof overhanging
Efflorescence	A white deposit which may form on the surface of new bricks if the latter contain a high proportion of mineral salts.
Engineering Bricks	Hard dense bricks of regular size used for carrying heavy loads (eg in bridge buildings, heavy foundations)
Expanded Metal	Metal reinforcement made out of sheet metal to form a mesh.
Expansion Joints	Fibrous material (10 - 12mm thick) used to permit movement allowing for expansion and contraction
Faced Bricks	Bricks of better quality suitable use on face of walling where good appearance is required
Fascia	Horizontal boards attached to rafter/truss ends at the eaves and along gables. Roof drain gutters are attached to the fascia
Feathered Edged Coping	A coping that is thinner at one edge than the other.
Fender Wall	A dwarf wall to carry the hearth of a ground-floor fireplace.
Flashing	Dressed lead or zinc over a joint in construction arranged
Float	Finishing tool used when laying concrete
Flaunching	The cement fillet at the junction around a chimney pot.
Gables	The part of the wall in the triangle formed by the sloping sides of the roof.
Flue	A pipe or tube formed for conveying smoke or air
Head	Horizontal top member of a door window frame
Flue Linings	Pre-cast hollow fireclay blocks which are built in position during chimney construction to form a complete flue
Folding Wedges	Wedges placed against each other with their thinner edges facing in opposite directions.
Footings	Projecting courses at the base of a wall
Formwork	Shuttering used for casting concrete
Foul Water	Waste matter from WCs, sinks, washing machines etc
Foundation	Used to spread the load of a building to the sub-soil, types include:- strip, pad, raft, beam etc

Frost Inhibitor	Additive used to prevent frost affecting the setting process of materials during freezing weather
Gables	The part of the wall in the triangle formed by the sloping sides of the roof.
Gathering	<ol style="list-style-type: none"> 1. The reduction of the brickwork opening over the mouth of a fireplace to the required size of the fire 2. Bringing together all the flues to the base of the stack
Gauge	The vertical setting out of brick course's
Gauge Box	A bottomless box used for measuring material to be mixed together to form concrete or mortar
Hatchings	Patterns used on a drawing to identify different materials to meet the standards BS1192
Head	Horizontal top member of a door window frame
Header Face	The end face of a brick.
Hearth	The slab projecting in front of the fireplace opening and jambs.
Horns	The projections on a door head for building into the joints.
Hessian	Sacking like material used to keep the frost off new brickwork concrete during freezing conditions
Indent	A recess formed in the brickwork.
Industrial Standards	Minimum standards of quality of completed work
Inspection Chamber	A small shallow man-hole that allows inspection of the system or to allow obstructions to be removed
Insulation	Materials used to retain heat and improve the thermal value of a building, may also be used for managing sound transfer
Invert	The lowest surface of the inside of a drain pipe when laid
Ironmongery	Locks, bolts, handles, screws and nails usually used by carpenters
Jamb	The brickwork on either side of an opening.
Jointing	Making a finish to the mortar faces as work proceeds, i.e. half round jointing
Joists	Parallel beams of timber, steel, reinforced concrete, etc., for supporting floors and ceilings
Junctions	<ol style="list-style-type: none"> 1. Methods of joining walls set at angles, together 2. Connectors for joining drain runs together
Leaf	One of two parallel walls that are tied together as a cavity wall
Levelling	Making sure that two points are at the same height
Lime	A fine powdered material traditionally used in mortars
Lintel	A horizontal member for spanning an opening to support the structure above.
Load-bearing	A part of a building that carries dead and imposed loads transferred by adjoining elements
Low-energy	Indicates a better energy performance than the standard alternative energy

Man-hole	A large inspection chamber on a drain or sewer
Method Statement	A description of the intended method of carrying out a task often linked to a risk assessment.
Mid Girth	Often referred to as a centre line calculation, used for calculating quantities of materials
Mortar	A mixture of sand, cement and/or lime and water used for laying bricks
Movement Joint	A joint to allow for the co-efficient of thermal expansion in materials enabling expansion and contraction.
Newel post	The large starting post to which the end of a stair guard railing or balustrade is fastened.
Oversailing	Projecting from the general face of the wall
Padstone	A masonry unit incorporated in a structure to help spread the load through a wall
Parapet Wall	A low wall on the edge of a building or a platform.
Party Wall	The dividing wall between adjoining buildings
Overhand Work	Facework executed from the back of the wall.
PAT Testing	Portable appliance testing ensures that electrical tools can be used safely
Permeability	A measure of the ease with which water penetrates a material
Photovoltaic	Photovoltaic refers to a technology which uses a device usually a solar panel to produce free electrons when exposed to light, resulting in the production of an electric current.
Piers	Brickwork used for support in walls or as pillars, attached and detached.
Plasticiser	Used to make mortar workable
Plinth	The projecting base of a wall or column
Plumb	The verticality of brickwork
Pointing	Applying a finish to the mortar faces, a sequence of activities post-building, could also be re-pointing as a repair job. I.e. weather struck, tuck etc.
Pre-cast or Preformed	Made-up beforehand
Preservative	Any pesticide substance that, for a reasonable length of time, will prevent the action of wood-destroying fungi, insect borers, and similar destructive agents when the wood has been properly coated or impregnated with it. Normally an arsenic derivative. Chromated Copper Arsenate (CCA) is an example
Primary Elements	The main supporting , enclosing or protective elements of a building
Profiles	Patent guides for lining in brickwork
Profiles	Often same as "Templet". Boards fixed horizontally to ground pegs at the ends of a wall before construction commences in order that lines may be stretched across to mark the position of the wall

Joggle	Cavity into which grout is poured, often to form a joint
Programme of Work	Planning of work and timescales for different trades, usually managed through bar charts on small projects or a critical path on larger projects
Quoins	The vertical external angles in walling.
Pre-cast	Made-up beforehand
Radon	A naturally-occurring, heavier than air gas common in many parts of the country.
Rafter	A piece of timber that forms the roof, of which there are several types i.e. Common Rafters, Hip Rafters, Crown Rafters, Jack Rafters, Valley Rafters, Cripple Rafters etc
Ranging Line	A line stretched between profiles to mark the position of a wall.
Refurbishment	To make an existing building up to standard or to make it suitable for another purpose through renovation
Reinforced Brickwork	Brickwork strengthened by inserting reinforcement between the mortar joints.
Reinforced Concrete	Concrete containing metal rods or steel mesh to give additional strength.
Restoration	To bring an existing building back to its original condition
Renewable	Relating to or being a commodity or resource, such as solar energy or firewood, that is inexhaustible or replaceable by new growth.
Retaining Wall	A wall built for the purpose of keeping in position a volume of earth or liquid.
Retardants	Additives used to slow down the setting process of materials
Reveal	The portion of a wall at the side of a window or door opening when the jambs are recessed or rebated.
Ridge Board	A horizontal board at the apex acting as a spine, against which most of the rafters are fixed
Rise	The vertical height of the arch from the springing line
Risk assessment	An assessment of the hazards and risks associated with an activity and the reduction and monitoring of them
Saddle-back	A pointed coping, i.e. with sloping sides.
Sanitary Ware	WC, cisterns, wash hand basins and shower trays
Scale	A method used to make increase or decrease an actual object to show on a drawing
Schedule	A document used to record repetitive use of components
Screed	A layer of small aggregate concrete approx. 50 mm thick laid on top of concrete floor to provide a smooth, level floor finish.
Sleeper Walls	Dwarf walls erected at intervals between the main walls To provide intermediate supports to ground floor joists, usually built honeycombed.
Semi-detached	A building that is joined to one adjacent building and shares only one party wall.

Services	For example provided by the utility companies, Gas, electric and water.
Setting Out	A method of locating the position of building works ready for starting work.
Shoring	Operation of temporarily supporting the wall of an excavation or a structure.
Shuttering	Temporary framework erected to receive wet cement, the framework remaining until the concrete is set.
Site Plan	Shows the proposed position of a building and the general layout of the services to site.
Situ	In position
Skewback	The inclined surface of brickwork from which a segmental arch springs.
Slump	The 'wetness' of concrete
Soakaway	A purpose made collection point for surface water before being dispersed into the substrata
Soffit	The under surface of the arch
Solar Heat	The conversion of solar radiation into heat for technological, comfort-heating and cooking purposes.
Span	The horizontal width of the opening that the arch will span.
Specification	Instruction detailing types of materials and methods of work to be used
Spigot and socket	Male / female connection for pipes, one end (the socket) being enlarged to receive the normal end (the spigot) of the pipe
Spoil	Refuse material removed from an excavation.
Springer	The first voussoir of the arch
Springing line	The horizontal line from which the arch springs
Squint	A special brick for the construction of non-right angled quoins
Storey Rod	A gauge rod of storey height with additional markings to indicate features such as lintels, cills, and floors
Stretcher Face	The long face of a brick when laid.
Sub-structure	All of the structure below ground level up to and including the ground floor slab and DPM
Superstructure	All of the structure above ground level including the internal and external elements
Surface Water	Rainwater, ie collected from roofs or walkways and butts, not contaminated like foul water
Sustainable	Capable of being continued with minimal long-term effect on the environment
Taking off	Taking measurements from a working drawing to use for calculating quantities.
Tamping	A method of compacting concrete by a succession of blows or taps.

Templet	A temporary pattern of wood or metal, also often referred to as a 'profile' or 'Template'.
Tensile Forces	A measure of the ability of material to resist a force that tends to pull it apart.
Terraced	A row of three or more adjoined dwellings
Thermal values	Often referred to as the U value which is an efficiency of a building and is used to calculate the heat loss, it is found by dividing the materials thickness by its conductivity or K value which in turn gives a resistance which can be used to calculate the heat loss from a building.
Tile Creasing	The use of flat tiles as a decorative course
Timbering	The operation of supporting earth in trench work, etc., with heavy timbers.
Toolbox Talk	Informal site discussion, often around health and safety and methods of working
Toothing	Leaving the vertical end of a wall unfinished in its bond to enable the wall to be continued at a later stage.
Top Soil	The top 150 mm of soil containing vegetable matter.
Trammel	A lath or batten used to mark out a circular curve by being pivoted at one end.
Travel in a Flue	The horizontal distance which a flue is moved from one position to another.
Trench	Line excavation <ul style="list-style-type: none"> • Trench Fill – Concrete used to fill the trench to form foundations • Trench Collapse – Sides of the trench falling in • Trench Support – Timbering to prevent trench collapse
Trestles	Simple metal H frame supports for access and working off the ground to low levels
Vent pipe	The top part of a soil pipe to allow the escape of foul air from the drains
Vibrating Pokers	Mechanical tool used to aid the compacting concrete
Visqueen	A 4 mil or 6 mil plastic sheeting
Voltage	A measure of electrical potential. Most homes are wired with 110 and 220 volt lines. The 110 volt power is used for lighting and most of the other circuits. The 220 volt power is usually used for the kitchen range, hot water heater and dryer
Waste Management	Disposal, processing, controlling, recycling, and reusing solid, liquid, and gaseous waste. It includes control within a closed ecological system to maintain a habitable environment.
Wall Plate	A timber bedded on the top of a wall for supporting joists or rafters.
Water Harvesting	A robust and economical system for builders and homeowners to re-cycle rainwater

Water Table	The level below which the ground is completely saturated with water. Also called <i>water level</i>
Weep Holes	Small openings in a wall to permit the escape of water from the back of the wall.
Withes	The thin division between adjoining flue liners, sometimes termed mid-feathers.

Unit 201/601 Health, safety and welfare in construction

UAN:	A/504/6719
Level:	2
Credit value:	7
GLH:	70
Endorsement by a sector or regulatory body:	This unit is endorsed by Construction Skills, the Sector Skills Council for the construction industry.
Aim:	The aim of this unit is to provide the learner with the knowledge to carry out safe working practices in construction, in relation to sourcing relevant safety information and using the relevant safety procedures at work

Learning outcome
The learner will: 1. know the health and safety regulations, roles and responsibilities
Assessment criteria
The learner can: 1.1 identify health and safety legislation relevant to and used in the construction environment 1.2 state employer and employee responsibilities under the Health and Safety at Work Act (HASWA) 1.3 state roles and responsibilities of the Health and Safety Executive (HSE) 1.4 identify organisations providing relevant health and safety information 1.5 state the importance of holding on-site safety inductions and toolbox talks.

Range
Health and safety legislation Health and Safety at Work Act, Reporting Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR), Control of Substances Hazardous to Health (COSHH), Construction, Design and Management (CDM) regulations, Provision and Use of Work Equipment Regulations (PUWER), manual handling operations Regulations, Personal Protective Equipment (PPE) at Work Regulations, Work at Height Regulations, Control of Noise at Work Regulations, Control of Vibration at Work Regulations, Electricity at Work Regulations, Lifting operations and Lifting Equipment Regulations (LOLER)

Employer responsibilities

Safe working environment, adequate staff training, health and safety information, site inductions, toolbox talks, risk assessment, supervision, PPE, reporting hazards, accidents and near misses, sections 2 to 9 of Health and Safety at Work Act, CDM reg's, construction phase plans, welfare, display public liability Insurance and health and safety law poster.

Employee responsibilities

Working safely, working in partnership with the employer, reporting hazards, accidents and near misses, following organisational procedures as per Sections 2 to 9 of Health and Safety at Work Act.

Roles and responsibilities:

Enforcement (including fees for intervention), legislation and advice, inspection, investigation eg site investigations.

Organisations

Health and Safety Executive (HSE) website, Institute of Occupational Safety and Health, British Safety Council, 'manufacturer', ROSPA.

Learning outcome

The learner will:

2. know accident and emergency reporting procedures and documentation

Assessment criteria

The learner can:

- 2.1 state legislation used for reporting accidents
- 2.2 state major **types of emergencies** that could occur in the workplace
- 2.3 identify reportable injuries, diseases and dangerous occurrences as per RIDDOR
- 2.4 state main types of **records** used in the event of an accident, emergency and near miss and reasons for reporting them
- 2.5 identify **authorised personnel** involved in dealing with accident and emergency situations
- 2.6 state **actions** to take when discovering an accident.

Range**Types of emergencies**

Fires, security incidents, gas leaks.

Records:

Accident book, first aid records, organisational records and documentation.

Authorised personnel

First aiders, supervisors/managers, health and safety executive, emergency services, safety officer.

Actions

Area made safe, call for help, emergency services.

Learning outcome

The learner will:

3. know how to identify hazards in the workplace

Assessment criteria

The learner can:

- 3.1 state the importance of **good housekeeping**
- 3.2 state reasons for risk assessments and method statements
- 3.3 identify **types of hazards** in the workplace
- 3.4 state the importance of the correct storage of combustibles and chemicals on site
- 3.5 identify different **signs and safety notices** used in the workplace.

Range**Good housekeeping:**

Cleanliness, tidiness, use of skips and chutes, segregation of materials, clear access to fire escapes, clear access to fire extinguishers.

Types of hazards:

Fires, slips, trips and falls, hazardous substances (relating to inhalation, absorption, exposure, ingestion, cross-contamination), electrical, asbestos, manual handling, plant and vehicle movement, adverse weather.

Signs and safety notices:

Prohibition, mandatory, warning, safe condition, supplementary.

Learning outcome

The learner will:

4. know about health and welfare in the workplace

Assessment criteria

The learner can:

- 4.1 identify requirements for welfare facilities in the workplace as per Construction Design Management (CDM)
- 4.2 state health effects of noise and **precautions** that can be taken
- 4.3 state **risks** associated with drugs, alcohol and medication which could affect performance in the workplace.

Range**Precautions**

Reducing noise at source, PPE, isolation, exposure time.

Risks

Reduced risk perception, loss of concentration, balance problems, absenteeism and reduced productivity.

Learning outcome
The learner will: 5. know how to handle materials and equipment safely
Assessment criteria
The learner can: 5.1 identify legislation relating to safe handling of materials and equipment 5.2 state procedures for safe lifting and manual handling activities in accordance with guidance and legislation 5.3 state the importance of using lifting aids when handling materials and equipment.

Range
Lifting aids Wheelbarrow, sack barrow, mechanical lifting aids, pallet truck.

Learning outcome
The learner will: 6. know about access equipment and working at heights
Assessment criteria
The learner can: 6.1 identify legislation relating to working at heights 6.2 identify types of access equipment 6.3 state safe methods of use for access equipment 6.4 identify dangers of working at height.

Range
Access equipment: Stepladders, ladders (pole, extension), trestles, hop-ups, proprietary scaffolding, podium, stilts
Safe methods Regular inspection, check for broken, damaged or missing components, responsible use, consideration of adverse weather conditions, good housekeeping
Dangers Falling tools, falling equipment, falling materials, persons falling from height (injuries to themselves and others).

Learning outcome
The learner will: 7. know how to work with electrical equipment in the workplace
Assessment criteria
The learner can: 7.1 state precautions to take to avoid risks to self and others when working with electrical equipment 7.2 state dangers of using electrical equipment 7.3 identify voltages and voltage colour coding that are used in the workplace 7.4 state methods of storing electrical equipment.

Range
Precautions Check leads, check plugs, use of cable hangers, check tools and equipment, current valid PAT certificate
Dangers: Burns, electrocution, fire.
Voltages Battery powered, 110/115 volts, 230/240 volts and 415 volts.
Methods Components present, equipment cleaned, checked for damage, stored in a clean and secure location.

Learning outcome
The learner will: 8. know how to use Personal Protective Equipment (PPE)
Assessment criteria
The learner can: 8.1 state the legislation governing use of Personal Protective Equipment (PPE) 8.2 state types of PPE used in the workplace 8.3 state the importance of PPE 8.4 state why it is important to store, maintain and use PPE correctly 8.5 state the importance of checking and reporting damaged PPE.

Range
PPE: Head protection, eye protection, ear protection, face/dust masks, breathing apparatus, high visibility clothing, safety footwear, gloves, sun protection, barrier cream, water proofs, knee pads, overalls/disposable clothing

Learning outcome
The learner will: 9. know the cause of fire and fire emergency procedures
Assessment criteria
The learner can: 9.1 state elements essential to creating a fire 9.2 identify methods of fire prevention 9.3 state actions to be taken on discovering a fire 9.4 state types of fire extinguishers and their uses.

Range
Elements Oxygen, fuel, heat. Types of fire extinguishers: Water, foam, CO2, dry powder.

Unit 202/602 Principles of building construction, information and communication

UAN:	Y/504/6999
Level:	2
Credit value:	6
GLH:	55
Endorsement by a sector or regulatory body:	This unit is endorsed by Construction Skills, the Sector Skills Council for the construction industry.
Aim:	<p>The aim of this unit is to provide the learner with the knowledge of building methods and construction technology in relation to:</p> <ul style="list-style-type: none"> • understanding a range of building materials used within the construction industry and their suitability to the construction of modern buildings. • source relevant information and apply it to relevant tasks • calculating the resources from required drawings and specifications.

Learning outcome
The learner will: 10. understand how to select types of building information.
Assessment criteria
The learner can: 10.1 interpret information sources used in construction 10.2 interpret scale, symbols and hatchings on a working drawing 10.3 explain the purpose of benchmarks used in construction.

Range
<p>Information sources Drawings , schedules, specifications, programme of work, organisational chart, method statements, risk assessment, manufacturers' technical information, bill of quantities, order requisitions, delivery notes, variation orders, permits to work, signs and notices.</p> <p>Symbols WC, sink, bath, door, window</p> <p>Hatchings</p>

Brickwork, timber (wrot and unwrot), blockwork, concrete, hardcore, sub soil, insulation, damp proof course (DPC), damp proof membrane (DPM)

Benchmarks

Site datums, temporary bench marks (TBM), ordnance bench marks (OBM).

Learning outcome

The learner will:

- 11. know about environmental considerations in relation to construction.

Assessment criteria

The learner can:

- 11.1 describe thermally insulated **materials**
- 11.2 describe **methods** of making buildings water efficient
- 11.3 describe **methods** of making buildings energy efficient
- 11.4 state environmental-friendly **building materials**
- 11.5 state **procedures** for waste management.

Range

Materials

Polyisocyanurate (PIR), Expanded Polystyrene (EP), fibre glass, mineral wool, double glazed units, multi-foil insulation.

Methods (2.2)

Efficient sanitary ware, water harvesting.

Methods (2.3)

Low energy lighting, automatic movement sensors, solar panels, wind turbines, heat source, biomass heating.

Building materials

Locally sourced, managed timber (FSC), lime, sheep wool, recycled materials, straw.

Procedures

Segregation and recycling of waste, safe disposal of hazardous materials, Local Exhaust Ventilation (LEV).

Learning outcome

The learner will:

- 12. understand the construction of foundations.

Assessment criteria

The learner can:

- 12.1 describe **factors** to be considered when selecting **foundations**
- 12.2 describe **materials** and mix-ratios used in concrete foundations
- 12.3 explain how to **set out** foundations
- 12.4 explain **factors** to consider when excavating foundations
- 12.5 describe methods of transferring datums
- 12.6 calculate the volume of concrete used in pile foundation.

Range
<p>Factors (3.1) Ground conditions (subsoil), strength, types of building.</p> <p>Foundations Strip, raft, pile, pad.</p> <p>Materials Course aggregate, fine aggregate, cement, water, steel reinforcement, sulphate-resisting cement, ordinary portland cement, frost proofing, accelerators, retardants.</p> <p>Set out 3:4:5 method, diagonals, profiles, builder's square.</p> <p>Factors (3.4) Underground services, proximity to neighbouring buildings, tree roots, ground conditions.</p> <p>Methods Optical/laser level, straight edge and spirit level</p>

Learning outcome
The learner will: 13. understand construction of internal and external walls.
Assessment criteria
The learner can: 13.1 describe wall components 13.2 explain the importance of a Damp Proof Course (DPC) 13.3 calculate the area of a gable 13.4 identify additives used in mortar 13.5 identify different types of bonding 13.6 describe the differences between load-bearing and non-load-bearing internal walls 13.7 calculate the volume of paint required to cover a wall area.

Range
<p>Wall components Brick, block, insulation, Damp Proof Course (DPC), lintels, wall ties, airbrick and liner, cavity closures, stud partition, light density blocks, plasterboard, plaster.</p> <p>Additives Retardant, accelerant, frost inhibitor, cement dyes, plasticiser.</p> <p>Bonding: Stretcher, English, Flemish.</p>

Learning outcome
The learner will: 14. know about construction of floors.
Assessment criteria
The learner can: 14.1 describe floor components 14.2 calculate the linear quantity of floor boarding to cover an irregular shaped area 14.3 calculate additional quantities of wastage using percentage.

Range
Floor components Hard core, blinding sand, Damp Proof Membrane (DPM), insulation, oversite concrete, block and beam, pre-cast floor panels, screed (dry, self-levelling) sleeper walls, wall plates, DPC, joists, joist hangers, floor covering.

Learning outcome
The learner will: 15. know about construction of roofs.
Assessment criteria
The learner can: 15.1 describe types of roofs 15.2 describe roof components .

Range
Types Gable-ended, flat, hipped, lean-to.
Roof components: Purlins, rafters, truss rafters, ridge, batten/lathe, fascia, soffit, barge, valleys, wall plate, flashings, felt, slate/tile, insulation, joists, wall plate straps.

Learning outcome

The learner will:

16. understand how to communicate in the workplace.

Assessment criteria

The learner can:

- 16.1 describe **job roles** within building teams
- 16.2 explain **key personnel** involved in day to day communication
- 16.3 state **information** needed when requesting materials
- 16.4 identify methods of communication used to relay information to colleagues and others
- 16.5 describe advantages and disadvantages of **methods of communication**
- 16.6 state **occasions** when clear communication is vital in the workplace
- 16.7 explain **benefits** of positive communication with colleagues and others.

Range**Job roles**

Professional, technician, trade, general operative.

Key personnel

Site manager, supervisors, fellow operatives.

Information

Dimensions, quantities, type, when and where required, contact name and details.

Methods of communication (7.4)

Letters, emails, telephone, memos, verbal, posters, signs, meetings, radio, text messages

Methods of communication (7.5)

Written, verbal

Occasions

Changes to risk assessments, work restrictions, changes to method statement, permits to work, changes to legislation.

Benefits

Improved motivation, avoid conflict, complying with equality and diversity, meeting deadlines.

Unit 227

Construction site protection barriers

UAN:	M/504/7009
Level:	2
Credit value:	4
GLH:	36
Aim:	<p>The aim of this unit is to provide the learner with the knowledge and skills to:</p> <ul style="list-style-type: none">• interpret given instructions for the provision of work area protection and safety• establish work area protection and safety relating to:<ul style="list-style-type: none">• installation• moving and repositioning• dismantling and storing.

Learning outcome
The learner will: 1. understand how to install and maintain construction site barriers.
Assessment criteria
The learner can: 1.1 explain the importance of installing construction site barriers 1.2 describe features of construction site barriers 1.3 describe procedures for installing and setting out construction site barriers 1.4 identify tools required to assemble and position construction site barriers 1.5 describe checks to be carried out upon completion of installation of construction site barriers 1.6 explain the importance of maintaining construction site barriers during work operations 1.7 describe the procedures to be followed when changes to working conditions are required 1.8 describe procedures for reporting problems.

Range
Barriers Fencing, hoardings, sheeting, netting, vehicle barriers/stop blocks.
Features Stability, signs (prohibition, mandatory, warning and information), visibility, lighting, safety notices, viewing panels, height.

Procedures (1.3)

Risk assessment, method statement, verbal and written instructions, site rules.

Tools

Spanners, tape measures, hammer, spirit level, line/laser, drill, electric screwdriver, nail gun, cartridge gun, handsaw, circular saw.

Checks

Positioning of barriers, free from hazards, adequate lighting, adequate viewing panels, appropriate positioning of signs and notices, stability of barriers and/or temporary structures.

Procedures (1.7)

Site planning and authorisation when:

- moving
- alerting
- repositioning
- replacing.

Learning outcome

The learner will:

2. be able to install construction site barriers.

Assessment criteria

The learner can:

- 2.1 carry out risk assessment for installation of **construction site barriers**
- 2.2 select type and calculate quantity of construction site barriers used for work operations
- 2.3 select **tools** required to install construction site barriers
- 2.4 set out and install construction site barriers
- 2.5 **check** and maintain the construction site barriers during work operations
- 2.6 follow current environmental and relevant health and safety **regulations** relating to installation of construction site barriers.

Range**Construction site barriers**

Signs, lighting, safety and security barriers, protection and safety notices, fencing and hoardings, guarding.

Tools

Drills, spanners, tape measure, hammer.

Check

Spacing of lighting, positioning of signs and notices, stability of barriers, temporary structures.

Regulations

Provision and Use of Work Equipment Regulations (PUWER), Personal Protective Equipment at work (PPE), Chemicals or Substances Hazardous to Health (COSHH), vibration at work regulations, control of noise at work regulations current environmental, manual handling.

Learning outcome
The learner will: 3. know how to remove construction site barriers.
Assessment criteria
The learner can: 3.1 describe procedures used to dismantle and remove construction site barriers 3.2 state the importance of storing dismantled construction site barriers securely 3.3 describe procedures for reporting missing and damaged construction site barriers.

Range
Procedures Site planning and authorisation, correct sequence and timings, reinstatement of site.

Learning outcome
The learner will: 4. be able to remove construction site barriers.
Assessment criteria
The learner can: 4.1 follow risk assessment for removal of construction site barriers 4.2 dismantle and remove construction site barriers from the work area 4.3 store dismantled construction site barriers securely ready for re-use 4.4 follow current environmental and relevant health and safety regulations relating to removal of construction site barriers.

Range
Regulations Provision and Use of Work Equipment Regulations (PUWER), Personal Protective Equipment at work (PPE), chemicals or substances hazardous to Health (COSHH), vibration at work regulations, control of noise at work regulations current environmental, manual handling.

Unit 228

Lay domestic drainage

UAN:	K/504/7011
Level:	2
Credit value:	11
GLH:	95
Aim:	<p>The aim of this unit is to provide the learner with the knowledge and skills to:</p> <ul style="list-style-type: none">• interpret information sources• mark out drainage runs• carry out the installation of domestic drainage systems to comply with the working instructions relating to:<ul style="list-style-type: none">• preparing ground and establishing levels and gradients• laying drainage pipes, units and components• constructing inspection chambers• use hand and portable power tools• assess risks/hazards associated with excavation and drainage work.• test drainage systems.

Learning outcome
The learner will: 1. know the types and purpose of domestic drainage systems.
Assessment criteria
The learner can: 1.1 identify types and purpose of domestic drainage systems .

Range
Drainage systems Combined, separate, partially separate, soakaway, sustainable.

Learning outcome

The learner will:

2. know how to select resources for laying domestic drainage.

Assessment criteria

The learner can:

- 2.1 identify the **resources** required for laying domestic drainage
- 2.2 **calculate** the **resources** required for laying domestic drainage to given specifications.
- 2.3 describe types and uses of **tools and ancillary equipment** used for laying domestic drainage.

Range**Resources**

Pipes (plastic and clay drainage pipes up to 150 mm diameter), plastic, concrete and brick inspection chambers, fittings/connections, bedding materials, lubricants and sealants.

Calculate

Linear, volume, quantities.

Tools and ancillary equipment

Shovels, laying/bedding tools, hand-operated and powered pipe cutting equipment, levels (optical, pipe laser), boning rod/traveller, profiles, , string line, tape measure, testing equipment, earthwork supports, excavating plant.

Learning outcome

The learner will:

3. be able to select resources for laying domestic drainage.

Assessment criteria

The learner can:

- 3.1 select **resources** required for laying domestic drainage
- 3.2 calculate quantity of **resources** required for laying domestic drainage to given specifications
- 3.3 select **tools and ancillary equipment** required for laying domestic drainage to given specifications.

Range**Resources**

plastic and clay foul and surface water drainage pipes; plastic, concrete, brick inspection chambers; fittings/connections and bedding materials.

Tools and ancillary equipment

Shovels, laying/bedding tools, hand-operated and powered pipe cutting equipment, levels (optical, laser), boning rods.

Learning outcome
The learner will: 4. understand how to prepare ground for laying domestic drainage.
Assessment criteria
The learner can: 4.1 describe methods of preparing ground for laying domestic drainage 4.2 describe methods of determining levels and gradients for laying domestic drainage 4.3 describe potential natural and environmental hazards encountered when laying domestic drainage 4.4 explain the importance of trench support systems and when they are used.

Range
Methods (4.1) Site investigation, setting out, safe excavation, safe storage of spoil, marking out drainage runs and falls.
Methods (4.2) Invert levels, site rail heights, traveller, temporary benchmark, pipe laser.
Hazards Water tables, tree roots, confined spaces, contaminated ground, trench collapse.

Learning outcome
The learner will: 5. be able to prepare ground for laying domestic drainage.
Assessment criteria
The learner can: 5.1 carry out risk assessment for preparing ground for laying domestic drainage 5.2 prepare ground for laying domestic drainage 5.3 check levels and gradients for laying domestic drainage 5.4 follow current environmental and relevant health and safety regulations related to preparing ground for laying domestic drainage.

Range
Prepare Excavating ground, laying of bedding materials to line and level.
Regulations Provision and Use of Work Equipment Regulations (PUWER), Personal Protective Equipment at Work (PPE), Chemicals or Substances Hazardous to Health (COSHH), vibration at work regulations, control of noise at work regulations, current environmental.

Learning outcome
The learner will: 6. know how to install and test drainage systems.
Assessment criteria
The learner can: 6.1 state information sources used to locate new and existing services 6.2 describe methods used to install new drainage systems and components to line and level 6.3 describe methods of breaking into existing drainage systems and connecting new systems to existing pipework 6.4 describe methods of placing and compacting pipe surround and backfill materials 6.5 describe methods of forming and constructing inspection chambers using preformed units 6.6 describe methods of constructing brick inspection chambers 6.7 describe reasons for, and methods of, protecting work, resources and surrounding areas from damage arising from installation activities 6.8 describe methods of testing completed drainage systems.

Range
Services Gas pipes, electricity cables, water pipes, telecommunication cables, existing drainage.
Drainage systems Combined, separate, partially separate, soakaway, sustainable.
Components Junctions, bends, channels, pipes (plastic and clay drainage pipes up to 150 mm diameter), fittings/connections, bedding materials, lubricants and sealants, inspection chambers (plastic, concrete and brick).
Preformed units Plastic, concrete.
Methods Foundation, bedding and channel, inlets, frame and cover, heights and levels, correct bond and joint finish (English or water bond), step irons, corbelling, bridging openings (pipes).
Testing Correct falls and alignment, sealed joints, system constructed to specification and industrial standards (water, smoke and air tests).

Learning outcome
The learner will: 7. be able to install and test drainage systems.
Assessment criteria
The learner can: 7.1 follow risk assessment for installing and testing drainage systems 7.2 lay new drainage pipes to line and level 7.3 install new drainage units and components to line and level 7.4 break into existing drainage system and connect new to existing pipework 7.5 place and compact pipe surround and backfill materials 7.6 construct inspection chambers using plastic preformed units 7.7 construct brick inspection chambers 7.8 protect work, resources and surrounding areas from damage arising from installation activities 7.9 test completed drainage systems 7.10 follow current environmental and relevant health and safety regulations relating to installing and testing drainage systems.

Range
Pipes Plastic, clay.
Drainage units and components Junctions, bends, channels, rodding eye, couplers, gullies.
Inspection chambers Benching work and bedding of inspection chamber frame and cover.
Test Confirming falls are correct, joints are sealed and system is constructed to the required specification and industrial standards (air tests).
Regulations Provision and Use of Work Equipment Regulations (PUWER), Personal Protective Equipment at Work (PPE), Chemicals or Substances Hazardous to Health (COSHH), vibration at work regulations, control of noise at work regulations, current environmental.

Unit 229

Construct foundations, slabs and paths in concrete

UAN:	K/504/7008
Level:	2
Credit value:	7
GLH:	58
Aim:	<p>The aim of this unit is to provide the learner with the knowledge and skills to:</p> <ul style="list-style-type: none">• place and finish non-specialist concrete to comply with the working instructions relating to:• establishing and selecting resources for the work• establishing alignment and levels for placement of concrete• forming and positioning basic edging/formwork to receive concrete• placing, compacting and finishing concrete for slabs and bases• assess risks/hazards associated with concreting work.• use hand and portable power tools

Learning outcome
The learner will: 1. know how to set out for concreting work.
Assessment criteria
The learner can: 1.1 list resources required for setting out and establishing a level for concreting work 1.2 describe how to read and take off measurements from working drawings 1.3 describe methods of setting out right angled corners 1.4 state methods for carrying out checks to setting out 1.5 state how setting out information is transferred onto the ground 1.6 identify methods used to transfer levels from datum and the importance of datum heights.

Range
Resources Laser level and detector, ranging lines, profiles, spray paint/sand line, tape measures, straight edge, spirit level, builder's square, setting out pins/pegs, calculator, working drawings.

<p>Methods (1.3) 3:4:5 ratio, builder's square, optical/laser square, calculation of diagonals (Pythagoras' Theorem).</p> <p>Checks Levels, dimensions, diagonals.</p> <p>Methods (1.6) Straight edge, spirit level, optical/laser level and staff.</p>
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<p>Learning outcome</p> <p>The learner will: 2. be able to set out for concreting work.</p>
<p>Assessment criteria</p> <p>The learner can:</p> <p>2.1 select resources required for setting out and establishing a level for concreting work</p> <p>2.2 read and take off measurements from working drawings</p> <p>2.3 set out onto profiles</p> <p>2.4 carry out checks to setting out</p> <p>2.5 transfer setting out information onto the ground</p> <p>2.6 transfer levels from given datum point.</p>

<p>Range</p>
<p>Resources optical and laser level, optical square, ranging lines, profiles, spray paint, tape measures, straight edge and spirit level, builders square.</p> <p>Concreting work Concrete slabs and bases, paths.</p> <p>Set out Length, width, 90 degree corners.</p>

<p>Learning outcome</p> <p>The learner will: 3. know how to construct and secure formwork.</p>
<p>Assessment criteria</p> <p>The learner can:</p> <p>3.1 describe reasons for using formwork</p> <p>3.2 describe types and uses of materials used in formwork</p> <p>3.3 describe types and uses of tools and ancillary equipment used in formwork</p> <p>3.4 calculate the resources required for constructing formwork</p> <p>3.5 describe methods used for constructing and securing formwork.</p>

Range
<p>Reasons Edge restraint to give shape and level, containing of concrete.</p> <p>Materials Timber, metal, plywood, plastic, fixing ties, release agents, clamps, struts, pins, pegs and wedges.</p> <p>Tools and ancillary equipment Hammers, saws, levels (spirit, optical, laser), ranging lines, tape measures, crowbar, wheelbarrow, pick axe, shovels.</p> <p>Calculate Area, perimeter, circumference, volume.</p>

Learning outcome
The learner will: 4. be able to construct and secure formwork.
Assessment criteria
The learner can: 4.1 follow risk assessment for constructing and securing formwork 4.2 select materials, tools and equipment required to construct, formwork to a given specification 4.3 construct and secure formwork to receive concrete 4.4 follow current environmental and relevant health and safety regulations related to constructing and securing formwork.

Range
<p>Materials Timber, plywood formwork, fixings.</p> <p>Tools and equipment Hammers, saws, levels (spirit, optical, laser), ranging lines, rules.</p> <p>Formwork Foundations, oversite concrete and paths.</p> <p>Regulations Provision and Use of Work Equipment Regulations (PUWER), Personal Protective Equipment at work (PPE), Chemicals or Substances Hazardous to Health (COSHH), vibration at work regulations, control of noise at work regulations, current environmental.</p>

Learning outcome

The learner will:

5. understand how to place and finish concrete.

Assessment criteria

The learner can:

- 5.1 describe types and uses of **materials** used in **concreting work**
- 5.2 describe types and uses of **tools** used in **concreting work**
- 5.3 describe the reasons for using reinforcement
- 5.4 describe **methods** used for mixing concrete
- 5.5 **calculate** the resources required for **concreting work**
- 5.6 describe methods used for placing concrete
- 5.7 state the reason for compacting concrete
- 5.8 describe **methods** used for finishing concrete
- 5.9 describe **methods** of protecting concrete during curing.

Range**Materials**

Aggregates, cement, additives, reinforcement.

Concreting work

Foundations, concrete slabs, paths.

Tools

Shovels, rake, wheelbarrows, floating trowels, tampers, brushes, hammers, saws, powered tampers, vibrating pokers.

Methods (5.4)

By hand, mechanical, pre-mixed.

Calculate

Mix ratios, volume, area.

Methods (5.8)

Levelled, tamped, floated, brushed.

Method (5.9)

Appropriate to weather conditions:

- polythene sheeting
- hessian
- curing compounds
- sand.

Learning outcome

The learner will:

6. be able to place and finish concrete.

Assessment criteria

The learner can:

- 6.1 follow risk assessment for placing and finishing concrete
- 6.2 select **materials** for **concreting work**
- 6.3 select **tools** for **concreting work**
- 6.4 **calculate** the resources required for **concreting work**
- 6.5 place concrete to given specifications
- 6.6 **finish** concrete to given specifications
- 6.7 **protect** concrete during curing as appropriate
- 6.8 follow current environmental and relevant health and safety **regulations**.

Range**Materials**

Aggregates, cement

Concreting work

Concrete slabs and bases, paths

Tools

Shovels, rake, wheelbarrows, floating trowels, tampers, brushes.

Calculate

Mix ratios, weight, volume.

Finish

Levelled, tamped, floated, brushed and trowelled surface finishes.

Protect

Use of polythene sheeting, hessian and curing compounds.

Regulations

Provision and Use of Work Equipment Regulations (PUWER), personal protective equipment at work (PPE), Chemicals or Substances Hazardous to Health (COSHH), vibration at work regulations, control of noise at work regulations, current environmental.



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:

- Regulatory Arrangements for the Qualifications and Credit Framework (2008)
- SQA Awarding Body Criteria (2007)

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.

Useful contacts

UK learners

General qualification information

T: +44 (0)844 543 0033

E: learnersupport@cityandguilds.com

International learners

General qualification information

T: +44 (0)844 543 0033

F: +44 (0)20 7294 2413

E: intcg@cityandguilds.com

Centres

Exam entries, Certificates,
Registrations/enrolment, Invoices,
Missing or late exam materials,
Nominal roll reports, Results

T: +44 (0)844 543 0000

F: +44 (0)20 7294 2413

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

T: +44 (0)844 543 0000

F: +44 (0)20 7294 2413

F: +44 (0)20 7294 2404 (BB forms)

E: singlesubjects@cityandguilds.com

International awards

Results, Entries, Enrolments,
Invoices, Missing or late exam
materials, Nominal roll reports

T: +44 (0)844 543 0000

F: +44 (0)20 7294 2413

E: intops@cityandguilds.com

Walled Garden

Re-issue of password or username,
Technical problems, Entries,
Results, e-assessment, Navigation,
User/menu option, Problems

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F: +44 (0)20 7294 2413

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