

Level 1 Diploma in Stonemasonry (6715-01)

February 2018 Version 1.2



Qualification at a glance

| | |
|---------------------------------------|---|
| Subject area | Construction |
| City & Guilds number | 6715 |
| Age group approved | 16-18, 19+ |
| Entry requirements | None |
| Assessment | Multiple choice/assignment |
| Support materials | Centre handbook Assessor guidance Practical 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 1 Diploma in Stonemasonry | 442 | 500 | 6715-01 | 601/3613/3 |

| Version and date | Change detail | Section |
|-------------------------|--|--|
| 1.2 February 2018 | Added GLH and TQT details Removed QCF | Qualification at a glance and Introduction Centre requirements and Appendix 1 |
| 1.1 December 2015 | Updated range for LO 1, 3 and 4 in unit 201 | Units |



Contents

| | | |
|---------------------|---|-----------|
| 1 | Introduction | 4 |
| | Structure | 5 |
| 2 | Centre requirements | 6 |
| | Approval | 6 |
| | Resource requirements | 6 |
| | Continuing professional development (CPD) | 6 |
| | Candidate entry requirements | 7 |
| 3 | Delivering the qualification | 8 |
| | Initial assessment and induction | 8 |
| | Support materials | 8 |
| 4 | Assessment | 9 |
| 5 | Units | 14 |
| Unit 101/501 | Principles of building construction, information and communication | 15 |
| Unit 132 | Principles of stonemasonry | 20 |
| Unit 133 | Setting out and templet making for stonemasonry components | 24 |
| Unit 134 | Working stonemasonry components | 28 |
| Unit 135 | Fixing stonemasonry components | 32 |
| Unit 201/601 | Health, safety and welfare in construction | 38 |
| Appendix 1 | Sources of general information | 44 |



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 would like to work in the stonemasonry industry. |
| What does the qualification cover? | <p>It allows candidates to learn, develop and practise the skills required for employment and/or career progression in stonemasonry.</p> <p>In addition to covering the principles of construction, stonemasonry and health and safety, it covers the following skills:</p> <ul style="list-style-type: none">• setting out and templet making• working stonemasonry components• fixing stonemasonry components. |
| What opportunities for progression are there? | <p>It allows candidates to progress into employment or to the following City & Guilds qualification:</p> <ul style="list-style-type: none">• Level 2 Diploma in Stonemasonry. |

Structure

To achieve the **Level 1 Diploma in Stonemasonry (6715-01)**, learners must achieve **50** credits from the mandatory units.

| Unit accreditation number | City & Guilds unit number | Unit title | Credit value | GLH |
|----------------------------------|--------------------------------------|--|---------------------|------------|
| Mandatory | | | | |
| A/504/6722 | Unit 101/501 | Principles of building construction, information and communication | 6 | 52 |
| M/506/4795 | Unit 132 | Principles of stonemasonry | 4 | 28 |
| T/506/4796 | Unit 133 | Setting out and templet making for stonemasonry components | 6 | 47 |
| A/506/4797 | Unit 134 | Working stonemasonry components | 20 | 190 |
| F/506/4798 | Unit 135 | Fixing stonemasonry components | 7 | 55 |
| A/504/6719 | Unit 201/601 | Health, safety and welfare in construction | 7 | 70 |

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 1 Diploma in Stonemasonry | 442 | 500 |



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

Physical resources and site agreements

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. Centres will have special designated areas within their workshop (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.

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 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 |
| Practical Task Manual | www.cityandguilds.com |
| Qualification approval form | www.cityandguilds.com/construction |



4 Assessment

| Unit | Title | Assessment method | Where to obtain assessment materials |
|---------|--|---|---|
| 101/501 | 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. |
| 132 | Principles of stonemasonry | Multiple choice question paper, covering knowledge outcomes. Set by City & Guilds, delivered and marked by the tutor/assessor, and externally verified by City & Guilds to make sure it is properly carried out. | www.cityandguilds.com |
| 133 | Setting out and templet making for stonemasonry components | 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 |
|-------------|--|--|---|
| 134 | Working stonemasonry components | <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 |
| 135 | Fixing stonemasonry components | <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 |
| 201/601 | Health, safety and welfare in construction | <p>City & Guilds e-volve multiple choice test or on demand externally marked paper.</p> <p>The test covers all of the knowledge in the unit.</p> | Examinations provided e-volve or question papers ordered via Walled Garden. |

Test specifications

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

Test 1: Unit 101/501 Principles of building construction, information communication

Duration: 70 minutes

| Unit | Outcome | Number of questions | % |
|-------------|--|----------------------------|------------|
| 101/501 | 1 Know how to identify information used in the workplace | 7 | 20 |
| | 2 Know about environmental consideration in relation to construction | 2 | 5.5 |
| | 3 Know about construction of foundations | 4 | 11.5 |
| | 4 Know about construction of internal and external walls | 8 | 23 |
| | 5 Know about construction of floors | 4 | 11.5 |
| | 6 Know about construction of roofs | 6 | 17 |
| | 7 Know how to communicate in the workplace | 4 | 11.5 |
| | Total | 35 | 100 |

Test 2: Unit 132 Principles of stonemasonry

Duration: 30 minutes

| Unit | Outcome | Number of questions | % |
|-------------|---|----------------------------|------------|
| 132 | 1 Know job roles within the stone industry | 1 | 5 |
| | 2 Know the geology and application of building stones | 6 | 30 |
| | 3 Know the extraction process for building stones | 5 | 25 |
| | 4 Know the production process of extracted stone | 8 | 40 |
| | Total | 20 | 100 |

Test 3: Unit 133 Setting out and templet making for stonemasonry components

Duration: 30 minutes

| Unit | Outcome | Number of questions | % |
|--------------|---|----------------------------|------------|
| 133 | 1 Know stonemasonry geometry | 10 | 56 |
| | 3 Know the principles of templet making | 8 | 44 |
| Total | | 18 | 100 |

Test 4: Unit 134 Working stonemasonry components

Duration: 40 minutes

| Unit | Outcome | Number of questions | % |
|--------------|--|----------------------------|------------|
| 134 | 1 Know the principles of working stone | 23 | 100 |
| Total | | 23 | 100 |

Test 5: Unit 135 Fixing stonemasonry components

Duration: 30 minutes

| Unit | Outcome | Number of questions | % |
|--------------|--|----------------------------|------------|
| 135 | 1 Know how to prepare for fixing stonemasonry components | 8 | 44.44 |
| | 3 Know how to set out for fixing stonemasonry components | 4 | 22.22 |
| | 5 Know how to fix stonemasonry components | 6 | 33.33 |
| Total | | 18 | 100 |

Test 6: 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 |



5 Units

Availability of units

The following units can also be obtained from The Register of Regulated Qualifications: <http://register.ofqual.gov.uk/Unit>

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.

Unit 101/501 Principles of building construction, information and communication

| | |
|--|---|
| UAN: | A/504/6722 |
| Level: | 1 |
| Credit value: | 6 |
| GLH: | 52 |
| Endorsement by a sector or regulatory body: | This unit is endorsed by ConstructionSkills. |
| 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 • Processes for disseminating information • Basic concepts of effective communication. |

| |
|--|
| Learning outcome |
| The learner will: |
| 1. know how to identify information used in the workplace. |
| Assessment criteria |
| The learner can: |
| 1.1 identify information sources used in construction |
| 1.2 identify the scale to use with drawings in relation to BS1192 |
| 1.3 identify symbols and hatchings from drawings in relation to BS1192 |
| 1.4 state the purpose of datums used in construction. |

| |
|---|
| Range |
| Information sources Drawings, schedule, specifications, programme of work |
| Drawings Block plan, site plan, detail, section |
| Symbols WC, sink, bath, door, window |

Hatchings

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

Learning outcome

The learner will:

2. know about environmental considerations in relation to construction.

Assessment criteria

The learner can:

- 2.1 state **features** of a building that improves efficiency
- 2.2 state the importance of **waste management**.

Range**Features**

Design features that reduce consumption of water and energy: insulation and water harvesting/conservation

Waste management

Reduce, reuse, recycle.

Learning outcome

The learner will:

3. know about construction of foundations.

Assessment criteria

The learner can:

- 3.1 identify **types of foundations**
- 3.2 identify **materials** used in concrete foundations
- 3.3 state the **information** required to work out the quantity of materials used in a foundation
- 3.4 calculate volume of concrete used in single strip foundation.

Range**Types of foundations**

Strip, raft, pile, pad

Materials

Course aggregate, fine aggregate, cement, water, steel reinforcement

Information

Specification, dimensions

| |
|---|
| Learning outcome |
| The learner will: 4. know about construction of internal and external walls. |
| Assessment criteria |
| The learner can: 4.1 identify types of internal and external walls 4.2 identify external walling materials and components 4.3 identify internal walling materials and components 4.4 calculate the area of a wall 4.5 identify materials and mix ratios used in mortar 4.6 identify wall finishes 4.7 state paint systems for new plaster. |

| |
|--|
| Range |
| Types Solid, cavity, timber frame, stud |
| External walling materials and components Brick, block, timber, insulation, Damp proof course (DPC), wall ties |
| Internal walling materials and components Stud (timber, metal), low density blockwork, plasterboard, plaster |
| Materials Sand, lime, plasticiser, cement |
| Wall finishes Plaster, render |
| Paint systems mist-coat/seal, two coats of emulsion |

| |
|---|
| Learning outcome |
| The learner will: 5. know about construction of floors. |
| Assessment criteria |
| The learner can: 5.1 identify types of floors 5.2 identify components of solid concrete ground floors 5.3 identify components of timber floors. |

| |
|--|
| Range |
| Types of floors Solid concrete ground, timber (ground, upper) |
| Components of solid concrete ground floors Hardcore, blinding sand, damp proof membrane (DPM), insulation, oversite concrete, screed |

Components of timber

Oversite concrete, sleeper walls, wall plates, DPC, joists, insulation, floor covering

Learning outcome

The learner will:

6. know about construction of roofs.

Assessment criteria

The learner can:

6.1 identify **types of roofs**

6.2 identify **components of roofs**

6.3 state **paint systems for timber**

6.4 calculate the linear quantity of fascia board

6.5 state the importance of thermal insulation in a roof.

Range**Types of roofs**

Gable-ended, flat, hipped, lean-to

Roof components

Ridge, batten/lathe, fascia, wall plate, felt, slate/tile, truss rafters, insulation, joists, wall plate straps

Paint systems for timber

Knotting, prime, undercoat, gloss, (water-based and solvent-based)

Learning outcome

The learner will:

7. know how to communicate in the workplace.

Assessment criteria

The learner can:

7.1 list **job roles** within construction

7.2 state **information** needed when recording a message

7.3 list **benefits** of clear and effective communication

7.4 list **benefits** of positive communication with colleagues and others

7.5 identify **communication methods** used to relay information to colleagues.

Range**Job roles**

Professional, technician, trade, general operative

Information

Date, time, content, contact name and details

Benefits (7.3)

Preventing errors, safe working, improved productivity

Benefits (7.4)

Improved motivation, avoid conflict, complying with equality and diversity

Communication methods

Verbal, memos, telephone, email, radio, text messages

| | |
|--|--|
| UAN: | M/506/4795 |
| Level: | 1 |
| Credit value: | 4 |
| GLH: | 28 |
| Endorsement by a sector or regulatory body: | This unit is endorsed by ConstructionSkills. |
| Aim: | The aim of this unit is to provide learners with the knowledge of stonemasonry principles including processing and production within the industry. |

| |
|--|
| Learning outcome |
| The learner will: 1. know job roles within the stone industry. |
| Assessment criteria |
| The learner can: 1.1 identify the main job roles in the stone industry 1.2 describe the responsibilities of the main job roles in the stone industry. |

| |
|--|
| Range |
| Job roles Banker, fixer, draughtsperson, mould cutter, carver, memorial, quarry person, sawyer, machine operator, restorer |

| |
|--|
| Learning outcome |
| The learner will: 2. know the geology and application of building stones. |
| Assessment criteria |
| The learner can: 2.1 describe the process of rock formation 2.2 identify the different classifications of building stones 2.3 state the suitability of building stones for different applications 2.4 state the importance of using correct bedding planes 2.5 identify bedding planes for different components . |

| |
|--|
| Range |
| <p>Classifications Igneous (granite), sedimentary (sandstone, limestone), metamorphic (marble, slate)</p> <p>Building stones Sandstone, granite, marble, limestone, slate</p> <p>Applications Architectural (structural and decorative), internal (floors, fireplaces, kitchens, bathrooms, staircases), external (roofs, cladding, walling, flooring), memorials</p> <p>Components Voussoirs, string course, plinth, cornice, copings, cills, transoms, jambs, mullions, pediment, columns, treads, risers, tracery</p> |

| |
|--|
| Learning outcome |
| The learner will: 3. know the extraction process for building stones. |
| Assessment criteria |
| The learner can: 3.1 state the different methods of extracting building stones 3.2 list the advantages and disadvantages of different extraction methods 3.3 identify the legislative requirements for extracting building stones 3.4 identify defects of extracted building stones. |

| |
|---|
| Range |
| <p>Methods (3.1 & 3.2) Open cast (wire ropes, water, explosives, machines, chainsaws, splitting, hand), mining (machines, chainsaws, splitting, hand)</p> <p>Legislative requirements Planning permission, energy efficiency, sustainability, environmental impact, waste disposal and regeneration</p> <p>Defects Vents/cracks, shakes, clay holes, fissures, soft beds, mineral deposits</p> |

| |
|--|
| Learning outcome |
| The learner will: 4. know the production process of extracted stone. |
| Assessment criteria |
| The learner can: 4.1 identify different types of lifting equipment 4.2 state methods of handling and transporting extracted stone 4.3 state methods of splitting stone 4.4 identify plant and equipment used to process stone 4.5 state the importance of stone referencing when processing extracted stone 4.6 state the quality control checks for processed stone 4.7 state the action required upon discovery of a problem during the production process . |

| |
|--|
| Range |
| Lifting equipment Straps, lifting shears, chains, chain dogs, grabs, slings, hoists, gantries, block and tackle, vacuum lifts/suction pads |
| Methods (4.2) Lorries, cranes, forklifts, pallet trucks, sack barrows, boggies, kinetic lifting, rollers, millers |
| Methods (4.3) Coping chisels, plugs and feathers |
| Plant and equipment Primary processing: frame saws, wire saws, chain saws, hand saws, circular saws Secondary processing: CNC saws, planers, lathes, millers, polishers |
| Stone referencing Drawings, cutting schedule, job card, templets, stone component, numbering |
| Quality control checks Dimensional accuracy, stone type, squareness, finish, bedding plane, stone referencing, job card, pallet schedule |
| Production process Drawings, numbering, cutting schedule, job card, templets, stone component, pallet schedule |

Unit 132 Principles of stonemasonry

Supporting information

Guidance

AC 4.2 & 4.4

A 'miller' can be described as a device for moving the stone around on the banker.

Unit 133

Setting out and templet making for stonemasonry components

| | |
|--|---|
| UAN: | T/506/4796 |
| Level: | 1 |
| Credit value: | 6 |
| GLH: | 47 |
| Endorsement by a sector or regulatory body: | This unit is endorsed by ConstructionSkills. |
| Aim: | The aim of this unit is provide learners with the underpinning knowledge and skills to set out and produce templates and moulds required for stonemasonry components. |

| |
|--|
| Learning outcome |
| The learner will: 1. know stonemasonry geometry. |
| Assessment criteria |
| The learner can: 1.1 identify the resources required for geometry 1.2 identify the elements used to prepare pages for drawing 1.3 identify different line types used in geometry and templet making 1.4 identify different projection methods 1.5 identify common symbols and abbreviations 1.6 identify common section details 1.7 identify face moulds and bed moulds. |

| |
|---|
| Range |
| Resources Compasses, trammel heads, scale rule, protractor, beam compass, retractable 0.3 mm pencils, paper, set squares, CAD, CAM, plotters, drawing board, T squares, setting out table, pens |
| Elements 10 mm border, legend, scale, name, title, date, drawing number |
| Line types Construction line, hidden detail, centre line, outline, dimension line, wall line, break line, line weights (0.1-0.7mm), clean line |

Projection methods

Orthographic, isometric, axonometric, oblique

Symbols

Arrows, bed direction, hatchings (hardcore, concrete, earth, stone, blockwork, brickwork, timber), break line, symbols (components)

Abbreviations

Centre line, wall line, scales, components, materials

Section details

Rebate, chamfer, fillet, ovolo, cavetto, cyma recta, cyma reversa, quadrant, segment

Learning outcome

The learner will:

2. be able to carry out stonemasonry geometry.

Assessment criteria

The learner can:

- 2.1 bisect lines
- 2.2 erect **lines**
- 2.3 divide a line into equal divisions along a given length
- 2.4 find given **angles** with the use of a compass
- 2.5 produce a job card
- 2.6 set out **drawings** to scale
- 2.7 set out **section details**
- 2.8 set out positions of fixings
- 2.9 set out bed moulds and face moulds.

Range**Lines**

Perpendicular line from a given point, perpendicular from the end of a line, perpendicular from outside the line

Angles

90°, 60°, 45°, 30°, 15°, 7.5°

Drawings

Orthographic, isometric, axonometric, oblique

Section details

Rebate, chamfer, fillet, ovolo, cavetto, cyma recta, cyma reversa, quadrant, segment

| |
|---|
| Learning outcome |
| The learner will: 3. know the principles of templet making. |
| Assessment criteria |
| The learner can: 3.1 identify the resources required for templet making 3.2 state the advantages and disadvantages of different templet materials 3.3 calculate the area of material required for templet making 3.4 state the different templet annotations 3.5 state the storage requirements of templets 3.6 state the disposal requirements for materials used in templet making. |

| |
|---|
| Range |
| Resources Zinc, card, plastic, permanent markers, pencils, scribe, tin snips, scissors, dividers, compass cutters, straight edge, ruler, cutting mats, compass, gloves, safety boots, files, wire wool, craft knife, beam compass, trammel heads, set squares |
| Templet materials Zinc, card, plastic |
| Templet making Face moulds, bed moulds, reverses, sections |
| Templet annotations Joint line, wall line, sawn back, clean face, templet type, reference, lines up, lines down |
| Templets Zinc, plastic, card |
| Materials Zinc, permanent markers, plastic, card, wire wool, craft knife blades |

| |
|---|
| Learning outcome |
| The learner will: 4. be able to make templets and moulds. |
| Assessment criteria |
| The learner can: 4.1 interpret information from a job card 4.2 complete method statements for making templets and moulds 4.3 complete risk assessments for making templets and moulds 4.4 select appropriate Personal Protective Equipment for making templets and moulds |

- 4.5 select appropriate resources for making templets
- 4.6 transfer **setting out details** to templet material
- 4.7 produce **templets** within industry tolerances
- 4.8 annotate templets with necessary information
- 4.9 store templets correctly
- 4.10 dispose of waste materials in accordance with legislative requirements
- 4.11 protect work and surrounding areas during the templet and mould making process
- 4.12 follow current environmental and relevant health and safety legislation.

Range

Setting out details

Rebate, chamfer, fillet, ovolo, cavetto, cyma recta, cyma reversa, quadrant, segment, fixings (joggles, slots, dowel holes, cramps), straight, internal/external mitres, ashlar stops

Templets

Section, bed, face, reverse

Unit 134

Working stonemasonry components

| | |
|--|---|
| UAN: | A/506/4797 |
| Level: | 1 |
| Credit value: | 20 |
| GLH: | 190 |
| Endorsement by a sector or regulatory body: | This unit is endorsed by ConstructionSkills. |
| Aim | The aim of this unit is to provide learners with the underpinning knowledge and skills to work stonemasonry components. |

| |
|---|
| Learning outcome |
| The learner will: 1. know the principles of working stone. |
| Assessment criteria |
| The learner can: 1.1 identify the resources required for working stone 1.2 identify hazards associated with working stone 1.3 identify personal protective equipment commonly required when working stone 1.4 calculate the mass of stonemasonry components to determine movement requirements 1.5 state the method of preparing quarry blocks for coping 1.6 describe the process of coping a quarry block 1.7 describe the process of boning in 1.8 describe the process of working a flat surface 1.9 identify different stonemasonry components 1.10 identify different elements of stonemasonry components 1.11 identify different surface finishes applied to stonemasonry components 1.12 state the storage requirements of stone in the workshop 1.13 state the disposal requirements of waste materials resulting from working stone. |

| |
|--|
| Range |
| Resources Straight edges, boning blocks, pitchers, punches, claws, hammer, sledge hammer, mason's mallet, plugs and feathers, tri square, 9H pencil, soft stone chisels/Bath chisels, drags (English & French), tungsten chisels, fire sharpened chisels, dummies, brushes, files, |

rasps, scribe, dividers, mitre board, box trammel, combination square, miller, gouges, bullnoses, wax crayon, shift stocks/sliding bevels, drill, transformer, leads, drill bits, bars, pneumatic tools

Hazards

Flying debris, dust, sharps, vibrations, temperature extremes, excessive noise, heavy loads, electrical tools and equipment, wet surfaces, working at height

Personal protection equipment

Appropriate dust masks, ear defenders, eye protection, safety boots, overalls, anti-vibration gloves, high visibility vests, barrier cream

Movement requirements

Kinetic lifting, straps, slings, hoists, gantries, block and tackle, vacuum lifts/suction pads, cranes, forklifts, pallet trucks, sack barrows, boggies, rollers, millers

Stonemasonry components

Voussoirs, springer, keystone, kneeler, apex, balustrade, string course, plinth, cornice, copings, cills, transoms, jambs, mullions, pediment, columns, treads, risers, tracery, hood mould, label mould, capitals, pilaster, quoins, heads

Elements

Joggles, slots, dowel holes, top bed, bottom bed, sawn back, joints, face of operation, glazing grooves, drips, weathering, stooling, internal mitre, external mitre, ashlar stop, return break, arris, return stop, mitre lines

Surface finishes

Tooled, rubbed, polished, dragged, batted, picked/pecked, reticulated, vermiculated, honed, flame textured, riven, punched, pitched, cropped, axed, rustication, tooled margin, furrowed

Stone

Quarry block, slab/scant, sawn six sides, finished stone components

Learning outcome

The learner will:

2. be able to work stonemasonry components.

Assessment criteria

The learner can:

- 2.1 interpret **information sources** to work stonemasonry components
- 2.2 complete method statements for working stonemasonry components
- 2.3 complete risk assessments for working stonemasonry components

- 2.4 select appropriate Personal Protective Equipment for working stonemasonry components
- 2.5 select appropriate stone for coping
- 2.6 select resources required for working stonemasonry components
- 2.7 cope stones in accordance with industry practice
- 2.8 work plane surfaces true, out of twist and square
- 2.9 work **stonemasonry components** to include **mouldings** and **elements**
- 2.10 produce **surface finishes** to given specification
- 2.11 prepare stones for **fixing**
- 2.12 dispose of waste materials in accordance with legislative requirements
- 2.13 protect work and surrounding areas when working stonemasonry components
- 2.14 follow current environmental and relevant health and safety legislation.

| Range |
|--|
| <p>Information sources Drawings, job card, specifications, risk assessment, method statement</p> <p>Stonemasonry components Pilaster base (rectangular), plinth, ashlar</p> <p>Mouldings Fillets, rebates, chamfer, ovolo, cavetto, cyma recta, cyma reversa</p> <p>Elements Top bed, bottom bed, sawn back, joints, face of operation, internal mitre, external mitre, ashlar stop, return break, arris, return stop, mitre lines</p> <p>Surface finishes Tooled, chiselled, rubbed, dragged, batted, picked/pecked, tooled margin, furrowed, boastered</p> <p>Fixing Joggles, slots, dowel holes, cramps</p> |

Unit 134 Working stonemasonry components

Supporting information

Guidance

AC 1.1 & 1.4

A 'miller' can be described as a device for moving the stone around on the banker.

AC 2.9

Fillets and rebates can be produced individually or incorporated into other mouldings.

The following mouldings **must** each include internal mitres, external mitres and ashlar stops:

- chamfer
- ovolo
- cavetto
- cyma recta or cyma reversa.

Unit 135

Fixing stonemasonry components

| | |
|--|---|
| UAN: | F/506/4798 |
| Level: | 1 |
| Credit value: | 7 |
| GLH: | 55 |
| Endorsement by a sector or regulatory body: | This unit is endorsed by ConstructionSkills. |
| Aim: | The aim of this unit is to provide learners with the underpinning knowledge and skills to prepare for, set out and fix stonemasonry components. |

| |
|--|
| Learning outcome |
| The learner will: 1. know how to prepare for fixing stonemasonry components. |
| Assessment criteria |
| The learner can: 1.1 identify the documents required when planning for fixing stone on site 1.2 identify the resources required for fixing stone 1.3 identify hazards associated with fixing stone 1.4 identify the personal protection equipment commonly required when fixing stone 1.5 state the storage requirements of resources on site 1.6 state the different methods of lifting resources for fixing stonemasonry components. |

| |
|---|
| Range |
| Documents Drawings, specifications, fixing schedules, time sheets, COSHH datasheets, site diaries, delivery schedules, pallet schedule, delivery notes |
| Resources (1.2) Tools and equipment: straight edges, hammer, mason's mallet, builder's square, 9H pencil, sweeping brushes, drill, transformer, leads, drill bits, bars, gauging trowel, fixing trowel, pointing trowel, lifting trowel, pointing irons, rubber mallet, spirit level, plumb bob, line and pins, wedges, buckets, tingle plates, corner blocks, sponges, churn/stiff brush, shovels, wheel barrows, mixers, punches, quirks, bolsters, pitchers, tape measures |

materials: stone, lime, sand, cement, clean water, stainless steel dowels, cramps, restraint fixings

Hazards

Flying debris, dust, sharps, vibrations, temperature extremes, excessive noise, heavy loads, electrical tools and equipment, wet surfaces, working at height, hazardous substances (lime, cement)

Personal protection equipment

Appropriate dust masks, ear defenders, eye protection, safety boots, overalls, gloves, anti-vibration gloves, high visibility vests, barrier cream, hard hat, knee pads

Resources (1.5)

Tools and equipment, stone, lime, sand, cement, clean water, petrol for mixers

Methods

Straps, slings, split pin lewis, three legged lewis, hoists, gantries, block and tackle, vacuum lifts/suction pads

Learning outcome

The learner will:

2. be able to prepare for fixing stonemasonry components.

Assessment criteria

The learner can:

- 2.1 interpret **documents** required for fixing stone on site
- 2.2 complete method statements for fixing stonemasonry components
- 2.3 complete risk assessments for fixing stonemasonry components
- 2.4 select appropriate Personal Protective Equipment for fixing stonemasonry components
- 2.5 select **resources** required for fixing stonemasonry components
- 2.6 follow current environmental and relevant health and safety legislation.

Range

Documents

Drawings, specifications, COSHH datasheets, delivery schedules

Resources

Stainless steel dowels, cramps, restraint fixings

| |
|--|
| Learning outcome |
| The learner will: 3. know how to set out for fixing stonemasonry components. |
| Assessment criteria |
| The learner can: 3.1 identify the resources required for setting out 3.2 state methods of transferring levels when setting out 3.3 identify methods of setting out right angles 3.4 state the method of running in to a line. |

| |
|---|
| Range |
| Resources Tape measures, line and pins, straight edge, builder's square, spirit level, profile boards, wooden pegs, nails, hammer, spray paint, laser level, plumb bob, water level |
| Methods (3.2) Laser level, water level, spirit level, straight edge and pegs |
| Methods (3.3) 3:4:5 method, builder's square |

| |
|---|
| Learning outcome |
| The learner will: 4. be able to set out for fixing stonemasonry components. |
| Assessment criteria |
| The learner can: 4.1 interpret information from drawings and specifications 4.2 select resources required for setting out 4.3 establish a datum and temporary benchmarks 4.4 establish a building line 4.5 set out right angle corners 4.6 check setting out for dimensional accuracy 4.7 follow current environmental and relevant health and safety legislation. |

| |
|---|
| Learning outcome |
| The learner will: 5. know how to fix stonemasonry components. |
| Assessment criteria |
| The learner can: 5.1 identify different types of masonry walling 5.2 state methods of fixing stonemasonry components 5.3 identify different types of mortar 5.4 identify different joint finishes |

- 5.5 state the consequences of fixing in adverse weather conditions
- 5.6 state the disposal requirements of **waste materials** resulting from fixing stone.

Range

Masonry walling

Ashlar, coursed rubble, snecked, random rubble, rubble brought to courses, polygonal Kentish rag, broken coursed

Stonemasonry components

String course, plinth, cornice, copings, cills, jambs, mullions, quoins, heads, threshold, label mould, pilaster

Types of mortar

Sand lime, cement, lime putty, hot limes, hydraulic/non-hydraulic lime

Joint finishes

Flush, recessed, struck/weathered, ribbon, galleting

Waste materials

Excess stone, excess mortar, excess insulation, fixing offcuts, unclean water

Learning outcome

The learner will:

6. be able to fix stonemasonry components

Assessment criteria

The learner can:

- 6.1 interpret information from drawings and specifications
- 6.2 prepare mortar mixes for fixing walling and stonemasonry components
- 6.3 fix **masonry walling**
- 6.4 fix **stonemasonry components**
- 6.5 apply **joint finishes**
- 6.6 dispose of waste materials in accordance with legislative requirements
- 6.7 protect work and surrounding areas when fixing stonemasonry components
- 6.8 follow current environmental and relevant health and safety legislation.

Range

Masonry walling

Coursed rubble, ashlar

Stonemasonry components

Plinth, string course, pilaster

Joint finishes

Flush, recessed, struck/weathered, brushed

Unit 135 Fixing stonemasonry components

Supporting information

Guidance

AC 3.4

Method of running in to a line refers to setting up a string line between two ends/corners and fixing stone courses in-between.

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. |



Appendix 1 Sources of general information

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

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

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

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

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

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

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

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

- **Walled Garden:** how to register and certificate candidates on line

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

City & Guilds
Believe you can



www.cityandguilds.com

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 | T: +44 (0)844 543 0000 F: +44 (0)20 7294 2413 E: walledgarden@cityandguilds.com |
| Employer Employer solutions, Mapping, Accreditation, Development Skills, Consultancy | T: +44 (0)121 503 8993 E: business@cityandguilds.com |
| Publications Logbooks, Centre documents, Forms, Free literature | T: +44 (0)844 543 0000 F: +44 (0)20 7294 2413 |

Every effort has been made to ensure that the information contained in this publication is true and correct at the time of going to press. However, City & Guilds' products and services are subject to continuous development and improvement and the right is reserved to change products and services from time to time. City & Guilds cannot accept liability for loss or damage arising from the use of information in this publication. If you have a complaint, or any suggestions for improvement about any of the services that we provide, email: **feedbackandcomplaints@cityandguilds.com**

About City & Guilds

As the UK's leading vocational education organisation, City & Guilds is leading the talent revolution by inspiring people to unlock their potential and develop their skills. We offer over 500 qualifications across 28 industries through 8500 centres worldwide and award around two million certificates every year. City & Guilds is recognised and respected by employers across the world as a sign of quality and exceptional training.

City & Guilds Group

The City & Guilds Group operates from three major hubs: London (servicing Europe, the Caribbean and Americas), Johannesburg (servicing Africa), and Singapore (servicing Asia, Australia and New Zealand). The Group also includes the Institute of Leadership & Management (management and leadership qualifications), City & Guilds Licence to Practice (land-based qualifications), the Centre for Skills Development (CSD works to improve the policy and practice of vocational education and training worldwide) and Learning Assistant (an online e-portfolio).

Copyright

The content of this document is, unless otherwise indicated, © The City and Guilds of London Institute and may not be copied, reproduced or distributed without prior written consent. However, approved City & Guilds centres and candidates studying for City & Guilds qualifications may photocopy this document free of charge and/or include a PDF version of it on centre intranets on the following conditions:

- centre staff may copy the material only for the purpose of teaching candidates working towards a City & Guilds qualification, or for internal administration purposes
- candidates may copy the material only for their own use when working towards a City & Guilds qualification

The *Standard Copying Conditions* (see the City & Guilds website) also apply.

Please note: National Occupational Standards are not © The City and Guilds of London Institute. Please check the conditions upon which they may be copied with the relevant Sector Skills Council. Published by City & Guilds, a registered charity established to promote education and training

City & Guilds

1 Giltspur Street

London EC1A 9DD

T +44 (0)844 543 0000

F +44 (0)20 7294 2413

www.cityandguilds.com

HB-01-6715