

Unit 13: Developing Advanced Skills in Repairing and Maintaining Masonry

Unit code: R/503/5760

QCF Level: 3

Credit value: 10

Guided learning hours: 100

Unit aim

This unit gives the learner the knowledge and understanding required for the repair of masonry structures where deterioration requires that the integrity of the structure is maintained.

Learning outcomes and assessment criteria

In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

<p>1 Understand the preparation required to inspect and specify repairs to masonry structures</p>	<p>1.1 describe the work method for replacing 6 decayed bricks in a corbelled brick eaves</p> <p>1.2 prepare the material specification for replacing an isolated area (1 metre square) of decayed substructure brickwork, in a solid one and a half brick wall built in English bond</p> <p>1.3 calculate the quantity of resources needed to replace a two course oversailing on a single brick chimney stack positioned at the ridge</p> <p>1.4 describe the construction details for an isolated repair to a failed brick flat arch over a window opening that has a backing lintel consisting of a timber beam that is 100mm x 200mm x 1200mm long</p> <p>1.5 prepare a method statement for a brick layer to repair an isolated area of a cement sand verge in a double lap tiled roof</p> <p>1.6 describe the site protocol, hazards</p>
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	<p>and risks when re-pointing the front elevation of a house directly on a public footpath</p> <p>1.7 prepare a risk assessment for cement sand re-pointing an isolated area of a roof valley constructed in lead</p>
<p>2 Be able to repair and maintain existing masonry structures safely</p>	<p>2.1 prepare a method statement detailing the access, egress and resources for rebuilding a fire damaged party wall in the roof space</p> <p>2.2 remove a soot door from a brick chimney stack, replacing it with bricks to maintain the vernacular house style, complying with current legislation</p> <p>2.3 use access equipment as a working platform for removing and replacing 4 damaged isolated bricks, complying with current legislation</p> <p>2.4 cut out and form a window opening in a fair faced brick wall, including fixing new lintel and brick up jambs, complying with current legislation</p>

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Unit content

1 Understand the preparation required to inspect and specify repairs to masonry structures

Specification: materials standards (British Standards, Eurocodes, Agrément Certificates, manufacturer's standards); operational standards (work methods, legislation, codes of practice, HSE safety publications, industry standards); estimates (materials, labour, overheads, plant and equipment)

Repair: material failure (wind, abrasion, malicious damage, collapse, overloading, chemical, physical, fixing failure); deterioration; failure (stress, fatigue); corrosion (electrolytic action); fungal attack; insect attack; frost attack; chemical attack (sulphate, efflorescence, ultraviolet)

Quantity of resources: masonry materials (bricks, blocks, natural stone, local materials, mortars, lightweight blocks, insulating blocks); fixing devices; frames (door, window, new, salvaged); wall extension profiles; lintels (steel, in-situ concrete, precast concretes); brick reinforcement; mortars; hand tools; shoring equipment; access equipment (ladders, hop-ups, stepladders, lightweight tower scaffolds, trestles and staging); mechanical aids for propping and supporting walls and floors; material handling (manual, mechanical); portable power tools (cutting, forming, shaping, site electrical); personal protective clothing; safety barriers and guards; manufacturer's recommended checks

Site protocol: safety (entry, inductions, site logistics, first aid, emergency, scaffold tower, power access equipment); welfare facilities; protection (building, general public, site personnel)

Risk assessment: hazards (operational, general public); risk control mechanism; work methods; site logistics; hazardous materials; material movement; storage; mechanical plant and equipment (lifting, transporting, fixing, forming cutting and fixing); waste (licences, consent)

2 Be able to repair and maintain existing masonry structures safely

Method: cutting; forming; shaping; use of hand and portable power tools; propping; protecting; inserting; bonding; pointing to match vernacular style

Access and egress: hop-ups; stepladders; trestles; staging; tower scaffolds; scaffolding; power access equipment

Resources: bricks (facings, commons, engineering, special shapes); blocks (dense aggregate, lightweight aggregate, aerated); mortars (lime, gauged, cement); lintels (timber, steel, precast concrete); propping structures (timber, steel, proprietary); *metalwork (fixing, connecting, supporting, bolts, angles and tees, accessories)*

Legislation: Building Regulations (stability, fire, energy conservation, access, dangerous structures, enforcement, inspections, approved inspector); lanning (vernacular styles, listed building, conservation areas, enforcement); local authority (licences and consents); waste (disposal, carrier licences, recycling, architectural salvage); working at height legislation; COSHH; manual handling; Lifting Operations and Lifting Equipment Regulations (LOLER); Provision and Use of Working Equipment Regulations (PUWER); noise; health monitoring; site safety inspections and monitoring; accident reporting (site, organisation Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR); scaffolding; dust; waste disposal

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THIS IS AN ACCREDITED SPECIFICATION AND CAN BE USED FOR TEACHING AND ASSESSMENT