# Unit 21: Developing Advanced Skills in Repairing Roof Tiles and Slates

**Unit code:** T/503/5766

**QCF Level:** 3

**Credit value:** 5

**Guided learning hours:** 50

## Unit aim

This unit enables learners to understand the tools, equipment and working techniques used to perform repairs operations to tiled and slated roof. It gives learners the opportunity to use modern and traditional techniques.

## 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.

| Learning outcomes | Assessment criteria |
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| 1 Understand the preparation required to inspect and specify roof repair operations | 1.1 Describe a safe inspection method to establish the roof repair on double lap roof covering<br>1.2 Describe the materials and quality specification for a given roof repair<br>1.3 Identify tools and equipment for a given repair operation<br>1.4 Calculate materials associated for a given repair operation<br>1.5 Describe the roof construction details for an isolated repair to a ridge on a double lap roof covering, complying with site protocol<br>1.6 Prepare a method statement for a roof slater to repair an isolated area of a cement sand verge in a double lap tiled roof<br>1.7 Describe the hazards and risks to a roofer when repairing a damaged waterproofing system to a roof aperture |

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| | in a single lap roof<br><br>1.8 Prepare the risk assessment for a roof repair on a leaking roof valley constructed in lead |
| 2 Be able to repair isolated areas of a roof covering safely | 2.1 Inspect the access, egress and work specification for a roof covering repair to a given damaged roof area.<br><br>2.2 Create a report on the access, egress and work specification for a repair to a given damaged roof area<br><br>2.3 Calculate the quantities of materials and equipment needed to repair a partial ridge tile failure (2 ridge tile in length) on a double lap slated roof<br><br>2.4 Remove and replace damaged ridge tiles, bedded and pointed in cement mortar on a double lap tiled roof, complying with current legislation<br><br>2.5 Remove and replace single lap interlocking tiles at a boxed eaves, replacing interlocking tiles in an area approximately 1 metre square, complying with current legislation<br><br>2.6 Carry out a roof repair to a slated roof around an aperture where the lead waterproofing has failed (replacing at least 6 slates), complying with current legislation<br><br>2.7 Remove and replace double lap plain tiles at a cement sand verge (approximately 1 metre length of verge), complying with current legislation<br><br>2.8 Lead flashings on a double lap tiled roof and make good<br><br>2.9 Refix and secure slipped slate to a pitched roof, complying with current legislation<br><br>2.10 Remove, reclaim and dispose of waste materials, returning equipment and leaving the area clean and safe |

## Unit content

### 1 Understand the preparation required to inspect and specify roof repair operations

*Roof types:* mono pitched (L-shaped plan, dormers, abutments); duo pitched (asymmetrical, various pitch, L-shaped on plan, complex pitches); warm roof; cold roof; roof covering failure (wind, abrasion, malicious damage, broken, fixing failure, underlay failure); deterioration and failure; corrosion, (electrolytic action, fungal attack, insect attack, frost attack, chemical attack, sulphate attack, efflorescence, ultraviolet (UV) attack, stress, fatigue, role of water in failure mechanisms)

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

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

*Quantity of tools and equipment:* material handling (manual, mechanical); portable power tools (cutting, forming, shaping, site electrical, portable); personal protective clothing; safety barriers and guards

*Roof construction details:* tile (single lap, interlocking, double lap); slate (regular, random, double lap, single lap interlocking, ornamental); ridge (dry and cement sand bed); verge (dry, cement sand verge, proprietary); eaves (boxed and open); valleys; hips; abutments; apertures

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

### 2 Be able to repair isolated areas of a roof coverings safely

*Roof covering:* tile (single lap, single lap interlocking, double lap); slate (single lap, double lap, regular, random, interlocking, ornamental); mono pitched (L-shaped plan, dormers, abutments); duo pitched (asymmetrical, various pitch, L-shaped on plan, complex pitches); warm roof; cold roof; abutments; ridge (dry and cement sand bed); verge (dry, cement sand verge, proprietary); eaves (boxed and open); valleys; hips; apertures

*Legislation:* 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, RIDDOR); scaffolding; waste and waste disposal

*Roof covering failure:* wind; abrasion; malicious damage; broken; fixing failure; underlay failure; deterioration and failure; corrosion; (electrolytic action, fungal attack, insect attack, frost attack, chemical attack, sulphate attack, efflorescence, ultraviolet (UV) attack, stress, fatigue, role of water in failure mechanisms)

*Waste:* reduction; salvage; disposal