



National Unit specification: general information

Unit title: Carpentry and Joinery: Repairs and Maintenance
(SCQF level 6)

Unit code: H0RN 12

Superclass: TG

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Version: 01

Summary

This Unit is suitable for candidates working towards a Modern Apprenticeship in Carpentry and Joinery and will develop the candidates craft skills and knowledge in repairing and maintaining timber, timber products and formwork. This Unit is designed to develop the candidate's competence in assessing repair requirements for defective timber components, repairing components and fitting a range of ironmongery and the ability to apply these skills in the workplace. It is also designed to develop the candidate's knowledge and understanding of timber damage, defects and how to repair them.

Outcomes

- 1 Demonstrate knowledge and understanding of timber damage, repair and maintenance.
- 2 Assess repair requirements for given defective timber components.
- 3 Perform a range of craft repairs associated with minor works and general jobbing.
- 4 Construct formwork for a pre-cast concrete component.

Recommended entry

While entry is at the discretion of the centre, candidates undertaking the Professional Development Award in Carpentry and Joinery at SCQF level 6 must meet the requirements of the Modern Apprentices which include being employed in the relevant craft industry.

Credit points and level

1 National Unit credit at SCQF level 6: (6 SCQF credit points at SCQF level 6*)

**SCQF credit points are used to allocate credit to qualifications in the Scottish Credit and Qualifications Framework (SCQF). Each qualification in the Framework is allocated a number of SCQF credit points at an SCQF level. There are 12 SCQF levels, ranging from Access 1 to Doctorates.*

General information (cont)

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Core Skills

Achievement of this Unit gives automatic certification of the following:

Complete Core Skill None

Core Skill component Critical Thinking @ SCQF level 5

There are also opportunities to develop aspects of Core Skills which are highlighted in the Support Notes of this Unit Specification.

National Unit specification: statement of standards

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Acceptable performance in this Unit will be the satisfactory achievement of the standards set out in this part of the Unit specification. All sections of the statement of standards are mandatory and cannot be altered without reference to SQA.

Outcome 1

Demonstrate knowledge and understanding of timber damage, repair and maintenance.

Performance Criteria

- (a) Define terminology associated with timber repair and maintenance correctly.
- (b) Describe physical characteristics of different types of timber correctly both in external and internal situations.
- (c) Source and report on different types of timber damage and attack.
- (d) Correctly describe preventative measures against a recurrence of timber defects and attack.
- (e) Describe the terminology and function of components used in formwork correctly.

Outcome 2

Assess repair requirements for given defective timber components.

Performance Criteria

- (a) Propose appropriate methods of repair for defective timber components.
- (b) Select materials and fixings correctly in terms of quantity, cost, quality and type.
- (c) Compile an accurate material and tool list for given work.

Outcome 3

Perform a range of craft repairs associated with minor works and general jobbing.

Performance Criteria

- (a) Cut out and remove defective timber correctly.
- (b) Position and secure replacement timber accurately.
- (c) Risk assess the use and application of timber preservatives.
- (d) Surface finish the repair in harmony with adjacent surfaces.
- (e) Fit ironmongery in accordance with manufacturer's instructions
- (f) Comply with current health and safety legislation and regulations throughout.
- (g) Correctly dispose of defective timber and materials, taking environmental issues into consideration.

National Unit specification: statement of standards (cont)

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Outcome 4

Construct formwork for a pre-cast concrete component.

Performance Criteria

- (a) Select suitable materials for the construction of a mould box.
- (b) Mark out the mould box in accordance with the given specification.
- (c) Construct a knock-down mould box in accordance with the given specification.
- (d) Comply with current health and safety regulations in all activities.

Evidence Requirements for this Unit

These Evidence Requirements will be met by the completion of the Carpentry and Joinery Training and Assessment Programme (TAP).

Evidence is required to demonstrate that the candidates have achieved this Unit to the standard specified in all Outcomes and Performance Criteria. All working practices must be in line with relevant and current Health and Safety legislation and regulations. A risk assessment and method Statement must be completed prior to any practical activities taking place.

Written and/or oral recorded evidence is required to demonstrate that the candidate has achieved Outcomes 1 and 2 to the standard specified in the Performance Criteria. Evidence is required to demonstrate the candidate can specify a method of repairing one structural component and two non structural components. For each repair a clear description outlining the materials for a minor works project and cost and cost a small project. The project will include a minimum of two numbered components to be extracted from a manufacturer's catalogue, a quantity of linear measured components and a quality of superficial measured components. This assessment will be conducted under controlled, closed-book supervised conditions.

Product and performance evidence is required to demonstrate that the candidate has achieved Outcomes 3 and 4 to the standards specified in the Performance Criteria.

Candidates will need to:

- ◆ Complete one of the following splicing activities:
 - (a) Cut and fit splice to the hinge recesses on a timber door.
 - (b) Replace either top or bottom section of a door stile by slicing.
- ◆ Remove and replace a timber frame. The candidate is required to remove a full size door frame from its opening, rotate the jambs so that the hinge and lock recesses are hidden, reassemble the doorframe in the correct manner and refit the doorframe back into the opening in preparation for fitting a full size door.
- ◆ Remove and replace one of the following structural timbers:
 - (a) A common rafter.
 - (b) A jack rafter to a traditional roof.

National Unit specification: statement of standards (cont)

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- ◆ Slice one of the following structural timbers:
 - (a) Repair the bottom of a common rafter that has been affected by wet rot.
 - (b) Repair a timber suspended ground floor that has been affected by dry rot to the end of a joist.
- ◆ Produce a risk assessment for the use and application of timber preservatives.
- ◆ Replace top and bottom sash cords to a traditional case and sash window in pairs. Each pair must remove the bottom sash and surrounding timbers without damage in order to gain access to the top sash, replace all sash cords and reassemble the window ensuring that both sashes operate correctly.
- ◆ Design and construct a suitable knock-down mould box.

Summary of standards	
Splicing frames and linings	
Splicing securely fixed, neatly fitted	no gaps exceeding 1 mm
Repairs suitable for type of frame/lining and applied finish	
Removing and replacing structural timbers	
Timbers cut to length	correct within 5 mm
All joints tight fitting	no gaps exceeding 2 mm
All timber secured	without movement
Timber replaced in same position	
Sawn ends treated	
No unnecessary damage caused to surrounding areas	
Risk assessment produced for working with preservatives	
Removing and replacing frames and linings	
Frame/ linings fixed to required datum	correct within 3 mm
Frame/linings positioned to suit final wall finish	correct within 2 mm
Frame/linings and edge of frame jambs plumb	correct within 2 mm in height
Frame/linings fixed	free of twist and no bows exceeding 2 mm
Frame/linings fixed	free without defects that cannot be rectified
Repairs suitable for type of frame/lining and applied finish	
Replacing sash cords	
Staff beads and parting beads removed and replaced	
Sash opens to its full height	
Sash moves freely without binding	
Construct mould box	
Horizontal dimension	correct within 2 mm
Vertical dimension	correct within 2 mm
Infill dimension	correct within 2 mm
Box joints	no gaps exceeding 1 mm
Infill joints	no gaps exceeding 1 mm
Infill nailing	punched and filled
Components secured	

National Unit specification: support notes

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This part of the Unit specification is offered as guidance. The support notes are not mandatory.

While the exact time allocated to this Unit is at the discretion of the centre, the notional design length is 40 hours.

Guidance on the content and context for this Unit

This Unit has been developed as a mandatory Unit in the Professional Development Award in Carpentry and Joinery at SCQF level 6.

The successful completion of this Unit will provide candidates with the required underpinning knowledge and skills relating to the repair and maintenance of a range of structural and non-structural components. Candidates will be tested on their accuracy and quality of finish having provided risk assessments and safe work systems prior to facilitating repairs.

This Unit would be offered to candidates working towards a Modern Apprenticeship in Carpentry and Joinery and will develop the candidate's skills in repair and maintenance. The skills and knowledge and understanding are transferable within different working environments but the Unit is primarily aimed at candidates whose normal place of work would be a site, workshop, or similar environment.

The Unit deals with theory and practice of repairing and maintaining timber components both structural and non-structural and is complemented by Units dealing with related work in Carpentry and Joinery. There would be opportunity to integrate aspects of this Unit with others in the Carpentry and Joinery PDA. It should be delivered as part of a structured programme of training and orientated to the context of the candidate's work and area of responsibility.

Health and Safety and Sustainability are integral and key to the Construction Industry therefore throughout the Unit emphasis will be placed where appropriate on the application of Health and Safety and Sustainability. Safety working practices should comply with current safety codes of practice and regulations. Sustainability should include reference to criteria affecting sustainability, impact of not implementing sustainability on the environment and the legislation promoting sustainability.

National Unit specification: support notes (cont)

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Guidance on learning and teaching approaches for this Unit

Outcomes 1 and 2

The candidate could be introduced to minor works project such as a domestic extension when the tutor/trainer could, with the assistance of the class group, extract the required components and materials associated with carpentry and joinery provision to compile a material list. Simple costing based on given prices of components and materials, including an all-in labour rate, this could provide sufficient information to make the Outcomes meaningful without being too time consuming for the craft candidate. Working drawings, manufacturer's catalogues, price lists from builder's suppliers and blank requisition sheets are essential requirements for the learning situation and for summative assessment. The Outcomes can be used to give the candidates the opportunity to develop IT skills through the use of spreadsheets.

The tutor/trainer could briefly introduce the candidate to a broad range of components commonly subjected to degradation by either physical or natural attack/dilapidation and could lead group discussion on a range of repair and maintenance work using the experiences of the class group to highlight good practices. The use of audio visual materials, power point slides and direct observation of repair work could prove most useful. Teaching notes could be supplemented by reference to text books on this area of work when the candidate could build up a folio of information. The reasons why the defects occur should be fully explored as should the methods adopted to prevent a recurrence. Integration with other Units should assist the candidate particularly when specifying replacement materials. Reference to British and European Standards and Codes of Practice should be relayed to the candidate to provide an awareness of correct practices.

Outcome 3

The tutor/trainer could centre discussion on a range of repairs common to this area of work and could include repairs to, the feet of rafters, floors, joinery components such as stiles, rails, sills, treads and similar components which may be patched or replaced by outlining methods of carrying out the repair including any remedial treatments required to prevent a re-occurrence. The candidate must appreciate that great skill must be exercised to produce work of a satisfactory nature and should appreciate the need to cut bevels to the correct position and to provide support to load sharing members during structural repairs. Assessing risk involved in carrying out the repairs and emphasizing safe systems of work (method statements) are crucial for any structural repair and opportunity to link this with other Units within the PDA will enforce the need for supporting structural carcassing components prior to repair works being carried out.

Examples of well fitted ironmongery could be used to focus attention on finer details such as sinking face plates of locks slightly under the flush and cutting key holes to a slightly larger profile than the section of the key. The candidate must appreciate that expensive ironmongery may be rejected during inspection of work if it bears marks caused by hammering to position.

National Unit specification: support notes (cont)

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Work methods and activities should be encouraged in terms of:

- 1 Sequencing operations.
- 2 Minimising wastage of materials.
- 3 Satisfying current safety regulations.

Throughout this Outcome the use of woodworking machinery and power tools should be encouraged when it is safe to do so.

All activities should comply with current health and safety and building regulations.

Candidates must be given the opportunity to further develop their skills in Carpentry and Joinery by learning about Repairs and Maintenance.

Candidate centred learning and teaching approach are encouraged with candidates actively participating in practical activities after lecturer demonstration of key construction practices and principles.

The use of effective questioning techniques to confirm understanding of salient learning objectives should be central to learning and teaching approaches used in classrooms or workshops.

Candidates should be encouraged to learn at their own pace with e-learning opportunities available to suit their preferred learning style.

The use of e-learning as a teaching tool should be adopted by lecturers wherever possible to enable candidates to develop at their own pace using preferred learning styles.

Learning and Teaching approaches should ensure that candidates are acquiring the underpinning knowledge required for the Unit in tandem with undertaking practical workshop activities.

Units which include elements such as floors, partitions and roofs; the tutor can generate a debate on types of rot/infestation. Reasons for such attacks can focus on the cause of such outbreaks, such as faulty roof coverings, defective guttering/down pipes, poorly fitted components such as windows and doors, age of building, raised ground level/blocked cavity.

During delivery of the practical components of this Unit, candidates should understand the importance of Health and Safety regulations and legislation relating both to working practices within the construction environment, as well as those specific to any practical task they are requested to carry out, such as emphasising the importance of carrying out risk assessments, following method statements and using the correct PPE at all times.

National Unit specification: support notes (cont)

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Where appropriate, opportunities should be taken throughout delivery of this Unit to meet the requirements of the generic Units of the Training and Assessment Programme including:

- ◆ *Conform to Productive Working Practices*
- ◆ *Conform to General Workplace Health, Safety and Welfare*
- ◆ *Move, Handle and Store Resources*
- ◆ *Confirm Work Activities and Resources for the Work*
- ◆ *Develop and Maintain Good Working Relationships*
- ◆ *Confirm the Occupational Method of Work*

Opportunities for developing Core Skills

Components of the Core Skill of *Problem Solving*, such as Planning and Organising and Critical Thinking will be developed as candidates undertake this Unit. Candidates will need to take account of a range of factors in order to work efficiently and safely, such as the interpretation of drawings, choice of tools and appropriate materials, application of scientific principles, risk assessments, health, safety and welfare and a sustainable approach. Individual discussions with assessors will enhance the evaluation of productive work practices.

There are opportunities to develop the Core Skill of *Working with Others* at SCQF level 4, particularly in Outcomes 2, 3 and 4, as these practical assessments should be carried out in pairs. Candidates can agree responsibilities and provide support and information to each other during the practical group activities.

Opportunities also arise for candidates to develop the Core Skill of *Information and Communication Technology (ICT)* at SCQF level 3 by researching Health and Safety legislation affecting their area of work, manufacturer's instructions and specifications, and in the use of spread sheets to produce cutting lists.

Numeracy at SCQF level 3 could be enhanced through the knowledge evidence in setting out straight flight stars and the practical use of calculation and measuring scales required for teaching and learning assessments for Outcomes 1, 2, and 4.

There will be opportunities for candidates to develop the Core Skills of *Communications* at SCQF level 4 through the knowledge part of the assessment for Outcomes 1 and 2. As candidates complete practical tasks in Outcomes 3 and 4, they should be expected to communicate with others using the correct terminology, tone and style suited to the workplace while interpreting drawings.

This Unit has the Critical Thinking component of Problem Solving embedded in it. This means that when candidates achieve the Unit, their Core Skills profile will also be updated to show they have achieved Critical Thinking at SCQF level 5.

National Unit specification: support notes (cont)

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Guidance on approaches to assessment for this Unit

The Carpentry and Joinery Training and Assessment Programme (TAP) provides detailed assessment material for this Unit. It is advised to use the TAP which has been developed centrally by SQA. Any other instruments of assessment used must be comparable to the TAP and have been through prior verification. It is expected that candidates will be given as much practice as possible, prior to being set assessment tasks.

A suitable method of assessing underpinning knowledge and understanding in Outcomes 1 and 2 would be through multiple choice questions and classroom based assignments with given scenarios about defective timbers and components.

A series of practical activities will allow evidence to be gathered for Outcome 3 and 4 through observation that the candidates have met the given standards and tolerances. An assessor observation checklist/record can be used to record this evidence.

Opportunities for the use of e-assessment

E-assessment may be appropriate for some assessments in this Unit. By e-assessment we mean assessment which is supported by Information and Communication Technology (ICT), such as e-testing or the use of e-portfolios or social software. Centres which wish to use e-assessment must ensure that the national standard is applied to all candidate evidence and that conditions of assessment as specified in the Evidence Requirements are met, regardless of the mode of gathering evidence. Further advice is available in *SQA Guidelines on Online Assessment for Further Education (AA1641, March 2003)*, *SQA Guidelines on e-assessment for Schools (BD2625, June 2005)*.

Disabled candidates and/or those with additional support needs

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering whether any reasonable adjustments may be required. Further advice can be found on our website www.sqa.org.uk/assessmentarrangements

History of changes to Unit

Version	Description of change	Date

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