



## **National Unit specification: general information**

**Unit title:** Carpentry and Joinery: Timber Framed Construction and Internal Partitioning Systems (SCQF level 6)

**Unit code:** H0RR 12

**Superclass:** TG

**Publication date:** March 2012

**Source:** Scottish Qualifications Authority

**Version:** 01

## **Summary**

This Unit is suitable for candidates working towards a Modern Apprenticeship in Carpentry and Joinery and will develop the candidate's skills and knowledge in Timber Framed Construction and Internal Partitioning Systems. This Unit is designed to provide candidates with competence in the use of tools and equipment to set out and build Timber Framed Walling and Internal Partitioning Systems and the ability to apply these skills in the workplace.

## **Outcomes**

- 1 Demonstrate knowledge and understanding of terminology, function of components and forms of construction used in Timber Framed Systems and Internal Partitioning Systems.
- 2 Produce fully annotated sketches of design and jointing details for timber frame construction.
- 3 Produce a cutting list for a load bearing timber frame.
- 4 Set out, construct and erect an external timber framed stud partition.
- 5 Set out, construct and erect internal partitioning systems.

## **Recommended entry**

While entry to this Unit 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.

## General information (cont)

**Unit title:** Carpentry and Joinery: Timber Framed Construction and Internal Partitioning Systems (SCQF level 6)

### Credit points and level

2 National Unit credits at SCQF level 6: (12 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.*

### Core Skills

Achievement of this Unit gives automatic certification of the following:

Complete Core Skill	None
Core Skill components	Critical Thinking @ SCQF level 4 Using Graphical Information @ SCQF level 4

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**

**Unit title:** Carpentry and Joinery: Timber Framed Construction and Internal Partitioning Systems (SCQF level 6)

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 terminology, function of components and forms of construction used in Timber Framed Systems and Internal Partitioning Systems.

#### **Performance Criteria**

- (a) Identify and define the function of components correctly.
- (b) State the applications of different forms of partitions correctly.
- (c) Use correct terminology throughout.

### **Outcome 2**

Produce fully annotated sketches of design and jointing details for timber frame construction.

#### **Performance Criteria**

- (a) Draw the constructional arrangement of external timber kit correctly.
- (b) Draw the constructional arrangement of details through openings correctly.
- (c) Annotate drawings to be complete and technically correct.

### **Outcome 3**

Produce a cutting list for a load bearing timber frame.

#### **Performance Criteria**

- (a) Compile an accurate and legible cutting list including types of materials and components from a given graphical specification.
- (b) Calculate material quantities accurately from given specification allowing for wastage.
- (c) Use appropriate and consistent terminology throughout.
- (d) Comply with current Health and Safety and sustainability requirements during all work methods and activities.

## **National Unit specification: statement of standards (cont)**

**Unit title:** Carpentry and Joinery: Timber Framed Construction and Internal Partitioning Systems (SCQF level 6)

### **Outcome 4**

Set out, construct and erect an external timber framed stud partition.

#### **Performance Criteria**

- (a) Set out external timber framed stud partition.
- (b) Cut, position and fix components in accordance with the specification.
- (c) Form and finish openings in accordance with the specification.
- (d) Comply with current Health and Safety and sustainability requirements during all work methods and activities.

### **Outcome 5**

Set out, construct and erect internal partitioning systems.

#### **Performance Criteria**

- (a) Set out internal partitioning system.
- (b) Cut, position and fix components in accordance with the specification.
- (c) Form and finish openings in accordance with the specification.
- (d) Fit and fix appropriate claddings, insulation and membranes accurately.
- (e) Comply with current Health and Safety and sustainability requirements during all work methods and activities.

## National Unit specification: statement of standards (cont)

**Unit title:** Carpentry and Joinery: Timber Framed Construction and Internal Partitioning Systems (SCQF level 6)

### Evidence Requirements for this Unit

Evidence is required to demonstrate that candidates have achieved all Outcomes and Performance Criteria.

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

Written and/or oral recorded evidence is required to demonstrate that the candidate has achieved Outcome 1 to the standard specified in the Performance Criteria. Candidates will be required to demonstrate their knowledge of the terminology, function of components and forms of construction associated with the building of Timber frames and Internal Partitioning Systems. This assessment will be conducted under controlled, closed-book supervised conditions.

Product evidence is required for Outcomes 2 and 3. For Outcome 2 fully annotated graphical evidence showing components and their position must be drawn to current legislative requirements. For Outcome 3 candidates must produce a cutting list with an appropriate wastage allowance for the partition to be constructed in Outcome 4. The evidence for these Outcomes will be obtained under supervised conditions.

Product and performance evidence is required to demonstrate that the candidate has achieved Outcomes 4 and 5 to the standards specified in the Performance Criteria. Using a simulated building line and datum candidates will build to the predetermined position and height. On completion the Timber Frames and Internal Partitioning Systems the timber frame will include the correct positioning of fire breaks, building paper, vapour barrier. The completed timber framed wall should be at least 2.4 metres in length and 1.8 meters in height the metal stud partition should be at least 2 meters in length.

<b>Summary of standards (working towards industrial tolerances)</b>	
<b>Item</b>	<b>Measurement of standard</b>
TIMBER FRAME	
Door opening to suit door size	
window opening	minimum dimensions 910 mm x 610 mm
stud work positions	as per drawing + - 4 mm
studs and dwangs	positioned and securely fixed to suit cladding
Openings	formed to size + - 5 mm
studwork	plumb+- 1 mm per 1.0 metre run and securely fixed
Building paper	Fixed securely with appropriate overlaps
Insulation	Correct thickness to fill partition voids fully
Vapour barrier	Fixed securely with appropriate overlaps
Fire breaks	fixed securely at required positions
claddings	fixed securely at required centres

## National Unit specification: statement of standards (cont)

**Unit title:** Carpentry and Joinery: Timber Framed Construction and Internal Partitioning Systems (SCQF level 6)

Item	Measurement of standard
METAL STUD	
Door opening to suit door size	
hatch opening (optional)	minimum dimensions 610 mm x 410 mm
stud work positions	as per drawing + - 4 mm
studs and dwangs	positioned and securely fixed to suit cladding
Openings	formed to size + - 5 mm
studwork	plumb+- 1 mm per 1.0 metre run and securely fixed
<b>Risk assessment</b>	
Safety boots	Worn at all times
Hard hat	Worn at all times
High visibility vest	Worn at all times
Gloves	Worn at all times
All other PPE	As risk assessed
<b>Method statement</b>	
Working area	Kept clear at all times
Materials	Stacked safely at all times
Tools (during working)	Handled correctly at all times
Tools (after work)	Cleaned and stored safely
<b>Sustainability</b>	
Waste	Kept to a minimum at all times.
Recycling	Materials recycled whenever possible.
Waste disposal	Waste disposed correctly/appropriately

The Evidence Requirements will be met by the completion of the Carpentry and Joinery Training and Assessment Programme (TAP) that provides detailed assessment material for this Unit.

## National Unit specification: support notes

**Unit title:** Carpentry and Joinery: Timber Framed Construction and Internal Partitioning Systems (SCQF level 6)

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 80 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 knowledge and skills relating to setting out techniques and construction practices associated with Timber framed panels and Internal Partitioning Systems with specific knowledge in timber kit components, assembly and erection. The student will require underpinning knowledge and skills relating to the design of partitions and the function of components and materials.

The candidate should be introduced to the terminologies and function of components of both timber framed walls and internal partitioning systems. Load bearing partitions as well as non load bearing structures should be discussed, as should types of insulation and a very basic awareness of what a 'u' value is and how it may affect the size of stud used in a timber framed wall. The other parts of the wall could be discussed at this stage, including; sheathing ply, breather paper, vapour barriers, fire stops and wall plates.

Components: horizontal members; vertical members; angled members; closed panel systems; volumetric, cassette wall systems.

Construction forms: load bearing; non-load bearing,

Materials: thermal insulation; sound insulation; fire protection; fire stops; sheet claddings; timber claddings; breather paper; vapour barrier.

The candidate should be introduced to drawings and sections of timber stud partitions and timber framed walls, showing plans, sections, elevations and openings in relation to their place within the building envelope.

Components: horizontal members; vertical members; arrangement at corners; arrangement at junctions; ½ hour fire protection, fire stops, breather paper, vapour barrier.

Details: horizontal sections through a door and/or window opening; vertical section through a door and/or window opening.

This Unit would be offered to candidates working towards a Modern Apprenticeship in Carpentry and Joinery and will develop the candidate's skills in setting out and building Timber frames and Internal Partitioning Systems. 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.

## **National Unit specification: support notes (cont)**

**Unit title:** Carpentry and Joinery: Timber Framed Construction and Internal Partitioning Systems (SCQF level 6)

The Unit with competence in the use of tools and equipment to set out and build Timber frames and Internal Partitioning Systems including design detailing to make a timber kit house; wind, water and vapour proof, thermal and sound insulated and finished fit for consumer purchase. 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.

### **Guidance on learning and teaching approaches for this Unit**

Candidates must be given the opportunity to further develop their skills in Carpentry and Joinery by learning about Timber frames and Internal Partitioning Systems and its principles.

The learning environment for this Unit will be a combination of classroom and workshop based learning. The knowledge element of this Unit would be taught in a classroom environment and put into practice in the workshop in conjunction with practical Outcomes.

#### **Outcome 1**

Could involve classroom teaching with visual aids, PowerPoint, DVDs, books, classroom exercises and discussion with candidates about the various materials used and where they would appear in relation to their position within the building. The function of each component should be thoroughly demonstrated and discussed.

#### **Outcome 2**

Elevations, sections and plans of all components should be demonstrated and practiced by the candidates. Candidate could be shown overhead projector details, electronic presentations, board sketches or internet sites with appropriate details, followed by candidates participating in sketching and drawing of details.

#### **Outcome 3**

Numerical skills should be reinforced with estimating techniques for the centring of studs and dwangs, followed by wastage and costings. Candidates will be given examples of materials lists and drawings relevant to both timber framed walls and timber stud partitions, after demonstration and delivery of examples, candidates should be able to attempt this on their own from a drawing or floor plan. This Outcome could be used to give the candidates the opportunity to develop IT skills through the use of spreadsheets to compile cutting lists.

Calculations: linear; area.



## National Unit specification: support notes (cont)

**Unit title:** Carpentry and Joinery: Timber Framed Construction and Internal Partitioning Systems (SCQF level 6)

### Outcomes 4 and 5

Candidates will work in teams whilst working on the timber frame and to set out the metal stud partition, each candidate should be responsible for fitting and fixing at least two components. It is possible for a boxed structure to be formed using four timber frames, which could be used as a base to fit a flat roof onto and the openings also used to fit a UPVC door and window. Construction practices during fitting of windows and doors should focus students awareness on the need for air tightness around apertures and openings within timber framed construction to meet the current regulations on insulation values and the need for air tightness (no air leakage) from the completed structure. Assessment of these Outcomes will be evidenced through observation of work processes and assessment of the completed work. Candidates must meet the given standards during the practical assessment. An assessor observation checklist must be used to record this evidence. Assessment should be conducted under controlled, supervised conditions.

Components should include:

- (i) Breather paper, fitted to external face.
- (ii) Fire stops fitted.
- (iii) Insulation fitted to correctly fill partition void.
- (iv) Vapour barrier fitted to internal face.

Candidates will be given the opportunity to work with materials appropriate to both timber framed walls and metal stud partitioning and also an opportunity to work as part of a team or group. Erection techniques for a timber kit panel should be demonstrated by the candidate, as should good lifting and handling skills. Construction methods should be demonstrated and attempted by candidates showing good technique in measuring, marking out, nailing, plumbing, levelling and fixing of components into position from a given floor plan. On completion the partitioning can be used as a sub straight for both first and second fixing to integrate with Units 2 and 3 of the TAP. It is possible for a boxed structure to be formed using four timber frames, which could be used as a base to fit a flat roof onto and the openings also used to fit a UPVC door and window (detailed within other Units). Construction practices during fitting of windows and doors should focus student's awareness on the need for air tightness around apertures and openings within timber framed construction to meet the current regulations on insulation values and the need for air tightness (no air leakage) from the completed structure.

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.

## National Unit specification: support notes (cont)

**Unit title:** Carpentry and Joinery: Timber Framed Construction and Internal Partitioning Systems (SCQF level 6)

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.

There are opportunities for candidates to develop co-operative working skills as the practical assessments may be carried out working in teams or in pairs. Candidates should take equal responsibility for activities and provide support and information to each other during assessments. After assessment, they should be encouraged to consider how effectively they supported each other.

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*

### Guidance on approaches to assessment for this Unit

Detailed assessment material for this Unit will be found in the Joinery Training and Assessment Programme (TAP) Centres may use the instruments of assessment which they consider to be most appropriate but are advised to use the Joinery 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

The candidates' knowledge and understanding of terminology and construction practices of kit construction will be assessed through a question paper in Outcome 1.

Terminology could include: load bearing; non-load bearing; internal; external.

Components could include: head; double header; sole; studs; dwangs; bracing; thermal insulation materials; sound insulation materials; fire protection materials; sheet claddings; timber cladding.

Forms of timber stud partitions could include: sound resisting; thermally insulated; fire resisting.

## National Unit specification: support notes (cont)

**Unit title:** Carpentry and Joinery: Timber Framed Construction and Internal Partitioning Systems (SCQF level 6)

In Outcome 2, the need to produce drawings of a size which clearly illustrates constructional details should be fully emphasised as should the requirement for full annotation.

In Outcome 3, the importance of calculating materials accurately to minimise wastage and be cost effective should be clearly stated. The materials list should be compiled in a table format and could include: contract; job title; date; material; size; quantity; signature.

Candidates should be given as much practise as possible in setting out and Joinery techniques, prior to being set the assessment. Evidence will be gathered for Outcomes 4 and 5 through observation that the candidates have met the given standards and tolerances during the practical assessment. An assessor observation checklist should 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)*.

### 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 3, and 4, as these practical assessments should be carried out in pairs or teams. 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, interpretation of drawings.

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

## **National Unit specification: support notes (cont)**

**Unit title:** Carpentry and Joinery: Timber Framed Construction and Internal Partitioning Systems (SCQF level 6)

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, 2 and 3. As candidates complete practical tasks in Outcomes 4 and 5, 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 and the Using Graphical Information component of Numeracy 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 and Using Graphical Information at SCQF level 4.

### **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](http://www.sqa.org.uk/assessmentarrangements)

## History of changes to Unit

Version	Description of change	Date

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