

## National Unit Specification: general information

**UNIT** Plumbing Services: An Introduction (Intermediate 1)

**CODE** F1L6 10

### SUMMARY

This Unit is suitable for candidates who have limited or no experience of plumbing practices. The Unit require the candidate to select the correct tools and materials required to successfully complete the tasks. The work throughout will be based on recognised craft practices and working in an organised manner with an emphasis on safe working procedures. Candidates who achieve this Unit should feel confident in progressing to other Units demanding higher-level skills in this area when the range and level of work will be greater.

### OUTCOMES

- 1 Identify basic plumbing tools and materials used in the plumbing industry.
- 2 Measure, cut and fabricate plastic waste pipe and associated fittings.
- 3 Measure, cut and fabricate compatible plastic water pipe and associated fittings
- 4 Measure, cut, bend and fabricate copper pipe work together with a range of compatible fittings

### RECOMMENDED ENTRY

Whilst access to this Unit is at the discretion of the centre, it would be beneficial if the candidate had an aptitude for practical craft skills.

### CREDIT VALUE

0.5 credit at Intermediate 1 (3 SCQF credit points at SCQF level 4\*)

*\*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.*

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### Administrative Information

**Superclass:** TH

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## **National Unit Specification: general information (cont)**

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### **CORE SKILLS**

There are opportunities to develop the Core Skills of Problem Solving, Working with Others, Information Technology, Numeracy and Communication at SCQF level 4 in this Unit, although there is no automatic certification of Core Skills or Core Skills components.

## **National Unit Specification: statement of standards**

### **UNIT Plumbing Services: An Introduction (Intermediate 1)**

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 the Scottish Qualifications Authority.

#### **OUTCOME 1**

Identify basic plumbing tools and materials used in the plumbing industry.

##### **Performance Criteria**

- (a) Pipe work and fittings are correctly identified to industrial standards.
- (b) Samples of tools are correctly identified to industrial standards.

#### **OUTCOME 2**

Measure, cut and fabricate plastic waste pipe and associated fittings.

##### **Performance Criteria**

- (a) The pipe work is free from excessive marking.
- (b) The pipe work is completed to within specified dimensions.
- (c) All pipe work is cut square, free from burrs and fabricated using associated fittings.
- (d) Health and Safety legislations are adhered to at all times.

#### **OUTCOME 3**

Measure, cut and fabricate compatible plastic water pipe and associated fittings.

##### **Performance Criteria**

- (a) The pipe work is free from excessive marking.
- (b) The pipe work is completed to within specified dimensions.
- (c) All pipe work is cut square, free from burrs and fabricated using associated fittings.
- (d) Health and Safety legislations are adhered to at all times.

#### **OUTCOME 4**

Measure, cut, fabricate and bend copper pipe work together with a range of compatible fittings.

##### **Performance Criteria**

- (a) The pipe work is free from excessive marking
- (b) The pipe work is completed to within specified dimensions.
- (c) All pipe work is cut square, free from burrs and fabricated using associated fittings.
- (d) Health and Safety legislations are adhered to at all times.

## **National Unit Specification: statement of standards**

### **UNIT Plumbing Services: An Introduction (Intermediate 1)**

#### **EVIDENCE REQUIREMENTS**

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

Evidence of the correct materials, selection of tools and good working practices while working with Plastics gutter and rainwater pipe and waste pipe installations is required to test underpinning knowledge and understanding and will be gained through an integrated assessment.

Written and/or oral evidence is required which demonstrates that the candidate has achieved Outcome 1 to the standards specified in the Outcome and Performance Criteria. The candidate will be required to identify correctly samples of tools, pipe work and fittings used in the plumbing industry. The evidence for this Outcome should be obtained under controlled, supervised conditions with an attainment level of 80%. The assessment will be closed-book.

Evidence of actual performance is required to show the candidate can measure, cut, bend and fabricate a range of basic plumbing materials and associated fittings to within  $\pm 15$  mm of given dimensions. An assessor observation checklist/record should be used to show that the candidate has achieved the standard specified in the Outcomes and Performance Criteria. Knowledge and understanding for Outcomes 1, 2, 3 and 4 will be gained through a set of ten multiple-choice questions with an attainment level of 80%

Assessment of this Unit should be completed over a period of time and evidence should be gathered at appropriate intervals.

The Assessment Support Pack for this Unit provides sample assessment material. Centres wishing to develop their own assessments should refer to the Assessment Support Pack to ensure a comparable standard.

## **National Unit Specification: support notes**

### **UNIT Plumbing Services: An Introduction (Intermediate 1)**

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 20 hours.

#### **GUIDANCE ON THE CONTENT AND CONTEXT FOR THIS UNIT**

This Unit has been developed as an optional Unit in the National Progression Award in Construction and can also be delivered as a freestanding Unit.

The content and context of this Unit is aimed at candidates who are interested in pursuing a career in the plumbing industry. Candidates will be required to gain an understanding of the correct terminology and materials for pipework used in the plumbing industry and will gain practical experience of measuring and cutting a variety of pipes to given specifications. It is imperative that there is firm guidance on the continued development of safe working practices at this stage of the award.

There should be an initial demonstration of all activities before the candidates commence with the practical work and it is recommended that candidates are given as much practise in the techniques prior to assessment.

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.

The work should be of an elementary standard and should be set with a view to motivate the candidate. It is therefore recommended that the twenty hours of the Unit should be spent predominantly on practical activities.

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 be looked at in accordance 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**

The candidate is required to develop the ability to use tools correctly and work in a safe manner at all times and therefore it is anticipated that all of the teaching will take place in the workshop environment. During the process of practical work the candidate is required to become accustomed to the use of plumbing terms and also to demonstrate knowledge of these terms. Individual candidates are encouraged to use and develop techniques suited to their own physical strengths and abilities.

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

### **UNIT Plumbing Services: An Introduction (Intermediate 1)**

#### **OPPORTUNITIES FOR CORE SKILL DEVELOPMENT**

The elements of the Core Skill of Problem Solving, such as planning and organising and critical thinking will be developed and enhanced 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 choice of appropriate tools and working practices. Complying at all times with health and safety requirements will enable candidates to develop co-operative working skills, as they must be aware of the safety of others as well as themselves. Individual discussions with assessors will enhance the evaluation of efficient working practices.

There are opportunities to research information about Health and Safety legislation enabling candidates to develop the Core Skill of Information Technology.

Numeracy skills will be naturally enhanced as skills such as measuring and interpretation of information are required in the teaching and learning assessments for Outcomes 2, 3 and 4.

Although Communication skills are not formally assessed, candidates will have the opportunity to develop written and/or oral communication skills for the knowledge part of the teaching and learning assessment for Outcome 1. As candidates complete practical tasks, they should be expected to communicate with others using the correct terminology, tone and style suited to the workplace.

#### **GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT**

Centres may use the Instruments of Assessment which they consider to be most appropriate but are encouraged to use the Assessment Support Pack (ASP) developed centrally by SQA.

It is expected that candidates will be given as much practice as possible prior to being set the assessment tasks.

#### **Outcome 1**

The candidate's knowledge and understanding of plumbing terminology and tools will be assessed through a matching exercise covering all Performance Criteria in Outcome 1. This Outcome should be assessed in the workshop situation where a selection of tools and materials are presented to the candidate. The candidate will then be asked to identify the tools and materials with a cutting score of 80%.

This assessment should be conducted under controlled, supervised condition. Assessment should show that the candidate has achieved all Performance Criteria and reassessment of any area of this Outcome can be conducted through an oral question/answer session.

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

### **UNIT Plumbing Services: An Introduction (Intermediate 1)**

#### **Outcome 2, 3 and 4**

An assessor observation checklist/record can be used to record evidence of the candidate's ability to cut, measure, fabricate and bent pipework to give specifications.

The candidate should be provided with working drawing(s) outlining the content and Performance Criteria for the practical activities attempted. Competence will be based on the candidate completing the practical activities in accordance with the stated achievement criteria.

The candidate will be provided with all of the tools, materials and equipment to complete the practical tasks as well as drawings and specifications for the tasks.

Evidence of the techniques and materials used in plumbing is needed to test underpinning knowledge and understanding and will be gained through a ten question multiple-choice assessment covering all the Outcomes in the Unit.

Candidates will also be assessed on their compliance of health and safety legislations in the Construction Industry including the correct use of PPE, safe working practices, manual handling methods and the correct and safe use of tools.

The ASP includes a bank of questions which may be used to form the assessment of Outcome 1 and assessor observation checklist/records for Outcomes 2, 3 and 4.

#### **CANDIDATES WITH DISABILITIES AND/OR ADDITIONAL SUPPORT NEEDS**

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering alternative Outcomes for Units. Further advice can be found in the SQA document *Guidance on Assessment Arrangements for Candidates with Disabilities and/or Additional Support Needs* ([www.sqa.org.uk](http://www.sqa.org.uk)).