



## Higher National Unit specification

### General information for centres

**Unit title:** Painting and Decorating: Paint Systems for Building Substrates

**Unit code:** F8RJ 34

**Unit purpose:** This Unit is designed to enable the candidate to develop their knowledge and understanding in the physical and chemical properties of substrates. The preparatory methods used in preparing these substrates along with current Health and Safety Regulations, and specifying and selecting finishing systems for these substrates.

On completion of the Unit the candidate should be able to:

- 1 Explain the physical and chemical properties of substrates.
- 2 Describe surface preparation procedures.
- 3 Select suitable finishing systems.

**Credit points and level:** 1 HN credit at SCQF level 7: (8 SCQF credit points at SCQF level 7\*)

*\*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.*

**Recommended prior knowledge and skills:** Access to this Unit is at the discretion of centres. However it is recommended that candidates have completed the Professional Development Award in Painting and Decorating at SCQF level 6 or have the equivalent level of industrial experience and prior learning.

**Core Skills:** ‘There are opportunities to develop the Core Skills of *Communication, Working with Others* at SCQF level 5 and *Information and Communication Technology* at SCQF level 4 in this Unit, although there is no automatic certification of Core Skills or Core Skills components.’

**Context for delivery:** If this Unit is delivered as part of a Group Award, it is recommended that it should be taught and assessed within the subject area of the Group Award to which it contributes. This Unit was developed as part of the Higher National Certificate in Painting and Decorating at SCQF level 7 and is aimed at candidates following a career in Painting and Decorating with current industrial experience.

## General information for centres (cont)

**Assessment:** This Unit is assessed on the candidates` demonstrating their understanding of the physical and chemical properties of substrates, the preparation procedures for these substrates, and the suitable finishing systems.

In order to achieve this Unit, candidates are required to present sufficient evidence that they have met all the knowledge elements for each Outcome. Details of these requirements are given for each Outcome.

The assessment instruments used should follow the general guidance offered by the Scottish Qualifications Authority (SQA) assessment model and an integrative approach to assessment is encouraged.

Evidence will be gathered through assignments and assessments for all Outcomes. Assessment should be carried out under controlled, supervised conditions. Candidates must achieve all of the Knowledge and/or Skills and Evidence Requirements specified for each Outcome to gain this Unit. Centres may use the instrument of assessment which they consider to be most appropriate but are advised to use the Painting and Decorating Training and Assessment Programme (TAP) which has been developed centrally by SQA. Any other instruments of assessment used must be compatible to the TAP and have been through prior verification.

Accurate records should be made of the assessment instruments used showing how evidence is generated for each Outcome and giving marking schemes, checklists and recorded candidate feedback. Records of candidates` achievements should be retained. These records will be made available for external verification.

## **Higher National Unit specification: statement of standards**

**Unit title:** Painting and Decorating: Paint Systems for Building Substrates

### **Outcome 1**

Explain the physical and chemical properties of substrates

#### **Knowledge and/or Skills**

- ◆ Explain the nature of substrates that will affect paint coatings
- ◆ Outline the differences between substrates

#### **Evidence Requirements**

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- ◆ identify structural substrates
- ◆ identify physical and chemical properties of substrates
- ◆ explain the effects physical and chemical properties may have on applied surface coatings

All the Evidence Requirements must be met and all items in the knowledge and skills covered. Evidence should be gathered through an assessment outlining substrate properties. Assessment should be conducted under open-book supervised conditions.

#### **Assessment Guidelines**

Assessments will be in the form of open-book. Questions will be directed at the physical and chemical properties of substrates and their likely condition prior to painting. Substrates to be covered are brickwork, building blocks, concrete, expanded polystyrene, ferrous metals, non ferrous metals, fibreglass, plaster, hardwoods, plasterboard, UPVC, softwoods.

Some substrates, eg timbers and metals, could produce an endless list, but emphasis should be given to the effects that some of these could have on applied surface coatings.

Specific or mechanical adhesion of paint to these substrates should also be noted.

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

**Unit title:** Painting and Decorating: Paint Systems for Building Substrates

### **Outcome 2**

Describe surface preparation procedures

#### **Knowledge and/or Skills**

- ◆ Identify different methods of preparatory work for substrates
- ◆ Outline the importance of complying with current Health and Safety Regulations

#### **Evidence Requirements**

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- ◆ explain preparatory methods for substrates
- ◆ identify appropriate health and safety regulations for preparatory and painting work

All the Evidence Requirements must be met and all items in the knowledge and skills covered. Evidence should be gathered through an assessment outlining surface preparation requirements in the decorating industry. Assessment should be conducted under open-book supervised conditions.

#### **Assessment Guidelines**

Assessment will be in the form of open-book and take the form of research work in the preparatory methods for given substrates. The methods to be used are solvent cleaning, hand tools, power tools and specialist equipment. Four different substrates that will require four different preparatory methods should be used. One substrate should include steelwork where a preparation standard will be identified.

Current Health and Safety Regulations should be adhered to for preparatory and painting work.

### **Outcome 3**

Select Suitable finishing systems

#### **Knowledge and/or Skills**

- ◆ Explain the use of primers for given substrates
- ◆ Explain the use of pigmented finishes for given substrates
- ◆ Set out a specification for given substrates

#### **Evidence Requirements**

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- ◆ identify primers for given substrates
- ◆ identify pigmented finishes for given substrates
- ◆ select and specify finishing systems

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

### **Unit title:** Painting and Decorating: Paint Systems for Building Substrates

All the Evidence Requirements must be met and all items in the knowledge and skills covered. Evidence should be gathered through an assessment finishing systems in the decorating industry. Assessment should be conducted under open-book supervised conditions.

#### **Assessment Guidelines**

Assessment will be an assignment including a question paper on the use of 10 primers and 4 pigmented finishes for a given situation and the setting out of specifications under the following sections:

- ◆ Conditions of work
- ◆ Materials to be used
- ◆ Preparation, general procedures
- ◆ Application
- ◆ Scheduling painting
- ◆ Minimum coating thickness
- ◆ Mixing and thinning
- ◆ Quality of work
- ◆ Storage of materials
- ◆ Health and safety

The substrates to be, stonework, building blocks, new galvanised surfaces, newly laid concrete floor, structural steelwork.

All substrates listed will receive the complete surface preparation, paints, and exact number of coats shall be given.

## Administrative Information

<b>Unit code:</b>	F8RJ 34
<b>Unit title:</b>	Painting and Decorating: Paint Systems for Building Substrates
<b>Superclass category:</b>	TG
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### History of changes:

Version	Description of change	Date

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## **Higher National Unit specification: support notes**

### **Unit title:** Painting and Decorating: Paint Systems for Building Substrates

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 for the Higher National Certificate in Painting and Decorating at SCQF level 7 and may be delivered in a sequence suitable to individual candidates and centres.

Candidates following a career in Painting and Decorating and with current industrial experience will benefit from undertaking this Unit.

This Unit is designed to enable the candidate to develop their knowledge and understanding of the physical and chemical properties of substrates, preparatory procedures for substrates and the selection of suitable coating systems. The candidate successfully completing this Unit will require underpinning knowledge in sourcing information from manufacturer's data/safety sheets and other relevant resources. Use of ICT will be encouraged.

The Knowledge and/or Skills for this Unit deal with identifying the physical and chemical properties of substrates in order to select an appropriate paint system. The preparatory methods used for the preparation of surfaces along with current Health and Safety Regulations. The identification and use of primers, pigmented finishes, and producing specifications for given substrates. It is complemented by other Units dealing with related aspects of painting and Decorating.

Research work of manufacturers' information and related articles eg The Code of Practice for Painting and Decorating should be encouraged.

Current Health and Safety should be fully emphasised throughout the delivery of this Unit.

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

**Unit title:** Painting and Decorating: Paint Systems for Building Substrates

### **Guidance on the delivery and assessment of this Unit**

#### **Outcome 1**

Substrates will be brickwork, building blocks, concrete, expanded polystyrene, ferrous metals, non ferrous metals, fibreglass, gypsum plaster, hardwoods, plasterboard, UPVC, softwoods, and their likely condition ie non porous, permeable, non absorbent, absorbent, porous, chemically active, corrodible. Also, how does a priming coat attach itself to a substrate? By mechanical or specific adhesion. Use of ICT should be encouraged.

#### **Outcome 2**

Photograph 1 will be cleaning the outside of a building with no painting required.

Photograph 2 will be the preparation of railings prior to painting.

Photograph 3 will be flaking of paint from a galvanised substrate prior to painting.

Photograph 4 will be flaking of paint from a sandstone building prior to painting.

The tools, materials and equipment should be listed for each, followed by a suitable primer for photographs 2, 3 and 4.

The 4 photographs will each have a different method for preparatory work, ie solvent cleaning, hand tools, power tools and specialist equipment. The surface preparation of steel will incorporate a standard from one of the following, NACE, SSPC, St, Sa.

Each photograph will also incorporate current Health and Safety Regulations, eg PPE, CHIP, COSHH. Use of ICT should be encouraged.

#### **Outcome 3**

Assessment will be to select and explain the use of primers.

A short description of each primer where candidates will select the correct one for a given situation, and then give an example of its recommended use. The same process will be used for pigmented finishes.

10 primers to be used and 4 pigmented finishes to be used.

5 photographs to be used and the substrates to be, stonework, building blocks, new galvanised surfaces, newly laid concrete floor, structural steelwork.

The following materials have to be incorporated within the specification, but the list is not exhaustive.

Block filler; primers; sealers; undercoats; exterior finishing paint; interior finishing paint; fillers; fungicidal solutions.



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

**Unit title:** Painting and Decorating: Paint Systems for Building Substrates

### ***Opportunities for developing Core Skills***

Working with others and communication skills at SCQF level 5 may be developed in assisting each other when working through this Unit.

Information and Communication Technology at SCQF level 4 may be developed by the candidates when researching material for the Unit.

### **Open learning**

E- assessment is appropriate for this Unit. By e-assessment we mean assessment which is supported by information and communications technology (ICT), such as e-testing or the use of e-portfolios or e-checklists. 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 2003)*.

### **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)

## **General information for candidates**

**Unit title:** Painting and Decorating: Paint Systems for Building Substrates

### **Outcome 1: Explain the physical and chemical properties of substrates**

You will be assessed by answering questions on the physical and chemical properties of substrates. The substrates will be brickwork, building blocks, concrete, expanded polystyrene, ferrous metals, non ferrous metals, fibreglass, gypsum plaster, hardwoods, plasterboard, UPVC, softwoods.

You will also be assessed by answering questions on the substrates` likely condition at the time of painting. Are the substrate non porous, permeable, non absorbent, porous, chemically active, or corrodible, and the way a priming coat attaches itself to a substrate.

### **Outcome 2: Describe surface preparation procedures**

Assessment for Outcome 2 will take the place of 4 photographs of substrates that require preparatory work.

Photograph 1 will be cleaning the outside of a building with no painting required.

Photograph 2 will be the preparation of railings prior to painting.

Photograph 3 will be flaking of paint from a galvanised substrate prior to painting.

Photograph 4 will be flaking of paint from a sandstone building prior to painting.

The tools, materials and equipment should be listed for each, followed by a suitable primer for photographs 2, 3 and 4.

The 4 photographs will each have a different method for preparatory work, i. e. solvent cleaning, hand tools, power tools and specialist equipment. The surface preparation of steel will incorporate a standard from one of the following, NACE, SSPC, St, Sa.

Each photograph will also incorporate current Health and Safety Regulations, eg PPE, CHIP, COSHH.

## General information for candidates (cont)

**Unit title:** Painting and Decorating: Paint Systems for Building Substrates

### Outcome 3: Select suitable finishing systems

Assessment for this Outcome will be questions detailing the suitability of primers and pigmented finishes for a given situation.

Also, specifications will have to be produced for the following: stonework, building blocks, new galvanised surfaces, newly laid concrete and structural steelwork.

The specification will be produced under the following headings:

- ◆ Conditions of work.
- ◆ Materials to be used.
- ◆ Preparation, general procedures.
- ◆ Application.
- ◆ Scheduling painting.
- ◆ Minimum coating thickness.
- ◆ Mixing and thinning.
- ◆ Quality of work.
- ◆ Storage of materials.
- ◆ Health and safety.

All substrates listed will receive the complete surface preparation, paints, and exact number of coats shall be given.

Photographs will be issued for the condition of these substrates.

If extensive research work is done for the Outcomes — from assignments through to assessments — work can be kept for your future career, and sourcing work within each Outcome for this Unit.

The assessment for the 3 Outcomes will be open-book and will be carried out in a supervised environment. You will have access to your own research material that you have personally prepared, but will not be permitted to bring other materials that are not your own work.

You will be assessed in supervised conditions to specified tolerances contained in an observation checklist. These tolerances should be fully explained and available to you prior to the assessment. You will be expected to work individually for the assessment and where required working with others. You will receive both oral and written feedback on your performance for the assessment.

There are opportunities for you to develop your Core Skills of *Communication*, *Working with Others*, and *Information and Communication Technology* within this Unit, although there is no automatic certification of Core Skills or Core Skills components.