Level 3 NVQ in Machine Printing - Web Offset (5158-31)

Standards and assessment requirements

500/1491/2

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Level 3 NVQ in Machine Printing - Web Offset (5158-31)

Standards and assessment requirements

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1   Introduction

About this document

This document contains the information that centres need to offer the following National Vocational Qualification (NVQ):

Level 3 NVQ in Machine Printing - Web Offset (5158-31)

QCA accreditation number: 500/1491/2

This document contains details and guidance on:
* centre resource requirements
* candidate entry requirements
* information about links with other qualifications
* qualification standards and specifications
* assessment requirements.

2 About the qualification

2.1 Proskills UK and the National Occupational Standards

Background to the National Occupational Standards (NOS) development

The NVQs in Printing (5158) at Levels 2 and 3 are work-based qualifications, designed for those who work in the printing industry.

For workers in the print industry, job descriptions and task lists will indicate which NVQ and which optional units within the NVQ are most suitable.

Every centre (training providers, training centres, colleges, etc) must ensure that each candidate, trainee and student is enrolled for qualifications and programmes in which they stand every reasonable chance of succeeding.

Contacting the Standards Setting Bodies

This qualification is based on the National Occupational Standards (NOS) developed by:

Sector Skills Council	Proskills UK
Address	Centurion Court
	85b Milton Park
	Abingdon
	Oxfordshire
	OX14 4RY
Telephone	01235 833844
URL	**www.proskills.co.uk**

Imported units

The majority of units have been developed by the Print and Graphic Communication National Training Organisation (PGCNTO). However, some units have been imported from the other NTOs, for example: Information Technology NTO (ITNTO); National Forum for Management, Education and Development (formerly MCI); Employment NTO (ENTO); Small Firms Enterprise Development Initiative (SFEDI) and; Institute for Customer Service (CSI).

The printing industry established that these units were directly relevant to individuals who would be expected to achieve the NVQs in Printing at Levels 2 or 3 and consequently decided to adopt them into the Printing qualifications

Apprenticeship frameworks

The NVQs in Printing have been approved by the SSC Proskills UK as part of the Apprenticeship Framework in England.

Full details of the requirements of the apprenticeship frameworks for the sector are available from:

Sector Skills Council	Proskills UK
Address	Centurion Court
	85b Milton Park
	Abingdon
	Oxfordshire
	OX14 4RY
Telephone	01235 833844
URL	**www.proskills.co.uk**

City & Guilds also offers the following qualifications which are also part of the Apprenticeship framework:

- City & Guilds Level 2 Certificate in Printing and Graphic Communications   5261-02
- City & Guilds Level 3 Certificate in Printing and Graphic Communications   5261-03

Accreditation details

This qualification is accredited by the Qualifications and Curriculum Authority as part of the National Qualifications Framework.

For further details about accreditation, national qualification frameworks and level descriptors please refer to Appendix 1.

2   About the qualification

2.2   Publications and sources of information

This document has been designed to be used with the City & Guilds *N/SVQ Guides*:

Publication	Content	Available from
Centre guide	An overview of N/SVQ assessment, delivery and quality assurance issues.	EN-12-001
Candidate guide	An introduction to N/SVQs, candidate responsibilities and an overview of the assessment process.	TS-12-001
Recording forms	Forms both centres and candidates may use to record evidence.	TS-33-0001

Visit the City & Guilds website (**www.cityandguilds.com**) for the latest versions of these documents.

Other essential City & Guilds documents

There are other City & Guilds documents which contain general information on City & Guilds qualifications:

- ***Providing City & Guilds qualifications – a guide to centre and qualification approval***
  contains detailed information about the processes which must be followed and requirements which must be met for a centre to achieve 'approved centre' status, or to offer a particular qualification.

- ***Ensuring quality***
  contains updates on City & Guilds assessment and policy issues.

- ***Centre toolkit***
  contains additional information on *Providing City & Guilds qualifications*, in a CD-ROM, which links to the internet for access to the latest documents, reference materials and templates.

- ***Directory of qualifications***
  contains details of general regulations, registration and certification procedures and fees. This information is also available online.

For the latest updates on our publications and details of how to obtain them and other City & Guilds resources, please refer to the City & Guilds website.

3 Candidate entry requirements and progression

Candidate work role requirements

The NVQs in Printing are for those working in the printing industry in the following roles:

Pathway	Job Roles
Carton Manufacture	Carton Maker Printed carton operative Carton die maker
Digital Print Production – Digital Artwork for Print	Desk Top Publisher Graphic designer Print Designer Pre-press manager
Digital Print Production – Digital Printing	Printer Digital Printer
Digital Print Production – Pre-Press	Desk Top Publisher Graphic designer Print Designer Pre-press manager
Envelope Manufacture	Envelope printer
Machine Printing – Die stamping	Printer Die stamping printer
Machine Printing – Flexography	Printer Flexographic Printer
Machine Printing – Gravure	Printer Gravure Printer
Machine Printing – Lithography	Printer Lithographic printer
Machine Printing – Pad Printing	Printer Pad printer
Machine Printing – Screen	Printer Screen printer
Machine Printing – Web offset	Printer Web offset printer
Mechanised Print – Finishing and Binding	Print finisher
Print Administration	Print Production manager Print production scheduler Print administrator

Candidate entry requirements

Candidates should **not** be entered for a qualification of the same type, content and level as that of a qualification they already hold.

Age restrictions

The NVQs in Printing are **not** approved for use by candidates under the age of 16.

For candidates above this age, there are no age limits unless this is a legal requirement of the process or the environment.

Otherwise, there are no formal entry requirements for candidates undertaking these qualifications, however centres must ensure that candidates have the potential and opportunity to gain evidence for the qualification in the work place.

For funding purposes, centres are reminded that candidates should not be entered for a qualification of the same type, level and content as that of a qualification they already hold.

4 Centre resource requirements

4.1 Centre, qualification and fast track approval

Centres not yet approved by City & Guilds

To offer this qualification, new centres will need to gain both **centre and qualification approval**. Please refer to the *Centre guide* and *Providing City & Guilds Qualifications* for further information.

Existing City & Guilds centres

To offer this qualification, centres already approved to deliver City & Guilds qualifications will need to gain **qualification approval**. Please refer to the *Centre guide* and *Providing City & Guilds Qualifications* for further information.

Centres already offering City & Guilds qualifications in this subject area

Centres approved to offer the 5157 NVQs in Printing may apply for approval for the new 5158 NVQs in Printing using the **fast track form,** available from the regional/national office or City & Guilds website.

Centres may apply to offer the new qualifications using the fast track form:
- providing there have been no changes to the way the qualifications are delivered, and
- if they meet all of the approval criteria specified in the fast track form guidance notes.

Fast track approval is available for 12 months from the launch of the qualification. After this time, the qualification is subject to the **standard** Qualification Approval Process. It is the centre's responsibility to check that fast track approval is still current at the time of application.

4   Centre resource requirements

4.2   Registration and certification

Registration and certification period

Centres should be aware of time constraints regarding the registration and certification periods for the NVQs in Printing, as specified in the City & Guilds *Directory of qualifications*.

Please check the *Directory of qualifications* for the latest information on length of registration and the last registration and certification dates.

Where the period of access to assessment offered by a centre is less than the period covered by the candidates' registration with City & Guilds, centres must ensure that this is understood by the candidates.

5 Assessment method requirements

This guidance is based on and amplifies the assessment strategy developed for the NVQs in Printing, by the Sector Skills Council for Printing Proskills UK.

External quality control

External quality control is provided by the usual City & Guilds external verification process which includes the use of the electronically scannable report form which is designed to provide an objective risk analysis of individual centre assessment and verification practice.

Accreditation of Prior Experience and Learning (APEL)

Please refer to the City & Guilds *N/SVQ Guides* documents which can be found on our website, **www.cityandguilds.com**

Evidence and location of assessment

The majority of the candidate's evidence should come from direct observations of competence in the real workplace, unless specified in the unit content. Other types of acceptable evidence include, but are not limited to:

- Witness Testimony (details of acceptable witnesses are found in section 6 of this document 'Expertise of Assessors, Internal Verifiers and Witnesses')
- logs/diaries kept by the candidate
- recorded answers to questions posed by the Assessor
- recorded/transcribed interviews with the candidate
- recorded use of up-to-date commercial/industrial equipment
- e-portfolios and other forms of digital media
- works documentation attributable to the candidate
- both interim and final internal verification.

Although the majority of the candidate's evidence should come from direct observations of competence in the real work place, in exceptional circumstances simulation of the real workplace may be allowed. Occasions in which this may be approved are provided below.

Simulation

Where simulated activities are not stated within the unit, a centre **must** discuss and agree their use in advance with the external verifier. Consideration for simulation should be given to those units which have real health, safety and environment implications.

All evidence from simulated activities must result from activities that have taken place in a realistic working environment, which replicates the conditions and circumstances in which the candidate usually works and meets the following conditions:

- Working conditions should reflect those found in the workplace and include facilities, equipment and materials used in the workplace for the activities being assessed. It should also include relationships, constraints and pressures met in the workplace.
- The activity to which the candidate is required to demonstrate competence must be realistic and reasonable in terms of its scale.
- Any assessment conducted under simulated conditions must require the candidates to take into consideration what would be typical ambient conditions encountered in the normal workplace

- Information available to the candidate on the nature of the activity must be consistent with the policies and practices of typical recycling operations.

The overarching principle to be applied to units identified as suitable for simulation is that it should **only** be undertaken in a minority of cases where:
- there is a high risk to the security or safety of the candidate, individuals, key people in their lives and others
- the opportunity to present evidence from work-based practice happens infrequently and therefore insisting that candidates wait for such an occurrence would be unreasonable or create blockages in the assessment system and might carry the risk of de-motivating candidates
- there would otherwise be a breach of confidentiality or privacy.

To reiterate, any simulation **must** be approved in advance by the External Verifier, and clear reasons must be given for its intended use. If approval is given, all Awarding Body guidance and requirements must be observed. Simulation should **not** be the primary source of a candidate's claim to competence

6 Roles and occupational expertise requirements
Expertise of Assessors, Internal Verifiers and Witnesses

Assessors

Assessors must:

- be registered and recognised by an approved centre
- be competent to make qualitative judgements about the units they are assessing. Illustrations of competence include, but are not limited to, the assessor:
    - having achieved the award themselves
    - having substantial demonstrable experience in the job roles they are assessing
    - being in a day-to-day line management or quality assurance role with responsibility for the job roles they are assessing
- be in possession of or working towards the A1/A2 award or the D32/33 award, or (in Scotland only) has gained an exemption in TQFE/TQSE, as recommended by SQA/QCA and supported by an appropriate Continuing Professional Development (CPD) record
- carry out their duties in accordance with the current NOS for Assessment, and in line with current guidance on assessment practice issued by the regulatory authorities and the appropriate Awarding Body
- maintain appropriate evidence of development activities to ensure their assessment skills and occupational understanding are current (CPD)
- have a working knowledge of awards and a full understanding of that part of the award for which they have responsibility. The Awarding Body will confirm this through examination of relevant CVs supported by relevant references.
- be approved by the Awarding Body who must maintain records demonstrating how they meet the assessment strategy. The appointment of Assessors may require the prior approval of the Awarding Body
- meet any additional requirements as specified in the unit specific content.

Internal Verifiers

Internal verifiers must:

- be registered and recognised by an approved centre
- be in possession of or working towards the V1 award or the D34 award, as recommended by SQA/QCA and supported by an appropriate CPD record
- carry out their duties in accordance with the current NOS for Verification, and in line with current guidance on verification practice issued by the regulatory authorities and the appropriate Awarding Body
- maintain appropriate evidence of development activities to ensure their verification skills and occupational understanding are current (CPD)
- have expertise and knowledge of awards and a full understanding of that part of the award for which they have responsibility. The Awarding Body will confirm this through examination of relevant CVs supported by relevant references
- be approved by the Awarding Body who must maintain records demonstrating how they meet the assessment strategy. The appointment of Internal Verifiers may require the prior approval of the Awarding Body
- meet any additional requirements as specified in the award specific annex.

Enhanced Quality Control

All Internal Verifiers must provide evidence of having verified:

- evidence supporting any key units (where specified in the award specific guidance) and evidence supporting at least one other unit from the award

or

- the evidence supporting at least two distinct units (or as documented in the Award Specific Guidance) for each award per annum.

As well as:

- all evidence from all simulations/simulators
- over time, an example of each unit the Assessor is qualified to assess
- over time, an example of each assessment method used in the centre
- evidence of internal verification.

Witnesses

There are no specific occupational expertise requirements for witnesses. Witness testimony can provide evidence to establish consistency in a candidate's practice and/or to evidence events which are difficult to plan to observe.

As the assessment decision lies with the Assessor, it is their responsibility to verify this and, where challenged, to justify their acceptance of third party 'witness testimony' to the Internal Verifier.

In order that the assessor may make an informed judgement about the contribution of the witness' testimony to the overall evidence presented for a unit or qualification, a statement of the witness' status should be included in the candidate's portfolio of evidence. This can be done by using the Witness Status list (form N/SVQ5) or including it as part of the witness testimony itself.

The statement should indicate the relationship between the candidate and the witness and should enable the assessor, by defining the role that the witness has played in the gathering of evidence (ie as colleague, worker from another organisation) to judge the extent of the witness' knowledge of the National Occupational Standards and understanding of the work roles involved.

Please note: The use of witness testimony from relatives or those with whom the candidate has a significant personal relationship is **not** acceptable.

Continuous Professional Development requirements

City & Guilds expects all those with formal roles in the assessment or verification process to participate in a minimum of two CPD activities per annum. This can be to update either vocational skills/knowledge or assessment/verification skills/knowledge.

7   Recording assessment and evidence

7.1   Data protection and confidentiality

Data protection and confidentiality

Data protection and confidentiality must not be overlooked when assessing candidates.

Centres offering the NVQs in Printing may need to provide City & Guilds with personal data for staff and candidates. Guidance on data protection and the obligations of City & Guilds and centres are explained in *Providing City & Guilds qualifications*.

Protecting identity

It is extremely important to protect the identity of the service users encountered by candidates in the work setting, eg customers, clients and patients.

Confidential information must **not** be included in candidate portfolios or assessment records. Confidential information should remain in its usual location, and a reference should be made to it in the portfolio or assessment records.

When recording evidence towards these qualifications, candidates are expected in particular to protect the identity of children in their care by disguising their names and that of the placement nursery.

Images of minors being used as evidence

If videos or photographs of minors (those under 18) are used as the medium to present evidence as part of the qualification, **both centre and candidate** have responsibilities for meeting child protection legislation.

It is the responsibility of the centre to inform the candidate of the:
- need to obtain permission from the minor's parent/guardian prior to collecting the evidence
- reasons and restrictions for using photographs or video recordings as evidence
- period of time for which the photographs or video recordings may be kept
- obligation to keep photographs or video recordings secure from unauthorised access
- secure electronic storage requirements of photographs or video recordings
- associated child protection legislation.

7   Recording assessment and evidence

7.2   Recording forms to use

City & Guilds has developed a set of *Recording forms* including examples of completed forms, for new and existing centres to use as appropriate (see *NVQ Guide **for centres and candidates - Recording forms**,* available on the City & Guilds website.

Although it is expected that new centres will use these forms, centres may devise or customise alternative forms, which must be approved for use by the external verifier, before they are used by NVQ candidates and assessors at the centre. City & Guilds also endorses the electronic recording systems *Quick Step* and *Paper Free*.

Amendable (MS Word) versions of the forms are available on the City & Guilds website.

8   The qualification structure
Level 3 NVQ in Machine Printing - Web Offset (5158-31)

To achieve the Level 3 NVQ in Machine Printing - Web Offset (5158-31) candidates must complete **all four** mandatory common units, plus **two** optional technical units.

Mandatory common units

301   Ensure your own actions reduce risks to health and safety in the workplace

302   Improve Individual and Organisational Performance

319   Control web offset printing machines

348   Maintain equipment in working order

Optional technical units

316   Control in-line converting machinery

317   Control ink drying machinery

318   Control auxiliary equipment

320   Control in-line printing units

321   Control reel handling equipment

322   Control in-line folding units

9 Relationships to other qualifications

9.1 Relationship to previous versions of the qualifications

City & Guilds has identified the connections to the NVQ previously offered by City & Guilds in this subject area.

This mapping is provided as guidance and suggests areas of overlap and commonality between the qualifications. It does **not** imply that candidates completing units in the forerunner qualification are automatically covering all of the content of the new NVQs listed in the mapping.

Relationship between this Level 3 NVQ in Machine Printing - Web Offset (5158-31) and the forerunner Level 3 NVQ in Machine Printing - Web Offset (5157-06)

Level 3 NVQ in Machine Printing - Web Offset (5158-31)	Level 2 NVQ in Machine Printing - Web Offset (5158-31)
Unit Number/Title	**Related units**
301 Ensure your own actions reduce risks to health and safety in the workplace	001 Reduce risks to health and safety in your workplace
302 Improve Individual and Organisational Performance	002 Develop yourself in your job
316 Control in-line converting machinery	230 Control in-line converting machinery
317 Control ink drying machinery	230 Control ink drying machinery
318 Control auxiliary equipment	233 Control auxiliary equipment
319 Control web offset printing machines	234 Control web offset printing machines
320 Control in-line printing units	232 Control in-line printing units
321 Control reel handling equipment	235 Control reel handling equipment
322 Control in-line folding units	236 Control in-line folding units
348 Maintain equipment in working order	004 Maintain equipment in working order

9 Relationships to other qualifications

9.2 Key skills

This qualification includes opportunities to develop and practise many of the underlying skills and techniques described in Part A of the standard for each key skills qualification in England, Northern Ireland and Wales.

Where candidates are working towards any key skills alongside this qualification they will need to be registered with City & Guilds for the key skills qualifications.

The 'signposts' below identify the **potential** for key skills portfolio evidence gathering that can be naturally incorporated into the completion of each unit. Any key skills evidence needs to be separately assessed and must meet the relevant standard defined in the QCA document 'Key skills qualifications standards and guidance'.

Please note: Key Skills Level 2 is illustrated as **2**
Key Skills Level 3 is illustrated as **3**

Unit number	Communication	Application of Number	Information Technology
301	3	2	2
302	3	2	
316		2	
317		2	
318		2	
319		2	
320		2	
321		2	
322		2	
348	2	2	2

Unit number	Problem Solving	Improving own learning and performance	Working With Others
301	3	3	2
302	3	3	3
316	3	3	2
317	3	3	2
318	3	3	2
319	3	3	2
320	3	3	2
321	3	3	2
322	3	3	2
348	3	3	2

10   About the National Occupational Standards (NOS)

Availability of standards

The units for the qualification follow.

They may also be obtained from the Printing and Graphic Communications industry section of the City & Guilds website.

11 The units

Unit 301 Ensure your own actions reduce risks to health and safety in the workplace

Introduction

Workplaces and work activities contain hazards that may create risks to the health and safety of workers and visitors. One of the key ways of minimising risk is to identify hazards, evaluate the risks from them, and implement a programme of action to reduce any risks to an acceptable level. This process is known as risk assessment.

This unit requires the candidate to identify the hazards in the workplace and reduce risks from those hazards by ensuring that actual working practice follows the advice and guidance contained in written documents such as the employer's workplace policies and procedures, the industry's codes of practice, suppliers' data sheets on use of substances harmful to health, etc.

Users of this unit must refer to the Knowledge and Understanding Glossary for the Printing suite of NOS for important definitions of terms used in this unit. Text in bold in this unit is defined more fully in the glossary.

There are **two** elements in this unit:

1   Element 301.1   Identify hazards and evaluate risks

2   Element 301.2   Reduce risks to health and safety in the workplace

This is what the unit covers

Fundamental to this unit is an understanding of the terms hazard and risk. This unit does not require the candidate to undertake a full risk assessment; it is about having an appreciation of significant risks in the workplace and knowing how to identify them and deal with them.

The Health and Safety Executive define a hazard as 'something with the potential to cause harm' and a risk is 'the likelihood of a hazard's potential being realised'. Each organisation should have its own risk control strategy and the candidate is required to work within this.

Almost anything may be a hazard, but it may or may not become a risk. For example: a trailing electrical cable from a piece of equipment is a hazard. If it is trailing across a passageway there is a high risk of someone tripping over it, but if it lies along a wall out of the way, the risk is much less.

Toxic or flammable chemicals stored in a building are a hazard, and by their nature may present a high risk. However, if they are kept in a properly designed secure store, and handled by properly trained and equipped people, the risk is much less than if they are left about in a busy workshop for anyone to use -or misuse.

The risks covered by this unit are those which could result from:

* the use or maintenance of machinery or equipment
* the use of materials or substances
* working practices which do not conform to laid down policies or codes of practice
* unsafe behaviour
* accidental breakages and spillages
* environmental factors.

Element 301.1 Identify hazards and evaluate risks in your workplace

Performance criteria

This is what you need to do:

1 correctly name and locate the person(s) responsible for health and safety in your workplace

2 identify which workplace policies and procedures are relevant to your working practices

3 identify those working practices in any part of your job role which could harm yourself or other persons

4 identify those aspects of the workplace which could harm yourself or other persons

5 evaluate which of the potentially harmful working practices and the potentially harmful aspects of the workplace are those with the highest risk to you or to others

6 report any hazards which present a high risk to the persons responsible for health and safety in the workplace

7 deal with hazards with a low risk in accordance with workplace policies and legal requirements.

Element 301.2 Reduce risks to health and safety in the workplace

Performance criteria

This is what you need to do:

1   carry out your working practices in accordance with legal requirements

2   follow the most recent workplace policies and procedures for your job role

3   rectify those health and safety risks within your capability and the scope of your job responsibilities

4   pass on any suggestions for reducing risks to health and safety within your job role to the responsible persons

5   make sure your personal conduct in the workplace does not endanger the health and safety of yourself or other persons

6   follow suppliers' or manufacturers' instructions for the safe use of equipment, materials or products

7   report any differences between workplace policies and procedures and suppliers / manufacturers instructions

8   make sure your personal presentation at work:

a   meets any legal duties

b   ensures the health and safety of yourself and others

c   is in accordance with workplace policies and procedures.

Unit 301 Ensure your own actions reduce risks to health and safety in the workplace

Knowledge and understanding

This is the knowledge and understanding you need to complete this unit successfully. For further detail you must refer to the Knowledge and Understanding Glossary for the Printing suite of National Occupational Standards.

K3 Health and Safety

1 Legal duties for health and safety in the workplace as defined by the relevant health and safety legislation

2 Your duties and responsibilities for health and safety as defined by any specific legislation covering your job role

3 Workplace policies and procedures

4 Working Practices

5 Hazards and risks in the workplace, their assessment and the action to take to deal with them

6 Hazards and risks in your own job, their assessment and the action to take to deal with them

7 Manufacturers' and suppliers' health and safety instructions / advice

8 Personal Presentation

9 How to stop a machine in the event of an emergency

K6 Communication

1 With colleagues

2 With visitors

K7 Workplace policy and practice

1 The working practices existing in the workplace

K21 Environmental

1 The legal requirements for the classification, storage, carriage and disposal of waste

2 Any specific environmental legislation that covers processes in your company

3 Control of pollution

K25 Cleaning, Lubrication and Maintenance

1 What is meant by the phrase 'safe system of work' and how it applies to cleaning, lubrication and maintenance activities

Unit 302   Improve individual and organisational performance

Introduction

In order to compete successfully, commercial businesses have to continuously improve their products and services; other kinds of organisations need to keep up to date with technology and best practice.

One of the ways in which organisations improve is by adopting a culture that encourages their people to take responsibility for improving their own and their organisation's performance. This often involves individuals acquiring new skills or expertise, taking on additional responsibilities and making improvements to working practices.

This unit is about regularly reviewing, planning, implementing and evaluating the success of objectives designed to improve your own performance as well as the performance of your organisation or team.

This unit consists of **three** elements:

1   Element 302.1   Evaluate and develop your own skills and expertise

2   Element 302.2   Improve customer service delivery

3   Element 302.3   Improve quality, productivity and team working within your organisation

This is what the unit covers

The first stage of the planning cycle involves review. You will need to involve colleagues at work and ideally customers. You should discuss which kinds of performance improvements are likely to benefit you and your organisation. Detailed notes should be kept to help in the preparation of an action plan.

Once you have collected sufficient constructive advice and ideas, you will need to discuss them with your manager and agree on the priorities. It is important to ensure that the objectives agreed are achievable.

The objectives that you agree with your manager should enable specific targets to be identified that can be written into an action plan. There must be a way of measuring any targets that you set and you should agree how they will be measured. It is also important to set out realistic timescale.

For the purpose of this unit, the action plan should include, as a minimum, proposals for:
- improvement to your own skills and knowledge
- improvement to customer service delivery
- improvements to quality, productivity and team working within your organisation.

Once agreed, the action plan should become a 'working' document – not one which is put away and forgotten about. You should frequently check progress towards achievement of the objectives, and make a note of any changes to the timescales that were previously agreed.

If the plan soon becomes out of date because, for example,

- all the targets or objectives are achieved very quickly
- it proves impossible to make progress towards any of the targets
- there is a change of strategy within your organisation
- operational changes affect your or your team's plans

you must go back to your manager and revise the plan as soon as it becomes apparent that major changes are necessary

It is perfectly normal to achieve some things in an action plan and not others. What is important is to honestly evaluate the progress made towards the entire plan at reasonable intervals – at least every three months, but more often if you wish -and then create a revised or a new plan for the next period.

Scope

To achieve this unit, it is not necessary to show that all objectives or targets in action plans have been met.

However, the evidence must show that action planning and review covering all the areas specified in this standard is a continuing activity over a reasonable timescale. It is unlikely that such evidence could be produced in less than six months.

The evidence must show that action plans have been used as working documents and updated regularly. A single action plan with little evidence of the cycle of review through to evaluation is also insufficient.

Element 302.1 Evaluate and develop your own skills and expertise

Performance criteria

This is what you need to do:

1 objectively assess your existing skills and expertise against current industry standards

2 identify ways in which you can improve your performance at work by improving your skills and expertise

3 seek constructive feedback from others on how your performance at work could be improved

4 identify with your manager areas for development to maintain and improve your own skills and expertise

5 set yourself improvement objectives which are specific and achievable

6 agree an action plan with your manager that includes realistic timescales and measurable targets

7 evaluate your progress and update your action plan regularly with your manager.

Element 302.2 Improve customer service delivery
Performance criteria

This is what you need to do:

1   check that the service you and your team give meets your customers' needs and expectations

2   where you or your team could have given better service to your customers identify how the service could have been improved

3   include in your personal action plan at least one target that should result in an improvement to the service you or your team give to customers

4   share relevant information with others in your team to improve your organisation's customer service delivery

5. provide evidence that the service you and / or your team give to customers has improved over time.

*customers in this context may be 'internal' or 'external' to the workplace

Element 302.3 Improve quality, productivity and team working within your organisation

Performance criteria

This is what you need to do:

1 periodically identify possible improvements to the quality of your organisation's products or services by improvements to:

    a   your organisation's systems or procedures

    b   your own skills or expertise

    c   your organisation's resources

    d   team working within your organisation

2 periodically identify possible improvements to your organisation's productivity by improvements to:

    a   your organisation's systems or procedures

    b   your own skills or expertise

    c   your organisation's resources

    d   team working within your organisation

3 discuss with your manager the improvements to quality, productivity and team working that you have identified

4 include in your personal development plan at least one target that might contribute to improvements in your organisation's quality of product / service, productivity and team working

5 provide evidence that the quality of product or service, productivity and team working within your organisation has been maintained or improved over time.

Unit 302 Improve individual and organisational performance

Knowledge and understanding

This is the knowledge and understanding you need to complete this unit successfully. For further detail you must refer to the Knowledge and Understanding Glossary for the Printing suite of National Occupational Standards.

K6   Communication

1   With colleagues

2   With customers

K7   Workplace policy and practice

1   Workplace objectives, priorities, standards and procedures

2   The range of work carried out in the workplace

3   The working practices existing in the workplace

4   The key job roles within the printing and graphic communications industry and their main purposes

K8   The identification and assessment of printing options

1   The reasons for selecting one process over another

2   The choice of processes for any particular product

3   The stages in the printing process from pre-press to printed product

K9   Time and Resources

1   The different types of resource, including labour, materials, machinery

2   The relationship between resource usage and profitability

3   How to maximise productivity

4   The relationship between productivity and competitiveness

K20   Management

1   Target-setting

2   Problem solving

3   Ways of presenting and describing workplace activities

4   Business Improvement Techniques

K22   Quality Assurance and Control

1   The main features of quality assurance and quality control systems

2   Techniques for controlling quality, including inspection, testing, sampling, use of input and output controls

3   Equipment for controlling quality in printing

K27   Personal Development

1   The principles of personal development planning and training

2   Developing people at work

Unit 316   Control in-line converting equipment

Introduction

To achieve your unit certificate, you must show that you can:

1   Element 316.1   Set up in-line converting equipment

2   Element 316.2   Monitor and run in-line converting equipment

3   Element 316.3   Diagnose and correct faults in in-line converting equipment

This is what the unit covers:
- identifying the job requirements;
- setting in-line converting equipment;
- checking that safety devices are working properly;
- running in-line converting equipment safely;
- checking and adjusting settings, where necessary to maintain production
- checking that work meets the required standard;
- identifying faults and taking action to deal with them.

Note: In-line converting equipment is any unit which is run in line with the printing machine, and which is used to cut, fold or enhance the product, including:
- trimming
- in-line slitting
- die cutting
- punching
- perforating
- creasing
- folding
- laminating
- embossing - foil blocking
- varnishing

Your performance evidence must show that you have covered all of the statements in each element, and must be the result of real work activities in actual production situations. Simulation is **not** acceptable for this unit.

Your assessor will need to be satisfied that you have the necessary understanding specified in each 'K' list. Where this is not evident from your performance, you may be asked oral or written questions, or to write a short report.

You may need to provide other information to support your performance evidence. Here are some examples:

- a photocopy of the job instructions
- a photocopy of the documentation confirming all the materials used in the production of the job
- samples of the job including a signed pass copy
- samples of running faults as they arise
- a written or spoken report describing faults, their causes and how you corrected them.

Element 316.1 Set up in-line converting equipment
Performance Criteria

You must be able to:

1 check that you have all the details you need for the job

2 check that the work area is safe and ready for production

3 accurately identify:

    a the quality standards to be achieved

4 set up the converting unit(s) to run efficiently and safely, so that:

    a the material feeds squarely and centrally at the rate required

    b the quality of the converted materials meets your company's standards waste is kept to the minimum

    c an accurate count of output is made

5 produce a sample from the machine and check that it matches the required standards

6 make adjustments when the standards are not met

7 report promptly to your manager, if the standards cannot be met

8 check that operators understand the requirements of the job.

Element 316.1 Set up in-line converting equipment

Knowledge and Understanding

You must understand:

K1   your company's quality standards

K2   the principles of in-line converting

K3   the risks associated with running in-line converting equipment and how to avoid them

K4   the emergency shutdown procedures

K5   what factors can affect the condition of materials during converting operations

K6   common converting methods and schemes

K7   the operating units on the in-line converting equipment and their function

K8   what production and quality assurance records you are required to keep.

Element 316.1 Set up in-line converting equipment
Performance evidence

You must show that you can make ready in-line converting equipment consistently over a period of time. Your evidence must show that:

R1   you set up for converting:

a   printed coated papers

b   printed uncoated papers

c   printed card

R2   by operating at least **one** of the following types of in-line converting processes:

a   cutting

b   forming

c   enhancing

R3   you test and adjust equipment by:

a   visual inspection

b   checking control settings

c   producing a sample run.

Element 316.2 Monitor and run in-line converting equipment
Performance criteria

You must be able to:

1   run in-line converting equipment:

      a   at the required speed

      b   safely and efficiently

2   keep up the supply of materials throughout the run

3   regularly check that quality standards are met

4   continuously monitor the safe and efficient operation of equipment

5   regularly check that operators are using safe and efficient working practices

6   give operators practical support, when they require it, to meet production requirements

7   check regularly that converted materials are forwarded to their correct destination

8   accurately record the production and quality assurance details required.

Element 316.2 Monitor and run in-line converting equipment
Knowledge and understanding

You must understand:

K1   your company's quality standards

K2   the principles of in-line converting

K3   the risks associated with running in-line converting equipment and how to avoid them

K4   the emergency shutdown procedures

K5   what factors can affect the condition of materials during converting operations

K6   common converting methods and schemes

K7   the operating units on the in-line converting equipment and their function

K8   what production and quality assurance records you are required to keep.

Element 316.2 Monitor and run in-line converting equipment
Performance evidence

You must show that you can monitor and run in-line converting equipment consistently over a period of time. Your evidence must show that:

R1   you monitor the throughput of at least **one** of the following types of material:

      a   printed coated papers

      b   printed uncoated papers

      c   printed card

R2   … by controlling at least **one** of the following types of in-line converting processes:

      a   cutting

      b   forming

      c   enhancing.

Element 316.3 Diagnose and correct faults in in-line converting equipment

Performance criteria

You must be able to:

1   accurately identify the cause of problems which:

      a   reduce the rate of output

      b   cause damage or distortion to the end product

      c   affect the efficient operation of equipment

      d   create risks to health and safety

2   promptly correct faults which it is your job to correct

3   promptly report faults which it is not your job to correct

4   co-operate with colleagues who are responsible for correcting faults

5   check that machines are safe to run, once faults are corrected

6   keep accurate records of any recurring machine faults equipment consistently, over a period of time.

Element 316.3 Diagnose and correct faults in in-line converting equipment

Knowledge and understanding

You understand:

K1   the risks associated with operating in-line converting equipment and how to avoid them

K2   the common in-line converting equipment faults, what causes them and how to correct them

K3   how to recognise when you should correct faults yourself and when you should ask for help

K4   to whom you must report faults

K5   what records of faults you are required to keep for your company

K6   how to assist others who are correcting faults on your machines.

Element 316.3 Diagnose and correct faults in in-line converting equipment

Performance evidence

You must show that you can diagnose and correct faults in in-line converting equipment consistently, over a period of time. Your evidence must show that:

R1 you identify and report the following types of fault:

    a   damage to output

    b   output out of specification

    c   recurring machine faults

    d   machine faults which require others' expertise to correct

R2 you communicate with:

    a   colleagues in your team

    b   your manager

    c   maintenance staff.

Unit 317   Control ink drying machinery

Introduction

To achieve your unit certificate, you must show that you can:

1   Element 317.1   Set up ink drying machinery

2   Element 317.2   Monitor and run ink drying machinery

3   Element 317.3   Diagnose and correct faults in ink drying machinery

This involves:

- identifying the job requirements
- setting ink drying machinery
- checking that safety devices are working properly
- running ink drying machinery safely
- adjusting settings, where necessary to maintain the required standard
- checking that work meets the required standard
- identifying faults and taking action to deal with them.

Collecting the evidence for this unit

Your performance evidence must show that you have covered all of the statements in each element, and must be the result of real work activities in actual production situations. Simulation is **not** acceptable for this unit.

Your assessor will need to be satisfied that you have the necessary understanding specified in each 'K' list. Where this is not evident from your performance, you may be asked oral or written questions, or to write a short report.

You may need to provide other information to support your performance evidence. Here are some examples:

- a photocopy of the job instructions
- a photocopy of the documentation confirming all the materials used in the production of the job
- samples of the job including a signed pass copy
- samples of running faults as they arise
- a written or spoken report describing faults, their causes and how you corrected them.

Element 317.1 Set up ink drying machinery
Performance criteria

You must show that you:

1   check that you have all the details you need for the job

2   check that you have enough materials of the right type for the job

3   check that your work area is safe and ready for production

4   set up the drying unit(s) efficiently and safely, so that:

      a   the correct temperature is achieved and maintained

      b   dryers are thoroughly mixed into the ink and do not exceed

      c   company and legal requirements

      d   ink sets and hardens at the rate required for production

      e   waste is kept to the minimum

5   clearly tell operators the production requirement.

Element 317.1 Set up ink drying machinery
Knowledge and Understanding

You must understand:

K1   what details you need for the job

K2   the principles of ink curing and drying

K3   the operating units on the machinery and what settings are required

K4   the sequence of make ready tasks for your machine

K5   the drying and curing methods to use

K6   the risks associated with operating ink drying equipment and how to avoid them

K7   the common fault which can occur when operating the equipment, what causes them and how to prevent them

K8   the emergency shutdown procedures period of time.

Element 317.1 Set up ink drying machinery
Performance evidence

You must show that you can make ready ink drying machinery consistently over a period of time. Your evidence must show that:

R1   you can set up for at least **one** of the following types of ink drying processes:

         a   UV curing

         b   water based UV curing

         c   catalytic curing

         d   evaporation.

Element 317.2 Monitor and run ink drying machinery
Performance criteria

You must show that you:

1   run drying machinery:

      a   at the required speed

      b   safely and efficiently

2   keep up the supply of materials throughout the run

3   inspect output regularly to check that:

      a   ink setting and hardening rates meet production requirements

      b   the correct temperature is maintained throughout the run

      c   the quality of the image is maintained during drying activities

      d   the drying unit operates safely and efficiently

4   continuously monitor the safe and efficient operation of equipment

5   regularly check that operators are using safe and efficient working practices

6   give operators practical support, when they require it to meet production requirements

7   accurately record the production and quality assurance details required.

Element 317.2 Monitor and run ink drying machinery
Knowledge and understanding

You must understand:

K1   the principles of ink curing and drying

K2   your company's quality standards

K3   the risks associated with operating ink drying units and how to avoid them

K4   the emergency shutdown procedures

K5   why it is important to maintain the quality of the image throughout the process

K6   what production and quality assurance records you are required to keep.

Element 317.2 Monitor and run ink drying machinery
Performance evidence

You must show that you can monitor and run ink drying equipment consistently over a period of time. Your evidence must show that:

R1   you monitor and control at least **one** of the following processes:

      a   UV curing

      b   water based UV curing

      c   catalytic curing

      d   evaporation.

Element 317.3 Diagnose and correct faults in ink drying machinery

Performance criteria

You must show that you:

1 accurately identify the cause of problems which:

a affect the quality of the product

b produce a shortfall in output

c affect the efficient operation of equipment

d create risks to health and safety

2 promptly correct faults which it is your job to correct

3 report promptly any faults which it is not your job to correct

4 check that machines are safe to run, once faults are corrected

5 keep accurate records of recurring machine faults.

Element 317.3 Diagnose and correct faults in ink drying machinery

Knowledge and understanding

You understand:

K1   what safe working practices and efficient working methods to use

K2   the risks associated with operating ink drying/curing equipment and how to avoid them

K3   the emergency shut down procedures

K4   what records you must keep

K5   the common faults which can occur when operating the equipment, what causes them and how to correct them

K6   what other faults can occur when running lithographic printing machines

K7   how to recognise when you should correct faults yourself and when you should ask for help

K8   to whom you must report faults

K9   how to assist others who are correcting faults on your machines.

Element 317.3 Diagnose and correct faults in ink drying machinery

Performance evidence

You must show that you can diagnose and correct faults in in-line ink drying equipment consistently, over a period of time. Your evidence must show that:

R1   you identify and report the following types of fault:

      a   damage to output

      b   output out of specification

      c   recurring machine faults

      d   machine faults which require others' expertise to correct

R2   you co-operate with:

      a   colleagues in your team

      b   your manager

      c   maintenance staff.

Unit 318　　　Control auxiliary equipment

Introduction

To achieve your unit certificate, you must show that you can:

1　　Element 318.1　Co-ordinate the preparation of auxiliary equipment for production

2　　Element 318.2　Monitor and run auxiliary equipment

3　　Element 318.3　Diagnose and correct faults in auxiliary equipment

This involves:
- identifying the job requirements
- checking that safety devices are working properly
- setting up auxiliary equipment
- running machinery safely
- adjusting settings, where necessary to maintain the required standard
- checking that work meets the required standard
- identifying faults and taking action to deal with them.

Note: Auxiliary equipment is any piece of equipment which is run in line with the printing machine, and which is not an integral part of the printing machine itself: that is, if the press will not work without the equipment, it cannot be called auxiliary. Items of auxiliary equipment include:
- stapler unit
- folder controls
- fount tank
- turbo
- ink supply
- domino
- corona treating
- video web inspection
- web guide
- gravure coating
- sheeting
- sprocket.

Collecting the evidence for this unit
Your performance evidence must show that you have covered all of the statements in each element, and must be the result of real work activities in actual production situations. Simulation is **not** acceptable for this unit.

Your assessor will need to be satisfied that you have the necessary understanding specified in each 'K' list. Where this is not evident from your performance, you may be asked oral or written questions, or to write a short report.

You may need to provide other information to support your performance evidence. Here are some examples:

- a photocopy of the job instructions
- a photocopy of the documentation confirming all the materials used in the production of the job
- samples of the job including a signed pass copy
- samples of running faults as they arise
- a written or spoken report describing faults, their causes and how you corrected them.

Element 318.1 Co-ordinate the preparation of auxiliary equipment for production

Performance criteria

You must show that you:

1   check that you have all the details you need for the job

2   check that you have enough materials of the right type for the job

3   accurately identify:

   a   the job requirements

   b   the quality standards to be achieved

4   clearly tell operators the production requirement

5   confirm, through monitoring and inspection, that:

   a   auxiliary equipment is correctly synchronised with printing machines

   b   output can be achieved at the rate required

   c   the machine runs at the required speed

   d   waste is kept to the minimum

6   check that the equipment is safe to operate, before production starts.

Element 318.1 Co-ordinate the preparation of auxiliary equipment for production

Knowledge and understanding

You must understand:

K1   what details you need for the job

K2   the operating units on the equipment and what settings are required

K3   the emergency shut down procedures

K4   your company's procedures for set up, including safe working practices

K5   the risks associated with making ready auxiliary equipment and how to avoid them

K6   the location of switches, isolators and machine controls

K7   the common faults which can occur when operating the equipment, what causes them and how to prevent them.

Element 318.1 Co-ordinate the preparation of auxiliary equipment for production

Performance evidence

You must show that you can co-ordinate the preparation of auxiliary equipment for production consistently over a period of time. Your evidence must show that:

R1   you can monitor the preparation of auxiliary equipment when at least **one** of the following types of material is used:

    a   printed coated papers

    b   printed uncoated papers

    c   printed card

    d   plastic

    e   wallcoverings

R2   you determine action to remedy faults:

    a   to be taken by yourself

    b   to be taken by others.

Element 318.2 Monitor and run auxiliary equipment
Performance criteria

You must show that you:

1   inspect output sufficiently to check that:

    a   synchronisation with printing machines is maintained

    b   the machine runs at the required production speed

    c   the machine operates safely and efficiently

    d   waste is kept to a minimum

2   regularly check that operators are using safe and efficient working practices

3   regularly check that finished work is forwarded within the timescales set out in the production schedule

4   give operators practical support, when they require it to meet production requirements

5   accurately record the production and quality assurance details required.

Element 318.2 Monitor and run auxiliary equipment

Knowledge and understanding

You must understand:

K1   your company's quality standards

K2   the operation of auxiliary equipment

K3   what safe working practices and efficient working methods to use

K4   the risks associated with operating auxiliary units and how to avoid them

K5   your company's equipment safety procedures

K6   why it is important to maintain the quality of the image throughout the process

K7   what production and quality assurance records you are required to keep

K8   your company's equipment safety procedures.

Element 318.2 Monitor and run auxiliary equipment
Performance evidence

You must show that you can monitor and run auxiliary equipment consistently over a period of time. Your evidence must show that:

R1   you monitor and control auxiliary equipment when at least **one** of the following is used:

     a   printed coated papers

     b   printed uncoated papers

     c   printed card

     d   plastic

     e   wallcoverings.

Element 318.3 Diagnose and correct faults in auxiliary equipment

Performance criteria

You must show that you:

1   accurately identify the cause of problems which:

     a   affect the quality of the product

     b   produce a shortfall in output

     c   affect the efficient operation of equipment

     d   create risks to health and safety

2   determine logically the action required to remedy faults and solve problems

3   promptly correct faults which it is your job to correct

4   promptly report any faults which it is not your job to correct

5   co-operate with colleagues who are responsible for correcting faults

6   check that machines are safe to run, once faults are corrected

7   keep accurate records of recurring machine faults.

Element 318.3 Diagnose and correct faults in auxiliary equipment

Knowledge and understanding

You understand:

K1   what safe working practices and efficient working methods to use

K2   the risks associated with operating auxiliary equipment and how to avoid them

K3   the emergency shut down procedures

K4   what records of faults you must keep

K5   the common faults which can occur when operating the equipment, what causes them and how to correct them

K6   what other faults can occur when running auxiliary equipment

K7   how to recognise when you should correct faults yourself and when you should ask for help

K8   to whom you must report faults

K9   how to assist others who are correcting faults on your machines.

Element 318.3 Diagnose and correct faults in auxiliary equipment

Performance evidence

You must show that you can diagnose and correct faults in auxiliary equipment consistently, over a period of time. Your evidence must show that:

R1   you can identify:

    a   setting faults

    b   equipment faults

R2   you determine action to remedy faults:

    a   to be taken by yourself

    b   to be taken by others

R3   you co-operate with:

    a   colleagues in your team

    b   your manager

    c   maintenance staff.

Unit 319   Control web offset printing machines

Introduction

To achieve your unit certificate, you must show that you can:

1   Element 319.1   Make web offset machines ready for production

2   Element 319.2   Produce a good start up copy

3   Element 319.3   Monitor and run web offset printing machines

4   Element 319.4   Diagnose and correct faults in web offset machines

This involves:
- identifying the job requirements
- setting the print quality standard
- checking that safety devices are working properly
- deciding when to start up the machine
- checking that start up copy meets the quality standard for the job
- running web offset printing machines safely
- adjusting settings, where necessary to maintain the required standard
- checking that work meets the required standard
- identifying faults and taking action to deal with them.

Collecting the evidence for this unit

Your performance evidence must show that you have covered all of the statements in each element, and must be the result of real work activities in actual production situations. Simulation is **not** acceptable for this unit.

Your assessor will need to be satisfied that you have the necessary understanding specified in each 'K' list. Where this is not evident from your performance, you may be asked oral or written questions, or to write a short report.

You may need to provide other information to support your performance evidence. Here are some examples:
- a copy of the job instructions
- a photocopy of documentation confirming all materials requirements for the production of the job
- samples of the job taken at various stages during the run, up to a signed pass sheet
- samples of running faults as they arise
- a written or spoken report describing faults, their causes and how you corrected them.

Element 319.1 Make web offset machines ready for production

Performance criteria

You must show that you:

1   check that you have all the details you need for the job

2   check that you have enough materials and reels of the right type for the job

3   check that your work area is safe and ready for production

4   check that the general condition of the plate is suitable for production and meets the job imposition requirements

5   correctly complete pre-run checks to confirm that the machine can run normally and safely

6   web up the machine to the required settings

7   make ready the machine for production, so that:

    a   plates are located correctly and mounted securely

    b   ink duct settings are correct for the job

    c   folders are set correctly

8   clearly explain and allocate tasks and responsibilities to members of the press crew

9   check that make ready tasks done by others have been completed satisfactorily.

Element 319.1 Make web offset machines ready for production

Knowledge and understanding

You must understand:

K1   what details you need for the job

K2   the sequence of make ready tasks for your machine

K3   why the condition of plates must meet the job imposition requirements

K4   why it is important:

      a   to follow the sequence of make ready tasks

      b   to explain and allocate make ready tasks clearly

      c   to check that make ready tasks have been completed satisfactorily

K5   how to operate web offset machines safely

K6   how to handle materials safely

K7   the emergency shut down procedures

K8   how to use quality control guides

K9   the compatibility of inks with the substrate

K10   the types of plates and inks in general use

K11   the common web offset printing faults, what causes them and how to prevent them.

Element 319.1 Make web offset machines ready for production

Performance evidence

You must show that you can make web offset printing machines ready for production consistently over a period of time. Your evidence must show that:

R1   you can set the print standard for at least **three** of the following types of image:

      a   fine line and text

      b   coarse line and solid

      c   halftone

      d   colour process

R2   … and at least **one** of the following registers:

      a   fine register wet-on-wet overprint

      b   close back-up register

R3   …. on coated or uncoated paper

R4   … either:

      a   perfected

      or

      b   backed

R5   … with at least **two** of the following folds:

      a   former fold

      b   single cross fold

      c   double parallel cross fold

      d   quarter fold

R6   … and produced on:

      a   single web

      or

      b   multi web.

Element 319.2 Produce a good start up copy
Performance criteria

You must show that you:

1   check that:

    a   all safety devices are in place and working correctly

    b   your crew and work area are ready for start-up

2   apply the correct procedures to start up the machine and raise its speed

3   produce and inspect start up copy to check that:

    a   each page and the page sequence matches the imposition requirements

    b   line and back-ups are set to fit

    c   the colour fall gives the desired result

    d   the web position and tension is correct

    e   the register is correct

    f   the folder gives a consistent copy stream to the gripper conveyer

4   inspect start up copy speedily to avoid unnecessary delays in going to full production

5   make adjustments when quality standards are not met

6   promptly report to your manager any difficulties in achieving good copy which you cannot resolve.

Element 319.2 Produce a good start up copy
Knowledge and understanding

You must understand:

K1   the principles of web offset printing

K2   the press start-up procedures

K3   start-up waste constraints

K4   the scope and limits of your responsibilities for start-up

K5   your company's quality standards

K6   the colour fall required to meet the job imposition requirements

K7   the types of adjustments which can be made, and when to make them:

        a   to achieve ink water balance

        b   to achieve fit and register

K8   why it is important to inspect start up copy speedily, and the implications of downtime for the production schedule

K9   how to handle materials safely

K10   the emergency shut down procedures

K11   how to use quality control guides.

Element 319.2 Produce a good start up copy

Performance evidence

You must show that you can produce good start-up copy consistently over a period of time. Your evidence must show that:

R1   you can inspect the quality of at least **three** of the following types of image:

      a   fine line and text

      b   coarse line and solid

      c   halftone

      d   colour process

R2   ... and the quality of at least **one** of the following registers:

      a   fine register wet-on-wet overprint

      b   close back-up register

R3   ... on coated or uncoated paper

R4   ... either:

      a   perfected

      or

      b   backed

R5   ... with at least **two** of the following folds:

      a   former fold

      b   single cross fold

      c   double parallel cross fold

      d   quarter fold

R6   ... and produced on:

      a   single web

      or

      b   multi web.

Element 319.3 Monitor and run web offset printing machines
Performance criteria

You must show that you:

1   run web offset printing machines:

     a   at the required speed

     b   safely and efficiently

2   correctly load and unload materials

3   keep up the supply of materials throughout the run

4   check regularly that:

     a   the colour register consistently meets the standard set for the job

     b   registers meet your company's standard

     c   the correct web running position and tension is maintained throughout the run

     d   the copy stream meets the conveyor requirements

     e   auxiliary equipment operates correctly

5   make the correct running adjustments to achieve the standard set for the job

6   issue clear instructions to members of the crew to make adjustments when the colour register does not meet requirements

7   check regularly, throughout the run, that crew members work meets your company's standards

8   follow the correct procedures for the removal of waste

9   accurately record the production and quality assurance details required.

Element 319.3 Monitor and run web offset printing machines
Knowledge and understanding

You must understand:

K1   your company's quality standards

K2   the principles of web offset printing

K3   the scope and limits of your responsibilities for leading the press crew

K4   the risks associated with web offset printing and how to avoid them

K5   what efficient working practices you and operators under your control should use

K6   how to use quality control guides

K7   the different types of substrate and their common problems

K8   the different types of inks and their uses

K9   the procedures for the removal of waste from your machine

K10   what production and quality assurance records you are required to keep.

Element 319.3 Monitor and run web offset printing machines
Performance evidence

You must show that you can monitor and run web offset printing machines consistently over a period of time. Your evidence must show that:

R1   you can maintain the supply of:

    a   paper

    b   ink

    c   fountain solution

R2   you can operate the following machine controls:

    a   register

    b   ink duct

    c   metering

    d   substrate

R3   you can control the quality of print, using:

    a   register controls

    b   impression controls

    c   ink metering controls

    d   substrate feeding controls

    e   colour checking equipment

R4   ... and you can use the following adjustment methods:

    a   manual

    b   automatic

R5   ... and at least **two** of the following methods of checking:

    a   visual inspection

    b   measurement

    c   electronic monitoring.

Element 319.4 Diagnose and correct faults in web offset machines

Performance criteria

You must show that you:

1 accurately identify the cause of problems which:

    a   affect the quality of the image

    b   reduce the rate of output

    c   create risks to health and safety

    d   produce waste

2 promptly correct faults which it is your job to correct

3 delegate fault correction to members of the crew according to their responsibilities and ability to deal with the fault

4 promptly report faults which it is not your job to correct

5 co-operate with colleagues who are responsible for correcting faults

6 check that fault correction work by members of the crew has removed the fault

7 check that machines are safe to operate, once faults are corrected.

Element 319.4 Diagnose and correct faults in web offset machines

Knowledge and understanding

You must understand:

K1   the common web offset machine faults, what causes them and how to correct them

K2   common faults which can affect the quality of the image

K3   common faults in inks and substrates

K4   what other faults can occur when running web-offset machines

K5   methods of fault finding and correction

K6   how to recognise when you should correct faults yourself and when you should ask for help

K7   to whom you must report faults

K8   how to assist others who are correcting faults on your machine

K9   how to calculate the effects of downtime on your schedule.

Element 319.4 Diagnose and correct faults in web offset machines

Performance evidence

You must show that you can diagnose and correct faults in web offset machines consistently over a period of time. Your evidence must show that:

R1   you can take the following types of action to identify problems:

    a   examining printed output

    b   checking machine settings

    c   examination of materials supplied

    d   checking the condition and operation of the machine

R2   you can use the following methods to test output:

    a   visual

    b   touch

    c   electronically aided.

Unit 320   Control in-line printing units
Introduction

To achieve your unit certificate, you must show that you can:

1   Element 320.1   Set up in-line printing units

2   Element 320.2   Monitor and run in-line printing units

3   Element 320.3   Diagnose and correct faults in in-line printing units

This involves:
- identifying the job requirements
- setting printing machinery
- checking that safety devices are working properly
- running printing machinery safely
- adjusting settings, where necessary to maintain the required standard
- checking that work meets the required standard
- identifying faults and taking action to deal with them.

Collecting the evidence for this unit
Your performance evidence must show that you have covered all of the statements in each element, and must be the result of real work activities in actual production situations. Simulation is **not** acceptable for this unit.

Your assessor will need to be satisfied that you have the necessary understanding specified in each 'K' list. Where this is not evident from your performance, you may be asked oral or written questions, or to write a short report.

You may need to provide other information to support your performance evidence. Here are some examples:
- a photocopy of the job instructions
- a photocopy of the documentation confirming all the materials used in the production of the job
- samples of the job including a signed pass copy
- samples of running faults as they arise
- a written or spoken report describing faults, their causes and how you corrected them.

Element 320.1 Set up in-line printing units

Performance criteria

You must show that you:

1 check that you have all the details you need for the job

2 check that you have enough materials of the right type for job

3 check that the work area is safe and ready for production

4 set up the printing unit(s) efficiently and safely, so that:

    a the image quality meets production requirements

    b the machine runs at the required speed

    c waste is kept to the minimum

5 produce a sample from the machine and check that it matches the required standards

6 make adjustments when standard are not met

7 report promptly to your manager, if the standards cannot be met

8 clearly tell operators the production requirement.

Element 320.1   Set up in-line printing units

Knowledge and understanding

You must understand:

K1   what details you need for the job

K2   the sequence of set up tasks on the printing machine

K3   the risks associated with operating printing machinery and how to avoid them

K4   the emergency shutdown procedures

K5   the common faults which can occur when setting up printing units, what causes them and how to prevent them.

Element 320.1   Set up in-line printing units
Performance evidence

You must show that you can make ready in-line printing units consistently over a period of time. Your evidence must show that:

R1   you can set up for the following types of image:

      a   fine line and text

      b   coarse line and solid

      c   halftone

R2   ... and the following types of register:

      a   fine register wet-on-wet overprint

      b   close backup register

R3   ... to be printed on at least **one** of the following:

      a   printed coated papers

      b   printed uncoated papers

      c   printed card

      d   plastic

      e   wallcoverings.

Element 320.2 Monitor and run in-line printing units
Performance criteria

You must show that you:

1 run printing machinery:

   a   at the required speed

   b   safely and efficiently

2 keep up the supply of materials throughout the run

3 inspect output sufficiently to check that:

   a   the quality of the image is maintained

   b   the machine runs at the required production speed

   c   the machine operates safely and efficiently

   d   waste is kept to a minimum

4 regularly check that operators are using safe and efficient working practices

5 regularly check that finished work is forwarded within the timescales set out in the production schedule

6 give operators practical support, when they require it to meet production requirements

7 accurately record the production and quality assurance details required.

Element 320.2 Monitor and run in-line printing units
Knowledge and understanding

You must understand:

K1   your company's quality standards

K2   the principles of operating printing machines

K3   the risks associated with operating printing units and how to avoid them

K4   your company's equipment safety procedures

K5   why it is important to maintain the quality of the image throughout the run

K6   what production and quality assurance details you are required to keep.

Element 320.2 Monitor and run in-line printing units

Performance evidence

You must show that you can monitor and run in-line printing units consistently over a period of time. Your evidence must show that:

R1   you monitor and control the output of at least **one** of the following types of material:

      a   printed coated papers

      b   printed uncoated papers

      c   printed card

      d   plastic

      e   wallcoverings.

Element 320.3 Diagnose and correct faults in in-line printing units

Performance criteria

You must show that you:

1 accurately identify the cause of problems which:

    a affect the quality of the image

    b produce a shortfall in output

    c affect the efficient operation of equipment

    d create risks to health and safety

2 promptly correct faults that it is your job to correct

3 promptly report faults that it is not your job to correct

4 check that machines are safe to run, once faults are corrected

5 keep accurate records of recurring machine faults.

Element 320.3 Diagnose and correct faults in in-line printing units

Knowledge and understanding

You understand:

K1   the risks associated with operating printing equipment and how to avoid them

K2   the common faults which can occur when operating the equipment, what causes them and how to correct them

K3   what other faults can occur when running printing units

K4   how to recognise when you should correct faults yourself and when you should ask for help

K5   to whom you must report faults

K6   how to assist others who are rectifying faults on your machines

K7   what records you must keep.

Element 320.3 Diagnose and correct faults in in-line printing units

Performance evidence

You must show that you can diagnose and correct faults in in-line printing units consistently, over a period of time. Your evidence must show that:

R1   you identify and report the following types of fault:

    a   damage to output

    b   output out of specification

    c   recurring machine faults

    d   machine faults which require others' expertise to correct

R2   you co-operate with:

    a   colleagues in your team

    b   your manager

    c   maintenance staff.

Unit 321 Control reel-handling equipment

Introduction

To achieve your unit certificate, you must show that you can:

1 Element 321.1 Set up reel-handling equipment for production

2 Element 321.2 Monitor and run reel-handling equipment

3 Element 321.3 Diagnose and correct faults in reel-handling equipment

This involves:
- identifying the job requirements
- checking that safety devices are working properly
- setting up reel-handling equipment
- running machinery safely
- adjusting settings, where necessary to maintain the required standard
- checking that work meets the required standard
- identifying faults and taking action to deal with them.

Collecting the evidence for this unit

Your performance evidence must show that you have covered all of the statements in each element, and must be the result of real work activities in actual production situations. Simulation is **not** acceptable for this unit.

Your assessor will need to be satisfied that you have the necessary understanding specified in each 'K' list. Where this is not evident from your performance, you may be asked oral or written questions, or to write a short report.

You may need to provide other information to support your performance evidence. Here are some examples:
- a photocopy of the job instructions
- a photocopy of the documentation confirming all the materials used in the production of the job
- samples of the job
- samples of running faults as they arise
- a written or spoken report describing faults, their causes and how you corrected them.

Element 321.1 Set up reel-handling equipment for production
Performance criteria

You must show that you:

1   check that you have all the details you need for the job

2   check that you have enough materials of the right type for the job

3   clearly tell operators the production requirement

4   confirm, through monitoring and inspection, that:

a   reels are prepared correctly for production

b   the equipment operates smoothly and efficiently

c   sufficient reels are available for production

5   report promptly and clearly to your manager any difficulties in achieving output, which you cannot resolve

6   check that the equipment is safe to operate, before production starts.

Element 321.1 Set up reel-handling equipment for production

Knowledge and understanding

You must understand:

K1   what details you need for the job

K2   the types of reel used in your company

K3   what settings are required

K4   why it is important to check that reels have been prepared correctly

K5   the sequence of reel preparation tasks

K6   the risks associated with operating reel-handling equipment and how to avoid them

K7   the types of faults which can occur when preparing and using reels and how to prepare them

K8   common defects in reels and the substrate they carry and how to deal with them

K9   the emergency shutdown procedures.

Element 321.1 Set up reel-handling equipment for production

Performance evidence

You must show that you can set up reel-handling equipment for production consistently over a period of time. Your evidence must show that:

R1   you can set up least **one** of the following:

      a   semi-automatic reel handling equipment

      b   fully automatic operator controlled reel handling equipment

      c   fully automatic computer controlled reel handling equipment (robots)

R2   you test equipment by:

      a   visual inspection

      b   checking control settings.

Element 321.2 Monitor and run reel-handling equipment
Performance criteria

You must show that you:

1   check regularly that:

   a   the correct number and type of reels is delivered and recovered at the times required

   b   reels are fitted and replaced safely and securely without damage to the reel or machines

   c   reels are handled, fitted and retrieved without damage to material or equipment

2   regularly check that operators are using safe and efficient working practices

3   give operators practical support, when they require it to meet production requirements

4   keep accurate records of job details.

Element 321.2 Monitor and run reel-handling equipment
Knowledge and understanding

You must understand:

K1   the production requirements

K2   the operation of reel-handling equipment

K3   what safe working practices and efficient working methods to use

K4   the risks associated with operating reel-handling units and how to avoid them

K5   your company's equipment safety procedures

K6   your company's quality standards

K7   what production and quality assurance records you are required to keep

K8   your company's equipment safety procedures.

Element 321.2 Monitor and run reel-handling equipment
Performance evidence

You must show that you can monitor and run reel-handling equipment consistently over a period of time. Your evidence must show that:

R1   you monitor and run at least **one** of the following:

      a   semi-automatic reel handling equipment

      b   fully automatic operator controlled reel handling equipment

      c   fully automatic computer controlled reel handling equipment (robots).

Element 321.3 Diagnose and correct faults in reel-handling equipment

Performance criteria

You must show that you:

1 accurately identify the cause of problems which:

    a affect the quality of the product

    b produce a shortfall in output

    c affect the efficient operation of equipment

    d create risks to health and safety

2 determine logically the action required to correct faults

3 promptly correct faults which is your job to correct

4 promptly report faults which it is not your job to correct

5 co-operate with colleagues who are responsible for correcting faults

6 check that machines are safe to run, once faults are rectified

7 keep accurate records of recurring faults in reels and reel stands.

Element 321.3 Diagnose and correct faults in reel-handling equipment

Knowledge and understanding

You understand:

K1   what safe working practices and efficient working methods to use

K2   the risks associated with operating reel-handling equipment and how to avoid them

K3   the emergency shut down procedures

K4   what records you must keep

K5   the common reel handling faults, what causes them and how to correct them

K6   how to recognise when you should correct faults yourself and when you should ask for help

K7   common manufacturing faults in reels and faults which can appear in the material carried on reels, and how to deal with them

K8   to whom you must report faults

K9   how to assist others who are correcting reel handling faults.

Element 321.3 Diagnose and correct faults in reel-handling equipment

Performance evidence

You must show that you can diagnose and correct faults in reel-handling equipment consistently, over a period of time. Your evidence must show that:

R1   you can identify:

    a   setting faults

    b   faults in materials

R2   you determine action to remedy faults:

    a   to be taken by yourself

    b   to be taken by others

R3   you communicate with:

    a   colleagues in your team

    b   your manager

    c   maintenance staff.

Unit 322　　　　Control in-line folding units
Introduction

To achieve your unit certificate, you must show that you can:

1　　　　Element 322.1　Set up in-line folding units

2　　　　Element 322.2　Run in-line folding units

This involves:
- identifying the job requirements
- checking that the folding units are working properly
- checking that safety devices are working properly
- running folding units safely
- adjusting settings, where necessary to maintain the required standard
- checking that work meets the required standard
- identifying faults and taking action to deal with them
- unloading and stacking the finished product.

Collecting the evidence for this unit
Your performance evidence must show that you have covered all of the statements in each element, and must be the result of real work activities in actual production situations. Simulation is **not** acceptable for this unit.

Your assessor will need to be satisfied that you have the necessary understanding specified in each 'K' list. Where this is not evident from your performance, you may be asked oral or written questions, or to write a short report.

You may need to provide other information to support your performance evidence. Here are some examples:
- a photocopy of the job instructions
- a photocopy of the documentation confirming all the materials used in the production of the job
- samples of the job
- samples of running faults as they arise
- a written or spoken report describing faults, their causes and how you corrected them.

Element 322.1 Set up in-line folding units
Performance criteria

You must show that you:

1   check that you have all the details required for the job

2   check that the product matches the imposition

3   set the folding units correctly, so that:

      a   webs are square and even, with no distortion

      b   webs are folded without damage

      c   slits and perforations are square an clean

      d   the product is delivered evenly, without damage, at the required running speed

4   make adjustments when quality standards cannot be met

5   report promptly to your manager, if the standards cannot be met

6   check that:

      a   all safety devices are in place and work correctly

      b   your work area is safe and ready for production.

Element 322.1 Set up in-line folding units
Knowledge and understanding

You must understand:

K1   what details you need for the job

K2   the principles of in-line folding

K3   the sequence of set up tasks for the folding units

K4   why slitting and perforating is used

K5   when a heavy perforation cause problems for other processes

K6   the risks associated with setting up in-line folding units, and how to avoid them

K7   what the common in-line folding equipment faults are, what causes them and how to prevent them

K8   the emergency shut down procedures.

Element 322.1 Set up in-line folding units
Performance evidence

You must show that you can set in-line folding units consistently over a period of time. Your evidence must show that:

R1   you identify:

    a   product thickness

    b   finished product size

    c   grain direction

R2   you check that the material matches:

    a   the imposition

    b   the fold sequence

R3   you can set up for at least **one** of the following folding schemes:

    a   parallel schemes

    b   right angle schemes

    c   combination schemes

    d   straight or collect production

R4   … for sections between 4 pp and 32 pp which are at least **two** of the following:

    a   portrait

    b   landscape

    c   lapped fore-edge

    d   tabloid

    e   broadsheet

R5   … and for stock which is either:

    a   coated paper

    or

    b   uncoated paper.

Element 322.2 Run in-line folding units
Performance criteria

You must show that you:

1.   run folding machinery:

     a   at the optimum speed

     b   safely and efficiently

2.   regularly check that quality standards are met

3.   accurately identify the cause of faults in production, which result in:

     a   printed materials sticking together

     b   printed materials failing to enter fold unit

     c   printed materials failing to leave fold unit

     d   printed materials folded out of square

     e   slitting and perforating not parallel to sheet edge

     f   unacceptable creasing of printed materials

     g   marking of printed materials

4.   correct mechanical faults which it is your job to remedy

5.   promptly report faults which it is not your job to correct

6.   check that the machine is safe to operate, once faults are corrected

7.   accurately record production and quality assurance details

8.   follow the correct procedures for the removal of waste.

Element 322.2 Run in-line folding units
Knowledge and understanding

You must understand:

K1   your company's quality standards

K2   the principles of mechanised folding in the context of web offset printing

K3   how grain direction affects the folding process

K4   which types of material are most at risk of rub marking

K5   which printed colours are most at risk of marking

K6   the risks associated with running in-line folding equipment and how to avoid them

K7   the emergency shut down procedures

K8   the common problems which can occur when running in-line folding units, what causes them and how to correct them

K9   what other faults can occur during folding

K10   how to recognise when you should correct faults yourself and when you should ask for help

K11   to whom you must report faults

K12   where to find documents giving help in identifying the causes of faults

K13   the procedures for the removal of waste from your machine

K14   what production and quality assurance details you are required to keep.

Element 322.2 Run in-line folding units
Performance evidence

You must show that you can maintain the throughput of folding equipment consistently, over a period of time. Your evidence must show that:

R1   you can produce at least **one** of the following folding schemes:

        a   parallel schemes

        b   right angle schemes

        c   combination schemes

        d   straight or collect production

R2   ... for sections between 4 pp and 32 pp which are at least **two** of the following:

        a   portrait

        b   landscape

        c   lapped fore-edge

        d   tabloid

        e   broadsheet

R3   ... and for stock which is:

        a   coated paper

        or

        b   uncoated paper

R4   you identify and report the following types of fault:

        a   damage to the output

        b   output out of specification

        c   recurring machine faults

        d   machine faults which require others' expertise to correct.

Unit 348   Maintain equipment in working order

Introduction

To achieve your unit certificate, you must show that you can:

1   Element 348.1   Control the cleaning down of equipment

2   Element 348.2   Correct machine faults

This involves:
- planning cleaning operations so that disruption to production is minimised
- identifying and dealing with machinery problems which may affect production
- making sure waste and pollution are minimised
- briefing others on what cleaning work is required
- diagnosing and rectifying machine faults
- reporting faults which it is not your job to rectify
- recording faults and production down-time
- making sure that machines are safe to run.

Collecting the evidence for this unit

Your performance evidence must show that you have covered all of the statements in each element, and must be the result of real work activities in actual production situations. Simulation is **not** acceptable for this unit.

Your assessor will need to be satisfied that you have the necessary understanding specified in each 'K' list. Where this is not evident from your performance, you may be asked oral or written questions, or to write a short report.

The equipment cleaned is the equipment for which you are responsible in your job. This will depend on your area of work and the specific type of equipment you use. For example:
- machine printing – web offset machine
- print finishing – insetter-stitcher-trimmer
- carton manufacture – cutting and creasing machine
- envelope manufacture – reel-fed envelope machine.

You may need to provide other information to support your performance evidence. Here are some examples:
- a copy of plans for cleaning operations
- documents giving information about machine faults
- records of machine faults and down time
- written or spoken reports describing
- your responsibilities and your team's responsibilities for cleaning equipment
- the action you took to deal with recurring faults, such as giving the operator on-the-job training, reporting difficulties to your manager, reassigning the operator to other tasks.

Element 348.1 Control the cleaning down of equipment

Performance criteria

You must show that you:

1   plan cleaning operations to balance maintenance and production requirements

2   obtain the correct materials and equipment needed for cleaning

3   clearly tell colleagues what they have to do

4   check that colleagues use cleaning materials and equipment in ways which minimise waste and pollution

5   check that used cleaning agents and waste materials are disposed of correctly

6   check that machine are free from waste and cleaning materials

7   check that machines are safe to operate following cleaning operations.

Element 348.1 Control the cleaning down of equipment
Knowledge and understanding

You must understand:

K1   your team's responsibilities for cleaning machines -what you and the team are allowed to do

K2   the current legal requirements and industry guidelines for the safe handling and use of hazardous substances

K3   the risks of handling cleaning materials and lubricants

K4   what you have to do to check that your team understands the health and safety aspects of cleaning

K5   what the maintenance plan for the machine is

K6   what the production schedule is and how this affects cleaning operations

K7   why it is important to use cleaning methods which are safe, avoid harming the environment and meet manufacturers' requirements

K8   what cleaning agents and lubricants are suitable for use

K9   your company's procedures for the safe disposal of waste

K10   the Personal Protective Equipment that must be worn by your and your team, and your legal responsibilities.

Element 348.1 Control the cleaning down of equipment
Performance evidence

You must show that you can control the cleaning down of equipment consistently, over a period of time. Your performance will be observed on at least **four** occasions. Your evidence must show that:

R1   you plan cleaning operations taking account of the effect of the following on the production schedule:

      a   maintenance delays

      b   machine faults.

Element 348.2 Correct machine faults

Performance criteria

You must show that you:

1   obtain accurate information about problems with the machine

2   analyse information about machine faults to identify their likely cause

3   safely correct the machine faults which it is you job to deal with

4   promptly report those faults which are not your job to deal with

5   report accurately the time you estimate it will take to rectify faults which are stopping production

6   identify recurring faults which are caused by operator error, and take action to prevent them arising in the future

7   record the details of machine faults and production down-time accurately.

Element 348.2 Correct machine faults

Knowledge and understanding

You must understand:

K1   the risks of handing machinery and replacing components

K2   where to obtain information about machine faults

K3   what techniques to use to assess machine faults and decide how to deal with them

K4   what tools and equipment to use to rectify faults

K5   what types of fault are likely to occur in the equipment you control, and what you should do about them

K6   what the limits of your responsibilities are

K7   who to report faults and disruption to production to

K8   the procedures for rectifying faults and replacing components safely

K9   why it is important to take the minimum time necessary to rectify faults

K10   what records need to be kept.

Element 348.2 Correct machine faults
Performance evidence

You must show that you can correct machine faults. Your evidence must show that:

R1   you diagnose the following types of faults:

      a   machine operating faults

      b   component wear and tear

R2   you obtain information about machine faults from:

      a   reports from others

      b   examining output

      c   examining machines

R3   you report:

      a   faults which disrupt production

      b   recurring faults.

Appendix 1 Accreditation, national frameworks and qualification level descriptors

Please visit the following websites to find information on accreditation, national frameworks and qualification level descriptors in each country.

Nation	Who to contact	Website
England	The Qualifications and Curriculum Authority	**www.qca.org.uk**
Scotland	The Scottish Qualifications Authority	**www.sqa.org.uk**
Wales	The Department for Education, Lifelong Learning and Skills Wales	**www.new.wales.gov.uk**
Northern Ireland	The Council for Curriculum, Examinations and Assessment	**www.ccea.org.uk**

Appendix 2   The qualification structure

This section of the document outlines the qualification structure for the full suite of Printing NVQs at Levels 2 and 3. Please refer to the tables on the following pages.

Qualification	Complex	QCA reference
Level 2 NVQ in Digital Print Production	5158-20 and -80	500/1488/2
Level 2 NVQ in Machine Printing	5158-21 and -81	500/1483/3
Level 2 NVQ in Mechanised Print Finishing and Binding	5158-22 and -82	500/1479/1
Level 2 NVQ in Envelope Manufacture	5158-23 and -83	500/1476/6
Level 3 NVQ in Digital Print Production	5158-30 and -90	500/1469/9
Level 3 NVQ in Machine Printing	5158-31 and -91	500/1491/2
Level 3 NVQ in Mechanised Print Finishing and Binding	5158-32 and -92	500/1475/4
Level 3 NVQ in Envelope Manufacture	5158-33 and -93	500/1487/0
Level 3 NVQ in Hand Binding	5158-34 and -94	500/1477/8
Level 3 NVQ in Carton Manufacture	5158-35 and -95	500/1478/X
Level 3 NVQ in Print Administration	5158-36 and -96	500/1472/9

Level 2 NVQ in Digital Print Production

Mandatory common units

201	Comply with Health and Safety Requirements in the Workplace
202	Improve your performance at work
203	Plan your work to meet production requirements
204	Capture images from specified sources

Mandatory Technical Units

Group A – Digital Artwork for Print	**Group B – Pre-Press**	**Group C – Digital Printing**
205 Create digital colour artwork for print	206 Produce imposed separations for printing	207 Operate digital printing machines

Level 2 NVQ in Machine Printing

Mandatory common units

201	Comply with Health and Safety Requirements in the Workplace
202	Improve your performance at work
208	Contribute to maintaining equipment in working order

Mandatory technical units (Groups A-G) – complete two units from same pathway

Group A - Lithography	Group B - Web Offset	Group C - Flexography	Group D - Screen	Group E - Gravure	Group F - Pad printing	Group G - Dye Stamping
209 Prepare machines for sheet fed lithographic printing	217 Prepare machines for web offset printing	221 Prepare machines for flexographic printing	226 Prepare equipment and machines for screen printing	229 Prepare machines for gravure printing	232 Prepare machines for pad printing	262 Prepare dye stamping machines for printing
210 Operate sheet fed lithographic printing machines	218 Operate web offset printing machines	222 Operate flexographic printing machines	227 Operate screen printing machines	230 Operate gravure printing machines	233 Operate pad printing machines	263 Operate dye stamping machines

Optional technical units – complete one unit from chosen pathway

Group A - Lithography	Group B - Web Offset	Group C - Flexography	Group D - Screen	Group E - Gravure	Group F - Pad printing	Group G - Dye Stamping
211 Operate in-line converting equipment	211 Operate in-line converting equipment	211 Operate in-line converting equipment	211 Operate in-line converting equipment	211 Operate in-line converting equipment	212 Operate ink drying equipment	211 Operate in-line converting equipment
212 Operate ink drying equipment	212 Operate ink drying equipment	212 Operate ink drying equipment	212 Operate ink drying equipment	212 Operate ink drying equipment	213 Prepare inks	213 Prepare inks

213 Prepare inks	214 Set up and operate auxiliary equipment	213 Prepare inks	213 Prepare inks	220 Operate reel handling equipment	234 Maintain the condition of consumables for printing	214 Set up and operate auxiliary equipment
214 Set up and operate auxiliary equipment	219 Operate in-line printing units	214 Set up and operate auxiliary equipment	228 Prepare stencils for printing	231 Mix, dry and cure inks		216 Prepare and produce wet proofs
215 Maintain the condition of plates for printing	220 Operate reel handling equipment	215 Maintain the condition of plates for printing				
216 Prepare and produce wet proofs		220 Operate reel handling equipment				
		223 Operate and monitor bar code printing				
		224 Control colour throughout the run				
		225 Maintain anilox roll conditions				

Level 2 NVQ in Mechanised Print Finishing and Binding

Mandatory common units

201	Comply with Health and Safety Requirements in the Workplace
202	Improve your performance at work
208	Contribute to maintaining equipment in working order

Optional technical units (Groups A-B) – complete two optional from chosen pathway

Group A – General Print	Group B – Newspapers and Periodicals
235 Run and monitor guillotines	249 Operate automated inserting equipment for newspapers and periodicals production
236 Run and monitor adhesive binding machinery	250 Operate automated stitch and trim equipment for newspapers and periodicals production
237 Run and monitor case making machinery	251 Set up machines for automated newspapers and periodicals print finishing
238 Run and monitor casing-in machinery	252 Move materials for newspaper and periodical production
239 Run and monitor folding machinery	253 Repair and maintain feeder machinery
240 Set and operate booklet-making machinery	254 Control publishing equipment for newspaper and periodicals production
241 Set and operate mail processing machinery	255 Control auto-palletising equipment for newspaper and periodicals production
242 Set and operate multi-knife trimming machinery	
243 Set and operate multiple hopper feeders	Continued on next page

Level 2 NVQ in Envelope Manufacture

Mandatory common units

201	Comply with Health and Safety Requirements in the Workplace
202	Improve your performance at work
208	Contribute to maintaining equipment in working order
256	Monitor and run envelope manufacturing machines

Optional Technical units – complete one optional

257	Prepare and set printing units
258	Prepare and set window cutting and patching units for envelope manufacture
259	Prepare and set scoring, folding and gumming units for envelope manufacturing
260	Prepare and set profile cutting units for envelope manufacture

Level 3 NVQ in Digital Print Production

Mandatory Common Units

203	Plan work to meet production requirements
261	Send and receive digital files
301	Ensure your own actions reduce risks to health and safety in the workplace
302	Improve Individual and Organisational Performance
303	Plan and capture digital images
304	Maintain digital systems in working order
305	Design and produce creative digital colour artwork for print

Mandatory Technical Units (Groups A-B) – complete one units from chosen pathway

Group A - Digital Artwork for Print		**Group B - Pre-press**	
206	Produce imposed separations for printing	228	Prepare stencils for printing
207	Operate digital printing machines	306	Plan and produce edited images
306	Plan and produce edited images	307	Manage colour reproduction in digital pre-press
307	Manage colour reproduction in digital pre-press	308	Produce approved proofs from digital artwork
308	Produce approved proofs from digital artwork	309	Produce computer generated image carriers
		310	Make photopolymer plates for flexographic printing
		311	Make plates for lithographic printing
		312	Make gravure cylinders

Level 3 NVQ in Machine Printing

Mandatory common units

301	Ensure your own actions reduce risks to health and safety in the workplace
302	Improve Individual and Organisational Performance
348	Maintain equipment in working order

Mandatory technical units

Group A – Lithography	Group B – Web Offset	Group C – Flexography	Group D - Screen	Group E - Gravure	Group F - Pad Printing
315 Control sheet-fed multi unit lithographic printing machines	319 Control web offset printing machines	323 Control flexographic printing machines	325 Control screen printing machines	326 Control gravure printing machines	327 Control pad printing machines

Optional Technical Units (Groups A-F) – complete two units from chosen pathway

Group A – Lithography	Group B – Web Offset	Group C – Flexography	Group D - Screen	Group E - Gravure	Group F - Pad Printing
215 Maintain the condition of plates for printing	316 Control in-line converting machinery	215 Maintain the condition of plates for printing	213 Prepare inks	316 Control in-line converting machinery	213 Prepare inks
311 Make plates for lithographic printing	317 Control ink drying machinery	316 Control in-line converting machinery	228 Prepare stencils for printing	317 Control ink drying machinery	234 Maintain the condition of consumables for printing

316 Control in-line converting machinery	318 Control auxiliary equipment	317 Control ink drying machinery	316 Control in-line converting machinery	318 Control auxiliary equipment	317 Control ink drying machinery
317 Control ink drying machinery	320 Control in-line printing units	318 Control auxiliary equipment	317 Control ink drying machinery	321 Control reel handling equipment	
318 Control auxiliary equipment	321 Control reel handling equipment	321 Control reel handling equipment		322 Control in-line folding units	
	322 Control in-line folding units	324 Test flexographic printing machines			

Level 3 NVQ in Mechanised Print Finishing and Binding

Mandatory common units

301 Ensure your own actions reduce risks to health and safety in the workplace

302 Improve Individual and Organisational Performance

Optional technical units (Groups A-B) – complete one optional from chosen pathway

Group A – General Print	**Group B – Newspapers and Periodicals**
Optional technical units – complete two units	**Mandatory technical units – complete one unit**
328 [3] Control adhesive binding machinery	348 Maintain equipment in working order
329 Control case making machinery	Optional Technical units complete two units
330 Control casing-in machinery	253 Repair and maintain feeder machinery
331 Control programmatic guillotines	344 Control automated inserting processes for newspapers and periodicals print
332 [2] Control folding machinery	345 Control automated stitch and trim processes for newspaper and periodicals print
333 [1] Control in-line booklet making machinery	346 Control the set up of machines for newspaper and periodicals print finishing
Optional Technical units complete one unit	347 Control materials handling for newspaper and periodicals print finishing

246	Control foil blocking machinery
334	Control non-automatic finishing machines
335	Control multiple hopper feeders
336	Control auto-fed sewing machinery
337	Control multi-knife trimming machinery
338 [1]	Set and operate booklet-making machinery
339 [2]	Control parallel folding
340 [3]	Run and monitor adhesive binding machinery
341	Control inline insetting-stitching-trimming machines
342	Control inline gathering-adhesive-binding-trimming machinery
343	Control inline block-feeding-forwarding-case binding machinery

Notes

[1] Unit 338 may not be used in conjunction with Unit 333
[2] Unit 339 may not be used in conjunction with Unit 332
[3] Unit 340 may not be used in conjunction with Unit 328

Level 3 NVQ in Envelope Manufacture

Mandatory common Units

301 Ensure your own actions reduce risks to health and safety in the workplace

302 Improve Individual and Organisational Performance

314 Identify and organise the requirements for production

348 Maintain equipment in working order

349 Control envelope manufacturing machinery

Optional technical units – complete one optional

350 Support the efficient use of resources (MCI)

351 Manage yourself (MCI)

352 Contribute to the development of teams and individuals (MCI)

353 Lead the work of teams and individuals to achieve their objectives (MCI)

354 Train new operators

Level 3 NVQ in Hand Binding

Mandatory common units

301 Ensure your own actions reduce risks to health and safety in the workplace

302 Improve Individual and Organisational Performance

355 Prepare for hand binding operations

356 Bind books by hand

357 Cut page edges and binding materials by guillotine

Optional technical units – complete one optional

351 Manage yourself (MCI)

352 Contribute to the development of teams and individuals (MCI)

353 Lead the work of teams and individuals to achieve their objectives (MCI)

354 Train new operators

358 Decorate cases

Level 3 NVQ in Carton Manufacture

Mandatory common units

301	Ensure your own actions reduce risks to health and safety in the workplace
302	Improve Individual and Organisational Performance
348	Maintain equipment in working order

Optional technical units – complete one optional

359	Control cutting and creasing machinery
360	Control multi-folding and gluing machinery
361	Produce dyes and tooling

Optional technical units – complete one optional

314	Identify and organise the requirements for production
350	Support the efficient use of resources (MCI)
351	Manage yourself (MCI)
352	Contribute to the development of teams and individuals (MCI)
353	Lead the work of teams and individuals to achieve their objectives (MCI)
354	Train new operators

Additional technical unit

362	Control carton enhancing machinery

Level 3 NVQ in Print Administration

Mandatory common units

301 Ensure your own actions reduce risks to health and safety in the workplace

302 Improve Individual and Organisational Performance

261 Send and receive digital files

Optional technical units – complete three optional

363 Produce estimates from customer requirements

364 Prepare job cost information and produce invoices

365 Agree job specification and prepare production schedules

366 Control Production

367 Purchase materials and services for production

368 Service customer accounts