apprenticeship
FRAMEWORK

Polymer Processing Operations

Issued by
Cogent

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Document status:
Work in progress

Apprenticeships

Polymer Processing Operations

Information on the Issuing Authority for this framework:

Cogent

The Apprenticeship sector for occupations in chemical manufacturing, nuclear science, oil and gas extraction (also includes process technology, bioscience, polymer and sign making).

Issue number: 1	This framework includes:
Framework ID: FR00166	Level 2 Level 3
Date this framework is to be reviewed by: 16/07/2012	This framework is for use in: **England**

Short description

The Polymer Processing Operations Apprenticeship Framework provides work based training for young people and adults to undertake key technical and operational roles in the Polymer Processing Industries.

There are two levels of Apprenticeship contained in this framework:
• The Intermediate Level Apprenticeship (Level 2) in Polymer Processing Operations (Usually takes 12 months to complete)
• The Advanced Level Apprenticeship (Level 3) in Polymer Processing Operations (Usually takes 24 to 36 months to complete)

The framework contains details of vocational qualifications, knowledge based technical qualifications, Functional Skills (Maths, English, ICT) Personal Learning and Thinking Skills and employee rights and responsibilities required for an apprenticeship in Polymer Processing Operations.

Apprentices undertake training on-the-job at their workplace and off-the-job usually delivered by a local training provider or Further Education College.

Contact information

Proposer of this framework

(no information)

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Purpose of this framework

Summary of the purpose of the framework

This Apprenticeship Framework has been designed to meet the requirements for the type of work undertaken in the Polymer Processing Industries. Polymer processing deals with the manufacture and production of polymer and synthetic substances such as plastic, nylon and PVC. Plastic is incredibly versatile and can be made from different ingredients, moulded into any shape, and put to a huge range of uses across industry and the rest of society, from carrier bags to electrical cables. It's no surprise that the polymer industry is one of the most important areas of manufacturing in the UK. One factory is likely to produce many different kinds of plastic items.

An apprentice would normally work in either a factory or workshop and learn how to mass-produce plastic or composite items. They would weigh and mix raw materials; learn about the production process; test products; maintain machinery; and make sure items are made on time and without wasting materials.
Such is the diverse nature of the products manufactured, apprentices may find that they will be required to manufacture some products or components by hand-based methods .

Production requires practical skills, that will require the apprentice to work quickly on complicated tasks, use numeracy skills to mix materials, and need an eye for detail.

Job Roles

- Process Setter/ Operator
- Quality Control Inspector
- Finishing & Assembly Operative
- Process Operator/ Technician

Aims and objectives of this framework (England)

Aim
To provide a skilled technical workforce for the polymer processing operations industries that will enable them to compete in a global market.

The objectives of this framework are:
1. To provide the skilled operators and technicians to meet future demand forecasted by the polymer processing/polymer composite operations industries.

2. To provide a structured training framework that will provide the skills needed to operate, control and maintain polymer processing/composite plant and equipment.

3. To provide a development framework for existing staff in the polymer processing/polymer composite operations industries to up-skill their current vocational skills and knowledge that will enable them to meet the future challenges of new technologies and changing production processes.

4. To provide progression opportunities for apprentices both within the polymer processing/polymer composite operations industries and employment in other sectors as well as for those wishing to engage in further study in Further or Higher Education.

5. To attract new talent into the polymer processing/polymer composite operations industries from a range of backgrounds, in order to meet industry requirements.

Entry conditions for this framework

Apprenticeship applicants will be expected to attend an interview with the employer/ training provider to assess their suitability for entry on to the framework. The interview provides an opportunity to talk directly to the applicant and discuss an individual's previous learning and experience. From this interview the employer will be able to decide whether a candidate is suitable using some of the following guidance.

Intermediate Level Apprenticeship

The Intermediate Level Apprenticeship in Polymer Processing Operations is open to all people aged 16 or over. Due to the competition for places the following skills and attributes relevant to working within the polymer industries may be considered as part of the application process;
- motivation to succeed within industry
- an awareness of the demands of the Apprenticeship
- willingness to comply with employer/training provider terms and conditions of employment
- have the ability to apply learning in the workplace
- willingness to work with due regard to Health and Safety of self and others
- effective communication with a range of people.

The following examples of evidence can be used to support some of the above statements, such as;
• previous work experience or employment or
• voluntary or community based work or
• achievement of GCSEs (A*-E) or equivalent qualifications in Maths, English, Science and Design & Technology or
• achievement of a Foundation/ Higher Diploma in Manufacturing & Product Design or Foundation/ Higher Diploma in Engineering or
• achievement of Awards, Certificates or Diplomas in a related industry such as Science or Engineering or
• proof of completion of non-accredited courses.

Advanced Level Apprenticeship

The Advanced Level Apprenticeship in Polymer Processing Operations is open to all people aged 16 or over. Due to the competition for places the following skills and attributes relevant to working within the polymer industries may be considered as part of the application process;
• motivation to succeed within industry
• an awareness of the demands of the Apprenticeship
• willingness to comply with employer/training provider terms and conditions of employment
• have the ability to apply learning in the workplace
• willingness to work with due regard to Health and Safety of self and others
• effective communication with a range of people.

The following examples of evidence can be used to support some of the above statements, such as;
• progression from a Polymer Processing Operations Intermediate Level Apprenticeship or an Intermediate Level Apprenticeship in a related discipline or
• previous work experience or employment or
• voluntary or community based work or
• achievement of GCSEs (A*-C) or equivalent qualifications in Maths, English, Science and Design & Technology or
• achievement of a Higher/ Advanced Diploma in Manufacturing & Product Design or a Higher/ Advanced Diploma in Engineering or
• achievement of Awards, Certificates or Diplomas in a related industry such as Science or Engineering or
• proof of completion of non-accredited courses.

All Apprenticeship applicants should be aware of the varied working conditions that may include;

- working at heights
- shiftwork (including nights and weekends)
- 365 day operations
- working outdoors
- wearing specialist safety equipment
- working within high hazard environment.

Level 2

Title for this framework at level 2

Intermediate Level Apprenticeship in Polymer Processing Operations

Pathways for this framework at level 2

Pathway 1:	Production Operations

Level 2, Pathway 1: Production Operations

Description of this pathway

Polymer Processing Operations (Polymer/ Composite Operator)

Entry requirements for this pathway in addition to the framework entry requirements

None

Job title(s)	Job role(s)
Polymer/Composite Operator	Safely operate machines to construct, assemble and finish component parts or finished products by hand or by machine.

Qualifications

Competence qualifications available to this pathway

N/A

Knowledge qualifications available to this pathway

N/A

Combined qualifications available to this pathway

B1 - Level 2 Certificate in Polymer/Polymer Composite Operations (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
B1a	501/1163/2	PAA\VQSET	27	130	N/A
B1b	600/1631/0	Edexcel	27	130	N/A

Notes on competence and knowledge qualifications (if any)

Level 2 Certificate in Polymer/Polymer Composite Operations (QCF)- 27 Credits

For the Level 2 Certificate in Polymer/Polymer Composite Operations (QCF) learners must achieve a minimum of 27 Credits by taking one of the following pathways:

- **Pathway A** - Polymer Machine Operations *or*
- **Pathway B** - Polymer Hand-Based Operations.

Pathway A - Polymer Machine Operations Pathway

Learners must complete;
- 1 common Mandatory Unit,
- 3 Pathway-specific Mandatory Units and
- 11 Credits from Optional Units.

(Pathway A – Minimum knowledge = 14 Credits)

Pathway B - Polymer Hand-Based Operations Pathway

Learners must complete;
- 1 common Mandatory Unit,
- 3 Pathway-specific Mandatory Units and
- 14 Credits from Optional Units.

(Pathway B – Minimum knowledge = 13 Credits)

[C] = Competence [K] = Knowledge

Pathway A - Polymer Machine Operations

Mandatory Units

• Meet safety, health and environmental requirements in the workplace within polymer processing and related environments *[C- 1 Credit, K- 2 Credits]*
• Prepare to start up a machine-based production process *[C - 2 Credits, K - 2 Credits]*
• Start up and maintain a machine-based production process *[C - 2 Credits, K - 3 Credits]*
• Shutdown a machine-based production process *[C - 2 Credits, K - 2 Credits]*

Optional Units – (11 credits to be achieved)

• Inspect products *[C- 2 Credits, K- 2 Credits]*
• Finish products *[C- 1 Credit, K- 1 Credit]*
• Contribute to the provision of ancillary systems *[C - 3 Credits, K - 2 Credits]*
• Pick polymer stock and make up orders *[C- 1 Credit, K- 2 Credits]*
• Prepare materials for processing according to instructions *[C - 2 Credits, K - 1 Credit]*
• Maintain the condition of process equipment *[C - 3 Credits, K - 4 Credits]*
• Carry out simple sampling operations *[C- 1 Credit, K- 2 Credits]*
• Carry out simple testing operations *[C- 1 Credit, K- 2 Credits]*
• Accept, verify and store materials required for process operations *[C- 1 Credit, K- 2 Credits]*
• Supply materials required for process operations *[C- 1 Credit, K- 2 Credits]*
• Assemble products *[C- 1 Credit, K- 2 Credits]*
• Contribute to the maintenance of product quality *[C- 1 Credit, K- 2 Credits]*
• Establish and maintain effective working relationships within polymer processing and related environments *[C- 1 Credit, K- 1 Credit]*
• Contribute to the handover of production activities *[C- 1 Credit, K- 2 Credits]*

Pathway B - Polymer Hand-Based Operations

Mandatory Units

• Meet safety, health and environmental requirements in the workplace within polymer processing and related environments *[C- 1 Credit, K- 2 Credits]*
• Prepare to produce products by hand-based operations *[C - 2 Credits, K - 2 Credits]*
• Produce products using hand-based operations *[C - 2 Credits, K - 2 Credits]*
• Finish products *[C- 1 Credit, K- 1 Credit]*

Optional Units – (14 credits to be achieved)

• Inspect products *[C - 2 Credits, K - 2 Credits]*
• Contribute to the provision of ancillary systems *[C - 3 Credits, K - 2 Credits]*
• Pick polymer stock and make up orders *[C- 1 Credit, K- 2 Credits]*
• Prepare materials for processing according to instructions *[C - 2 Credits, K - 1 Credit]*
• Maintain the condition of process equipment *[C - 3 Credits, K - 4 Credits]*
• Carry out simple sampling operations *[C- 1 Credit, K- 2 Credits]*
• Carry out simple testing operations *[C- 1 Credit, K- 2 Credits]*
• Accept, verify and store materials required for process operations *[C- 1 Credit, K- 2 Credits]*
• Supply materials required for process operations *[C- 1 Credit, K- 2 Credits]*
• Assemble products *[C- 1 Credit, K- 2 Credits]*
• Contribute to the maintenance of product quality *[C- 1 Credit, K- 2 Credits]*
• Establish and maintain effective working relationships within polymer processing and related environments *[C- 1 Credit, K- 1 Credit]*
• Contribute to the handover of production activities *[C- 1 Credit, K- 2 Credits]*

Transferable skills (England)

Functional Skills / GCSE (with enhanced functional content) and Key Skills (England)

English	Minimum level or grade	Credit value
Functional Skills qualification in English	1	5
GCSE qualification (with enhanced functional content)	E	5
Key Skills qualification in Literacy achieved either before September 2013 as part of the Apprenticeship, or...*	1	5
GCSE Qualification in English*	C	N/A
A' Level or AS Level qualification in English Language*	E	N/A
A' Level or AS Level qualification in English*	E	N/A
A' Level or AS Level qualification in English Language and Literature*	E	N/A
GCSE or O' Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Literature**	A	N/A
A' Level or AS Level qualification in English Language and Literature**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Mathematics	Minimum level or grade	Credit value
Functional Skills qualification in Mathematics	1	5
GCSE qualification (with enhanced functional content) in Mathematics	E	5
Key Skills qualification in Application of Number achieved either before September 2013 as part of the Apprenticeship, or... *	1	5
GCSE qualification in Mathematics*	C	N/A
A' level or AS Level qualification in Mathematics*	E	N/A
A' Level or AS Level qualification in Pure Mathematics*	E	N/A
A'Level or AS Level qualification in Further Mathematics*	E	N/A
GCSE or O'Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Pure Mathematics**	A	N/A
A' Level or AS Level qualification in Further Mathematics**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

ICT	Minimum level or grade	Credit value
Functional Skills qualification in Information and Communications Technology (ICT)	1	5
GCSE qualification in ICT (with enhanced functional content)	E	5
Key Skills qualification in ICT achieved either before September 2013 as part of the Apprenticeship, or...*	1	5
GCSE qualification in ICT*	C	N/A
A' Level or AS Level qualification in ICT*	E	N/A
GCSE or O'Level qualification in ICT**	A	N/A
A' Level or AS Level qualification in ICT**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Inclusion of Information and Communications Technology (ICT)

(no information)

Progression routes into and from this pathway

Progression into this pathway:

There are no pre-defined routes of entry into the Intermediate Level Apprenticeship in Polymer Processing Operations, however, new entrants to the industry may be looking to progress from the following areas:

• Work based qualifications such as NVQs/ SVQs or vocationally related qualifications in a subject related to Polymer Processing. (Examples may include: BTEC's, City & Guilds, PAA/VQ-SET Diplomas/ Certificates/ Awards)

• GCSEs in Science, Maths, Design & Technology or Engineering also provide a strong platform for progression on to the framework.

• Foundation/ Higher Diplomas in Engineering or Manufacturing & Product Design also provide an excellent opportunity for progression in to polymer processing.

• Previous experience in the polymer processing industries or a related discipline can also be an appropriate route of entry.

Progression from this pathway:

Following completion of this Intermediate Level Apprenticeship there are several options open to the successful candidate who wishes to continue their development in order to progress their career. There are opportunities to continue to undertake further vocational training or academic qualifications. These may include (but are not exclusive to) the following:

- Advanced Level Apprenticeship in Polymer Processing Operations
- Higher/ Advanced Diploma in Engineering or Higher/ Advanced Diploma in Manufacturing and Product Design
- Developing a career in coaching through undertaking Assessor and Verifier Awards
- Qualifications in a related area, including (but not limited to) Health & Safety, Training & Development, Business Improvement Techniques and Supervisory Management.
- Cogent Gold Standard qualifications contained within the Gold Standard frameworks (www.cogent-prospectus.com)

Successful completion of the Intermediate Level Apprenticeship could lead to one of the following job roles:

- Process Setter/ Operator
- Quality Control Inspector
- Finishing & Assembly Operative

For a more in-depth look at careers within the Cogent Industries, please look at our careers pathway website www.cogent-careers.com

Delivery and assessment of employee rights and responsibilities

This Employee Rights and Responsibilities (ERR) section has no QCF Credit Value.

It is important that all employees understand and can demonstrate an understanding of their rights & responsibilities as an employee.

The Cogent Employee's Rights and Responsibilities (ERR) Workbook and Assessment Document has been designed to assist employers and training providers and should be used to deliver this mandatory element of the Apprenticeship Framework.

The content is as follows: -

1. Statutory rights and responsibilities under Employment Law.
2. Procedures and documentation that affect the relationship between employee and employer.
3. Sources of information and advice on employment rights and responsibilities.
4. The role played by an Apprentice's occupation in the organisation and industry.
5. Career pathways open to an Apprentice.
6. The types of representative bodies relevant to the industry and organisation and their main roles and responsibilities.
7. Where and how to get advice on the industry, occupation, training and careers.
8. Organisational principles and codes of practice.
9. Issues of public concern that affect the organisation and industry.

It is essential that the Apprentice can demonstrate competence in ERR and, as a result, is required to provide documentary evidence confirming their achievements. Examples of how the evidence can be gathered by individuals include;

- completing a company induction,
- attending relevant taught off-the-job training sessions
- on-the-job assessment.

When applying for the Intermediate Apprenticeship/ Advanced Apprenticeship Certificate, the training provider or employer will provide evidence that ERR has been achieved by submitting a copy of the completed assessment document, signed by both the apprentice and the

assessor.

Upon progression from an Intermediate Apprenticeship to an Advanced Apprenticeship in Polymer Processing Operations, apprentices would be exempt from this requirement provided that they are still with the same employer.

To obtain a copy of the workbook and assessment document, please visit the Apprenticeships section of the Cogent website at www.cogent-ssc.com.

Level 3

Title for this framework at level 3

Advanced Level Apprenticeship in Polymer Processing Operations

Pathways for this framework at level 3

Pathway 1:	Processing Operations

Level 3, Pathway 1: Processing Operations

Description of this pathway

Polymer Processing Operations (Production Operator/Technician)

Entry requirements for this pathway in addition to the framework entry requirements

None

Job title(s)	Job role(s)
Production Operator/Technician	Make complex polymer components using a machine or by hand based operations.

Qualifications

Competence qualifications available to this pathway

C1 - Level 3 Diploma in Polymer/Polymer Composite Operations (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	501/1173/5	PAA\VQSET	39	220	N/A
C1b	600/1630/9	Edexcel	39	220	N/A

Knowledge qualifications available to this pathway

K1 - BTEC Level 3 Diploma in Applied Science (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	500/6673/0	Edexcel	120	720	N/A

K2 - BTEC Level 3 Subsidiary Diploma in Applied Science (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	500/6725/4	Edexcel	60	360	N/A

K3 - BTEC Level 3 Diploma In Engineering (Specialist: Manufacturing Engineering) (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	500/8164/0	Edexcel	60	360	N/A

Combined qualifications available to this pathway

N/A

Notes on competence and knowledge qualifications (if any)

K1 or K2 or K3 will provide the underpinning knowledge and understanding for C1a or C1b.

The decision on which knowledge qualification the apprentices will undertake will be made by the training provider and employer, based on the experience of the apprentice, future job role requirements and the complexity of the employer's operations. It is satisfactory to achieve this apprenticeship by undertaking the minimum knowledge qualification of 360 Guided Learning Hours.The knowledge qualification of 720 Guided Learning Hours will provide a more in-depth technical knowledge if required.

The credit values and guided learning hours quoted in the above tables are the minimum for the qualification as stated on the Register of Regulated Qualifications. These credit values and guided learning hours may vary according to specific pathways/ options taken within qualifications. For further details please refer to the Register of Regulated Qualifications (http://register.ofqual.gov.uk/).

Transferable skills (England)

Functional Skills / GCSE (with enhanced functional content) and Key Skills (England)

English	Minimum level or grade	Credit value
Functional Skills qualification in English	2	5
GCSE qualification (with enhanced functional content)	C	5
Key Skills qualification in Literacy achieved either before September 2013 as part of the Apprenticeship, or...*	2	5
GCSE Qualification in English*	C	N/A
A' Level or AS Level qualification in English Language*	E	N/A
A' Level or AS Level qualification in English*	E	N/A
A' Level or AS Level qualification in English Language and Literature*	E	N/A
GCSE or O' Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Literature**	A	N/A
A' Level or AS Level qualification in English Language and Literature**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Mathematics	Minimum level or grade	Credit value
Functional Skills qualification in Mathematics	2	5
GCSE qualification (with enhanced functional content) in Mathematics	C	5
Key Skills qualification in Application of Number achieved either before September 2013 as part of the Apprenticeship, or... *	2	5
GCSE qualification in Mathematics*	C	N/A
A' level or AS Level qualification in Mathematics*	E	N/A
A' Level or AS Level qualification in Pure Mathematics*	E	N/A
A'Level or AS Level qualification in Further Mathematics*	E	N/A
GCSE or O'Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Pure Mathematics**	A	N/A
A' Level or AS Level qualification in Further Mathematics**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

ICT	Minimum level or grade	Credit value
Functional Skills qualification in Information and Communications Technology (ICT)	2	5
GCSE qualification in ICT (with enhanced functional content)	C	5
Key Skills qualification in ICT achieved either before September 2013 as part of the Apprenticeship, or...*	2	5
GCSE qualification in ICT*	C	N/A
A' Level or AS Level qualification in ICT*	E	N/A
GCSE or O'Level qualification in ICT**	A	N/A
A' Level or AS Level qualification in ICT**	A	N/A

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** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Inclusion of Information and Communications Technology (ICT)

N/A

Progression routes into and from this pathway

Progression into this pathway:

There are no pre-defined routes of entry into the Advanced Level Apprenticeship in Polymer Processing Operations, however, new entrants to the industry may be looking to progress from the following areas:

• Completion of an Intermediate Level Apprenticeship in Polymer Processing Operations
• Work based qualifications such as NVQs/ SVQs or vocationally related qualifications in a subject related to Polymer Processing. (Examples may include: BTEC's, City & Guilds, PAA/VQ-SET Diplomas/ Certificates/ Awards)
• GCSEs or A' Levels in Science, Maths, Engineering or Design & Technology also provide a strong platform for progression on to the framework.
• Higher / Advanced Diplomas in Engineering or Manufacturing & Product Design also provide

an excellent opportunity for progression in to polymer processing.
• Previous experience in the polymer processing industries or a related discipline can also be an appropriate route of entry.

Progression from this pathway:

Following completion of this Advanced Level Apprenticeship there are several options open to the successful candidate who wishes to continue their development in order to progress their career. There are opportunities to continue to undertake further vocational training or academic qualifications. These may include (but are not exclusive to) the following:

• Foundation Degree in Polymer Technology or a related discipline
• Higher National Certificate/ Diploma in Polymer Engineering or a related discipline
• Advanced Diploma in Engineering or Advanced Diploma in Manufacturing and Product Design
• Developing a career in coaching through Assessor and Verifier Awards
• Qualifications in a related area, including (but not limited to) Health & Safety, Training & Development, Business Improvement Techniques and Supervisory Management
• Membership of a professional institution at Engineering Technician level (Further information available at www.engineeringuk.com)
• Cogent Gold Standard qualifications contained within the Gold Standard frameworks (www.cogent-prospectus.com)

Successful completion of the Advanced Level Apprenticeship could lead to one of the following job roles:
• Process Operative/ Technician
• Quality Control Inspector

For a more in-depth look at careers within the Cogent Industries, please look at our careers pathway website www.cogent-careers.com

UCAS points for this pathway: Not applicable

Delivery and assessment of employee rights and responsibilities

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The content is as follows: -

1. Statutory rights and responsibilities under Employment Law.
2. Procedures and documentation that affect the relationship between employee and employer.
3. Sources of information and advice on employment rights and responsibilities.
4. The role played by an Apprentice's occupation in the organisation and industry.
5. Career pathways open to an Apprentice.
6. The types of representative bodies relevant to the industry and organisation and their main roles and responsibilities.
7. Where and how to get advice on the industry, occupation, training and careers.
8. Organisational principles and codes of practice.
9. Issues of public concern that affect the organisation and industry.

It is essential that the Apprentice can demonstrate competence in ERR and, as a result, is required to provide documentary evidence confirming their achievements. Examples of how the evidence can be gathered by individuals include;

- completing a company induction,
- attending relevant taught off-the-job training sessions
- on-the-job assessment.

When applying for the Intermediate Apprenticeship/ Advanced Apprenticeship Certificate, the training provider or employer will provide evidence that ERR has been achieved by submitting a copy of the completed assessment document, signed by both the apprentice and the

assessor.

Upon progression from an Intermediate Apprenticeship to an Advanced Apprenticeship in Polymer Processing Operations, apprentices would be exempt from this requirement provided that they are still with the same employer.

To obtain a copy of the workbook and assessment document, please visit the Apprenticeships section of the Cogent website at www.cogent-ssc.com.

The remaining sections apply to all levels and pathways within this framework.

How equality and diversity will be met

The Polymer Processing Operations Apprenticeship aims to promote diversity, opportunity and inclusion by offering high-quality, learning opportunities.

The delivery of the Apprenticeship Framework must be in environments free from prejudice and discrimination where all learners can contribute fully and freely and feel valued.

There must be no overt or covert discriminatory practices in selection and recruitment of Apprentices to the programme, which is available to all people, regardless of gender, ethnic origin, religion/belief, sexual orientation or disability who meet the stated selection criteria.

Issues

Gender: there is an under-representation of women within the sector, 21%.

Ethnicity: representation of ethnic minority groups is approximately 6% of the workforce.

Age: in the polymer processing industries, there is an ageing workforce with less than 9% under 25 years.

Barriers

The polymer processing industry is dominated by SME's where there is often a high turnover of staff responding to market conditions. Whilst the modern polymer processing industry is efficient, clean and has a good safety record, there is still a misconception the work is dirty and dangerous. Careers advice regarding entry in to the industry is often poor.

Actions

Cogent have introduced a series of industry specific case studies and Careers Pathways on the Cogent Careers web site (www.cogent-careers.com) to encourage people from all backgrounds to enter the polymer processing industry.

Cogent regularly attend regional/ national careers fairs/ skills events to promote apprenticeships, providing an ideal opportunity to address issues faced by women and ethnic minorities.

Cogent are also working with representative groups such as the United Kingdom Resource Centre, engaging with their Women in Science and Engineering Work programmes.

On and off the job guided learning (England)

Total GLH for each pathway

Legal Requirement:
The Specification of Apprenticeship Standards for England (SASE) states that apprentices must complete a minimum of 280 Guided Learning Hours (GLH) per year when undertaking either an Intermediate Level Apprenticeship or Advanced Level Apprenticeship. A minimum of 100 GLH (or 30% of GLH whichever is the greater) must be completed each year of the Intermediate Level Apprenticeship or Advanced Level Apprenticeship away from the apprentices area of work ('off-the-job').

Definition:
• 'on-the-job' = Time spent learning in the workplace
• 'off-the-job' = Time spent away from the area of work. This could be time spent with a training provider or Further Education College or completing functional skills.

To understand the overall make up of the GLH within a pathway, the 'off-the-job' pathways below should be linked to their corresponding 'on-the-job' pathways described later on in this document.

The total amounts of Guided Learning Hours for each pathway within the Polymer Processing Operations Apprenticeship Framework are as follows:

Intermediate Level Production Operations Pathway: 360 Total GLH.
PAA\VQSET or Edexcel Level 2 Certificate in Polymer/Polymer Composite Operations (QCF) (130 GLH). This is a combined qualification containing both knowledge and competence.
Other framework requirements covering Functional Skills, ERR, mentoring and company training (230 GLH).This pathway will take 12 months to complete.

Advanced Level Processing Operations Pathway 1a: 1170 Total GLH.
PAA\VQSET or Edexcel Level 3 Diploma in Polymer Processing/Polymer Composite Operations (QCF) (220 GLH)
Edexcel BTEC Level 3 Diploma in Applied Science (QCF) (720 GLH).
Other framework requirements covering Functional Skills, ERR, mentoring and company training (230 GLH).This pathway will take 36 months to complete.

Advanced Level Processing Operations Pathway 1b: 810 Total GLH.
PAA\VQSET or Edexcel Level 3 Diploma in Polymer Processing/Polymer Composite Operations (QCF) (220 GLH)
Edexcel BTEC Level 3 Subsidiary Diploma in Applied Science (QCF) (360 GLH).
Other framework requirements covering Functional Skills, ERR, mentoring and company training (230 GLH).This pathway will take 24 months to complete.

Advanced Level Processing Operations Pathway 1c: 810 Total GLH
PAA\VQSET or Edexcel Level 3 Diploma in Polymer Processing/Polymer Composite Operations (QCF) (220 GLH)
Edexcel BTEC Level 3 Diploma In Engineering (Specialist: Manufacturing Engineering) (QCF) (360 GLH).
Other framework requirements covering Functional Skills, ERR, mentoring and company training (230 GLH). This pathway will take 24 months to complete.

Minimum credits for each pathway:

- Intermediate Level Production Operations Pathway: 42 Credits
- Advanced Level Processing Operations Pathway 1a: 174 Credits
- Advanced Level Processing Operations Pathway 1b: 114 Credits
- Advanced Level Processing Operations Pathway 1c: 114 Credits

Minimum off-the-job guided learning hours

Off-the-job GLH for Intermediate Level (Level 2) Pathways
Below are the minimum 'off-the-job' guided learning hours (GLH) for the Polymer/ Composite Operator, dependent on the qualification route selected. The components of the framework undertaken will be decided by the employer, provider and apprentice, based on the employer's requirements and the prior achievements and prior experience of the apprentice.

Intermediate Level Production Operations Pathway: 295 'off-the-job' GLH
PAA\VQSET or Edexcel Level 2 Certificate in Polymer/ Polymer Composite Operations (QCF) (65 'off-the-job' GLH).
Additional framework requirements (230 'off-the-job' GLH).
It is expected that the apprentice will complete 295 'off-the-job' GLH in the first year of the apprenticeship.

Off-the-job GLH for Advanced Level (Level 3) Pathways
Below are the minimum 'off-the-job' guided learning hours (GLH) for the Production Operator/ Technician, dependent on the qualification route selected. The components of the framework undertaken will be decided by the employer, provider and apprentice, based on the employer's requirements and the prior achievements and prior experience of the apprentice.

Advanced Level Processing Operations Pathway 1a: 950 'off-the-job' GLH
Edexcel BTEC Level 3 Diploma in Applied Science (QCF) (720 'off-the-job' GLH).
Additional framework requirements (230 'off-the-job' GLH).
It is expected that the apprentice will complete 470 'off-the-job' GLH in the first year of the apprenticeship and a further 240 'off-the-job' GLH to be completed over months 13 to 24 and 240 'off-the-job' GLH over months 25 to 36.

Advanced Level Processing Operations Pathway 1b: 590 'off-the-job' GLH
Edexcel BTEC Level 3 Subsidiary Diploma in Applied Science (QCF) (360 'off-the-job' GLH).
Additional framework requirements (230 'off-the-job' GLH).
It is expected that the apprentice will complete 410 'off-the-job' GLH in the first year of the apprenticeship and 180 'off-the-job' GLH in months 13 to 24.

Advanced Level Processing Operations Pathway 1c: 590 'off-the-job' GLH
Edexcel BTEC Level 3 BTEC Level 3 Diploma In Engineering (Specialist: Manufacturing

Engineering) (QCF) (360 'off-the-job' GLH).
Additional framework requirements (230 'off-the-job' GLH).
It is expected that the apprentice will complete 410 'off-the-job' GLH in the first year of the apprenticeship and 180 'off-the-job' GLH in months 13 to 24.

The 'off-the-job' guided learning hours provided for all of the pathways above exceeds the minimum legal requirement of 30% or 100 'off-the-job' GLH per year.

How this requirement will be met

The guided learning hours for 'off-the-job' training can be met in a number of ways:

Pathway –Production Operations

Evidence:
Copy of a Certificate for the knowledge qualification –
• Level 2 Certificate in Polymer/Polymer Composite Operations (Combined Qualification)
Copies of the required Certificates for Functional Skills or Key Skills
Copy of the completed assessors evidence document for Employee Rights & Responsibilities
Copy of the completed assessors evidence document for all six Personal Learning and Thinking Skills
Copy of a signed declaration from the training provider stating how the GLH for other types of 'off-the-job' training has been achieved.

Example: How the 'off-the-job' learning requirement will be met using Intermediate Level (Level 2) Production Operations Pathway

• Level 2 Certificate in Polymer/Polymer Composite Operations (Combined Qualification) (QCF) [130 GLH] **[65 'off-the-job' GLH - knowledge]**
• Level 1 Functional Skills Maths (alternatively Key Skill Level 1 Application of Number) [45GLH]*
• Level 1 Functional Skills English (alternatively Key Skill Level 1 Communication) [45GLH]*
• Level 1 Functional Skills Information Communication Technology (ICT) (alternatively Key Skill Level 1 ICT) [45GLH]*
• Company Induction and Employee's Rights and Responsibilities (ERR) [40GLH]
• Mentoring for the duration of the framework [40GLH]
• Other appraisals, company training [15GLH]

• **Total** [295 GLH]

Advanced Level

Example: How the 'off-the-job' learning requirement will be met using Advanced Level (Level 3)
Processing Operations Pathway 1a

• Level 3 Diploma in Applied Science [720GLH]
• Level 2 Functional Skills Maths (alternatively Key Skill Level 2 Application of Number) [45GLH]*
• Level 2 Functional Skills English (alternatively Key Skill Level 2 Communication) [45GLH]*
• Level 2 Functional Skills Information Communication Technology (ICT) (alternatively Key Skill Level 2 ICT) [45GLH]*
• Company Induction and Employee's Rights and Responsibilities (ERR) [40GLH]
• Mentoring for the duration of the framework [40GLH]
• Other appraisals, company training [15GLH]

• **Total** [950 GLH]

Processing Operations Pathway 1b

• Level 3 Subsidiary Diploma in Applied Science [360 GLH]
• Level 2 Functional Skills Maths (alternatively Key Skill Level 2 Application of Number) [45GLH]*
• Level 2 Functional Skills English (alternatively Key Skill Level 2 Communication) [45GLH]*
• Level 2 Functional Skills Information Communication Technology (ICT) (alternatively Key Skill Level 2 (ICT) [45GLH]*
• Company Induction and Employee's Rights and Responsibilities (ERR) [40GLH]
• Mentoring for the duration of the framework [40GLH]
• Other appraisals, company training [15GLH]

• **Total** [590 GLH]

Processing Operations Pathway 1c

• Level 3 Diploma in Engineering (Specialist: Manufacturing Engineering) [360 GLH]

• Level 2 Functional Skills Maths (alternatively Key Skill Level 2 Application of Number) [45GLH]*
• Level 2 Functional Skills English (alternatively Key Skill Level 2 Communication) [45GLH]*
• Level 2 Functional Skills Information Communication Technology (ICT) (alternatively Key Skill Level 2 (ICT) [45GLH]*
• Company Induction and Employee's Rights and Responsibilities (ERR) [40GLH]
• Mentoring for the duration of the framework [40GLH]
• Other appraisals, company training [15GLH]

• **Total** [590 GLH]

* - Please refer to section on Transferable Skills for a list of exemptions or proxy qualifications.

Guided Learning Hours (GLH) should:
1. Achieve clear and specific outcomes which directly contribute to the successful achievement of the framework - this may include accredited and non-accredited elements of the framework;
2. Be planned, reviewed and evaluated jointly between the apprentice and a tutor, teacher, mentor or manager. The Apprentice must be allowed access to a tutor, teacher, mentor or manager, as and when required;
3. Be completed while working under an Apprenticeship Agreement and delivered during contracted working hours;
4. Be delivered through one or more of the following methods: individual and group teaching, distance learning, e-learning, coaching, mentoring, feedback and assessment, collaborative/ networked learning with peers and guided study;
5. Be recorded. (Example; in a log book or diary, completed attendance records or on an electronic/ online recording system, witness testimonies or video recordings.)

Minimum on-the-job guided learning hours

On-the-job GLH for Intermediate Level (Level 2) Pathway:
To understand the overall make up of the GLH within a pathway, the 'on-the-job' pathways below should be linked to their corresponding 'off-the-job' pathways described earlier in this document.

Intermediate Level Production Operations Pathway: 65 GLH
PAA\VQSET or Edexcel Level 2 Certificate in Polymer/Polymer Composite Operations (QCF) (65 'on-the-job' GLH). In year 1 a minimum of 65 GLH will be spent on-the-job, gathering

evidence for the vocational qualification.

Advanced Level Processing Operations Pathway 1a: 220 GLH
PAA\VQSET or Edexcel Level 3 Diploma in Polymer/Polymer Composite Operations (QCF) (220 GLH). In year 1 a minimum of 20 GLH will be spent on-the-job, gathering evidence for the vocational qualification. A further 100 GLH to be completed over months 13 to 24 and 100 GLH to be completed over months 25 to 36.

Advanced Level Processing Operations Pathway 1b: 220 GLH
PAA\VQSET or Edexcel Level 3 Diploma in Polymer/Polymer Composite Operations (QCF) (220 GLH). In year 1 a minimum of 110 GLH will be spent on-the-job, gathering evidence for the vocational qualification. The remaining 110 GLH will be completed over months 13 to 24 completing on-the-job training and assessments.

Advanced Level Processing Operations Pathway 1c: 220 GLH
PAA\VQSET or Edexcel Level 3 Diploma in Polymer/Polymer Composite Operations (QCF) (220 GLH). In year 1 a minimum of 110 GLH will be spent on-the-job, gathering evidence for the vocational qualification. The remaining 110 GLH will be completed over months 13 to 24 completing on-the-job training and assessments.

How this requirement will be met

On-the-job training may include any activity where an apprentice receives some form of instruction, tuition, guidance, support or feedback whilst carrying out their day to day role.

On-the-job training will consist of an apprentice meeting and demonstrating the skills and competencies in the competency qualification relevant to their selected pathway and any time spent receiving on the job support, feedback and review of their job performance.

Intermediate Level Apprenticeship

Pathway – Production Operations

Evidence:

Copy of a Certificate for the competence qualification –

• Level 2 Certificate in Polymer/Polymer Composite Operations
Copy of any certificates for any training courses attended
Copy of any completed assessor/ monitoring reports
Copy of any signed declaration from the training provider stating how the GLH for other type of on-the-job training has been achieved.

Advanced Level Apprenticeship

Pathway –Processing Operations

Evidence:

Copy of a Certificate for the competence qualification –
• Level 3 Diploma in Polymer/Polymer Composite Operations
Copy of any certificates for any training courses attended
Copy of any completed assessor/ monitoring reports
Copy of any signed declaration from the training provider stating how the GLH for other type of on-the-job training has been achieved

Guided Learning Hours (GLH) should:
1. Achieve clear and specific outcomes which directly contribute to the successful achievement of the framework - this may include accredited and non-accredited elements of the framework;
2. Be planned, reviewed and evaluated jointly between the apprentice and a tutor, teacher, mentor or manager. The Apprentice must be allowed access to a tutor, teacher, mentor or manager, as and when required;
3. Be completed while working under an Apprenticeship Agreement and delivered during contracted working hours;
4. Be delivered through one or more of the following methods: individual and group teaching, distance learning, e-learning, coaching, mentoring, feedback and assessment, collaborative/ networked learning with peers and guided study;
5. Be recorded. (Example; in a log book or diary, completed attendance records or on an electronic/ online recording system, witness testimonies or video recordings.)

Personal learning and thinking skills assessment and recognition (England)

Summary of Personal Learning and Thinking Skills

Personal Learning and Thinking Skills (PLTS) will be delivered through a combination of practical experience, experiential learning and/or through formal instruction dependent on how the individual PLTS relate to that particular unit.

The six individual PLTS have been mapped to the mandatory units of the vocational qualifications contained in this framework. The Cogent PLTS pack signposts where each learning outcome for the individual PLTS is embedded within the mandatory units.

As the apprentice completes the mandatory units they will need to highlight evidence of how the individual PLTS has been achieved. Evidence may be gathered in the form of a logbook, portfolio entries, observations, tasks and underpinning knowledge (UPK) tests. Within the PLTS pack there is a facility for the Apprentice to record/ signpost to relevant, supporting evidence that the skill has been used to get tasks done in the workplace.

The assessor will then need to check that this evidence is correct. A copy of the assessor's assessment documentation will then be submitted to the certificating authority as evidence that the PLTS has been achieved.

Alternatively, it is possible for Apprentices to undertake a specific QCF unit for PLTS which would be formally delivered, assessed and accredited. Some training providers may choose this option but this framework does not require the achievement of an accredited PLTS qualification unit.

It is important to note that the apprentice must acheive the standards of attainment for all 6 Personal Learning and Thinking Skills.

Further guidance can be obtained by downloading a PLTS pack from the Apprenticeships

section of the Cogent website. (www.cogent-ssc.com)

Creative thinking

Apprentices will need to show how they can think creatively by generating and exploring ideas, making original connections. They will try different ways to tackle a problem, working with others to find imaginative solutions and outcomes that are of value.

The creative thinking PLTS have been mapped to the mandatory units of the vocational qualifications contained in this framework. The Cogent PLTS pack signposts where each learning outcome for the individual PLTS is embedded within the mandatory units.

Independent enquiry

Apprentices will be expected to process and evaluate information within their work, planning what to do and how to go about it. They will take informed and well-reasoned decisions, recognising that others have different beliefs and attitudes.

The independent enquiry PLTS have been mapped to the mandatory units of the vocational qualifications contained in this framework. The Cogent PLTS pack signposts where each learning outcome for the individual PLTS is embedded within the mandatory units.

Reflective learning

Apprentices must evaluate their strengths and limitations, setting themselves realistic goals with criteria for success. They will monitor their own performance and progress, inviting feedback from others and making changes to further their learning.

The reflective learning PLTS have been mapped to the mandatory units of the vocational qualifications contained in this framework. The Cogent PLTS pack signposts where each learning outcome for the individual PLTS is embedded within the mandatory units.

Team working

Apprentices will be required to work confidently with others, adapting to different contexts and taking responsibility for their own part. They will listen to and take account of different views. They will form collaborative relationships, resolving issues to reach agreed outcomes.

The team working PLTS have been mapped to the mandatory units of the vocational qualifications contained in this framework. The Cogent PLTS pack signposts where each learning outcome for the individual PLTS is embedded within the mandatory units.

Self management

Apprentices must show how they can organise themselves, showing personal responsibility, initiative, creativity and enterprise with a commitment to learning and self-improvement. They will actively embrace change, responding positively to new priorities, coping with challenges and looking for opportunities.

The self management PLTS have been mapped to the mandatory units of the vocational qualifications contained in this framework. The Cogent PLTS pack signposts where each learning outcome for the individual PLTS is embedded within the mandatory units.

Effective participation

Apprentices must show how they have actively engaged with issues that affect them and those around them. They will play a full part in the life of their college or workplace by taking responsible action to bring about improvements for others as well as themselves.

The effective participation PLTS have been mapped to the mandatory units of the vocational qualifications contained in this framework. The Cogent PLTS pack signposts where each learning outcome for the individual PLTS is embedded within the mandatory units.

Additional employer requirements

None

apprenticeship
FRAMEWORKS ONLINE

For more information visit
www.apprenticeshipframeworksonline.semta.org.uk