



# **PIABC LEVEL 2 EXTENDED DIPLOMA IN POLYMER OPERATIONS**

(Qualification Number: 603/3796/5)

## **Qualification Specification**

Created: 28 March 2019

## PURPOSE

The regulated qualification PIABC Level 2 Extended Diploma in Polymer Operations (QN: 603/3796/5) has been designed for learners working in the polymer operations and related sectors. The main purpose of the qualification is to provide industry specific knowledge and skills appropriate for the day to day activities of the polymer operations environment.

Programmes leading to the qualifications can be organised and delivered by providers who have gained centre and qualification approval from PIABC Limited (PIABC). To achieve this they need to complete the PIABC centre and qualification approval procedures available from PIABC's website ([www.piabc.org.uk](http://www.piabc.org.uk)). In completing the documentation and the approval visit, centres need to demonstrate their ability to deliver high quality education leading to the qualifications. The actual style of delivery is up to the centre but could include taught sessions, tutor support, distance learning, work books, mentor support or any other method that the centre considers appropriate. In choosing their delivery method centres are expected to employ robust quality assurance processes. PIABC will appoint its own External Quality Assurers to ensure the effective operation of these processes and the maintenance of standards of quality.

It is expected that courses leading to the qualification will take a minimum of 49 guided learning hours, which is the average hours a learner may require guidance and support from teaching, learning and assessment professional to achieve the qualification. Learners will also be expected to carry out additional reading and other work to complete each unit and prepare for assessment. It is anticipated that the qualification will require a minimum of 495 hours of total qualification time for satisfactory completion for an average learner.

This qualification has been designed to be taken alongside the Level 2 Apprenticeship Standard – Science Manufacturing Process Operative to provide the theoretical knowledge required by an apprentice. Although this standard does not require an apprentice to undertake any additional qualification to successfully show competency in the science manufacturing process operative occupation, but it an option for employers for their apprentices.

## OUTCOMES

1. Provide and enhance the skills competency, knowledge and job satisfaction of learners - providing them with a means of progression to higher level job roles and qualifications.
2. Provide employers with an open and transparent basis for judging the suitability of learners for employment and promotion.
3. Facilitate job movement throughout the polymer processing industry and related sectors.

Specific outcomes for the qualification are listed under the individual unit description.

## TARGET GROUP

This Level 2 qualification is appropriate for those wanting to enhance their employment and progression opportunities in the polymer processing industry and related sectors:

There are two broad target groups:

1. People within the industry who want to extend their knowledge and skills to gain a recognised qualification.
2. People within the industry who want to operate more professionally and effectively.

## ENTRY REQUIREMENTS

There are no entry qualifications or age limits required for this qualification. But the PIABC Level 2 Extended Diploma in Polymer Operations (QN: 603/3796/5) is intended for those learners who are new to the industry.

Assessment for this qualification is open to any learner who has the potential to reach the standards laid down for level 2 qualifications. An initial assessment of past experience and current skills, knowledge and understanding should be carried out prior to commencement, to determine suitability for this qualification.

Aids or appliances, which are designed to alleviate disability, may be used during assessment, providing they do not compromise the standard required.

## PROGRAMME ORGANISATION

Programmes leading to the PIABC Level 2 Extended Diploma in Polymer Operations (QN: 603/3796/5) can be organised and delivered by providers who have gained centre and qualification approval from PIABC. To achieve this they need to complete the PIABC centre and qualification approval procedures available from [www.piabc.org.uk](http://www.piabc.org.uk). In completing the documentation and the approval visit, centres need to demonstrate their ability to deliver high quality education leading to the qualification. Centres are expected to employ robust quality assurance processes. PIABC will appoint its own External Quality Assurers to ensure the effective operation of these processes and the maintenance of standards of quality.

It is anticipated that the qualification will require a total qualification time of 495 hours. This includes assessment, self study and taught hours for satisfactory completion.

The organisation of the qualification is at the discretion of the centre and will take into account the aims, aspirations and experience of the learners.

Centres are encouraged to choose the most suitable curriculum model for their learners. Whilst the sequential delivery of parts of the unit is a possibility and may provide the most straightforward way of determining completion, it may be that some degree of integration of elements will occur, or that other methods of delivery are more appropriate to meet the needs of learners. It should be noted however that the whole unit and all the learning outcomes will be assessed.

Centres must ensure that adequate arrangements are in place for supporting learners. This could be either through separate tutorial sessions or through the use of time within structured study sessions.

Centres using on-line or other forms of open learning must ensure that appropriate tutorial support is provided for learners.

The employer's engagement in learning and assessment opportunities will be paramount in securing timely achievement and a participative role should be encouraged.

In relevant circumstances, centres are recommended to provide information and guidance to their learners on the availability and type of employment the qualification may lead to and on the progression routes available for further education and training in polymer process industry and associate sectors.

## **GUIDANCE ON LEARNING AND TEACHING STRATEGY, METHODS AND ASSESSMENT**

As far as possible, it is important that the course is taught by relating the underlying theory to practical examples and applications. Two factors which will help in this regard are:

1. The use of staff with direct experience in the industry. This must, of course, be balanced against a sound understanding of the theoretical principles, as anecdotal experience alone is unlikely to meet the requirements of the course.
2. Practical and commercial examples that underpin a more theoretical understanding should be used to show the link between theory and practice. DVD illustrations of processes could also be used as part of the teaching regime. A further and invaluable source of information is the Internet and there are many web sites which demonstrate important aspects of timber processing and use. Learners should be encouraged to research this material.
3. Practical experience of workplace operations dealing with polymer processing and the individual learner's chosen pathway. It is essential that Learners are able to, and can demonstrate their skills and knowledge in their own work environment with its production pressures

Learners employed in the polymer processing industry will come to the qualification with varying levels of existing knowledge and/or practical experience of some parts of the Learning Outcomes. Training needs should be identified and gaps in knowledge and competency should be filled with a planned delivery of an individual learning plan. This should be utilised in preparing for teaching and assessment. The sharing of knowledge which has the potential to lead to a high level of understanding should be encouraged by the use of staff with direct experience in the polymer process industry - particularly in the individual learner's chosen pathway. This must, of course, be balanced against a sound understanding of the theoretical understanding.

Where the skills assessment is to be carried out in a "production environment" this environment must not be simulated. The assessment should take account of production pressure within a natural work place.

The relationship between theory and practice is a theme that should be reflected in the assessments for the programme. Therefore in structured learning and individual work, learners should be aware of the requirement to develop a theoretical understanding to their practical work and a practical application to their theoretical understanding.

Those developing learning programmes should expect to achieve all the learning outcomes. It may be useful to have workbooks for use either at home or in the workplace.

## QUALIFICATION DESCRIPTION

This qualification follows the PIABC principles for designing units and qualifications and contains the features listed as follows:

- Unit reference number, title, guided learning hours, grading structure and assessment guidance.
- Each unit consist of:
  - Learning outcomes that show what the learners will be able to understand, know or demonstrate.
  - Assessment criteria that show what the learners can do or produce in order to show that they have met the learning outcome.
- To successfully complete, learners must meet all the learning outcomes and gain an overall pass for each unit.

## QUALIFICATION LEVEL

PIABC Level 2 Extended Diploma in Polymer Operations (QN: 603/3796/5) has been developed as a level 2 qualification.

The assessments for this qualification are based on the learning outcomes and assessment criteria set in a way that demonstrates that the learner can show that they have the knowledge and skills associated with a level 2 qualification.

It will prepare the learner to operate as a competent team member and will greatly assist them in their career development.

When work for this qualification is assessed, it is important to realise that evidence will be sought which demonstrates these features below.

## Level 2 Descriptor

### Summary

The descriptors set out the generic knowledge and skills associated with the typical holder of a qualification at Level 2. The level descriptors are framed as outcomes and each category starts with a stem statement (“the holder can...”) which then links into the outcomes associated with each level of the framework.

### Knowledge descriptor (the holder...)

- Has knowledge and understanding of facts, procedures and ideas in an area of study or field of work to complete well-defined tasks and address straightforward problems.
- Can interpret relevant information and ideas.
- Is aware of a range of information that is relevant to the area of study or work.

### Skills descriptor (the holder...)

- Select and use relevant cognitive and practical skills to complete well-defined, generally routine tasks and address straightforward problems.
- Identify, gather and use relevant information to inform actions.
- Identify how effective actions have been.

*Source: Qualification and Component Levels - Requirements and Guidance for All Awarding Organisations and All Qualifications. Version: Ofqual/15/5774. Ofqual 2015.*

## QUALIFICATION STRUCTURE

Six mandatory units must be taken by the learner.

PIABC Unit Ref.	Ofqual Unit Ref.	Unit Title	Level	GLH	Total Unit Time (hrs)	Credit
<b>MANDATORY UNITS (49 Credits Required)</b>						
DPO1	K/617/3072	Principles and Requirements of Polymer Processing	2	33	61	6
DPO2	M/617/3073	Health, Safety and Environmental Principles when Operating Polymer Processes	2	30	60	6
DPO3	T/617/3074	Quality, Process Control and Improvement Techniques used in Polymer Processing	2	34	71	7
DPO4	A/617/3075	Prepare, Start Up and Shut Down a Polymer Process	2	34	93	9
DPO5	F/617/3076	Basic Skills in Mathematics, Communication and Behaviour required in a Polymer Processing Environment	2	90	126	13
DPO6	J/617/3077	Install and Prepare a Polymer Processing Forming Tool and Ancillary Equipment for Production	2	42	84	8
<b>Qualification Level</b>			<b>2</b>			
<b>Total Guided Learning Hours (GLH)</b>				<b>263</b>		
<b>Total Qualification Time (TQT)</b>					<b>495</b>	
<b>Total Credit</b>						<b>49</b>

## **ASSESSMENT AND GRADING**

### **MANDATORY UNITS (DPO1, DPO2 and DPO3)**

These units are assessed by completing assignments which are set, internally assessed and internally quality assured by the centre.

The assignments should be designed for a holistic approach to the assessment and confirm learners have a full contextualised understanding of all the assessment criteria.

Assignments must incorporate aspects and examples of the learners own production environment; including policies, procedures, processes, equipment, and materials used. (Production environments must not be simulated for this unit).

Centre assignments and their management will be externally quality assured by PIABC.

These units have no grading; learners need to pass all the assessment criteria.

### **MANDATORY UNIT (DPO4)**

This unit should be predominantly assessed over time by natural observation in a production environment; this and other forms of supportive evidence should confirm ongoing and consistent competence over time. The Learner will successfully complete all the assessment criteria.

The Learner will be assessed on one type of polymer processing technique (e.g. extrusion, injection moulding, transfer moulding, material mixing/preparation, finishing/assembly operations, etc.).

The production environment for a polymer processing technique must not be simulated

The observations and any supporting evidence are internally assessed and internally quality assured by the Centre.

The Centre's assessments will be externally quality assured by PIABC.

This unit has no grading; learners need to pass all the assessment criteria.

### **MANDATORY UNIT (DPO5)**

This unit should be predominantly assessed over time by natural observation in a polymer production environment; this and other forms of supportive evidence should confirm ongoing and consistent competence over time. The Learner will successfully complete all the assessment criteria.

The production environment for a polymer processing technique (e.g. extrusion, injection moulding, transfer moulding, material mixing/preparation, finishing/assembly operations, etc.) must not be simulated.

The evidence can be generated holistically from activities and assignments within other units, particularly DP04.

Assignments must incorporate aspects and examples of the learners own production environment; including, procedures, processes, documentation, equipment, materials used, etc.

Learners who have successfully achieved Functional Skills level 1 in maths or equivalent can use this as APA (Accreditation of Prior Achievement) towards Learning Outcome 2.



Learners who have successfully achieved Functional Skills level 1 in maths or equivalent can use this as APA (Accreditation of Prior Achievement) towards Learning Outcome 3.

The observations and any supporting evidence are internally assessed and internally quality assured by the Centre.

The Centre's assessments will be externally quality assured by PIABC.

This unit has no grading; learners need to pass all the assessment criteria.

### **MANDATORY UNIT (DPO6)**

The Learner will be assessed on one type of polymer processing technique (e.g. extrusion, injection moulding, transfer moulding, material mixing/preparation, finishing/assembly operations, etc.)

The production environment for a polymer processing technique must not be simulated.

The knowledge and understanding Learning Outcomes (LO1 & LO2) in this unit are assessed by completing assignments which are set, assessed and quality assured by the centre.

The assignments should be designed for a holistic approach to the assessment and confirm learners have a full contextualised understanding of all the assessment criteria.

Assignments must incorporate aspects and examples of the learners own production environment; including policies, procedures, processes, equipment, and materials used. (Production environments must not be simulated for this unit).

The performance Learning Outcomes (LO3 & LO4) in this unit should be predominantly assessed over time by natural observation in a production environment, this and other forms of supportive evidence should confirm ongoing and consistent competence over time.

Centre assignments, observations and any supporting evidence are internally assessed and internally quality assured by the Centre.

The Centre's assessments will be externally quality assured by PIABC.

This unit has no grading; learners need to pass all the assessment criteria.

### **QUALIFICATION CERTIFICATION**

To achieve the full qualification, PIABC Level 2 Extended Diploma in Polymer Operations (QN: 603/3796/5) learners need to successfully gain the 49 credits by completing the six mandatory units.

## REGULATORY INFORMATION

Countries offered in:	England
Subject/sector area:	4.2 Manufacturing Technologies
Qualification operational start date:	31 October 2018
Qualification review date:	01 November 2019
Applicable age ranges (years):	16-18, 18+

## GLOSSARY

Term	Definition
Learning outcome	This describes what a learner needs to know, understand or do as a result of the process of learning.
Assessment criteria	These are the requirements learners are expected to meet to demonstrate that a learning outcome has been achieved.
Centre	The organisation that is approved by PIABC for the purposes of preparing learners for assessment.
Guided Learning Hours (GLH)	GLH is the average hours a learner may require guidance and support from teaching, learning and assessment professional to achieve the qualification.
Total Qualification Time (TQT)	This is an indication of the minimum length of time it would take the average learner to complete their qualification.

## FURTHER INFORMATION

Please contact PIABC Limited directly at:

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