



PIABC LEVEL 3 CERTIFICATE IN PACKAGING

Qualification Number: 610/0741/9

Qualification Specification

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PURPOSE

The PIABC Level 3 Certificate in Packaging (QN: 610/0741/9) is a nationally recognised qualification for those embarking on a career in the packaging industry, or for those who typically interface with some aspect of packaging handling or management.

The qualification provides learners with a broad knowledge of the principles, materials, processes and other elements of packaging production and use.

Those achieving the PIABC Level 3 Certificate in Packaging (QN: 610/0741/9) will be able to apply this knowledge to solving problems and making decisions associated with the technical and aesthetic performance, cost, safety and legality of packaging materials and packed products.

Within each of the units there are opportunities for the development of a range of key or functional skills and other learning opportunities, which can be devised by approved centres that offer the units leading to the qualification.

The Certificate can also provide a very useful complementary qualification for those on HNC/D, foundation degree or other higher education programmes in packaging design, food science/technology, materials science/engineering, and logistics.

GENERAL OUTCOMES

The general objectives of the PIABC Level 3 Certificate in Packaging (QN: 610/0741/9) are to:

1. Provide those employed in the packaging and related industries with the skills, knowledge and understanding to underpin and enhance job experience.
2. Provide learners with a portable qualification to enable job movement throughout the industry.
3. Provide learners with a means of progression to higher level qualifications, e.g. PIABC Level 5 Diploma in Packaging Technology and other Level 4/5 qualifications.
4. Provide employers throughout the packaging and related industries with a firm basis for judging suitability of candidates.
5. Raise the status of those employed in the packaging and related industries.

TARGET GROUP

This Level 3 qualification is appropriate for those wanting to enhance their employment and progression opportunities in the packaging and related industries. For example, candidates may be:

- Key personnel who handle and use packaging e.g. line operators, supervisors, maintenance engineers.
- Personnel who liaise with specifiers, users and handlers of packaging e.g. quality control and assurance personnel, designers, marketing personnel, sales executives.
- Personnel who liaise with packaging suppliers, other than those with direct responsibility for specifications, e.g. buyers, production planners, warehousing and distribution personnel.
- New recruits to the manufacturing and packaging industries, who need an introduction to the broad subject of packaging.
- Those looking for a broad qualification in packaging as a basis for career development.

ENTRY REQUIREMENTS

As a guide for entry onto programmes, candidates will normally be expected to have a minimum of 5 GCSEs at grade A – C (or equivalent), plus the key skills of numeracy, communication and information technology. Alternatively, substantial relevant industrial experience may also be the basis for successful study.

PROGRESSION

Success in this qualification prepares candidates for progression in the packaging industry to a position where they can assume extra responsibility in a company at any point in the supply chain. Success also provides the student with a qualification that enables them to progress on to the PIABC Level 5 Diploma in Packaging Technology and other higher-level qualifications.

STAFFING

It is expected that staff involved with the delivery of the certificate will be appropriately qualified or experienced in packaging. PIABC's centre and qualification approval processes require prospective centres to provide details of the staff involved in delivery and assessment including their qualifications and relevant training/employment experience, plus staff development arrangements. Whilst these details are passed on to the external moderator appointed by PIABC, it is the centre's responsibility to ensure tutors' qualifications are both bona fide and appropriate to the level of the qualification.

QUALITY ASSURANCE

PIABC requires that each centre has a quality assurance and enhancement procedure in respect of the programme, and a means of monitoring its implementation.

There should be a qualification team that is responsible for preparing an annual self-assessment of the programme and for monitoring the improvement measures resulting from this.

This self-assessment process should use evidence from different sources including:

- Candidate self-evaluation.
- The views of external individuals and organisations, for example those companies sending learners.
- Staff working on the qualification.

In addition, it is also expected that there will be an internal moderation procedure to ensure standardisation of unit delivery. This will include the following elements:

- Classroom observation.
- Peer review of qualification materials.
- Moderation of any internally assessed elements.

There should be a named and appropriately qualified individual (Centre Co-ordinator) who has the necessary authority, with whom PIABC can liaise directly on all matters of management, administration, and quality assurance.

EXTERNAL MODERATION

PIABC will appoint external centre monitors to undertake external quality assurance activities with the centres in order to ensure the maintenance of standards of quality.

PROGRAMME ORGANISATION

It is anticipated that the qualification will require a minimum of 35 guided learning hours for satisfactory completion.

The organisation of the qualification is at the discretion of the centre and will consider the aims, aspirations, and experience of the candidates.

Centres are encouraged to choose the most suitable curriculum model for their candidates. Whilst the sequential delivery of units is a possibility and may provide the most straightforward way of determining completion of individual units, it may be that some degree of integration of units will occur.

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

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

In relevant circumstances, centres are recommended to provide information and guidance to their candidates on the availability and type of employment the programme may lead to and on the progression routes available for further education and training in packaging.

Overall, it is expected that units leading to the qualification will take approximately 35 guided learning hours. In addition, candidates will be expected to carry out additional reading and other work to complete each unit. It is likely that this will add up to a total of 139 hours of study for the qualification.

GUIDANCE ON LEARNING AND TEACHING STRATEGY AND METHODS

Packaging is a practical subject, based on theoretical principles. As far as possible, it is important that the units are taught by relating the underlying theory to practical examples and applications. Two factors which will help in this regard are:

1. The use of lecturers with direct experience in the packaging and related industries. Specifically, for the option units, lecturers with experience in the relevant packaging sector are likely to offer the most appropriate level of practical knowledge. 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 units.
2. Wherever possible, the use of case studies and illustrations of processes should 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 packaging manufacture and use. Lecturers should be encouraged to use this material, always making sure due acknowledgment is given to the source.

Those learners employed in the packaging and related industries, will come to the programme with varying levels of existing knowledge and/or practical experience of some parts of the syllabus. Lecturers should utilise this, through group work and other structured interactive activities, thus encouraging the sharing of knowledge which has the potential to lead to a high level of understanding.

REASONABLE ADJUSTMENTS

Please refer to “*Access to Assessment – Arrangements for Candidates Needing Reasonable Adjustments, Special Consideration and/or Extenuating Circumstances in the Assessment Process*” document for more information. A copy is available from the PIABC team at piabc@iom3.org.

In carrying out assessments, PIABC’s policy is to give all candidates equal opportunity to demonstrate attainment and to provide candidates with disabilities, learning difficulties and other problems the same access to assessment as other candidates.

Assessment arrangements maybe varied however, where the standards permit, for candidates with particular requirements. These requirements may take the form of special condition/extenuating circumstances for candidates whose needs are covered by the Equality Act 2010 or extenuating circumstances for those whose needs result from temporary disability or indisposition such as short-term illness.

In general, variation in assessment arrangements may be needed for physical disability, visual impairment, hearing impairment, specific learning difficulty, medical conditions, and use of English as a second language.

The nature of any special arrangements depends largely upon the qualification being followed and the assessment strategy employed. For scheduled fixed date examinations, then arrangements must be agreed directly with PIABC. For assessments at Level 3 and above, centres must write to PIABC to request concessions at least two months before the assessment.

Concessions will be limited by specification and assessment requirements and supporting evidence will be required.

QUALIFICATION LEVEL

The Certificate in Packaging is a Level 3 qualification.

Candidates require the skills, knowledge and understanding in applying technical, aesthetic, and commercial principles to a range of tasks.

Candidates are required to analyse problems and suggest effective solutions.

This qualification requires the learner to understand various elements in the packaging process, for example packaging design, materials, and production methods. It will prepare the learner to operate in selected parts of the packaging supply chain. The qualification also prepares candidates to make judgements about alternative solutions to packaging problems, and to identify the critical factors associated with them.

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

LEVEL 3 DESCRIPTOR

Summary

The descriptors set out the generic knowledge and skills associated with the typical holder of a qualification at level 3. 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 factual, procedural and theoretical knowledge and understanding of a subject or field of work to complete tasks and address problems that while well-defined, may be complex and non-routine.
- Can interpret and evaluate relevant information and ideas.
- Is aware of the nature of the area of study or work.
- Is aware of different perspectives or approaches within the area of study or work.

Skills descriptor (the holder...)

- Identify, select and use appropriate cognitive and practical skills, methods and procedures to address problems that while well-defined, may be complex and non-routine.
- Use appropriate investigation to inform actions.
- Review how effective methods and actions have been.

Source: Ofqual Handbook: General Conditions of Recognition. Condition E9 - Qualification and Component Levels. Level Requirements (including level descriptors). Ofqual Updated 12 May 2022.

QUALIFICATION STRUCTURE

Learners must achieve 14 credits - this equates to achieving all the mandatory units. Indicative learning hours are shown below; however, these will vary for each individual.

PIABC Unit Ref.	Ofqual Unit Ref.	Unit Title	Level	Unit GLH*	Total Unit Time (hrs)	Credit
Unit A	R/650/2137	Role and functions of packaging	3	10	35	4
Unit B	T/650/2138	Packaging development process	3	3	13	1
Unit C	Y/650/2139	Packaging sustainability	3	3	13	1
Unit D	F/650/2140	Packaging materials and formats	3	11	50	5
Unit E	H/650/2141	Printing & decoration processes	3	5	15	2
Unit F	J/650/2142	Packing line operations	3	3	13	1
Qualification Level			3			
Total GLH				35		
Total Qualification Time (TQT**)					139	
Total Credit						14

GLH* = 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.

TQT** = This is an indication of the minimum length of time it would take the average learner to complete their qualification.

UNIT CONTENT

UNIT A - ROLE AND FUNCTIONS OF PACKAGING

Ofqual Unit No: R/650/2137
Unit Level: 3

Guided Learning Hours: 10
Unit Credits: 4

Learning Outcomes: what you need to know/understand		Assessment criteria: what you need to do		Indicative content
1.0	Understand the role and functions of packaging	1.1	Discuss the role of packaging throughout the supply chain and its interactions with society	<ul style="list-style-type: none"> • Definition of packaging including the levels of packaging. • Development of packaging. • Overview of the packaging market. • Factor effecting packaging use (i.e. lifestyle, legislation, business changes, etc.).
		1.2	Identify and explain the role of packaging in terms of its functions	<ul style="list-style-type: none"> • Contain, protect, preserve, provide convenience, inform, sell at all levels of packaging including: • Describe the supply chains from packer filler to end use and disposal. • Identification of common hazards (physical, chemical, biological, and micro biological), their likely causes and their effects on product. • Summarise the role of packaging in mitigating the effects of hazards faced by packed products in the supply chain to end use. • Product preservation/basic principles of spoilage and how packaging can contribute to extending shelf life and efficacy of product • Packaging as a means of delivering efficiency and convenience throughout the supply chain from packaging manufacture through to disposal by the consumer. • Knowledge of how packaging may be used to assist consumer convenience in the use of the product (e.g. dispensing of the product, and features which make the pack easy to open, easy and safe to hold, carry and store, tamper evidence, child resistance). • How packaging is used to provide information (e.g. legislative requirements) • Encouraging the sale of the product through graphics and structural design, use of different materials and functionality. • Includes a basic awareness of environmental and economic issues including responsible disposal.

Learning Outcomes: what you need to know/understand	Assessment criteria: what you need to do	Indicative content
		<ul style="list-style-type: none"> • Application to food and drink, cosmetics, toiletries, chemicals, pharmaceuticals, and consumer durables • Retail (including chilled and frozen goods), business to business, e-commerce packaging • Explain why the packaging components fulfil the appropriate functions to meet the needs of the supply chain whether retail (including chilled and frozen goods), business to business, e-commerce packaging and the end user.

UNIT B - PACKAGING DEVELOPMENT PROCESS

Ofqual Unit No: T/650/2138

Guided Learning Hours: 3

Unit Level: 3

Unit Credits: 1

Learning Outcomes: what you need to know/understand		Assessment criteria: what you need to do		Indicative content
1.0	Understand the packaging development process	1.1	Describe the factors which must be considered when developing packaging for new and existing products	<ul style="list-style-type: none"> • Reasons for change, what constitutes packaging development. • Understand the complexity of the alterations from minor graphic alterations to the development of a new pack for a new product (e.g. a copy change, a pack size change, a flavour/fragrance range extension, and a new product/new pack development). • Information about demand of the product and consumer including the demands of the packaging line and the storage, distribution and selling environment (e.g. retail or e-commerce). • Appreciation of the impact of development costs and the lead times involved.
		1.2	Identify the process of packaging development from concept to product launch	<ul style="list-style-type: none"> • Knowledge of the process of packaging development, from concept to product launch and explanation of the importance of each step. • Steps: <ol style="list-style-type: none"> 1. Defining the objective - agreeing purpose of change being considered and measurable indicators by which success will be defined. 2. Developing a packaging brief - Information about needs of the product and market including the demands of the packaging line and the storage, distribution and selling environment (e.g. retail or e-commerce). 3. Developing solutions - Knowledge of packaging materials, properties, availability (time scales/lead-times/minimum order quantities (MOQs)) and comparative costs so that appropriate supplier can be identified, and preliminary specification agreed. Assemble a range of solutions including visual and physical prototype. Appreciation of the interactions of different levels of packaging (i.e. primary, secondary, and tertiary) 4. Packaging material and pack testing - evaluating the solutions and agreeing on how to move forward. Product/pack compatibility, shelf life, design fulfilment, line trials, transit tests, market testing

				<p>5. Finalising specifications - Defining requirements, drawing up specifications, information to be included. Placing orders. Agreeing standards of acceptability.</p> <p>6. Launch & Review - Managing the introduction. Monitoring performance.</p> <ul style="list-style-type: none">• Knowledge of the functions/roles involved in the packaging decision making processes, how decisions are made, how timescale is managed, an appreciation of the impact of development costs and the lead times involved.
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UNIT C - PACKAGING SUSTAINABILITY

Ofqual Unit No: Y/650/2139

Unit Level: 3

Guided Learning Hours: 3

Unit Credits: 1

Learning Outcomes: what you need to know/understand		Assessment criteria: what you need to do		Indicative content
1.0	Understand packaging sustainability	1.1	Identify the key environmental sustainability issues for the packaging industry	<ul style="list-style-type: none"> Requirement for environmentally responsible packaging (inc. legislation and other drivers (e.g. manufacturers, marketing, perceived customer expectations and pressure groups)) Understand how packaging contributes to environmental impacts/concerns such as global warming, resource depletion, carbon, energy, water, etc. Relationship of pack to the product and its impact to waste/resource management and meet the functions of packaging Packaging resource management and applying circular economy design principles and pack strategies and their impact on the waste hierarchy. How packaging innovation and design for a circular economy is being implemented.
		1.2	Identify the tools and techniques available to assess the impact of packaging on the environment	

UNIT D - PACKAGING MATERIALS AND FORMATS

Ofqual Unit No: F/650/2140

Unit Level: 3

Guided Learning Hours: 11

Unit Credits: 5

Learning Outcomes: what you need to know/understand		Assessment criteria: what you need to do		Indicative content
1.0	Understand the major packaging materials and formats	1.1	Describe the major packaging materials and formats	<ul style="list-style-type: none"> • Main packaging material types (glass, metal, paper, corrugate, and plastics) with a basic understanding of the raw materials. • Main packaging formats (e.g. bottles, cans, trays, tubs, cartons/cases, and flexible film formats) with a basic understanding of manufacturing processes and properties. • For paper/board, glass and metal, the material's key performance properties and what factors influence those properties can be summarised. For plastics, differentiate between the common packaging plastic groups (e.g. Polyethylene Terephthalate (PET), High Density Polyethylene (HDPE), Low Density Polyethylene (LDPE), Polypropylene (PP) and Polystyrene (PS) and their properties. Identify functions of specialist plastics such as Ethylene Vinyl Alcohol (EVOH), Polyamide (PA), Surlyn, <i>Polyvinyl Alcohol</i> (PVOH) and bioplastics. • An understanding of which of these materials and formats would be the optimum choice for a given end use (including chilled goods, business to business and e-commerce packaging). • Specifications for packaging components including key considerations such as dimensional tolerances and performance properties (e.g. barriers, strength, temperature range, etc.)

UNIT E - PRINTING AND DECORATION PROCESSES

Ofqual Unit No: H/650/2141

Guided Learning Hours: 5

Unit Level: 3

Unit Credits: 2

Learning Outcomes: what you need to know/understand		Assessment criteria: what you need to do		Indicative content
1.0	Understand the basics of the printing and decoration processes used in packaging	1.1	Identify the principles of printing and decoration	<ul style="list-style-type: none"> Summarise the role, use of printing on packaging Explain how colour is perceived Explain how an image is achieved
		1.2	Describe the artwork and reprographic process from creative design to printing process	<ul style="list-style-type: none"> Outline the stages in the artwork and reprographic process Print prep processes: <ul style="list-style-type: none"> Artwork approved Repro processes (e.g. separation of colours and image assembly) Proofing Plate making
		1.3	Describe the different printing/decorating processes for packaging materials and components	<ul style="list-style-type: none"> Identify the main printing and decoration processes used for packaging. (Processes include: flexo, offset litho, gravure, screen, letterpress/dry offset, digital, tampo, embossing and hot foil). Key performance characteristics of the processes and applications (e.g. quality of imagery). High level pros and cons of each process, with regards to cost and quality.

UNIT F - PACKING LINE OPERATIONS

Ofqual Unit No: J/650/2142

Unit Level: 3

Guided Learning Hours: 3

Unit Credits: 1

Learning Outcomes: what you need to know/understand		Assessment criteria: what you need to do		Indicative content
1.0	Understand the key operations on a packing line	1.1	Describe the key operations on a packing line	<ul style="list-style-type: none"> • Flow diagram of tasks - High level diagram from materials fed to line, how filled, closed, identified/coded, collated, removed from the line to warehouse. • The operation of common packaging machines (e.g. Form-Fill-Seal (FFS) operations, liquid and solid filling, types of labels and labelling technology). • An understanding of the impact of material(s), machinery and line operations on the performance of a packaging line (e.g. material and machine considerations, line speeds and output, OEE and types of line checks required).

ASSESSMENT

This qualification is assessed by one 2-hour short answer examination and one written assignment with a suggested word count of 3,000 words.

Both assessments are graded *Pass*, *Merit* or *Distinction*. For a **Pass** the overall mark is 50 - 59%, for a **Merit** is 60 – 69% and over 70%+ for a **Distinction**.

The grading structure for the examination and the assignment are not subject to change.

QUALIFICATION CERTIFICATION

The full qualification is available at *Pass*, *Merit* or *Distinction* to candidates who successfully complete all the assessments.

The overall grading structure for the qualification is not subject to change.

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
Indicative content	Indicative content provides examples of the range of content learners are expected to cover in programmes preparing them for assessment.
Indicative approach	Indicative approach provides an example of the steps learners may take in developing and producing a project.
Primary Packaging	'Primary' or 'Sales' packaging is packaging which forms a sales unit for the user or final consumer, for example, a box containing soap powder.
Secondary Packaging	'Secondary' or 'Grouped' packaging is that which contains several sales units, for example, a cardboard outer containing a number of boxes of soap powder.
Tertiary Packaging	'Tertiary' or 'Transport' packaging is packaging that is used to group secondary packaging together to aid handling and transportation and prevent damage to the products, for example, the pallet and shrink wrap used to transport a number of cardboard outers containing boxes of soap powder.
Packaging	Packaging is defined as "all products made of any materials of any nature to be used for the containment, protection, handling, delivery and preservation of goods from the producer to the user or consumer."
Life Cycle Analysis	Life Cycle Analysis is a technique that quantifies the environmental burdens of a total pack in terms of its consumption of raw materials and energy, and the emissions to air, water and the solid waste stream, during its life.
Life Cycle Assessment	A Life Cycle Assessment is a qualitative interpretation of Life Cycle Analysis results that classifies and evaluates the effect of these results on environmental concerns such as global warming, ozone depletion and acid rain.

FURTHER INFORMATION

Please contact PIABC Limited directly at:

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