



Level 2 Diploma in Structure Assembly Engineering
603/4697/8
Assessment Guide

Diploma - Assessment Principles

Introduction

ETA qualifications are developed in conjunction with the industries and employers they service. They are designed to add value and deliver multidimensional outputs that provide impact for both learners and employers.

It is therefore important that the assessment requirements of ETA qualifications are robust whilst not containing unnecessary and over-burdensome challenges that detract from the intended outcomes and impact. These assessment principles are prepared with that in mind and are applicable to this qualification:

Level 2 Diploma in Structure Assembly Engineering

Principles

There are four key principles to underpin assessment delivery:

1. Assessment should contribute to developing a learner's knowledge and/or skills and provide relevant and current development as the related industry requires.
2. Systems for capturing evidence of competence should be integrated and efficient. Assessment practices for both competence-based and knowledge-based aspects of qualifications should, where possible, be integrated with industry driven standards and requirements.
3. Assessment methods must be appropriate for the level and nature of the qualification units to be assessed. Methods of assessing achievement against learning outcomes and assessment principles must be accommodating and flexible, whilst remaining appropriate for both the level being assessed and industry expectations of learners at that level.
4. Evidence of knowledge and understanding must be recorded and be clearly attributable to the learner. This can be delivered using task based activity with questions and answer sessions, supported by assessor observation.

The choice and application of assessment methods must be consistent with these principles and will generally include:

- Direct Observation
- Written evidence (portfolio/workbook)
- Centre set assignment
- Centre set coursework
- Oral examination
- Professional/open discussion

Delivery Team Requirements

Tutors / Assessors

- Tutors / Assessors should have a detailed knowledge of, and be competent in, the occupational requirements of the units
- Tutors / Assessors should hold or be working towards the related professional qualifications for delivery and assessment as required
- This competence will have been acquired either in direct employment in the occupational role to which the unit relates, or in employment as a manager, supervisor or in-house trainer of employees carrying out the role
- It is unlikely that occupational competence will have been achieved in less than twelve months of employment but individuals with less experience could be considered as assessors if sufficiently occupationally competent

Internal Quality Assurers (IQAs)

- IQAs must have a thorough understanding of the structure, content and occupational requirements of the units that they are internally quality assuring. This understanding will have been acquired while either working directly within or delivering within the relevant occupational area in either an operational or a support function
- The level of understanding must be sufficient to allow the IQA to judge whether the assessor has fully assessed learners against all the principles within the unit
- It is unlikely that a person could have gained this level of understanding in less than twelve months of being employed but individuals with less experience could be considered as IQAs if they have the required level of experience, knowledge and understanding.

Technical / Expert Witness

Expert witnesses can be drawn from a wide range of people who can observe, 'measure and examine performance against the industry and qualification principles. These can include line managers and experienced individuals within a related sector-based organisation. The Technical Expert Witnesses should have proven practical experience and knowledge relating to the content of the principles being assessed.

It is unlikely that someone could become an expert in their entire job role in less than twelve months of being employed in their industry. They could, however, very quickly become an expert in the content of a single unit if this was the focus of their job role.

The assessor should make a judgement as to the level of expertise held by a potential Technical Expert Witness and, where necessary, this should be confirmed with the awarding organisation.

Assessment Materials

ETC Awards Ltd. (ETA) Assessment Materials are protected by copyright and are supplied only to Approved Centres for use solely for the purpose of the assessment of ETA learners.

Instructions for Conducting Assessment

the Approved Centre must either:

- secure approval of in-house assessment material by ETA's External Quality Assurance team prior to use
- use ETA Assessment Materials
- we recognise that reasonable adjustments may be considered at the time of assessment, please refer to the ETA Reasonable adjustments and considerations policy

All approved centres must then handle and store securely all Assessment Materials in accordance with the following:

- Assessment Material must be accessible to learners only during their programme
- The Approved Centre must not make public in any format the contents of any materials either in part or in full.
- Materials must be securely handled and under no circumstances shared with third party organisations or individuals
- The Approved Centre must seek permission from ETA through the External Quality Assurance team if they want to convert Material for alternative storage, retrieval and delivery in electronic formats.

All centre based assessment material must be agreed with ETA prior to use and will be subject to robust monitored during sampling and verification activity.



Level 2 Unit – Health and Safety

Unit aim

This unit introduces learners to health and safety in a workplace relating to themselves and others. It aims to develop learners' awareness of potential hazards to which they may be exposed, how to identify and assess risk, along with how risks may be managed and controlled.

Unit introduction

This unit develops learners understanding of health and safety considerations in the workplace. The unit also develops learner understanding of the causes of accidents and hazards in the workplace. They will know how to identify risk and competently undertake risk assessments. Learners will also develop the skills to suggest measures to minimise the identified risk.

Assessment

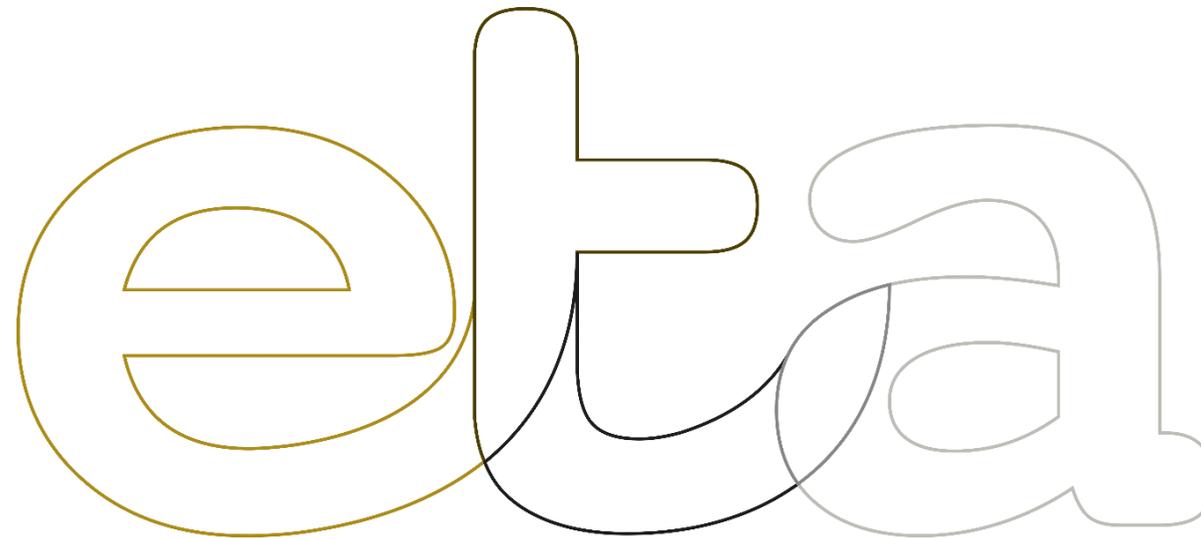
To achieve this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit through a variety of assessment methods appropriate to the delivery environment.

Unit Reference Number		A/617/6199
Qualification Framework		RQF
Title		Health and Safety
Unit Level		Level 2
Guided Learning Hours		40
Total Qualification Time		50
Unit Credit Value		5
Unit Grading Structure		Pass / Fail

	Learning Outcome		Assessment Criteria - The learner can	Criteria expansion
1	Understand the responsibilities for health and safety at work	1.1	Describe the responsibilities in a working environment	This should include, employer, others, self and public
		1.2	State the importance of reporting accidents and near misses	
		1.3	Understand a typical accident reporting procedure	
		1.4	State who is responsible for making accident reports.	
		1.5	Identify and comply with safety and warning signs in the workplace	
2	Understand the causes of accidents at work	2.1	Describe the causes of accidents in the workplace	This should include at least four potential accidents in the chosen work area
		2.2	Associate potential causes of accidents at work	List one possible reason for each the above causes.
		2.3	Describe the safety triangle and its importance	
3	Be able to identify and select personal protective equipment (PPE) required to complete task in the workplace	3.1	Identify the correct PPE for tasks and effectively deploy within the workplace	This must include at least four items of PPE and be observed in the workplace.

		3.2	Examine PPE to confirm its integrity for continued use	
		3.3	Explain the reasons why the identified PPE is required	
4	Know the importance of working safely at height in the workplace	4.1	Define the term “working at height”	List at least four examples of working at height
		4.2	State the employee’s responsibility under current legislation and official guidance whilst working at height	
		4.3	List hazards/ risks in the workplace associated with working at height	This must link to the method statement being followed
		4.4	State how hazards/ risks associated with working at height can be controlled	
		4.5	State the regulation that controls the use of suitable equipment for working at height	
		4.6	Demonstrate safe working practices in a range of circumstances	This must include at least two examples of working at height
5	Know the principles of risk assessment and their importance to health and safety at work	5.1	State the purpose of Site induction, Risk Assessments, Method Statements and Toolbox talks	
		5.2	Be able to read, understand and follow a risk assessment	This must include at least two observed examples from the workplace
		5.3	State the legal requirements for Risk Assessments and Method Statements	
		5.4	State common causes of work-related fatalities and injuries	
		5.5	State the implications of not preventing accidents and ill health at work	
6	Understand causes of fire and when fire extinguishers should be used	6.1	List the major causes of fires in the workplace	This must include the fire triangle

		6.2	Identify the different types of fire extinguishers	
		6.3	Describe when the different types of fire extinguisher should be used and by whom	
7	Understand and demonstrate safe practices whilst working with equipment and materials in a range of environments	7.1	Demonstrate the setup of machinery and equipment that complies with the manufacturers' recommendations	
		7.2	Demonstrate the safe use of machinery and equipment	
		7.3	Demonstrate safe moving handling and storage of materials	
8	Know the potential risks to health of substances in the working environment	8.1	List the main points of the Control of Substances Hazardous to Health (COSHH) Regulations and why is it important to correctly store them	
		8.2	List possible substances hazardous to health under current legislation.	This must include at least four substances
		8.3	List appropriate use for and common risks to health that these substances could affect	For all the substances identified above
		8.4	State the type of hazards/ risks that may occur in the workplace linked with the use of drugs and alcohol	
		8.5	State the important of hygiene at work both the environment and personal	
9	Demonstrate safe manual handling practices.	9.1	Select the most appropriate method to move materials and equipment	
		9.2	Demonstrate the effective moving of tool and equipment	This must include individual, team and mechanical movements.



Level 2 Unit – Preparing and using a CNC Machine

Unit aim

This unit introduces learners to the safe, efficient and effective operation of a CNC production machine. This relates to various job roles and the skills required for employment in the learner's particular sector. The unit will enable learners to work independently within their chosen occupation.

Unit introduction

Learners will develop an understanding of the skills required to work within their chosen sector, including the core sector-related skills, the skills required to work sustainably, and the transferable skills valued by employers, for example having the right attitude and demonstrating appropriate behaviour in line with the legal and ethical issues. Learners will be efficient in the safe and effective operation of a CNC production machine.

Assessment

To achieve this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit through a variety of assessment methods appropriate to the delivery environment.

Unit Reference Number		K/617/6201
Qualification Framework		RQF
Title		Preparing and using a CNC Machine
Unit Level		Level 2
Guided Learning Hours		110
Total Qualification Time		140
Unit Credit Value		14
Unit Grading Structure		Pass / Fail

Learning Outcome		Assessment Criteria - The learner can	Criteria expansion
1	Prepare and use a CNC production machines	1.1	Work safely at all times, complying with health and safety legislation, regulations and other relevant guidelines
		1.2	<p>Apply all of the following checks and practices at all times during the use of CNC machines:</p> <ul style="list-style-type: none"> • adhere to procedures or systems in place for risk assessment, COSHH, personal protective equipment (PPE) and other relevant safety regulations • machine guards are in place and correctly adjusted • components are held securely (without damage or distortion)
			This must include the manufacturers operating guidance for the specific machine being used

			<ul style="list-style-type: none"> • tools are maintained in a suitable/safe condition • the work area is maintained and left in a safe and tidy condition 	
		1.3	Plan the CNC machining activities before they commence	
2	Use a CNC production machine	2.1	Load/input the programme to the machine controller and check the programme for errors using the approved procedures	This must be observed
		2.2	Mount and set the required work holding devices, work piece and cutting tools	As above
		2.3	Feed, position and secure work pieces, using two of the following work holding methods and devices: This could be: <ul style="list-style-type: none"> • chucks with hard jaws • chucks with soft jaws • coil fed • fixtures • drive centres • collet chucks • faceplates • magnetic/pneumatic devices • other work holding devices 	As above
3	Complete production of components within required timescale and standards	3.1	Demonstrate effective production of components	This must be observed and comply with the practice and tolerance using both hand and power tools.
		3.2	Demonstrate the efficient and effective use equipment	As above

		3.3	Complete production following plans and drawings limiting damage and maintaining integrity	As above
		3.4	Explain the correct procedure for the safe disposal of materials	
		3.5	Dispose of waste materials safely following guidelines and legislation	
4	Comply with specification and tolerances	4.1	Safely complete activities following manufacturer, legal and employer specifications	
		4.2	Efficiently conduct activities whilst minimising waste	This should include both environmental and commercial impacts
5	Make adjustments to non-compliant assemblies	5.1	Review components to identify non-compliance with drawings, manufacturer and employer instructions	This must include both compliance with specification and integrity of finish
		5.2	Identify the most relevant and cost effective remedial action	
		5.3	Complete the remedial action to ensure components meet specification	



Level 2 Unit – Fitting and Constructing Sub-Assemblies

Unit aim

This unit introduces learners to the safe, efficient and effective methods of fitting and constructing sub-assemblies. These skills are relative to various job roles and the abilities required for employment in the learner's particular sector. The unit will enable learners to work independently within their chosen occupation.

Unit introduction

Learners will develop an understanding of the skills required to work within their chosen sector, including the core sector-related skills, the skills required to work sustainably, and the transferable skills valued by employers, for example having the right attitude and demonstrating appropriate behaviour in line with the legal and ethical issues. Learners will develop occupational competence, which contains significant transferable skills in assembly and manufacturing environments.

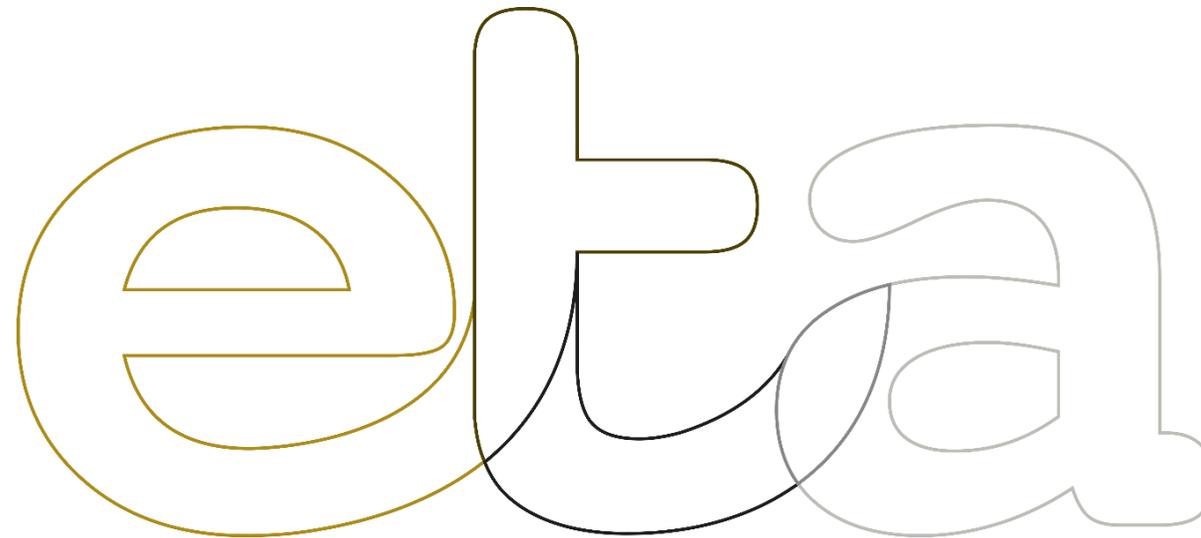
Assessment

To achieve this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit through a variety of assessment methods appropriate to the delivery environment.

Unit Reference Number		A/617/6204
Qualification Framework		RQF
Title		Fitting and constructing sub-assemblies
Unit Level		Level 2
Guided Learning Hours		110
Total Qualification Time		140
Unit Credit Value		14
Unit Grading Structure		Pass / Fail

	Learning Outcome		Assessment Criteria - The learner can	Criteria expansion
1	Plan and prepare for bench fitting activities	1.1	state how to use safe working practices and procedures for maintenance activities	The candidate must be aware of the related method statements
		1.2	Describe the hazards associated with bench fitting activities.	
		1.3	Extract information from engineering drawings.	
2	Select the required components, tools and equipment	2.1	Demonstrate the correct selection and preparation of tools and equipment	This must include both power and hand tools.
		2.2	Describe the benefits and use of joining and fixing techniques	
3	Complete bench fitting and construction of sub-assemblies within required timescale and standards	3.1	Demonstrate effective bench fitting and assembly techniques	This must be observed and comply with the practice and tolerance using both hand and power tools.
		3.2	Demonstrate the efficient and effective use of a range of fixings	As above
		3.3	Complete fitting and assembly following plans and drawings limiting damage and maintaining integrity	As above

		3.4	Explain the correct procedure for the safe disposal of materials	
		3.5	Dispose of waste materials safely following guidelines and legislation	
4	Comply with specification and tolerances	4.1	Safely complete activities following manufacturer, legal and employer specifications	
		4.2	Efficiently conduct activities whilst minimising waste	This should include both environmental and commercial impacts
5	Make adjustments to non-compliant assemblies	5.1	Review the assembly and identify non-compliance with drawings, manufacturer and employer instructions	This must include both compliance with specification and integrity of finish
		5.2	Identify the most relevant and cost effective remedial action	
		5.3	Complete the remedial action to ensure assembly meets specification	

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Level 2 Unit – Erect wall, floor and roof frames and structures

Unit aim

This unit introduces learners to the safe, efficient and effective erecting of wall, floor, roof, frames and structures. This relates to various job roles and the skills required for employment in the learner's particular sector. The unit will enable learners to work independently within their chosen occupation.

Unit introduction

Learners will develop an understanding of the skills required to work within their chosen sector, including the core sector-related skills, the skills required to work sustainably, and the transferable skills valued by employers, for example, having the right attitude and demonstrating appropriate behaviour in line with the legal and ethical issues. Learners will demonstrate the effective construction of frames and structures in a variety of environments.

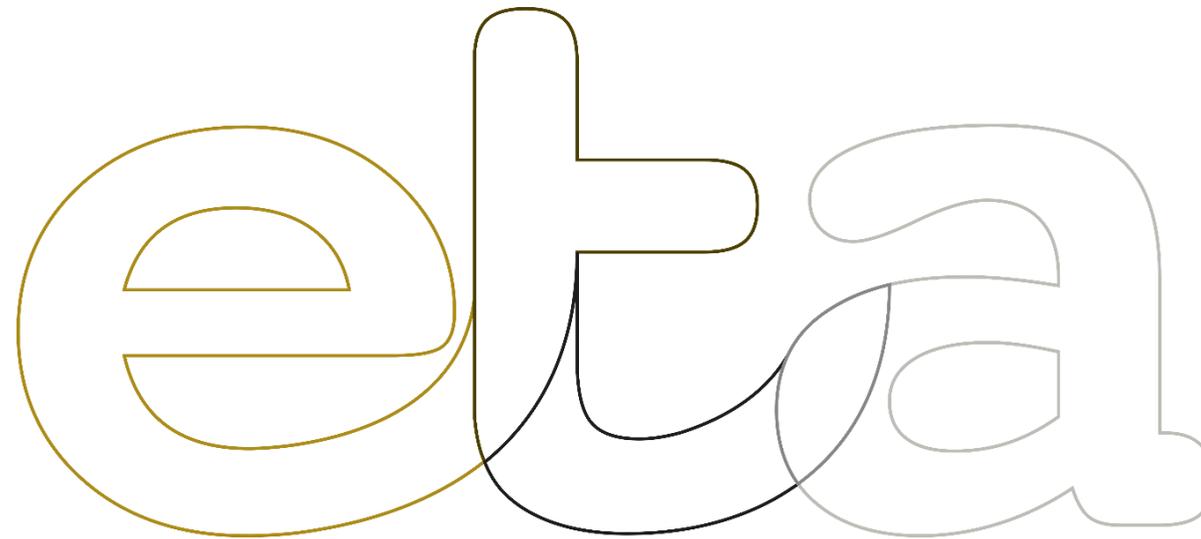
Assessment

To achieve this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit through a variety of assessment methods appropriate to the delivery environment.

Unit Reference Number		F/617/6205
Qualification Framework		RQF
Title		Erect wall, floor and roof frames and structures
Unit Level		Level 2
Guided Learning Hours		110
Total Qualification Time		140
Unit Credit Value		14
Unit Grading Structure		Pass / Fail

Learning Outcome		Assessment Criteria - The learner can		Criteria expansion
1	Interpret information to inform the correct erection of wall, floor and roof frames and structures	1.1	Read and extract dimensions, position and tolerance of components	The must include quantity, size and position.
		1.2	Describe the sources and benefits of different sources of information	This must include drawings, specifications, manufacturers and employer's instructions and legal notices.
2	Understand and comply with relevant legislation and guidance whilst erecting frames and structures	2.1	Comply with all relevant information before, during and after the installation	This must include method statements, legislation and employer instructions.
3	Select the required components, tools and equipment	3.1	Demonstrate the correct selection and preparation of tools and equipment	This must include both power and hand tools
		3.2	Describe the benefits and use of joining and fixing techniques	
4	Complete erecting work within required timescale and standards	4.1	Demonstrate the effective erection of wall, floor and roof frames and structures	This must be observed and comply with the practice and tolerance using both hand and power tools.
		4.2	Demonstrate the efficient and effective use of a range of fixings	As above
		4.3	Install frame and structures following plans and drawings limiting damage and maintaining integrity	As above

5	Comply with specification and tolerances	5.1	Safely erect wall, frame and roof structures following manufacturer, legal and employer specifications	
		5.2	Efficiently construct wall, frame and roof structures whilst minimising waste	This should include both environmental and commercial impacts
6	Make adjustments to non-compliant installations	6.1	Review the installation and ensure installation complies with drawings, manufacturer and employer instructions	This must include both compliance with specification and integrity of finish
		6.2	Identify the most relevant and cost effective remedial action	
		6.3	Complete the remedial action to ensure installation meets specification	

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Level 2 Unit – Prepare and Install sheet / cladding materials

Unit aim

This unit introduces learners to prepare and install sheet / cladding material. This relates to various job roles and the skills required for employment in the learner's particular sector. The unit will enable learners to work independently within their chosen occupation.

Unit introduction

Learners will develop the skills and knowledge required to work within their chosen sector, including core sector- related skills, the skills required to work sustainably, and the transferable skills valued by employers. These skills will provide them with transferable skills for the preparation and installation of sheet / cladding materials of various specifications in a range of settings.

Assessment

To achieve this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit through a variety of assessment methods appropriate to the delivery environment.

Unit Reference Number		J/617/6206
Qualification Framework		RQF
Title		Prepare and Install Sheet / Cladding Materials
Unit Level		Level 2
Guided Learning Hours		110
Total Qualification Time		140
Unit Credit Value		14
Unit Grading Structure		Pass / Fail

	Learning Outcome		Assessment Criteria - The learner can	Criteria expansion
1	Interpret information to inform the correct installation of cladding and enclosures	1.1	Extract and interpret relevant information from drawings, schedules and manufacturer's Instructions	
		1.2	Comply with specifications and instructions contained within information	Calculating quantity of materials to minimise waste
		1.3	Describe the sources and benefits of different sources of information	This must include drawings, specifications, manufacturers / employer's instruction and legal notices
		1.4	Set out areas, openings, junctions and apertures	
2	Select the required components tools and equipment in line with the materials installation specifications	2.1	Select resources to safely and effectively install materials to specification	To include materials, equipment, tools, fixings and PPE
3	Preparing work areas to receive linings and sheeting materials	3.1	Prepare and maintain safe work area minimising risk and damage to materials	
		3.2	Demonstrate safe working practices for the range of preparatory activities	Waterproof, sealing, insulating
		3.3	Demonstrate the following skills during the preparation for installation	Measuring, checking, preparing, positioning and minimising waste.
4	Install sheet materials following component specifications within required timescale and standards	4.1	Demonstrate the effective installation of sheet materials which could include roof, wall and flooring systems	A minimum of two materials / systems must be demonstrated. Materials: Timber, board, plasterboard, insulation and composite cladding systems

		4.2	Describe the features and limitations of appropriate fixings for the range of materials	
		4.3	Demonstrate the effective selection and use of fixing processes for the range of materials	This must include both positioning and securing using both hand and power tools.
		4.4	Complete installation of finished surfaces within tolerance	Comply with manufacturers, employers, customer and legal specification.
5	Confirm compliance with installation specification and tolerances	5.1	Review and compare installation to specification	
		5.2	Make required adjustments to non-compliant installations	
6	Safely dispose of waste materials	6.1	Explain the correct procedure for the disposal of waste materials	This should include: environmental, organisational, manufacturer and statutory.
		6.2	Dispose of waste materials safely following required procedures	



Level 2 Unit – Install Basic Mechanical, Electrical and
Plumbing Services

Unit aim

This unit introduces learners to the safe, efficient and effective installation of basic mechanical, electrical and plumbing services. This relates to various job roles and the skills required for employment in the learner's particular sector. The unit will enable learners to work under supervision within their chosen occupation.

Unit introduction

Learners will develop the basic skills and knowledge required to work within their chosen sector, including core sector-related skills, the skills required to work sustainably, and the transferable skills valued by employers. These skills will provide them with transferable skills for the installation of basic mechanical, electrical and plumbing services of various specifications in a range of settings.

Assessment

To achieve this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit through a variety of assessment methods appropriate to the delivery environment.

Unit Reference Number		L/617/6207
Qualification Framework		RQF
Title		Install Basic Mechanical, Electrical and Plumbing Services (MEP)
Unit Level		Level 2
Guided Learning Hours		110
Total Qualification Time		140
Unit Credit Value		14
Unit Grading Structure		Pass / Fail

	Learning Outcome		Assessment Criteria - The learner can	Criteria expansion
1	Read and understand plans / drawing and requirements for services	1.1	Extract and interpret relevant information, drawings, schedules, manufacturers and employers instructions	
		1.2	Comply with specification and instructions contained within information	
2	Prepare for the installation of requirements and services	2.1	Select resources to safely and effectively install components to specification	This must include material, equipment, tools, fixings and PPE
		2.2	Maintain a clean workspace and minimise potential risk and damage	
3	Calculate and select the resources required to minimise waste and complete the installation effectively	3.1	Calculate and select the required components, fixing, tools and equipment	Volume, length, size and area
4	Install requirements and services following plans and drawings, limiting damage and maintaining integrity	4.1	Measuring, marking out, positioning,	This must include a minimum of two of the following requirements: <ul style="list-style-type: none"> • Electrical • Plumbing • Ancillary services

		4.2	Secure installation using a variety of systems and techniques	<p>This must include a minimum of two of the following:</p> <ul style="list-style-type: none"> • Compression push fit • plastic weld • manually secured • Bonded • mechanical fixing <p>This must include the safe and effective use of both hand and power tools</p>
		4.3	Finishing the installation of components following legal / manufacturers specification	
5	Understand the component characteristics and limitations used in MEP services	5.1	Describe the quality, uses, limitations and defects of components and material used in MEP Services	<p>This must include components and materials for two of the following:</p> <ul style="list-style-type: none"> • Electrical • Plumbing • Ancillary services
		5.2	Complete visual and functional compliance check on components and materials	This includes cables, pipework, sealed units and components
6	Safely dispose of waste materials	6.1	Explain the correct procedure for the disposal of waste materials	<p>This should include the following factors:</p> <ul style="list-style-type: none"> • Environmental • Organisational • Manufacturer • Statutory
		6.2	Dispose of waste materials safely following required procedures	