ProQual Level 2 NVQ Diploma in Waterproof Membrane Roofing Systems (Construction)

Qualification Specification

Contents

Introduction

The ProQual Level 2 NVQ Diploma in Waterproof Membrane Roofing Systems (Construction) qualification provides a nationally recognised qualification for those working in the construction and the built environment sector working across a broad range of areas. It is designed to assess occupational competence in the workplace where candidates are required to demonstrate skills and knowledge to a level required in the construction industry.

The awarding body for this qualification is ProQual Awarding Body (www.proqualab.com) and the regulatory body is the Office of Qualifications and Examinations Regulation (Ofqual). The qualification has been accredited onto the Regulated Qualifications Framework (RQF) and is published on Ofqual's Register of Qualifications.

It is also endorsed by the sector body for construction - CITB.

Qualification Profile

Qualification title	**ProQual Level 2 NVQ Diploma in Waterproof Membrane Roofing Systems (Construction)**
Ofqual qualification number	603/0449/2
Level	2
Total qualification time	500 – 530 (Dependent on Pathway)
Guided learning hours	424 – 454 (Dependent on Pathway)
Assessment	Pass or fail Internally assessed and verified by centre staff External quality assurance by ProQual verifiers
Qualification start date	06/09/2016
Qualification end date	

Entry Requirements

There are no formal entry requirements for this qualification.
Centres should carry out an **initial assessment** of candidate skills and knowledge to identify any gaps and help plan the assessment.

Qualification Structure

To achieve the qualification candidates must complete the mandatory units from one of the Pathways. Candidates may also complete any of the additional units, but these will not count towards the qualification.

Pathway	**Minimum TQT**
Pathway 1: Reinforced Bitumen Membrane Roofing	530
Pathway 2: Single Ply Membrane Roofing	500
Pathway 3: Liquid Applied Membrane Roofing	500

Pathway One: Reinforced Bitumen Membrane Roofing				
Mandatory Units				
Unit Reference Number	**Unit Title**	**Unit Level**	**GLH**	***CITB Ref. No***
J/615/2181	Applying Reinforced Bitumen Membrane Systems in the Workplace *<u>This unit has the following endorsement requirements:</u>* ***One** of the following:* • *Pour and roll* • *Torch on* • *Flame free* • *Cold applied* • *Self-adhesive* • *Hot melt*	2	160	107v4
M/508/6537	Conforming to General Workplace Health, Safety and Welfare in the Workplace	1	17	641v1
T/508/6538	Conforming to Productive Working Practices in the Workplace	2	20	642v1
F/503/1171	Moving, Handling and Storing Resources in the Workplace	2	27	643v1
L/615/2179	Preparing Surfaces for Membrane Roofing Systems in the Workplace *<u>This unit has the following endorsement requirements:</u>* *Use and maintain **one** of the following:* • *LPG gas torch* • *Hot air gun* • *Electronic torch* ***Plus one of the following membrane roofing systems:*** • *Reinforced bitumen* • *Single ply* • *Liquid applied*	2	110	685v2
F/615/2180	Repairing Membrane Roofing Systems in the Workplace *<u>This unit has the following endorsement requirements:</u>* ***One** of the following:* • *Damaged membranes* • *Edges and upstands* • *Penetrations, Pipes and vents* • *Perimeters, rainwater outlets*	2	120	686v2

Additional Units – Not mandatory				
Unit Reference Number	**Unit Title**	**Unit Level**	**GLH**	***CITB Ref. No***
Y/615/2184	Installing Decking for Flat Roof Coverings in the Workplace	3	100	93v3
D/615/2185	Installing Support Systems for Green Roofs in the Workplace *<u>This unit has the following endorsement requirements:</u>* ***Four** of the following:* • *Root/rhizome resistant layer* • *Protection layer* • *Irrigation system* • *Drainage system* • *Filter layer* • *Substrate*	2	80	148v3
H/615/2186	Installing Solar Collectors to Roofs in the Workplace *<u>This unit has the following endorsement requirements:</u>* ***One** of the following:* • *Integrated photo voltaic* • *Mounted photo voltaic* • *Integrated solar thermal* • *Mounted solar thermal*	2	25	298v2

Pathway Two: Single Ply Membrane Roofing				
Mandatory Units				
Unit Reference Number	**Unit Title**	**Unit Level**	**GLH**	***CITB Ref. No***
L/615/2182	Applying Single Ply Membrane Roofing Systems in the Workplace *<u>This unit has the following endorsement requirements:</u>* ***Two** of the following:* • *Adhered* • *Ballasted* • *Mechanically fixed*	2	130	110v3
M/508/6537	Conforming to General Workplace Health, Safety and Welfare in the Workplace	1	17	641v1
T/508/6538	Conforming to Productive Working Practices in the Workplace	2	20	642v1
F/503/1171	Moving, Handling and Storing Resources in the Workplace	2	27	643v1
L/615/2179	Preparing Surfaces for Membrane Roofing Systems in the Workplace *<u>This unit has the following endorsement requirements:</u>* *Use and maintain **one** of the following:* • *LPG gas torch* • *Hot air gun* • *Electronic torch* ***Plus one of the following membrane roofing systems:*** • *Reinforced bitumen* • *Single ply* • *Liquid applied*	2	110	685v2
F/615/2180	Repairing Membrane Roofing Systems in the Workplace *<u>This unit has the following endorsement requirements:</u>* ***One** of the following:* • *Damaged membranes* • *Edges and upstands* • *Penetrations, Pipes and vents* • *Perimeters, rainwater outlets*	2	120	686v2

Additional Units – Not mandatory				
Unit Reference Number	**Unit Title**	**Unit Level**	**GLH**	***CITB Ref. No***
Y/615/2184	Installing Decking for Flat Roof Coverings in the Workplace	3	100	93v3
D/615/2185	Installing Support Systems for Green Roofs in the Workplace *<u>This unit has the following endorsement requirements:</u>* ***Four** of the following:* • *Root/rhizome resistant layer* • *Protection layer* • *Irrigation system* • *Drainage system* • *Filter layer* • *Substrate*	2	80	148v3
H/615/2186	Installing Solar Collectors to Roofs in the Workplace *<u>This unit has the following endorsement requirements:</u>* ***One** of the following:* • *Integrated photo voltaic* • *Mounted photo voltaic* • *Integrated solar thermal* • *Mounted solar thermal*	2	25	298v2

Pathway Three: Liquid Applied Membrane Roofing				
Mandatory Units				
Unit Reference Number	**Unit Title**	**Unit Level**	**GLH**	***CITB Ref. No***
R/615/2183	Applying Liquid Membrane Systems in the Workplace	2	130	113v3
M/508/6537	Conforming to General Workplace Health, Safety and Welfare in the Workplace	1	17	641v1
T/508/6538	Conforming to Productive Working Practices in the Workplace	2	20	642v1
F/503/1171	Moving, Handling and Storing Resources in the Workplace	2	27	643v1
L/615/2179	Preparing Surfaces for Membrane Roofing Systems in the Workplace *This unit has the following endorsement requirements:* *Use and maintain **one** of the following:* • *LPG gas torch* • *Hot air gun* • *Electronic torch* ***Plus one of the following membrane roofing systems:*** • *Reinforced bitumen* • *Single ply* • *Liquid applied*	2	110	685v2
F/615/2180	Repairing Membrane Roofing Systems in the Workplace *This unit has the following endorsement requirements:* ***One** of the following:* • *Damaged membranes* • *Edges and upstands* • *Penetrations, Pipes and vents* • *Perimeters, rainwater outlets*	2	120	686v2

Additional Units – Not mandatory				
Unit Reference Number	**Unit Title**	**Unit Level**	**GLH**	***CITB Ref. No***
Y/615/2184	Installing Decking for Flat Roof Coverings in the Workplace	3	100	93v3
D/615/2185	Installing Support Systems for Green Roofs in the Workplace *<u>This unit has the following endorsement requirements:</u>* ***Four** of the following:* • *Root/rhizome resistant layer* • *Protection layer* • *Irrigation system* • *Drainage system* • *Filter layer* • *Substrate*	2	80	148v3
H/615/2186	Installing Solar Collectors to Roofs in the Workplace *<u>This unit has the following endorsement requirements:</u>* ***One** of the following:* • *Integrated photo voltaic* • *Mounted photo voltaic* • *Integrated solar thermal* • *Mounted solar thermal*	2	25	298v2

Centre Requirements

Centres must be approved to offer this qualification. If your centre is not approved please complete and submit form **ProQual Additional Qualification Approval Application**.

Staff
Staff delivering this qualification must be appropriately qualified and/or occupationally competent.

Assessors/Internal Quality Assurance
Assessors for each unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy.

Assessors and internal quality assurance verifiers for competence-based units or qualifications will normally need to hold appropriate assessor or internal quality assurance qualifications.

Support for Candidates

Materials produced by centres to support candidates should:

- Enable them to track their achievements as they progress through the learning outcomes and assessment criteria;
- Provide information on where ProQual's policies and procedures can be viewed;
- Provide a means of enabling Internal and External Quality Assurance staff to authenticate evidence

Assessment

This qualification is competence-based, candidates must demonstrate the level of competence described in the units. Assessment is the process of measuring a candidate's skill, knowledge and understanding against the standards set in the qualification.
This qualification must be internally assessed by an appropriately experienced and qualified assessor.

Each candidate is required to produce a portfolio of evidence which demonstrates their achievement of all of the learning outcomes and assessment criteria for each unit.

Evidence can include:

- Observation report by assessor
- Assignments/projects/reports
- Professional discussion
- Witness testimony
- Candidate product
- Worksheets
- Record of oral and written questioning
- Recognition of Prior Learning

Learning outcomes set out what a candidate is expected to know, understand or be able to do.

Assessment criteria specify the standard a candidate must meet to show the learning outcome has been achieved.

Learning outcomes and assessment criteria can be found from page 14.

Additional information for assessment and requirements for unit **endorsements** where relevant is included after all of the learning outcomes and assessment criteria for each unit.

Internal Quality Assurance

An internal quality assurance verifier confirms that assessment decisions made in centres are made by competent and qualified assessors, that they are the result of sound and fair assessment practice and that they are recorded accurately and appropriately.

Adjustments to Assessments

Adjustments to standard assessment arrangements are made on the individual needs of candidates. ProQual's Reasonable Adjustments Policy and Special Consideration Policy sets out the steps to follow when implementing reasonable adjustments and special considerations and the service that ProQual provides for some of these arrangements. Centres should contact ProQual for further information or queries about the contents of the policy.

Results Enquiries and Appeals

All enquiries relating to assessment or other decisions should be dealt with by centres, with reference to ProQual's Enquiries and Appeals Procedures.

Certification

Candidates who achieve the requirements for this qualification will be awarded:

- A certificate listing all units achieved, and
- A certificate giving the full qualification title -

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Claiming certificates
Centres may claim certificates for candidates who have been registered with ProQual and who have successfully achieved the qualification. All certificates will be issued to the centre for successful candidates.

Unit certificates
If a candidate does not achieve all of the units required for a qualification, the centre may claim a unit certificate for the candidate which will list all of the units achieved.

Replacement certificates
If a replacement certificate is required a request must be made to ProQual in writing. Replacement certificates are labelled as such and are only provided when the claim has been authenticated. Refer to the Fee Schedule for details of charges for replacement

Units – Learning Outcomes and Assessment Criteria

Title:	Applying Reinforced Bitumen Membrane Systems in the Workplace
Unit Number:	J/615/2181

Learning Outcomes *The learner will be able to:*	**Assessment Criteria** *The learner can:*
1 Interpret the given information relating to the work and resources when applying reinforced bitumen membrane systems.	1.1 Interpret and extract relevant information from: • Drawings. • Specifications. • Schedules. • Method statements. • Risk assessments. • Permits to work. • Manufacturers' information. • Electronic data. • Oral and written procedures. • Current regulations. • Site inductions.
	1.2 Comply with information and/or instructions derived from risk assessments and method statements.
	1.3 Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
	1.4 Describe different types of information, their source and how they are interpreted in relation to: • Drawings. • Specifications. • Schedules. • Method statements. • Risk assessments. • Permits to work. • Manufacturers' information. • Electronic data. • Oral and written procedures. • Current regulations. • Site inductions.
	1.5 The range of relevant digital services, tools and systems, and how they are used.
	1.6 The importance of organisational procedures to solve problems with the information, and why it is important to follow them.

2	Know how to comply with relevant legislation and official guidance when applying reinforced bitumen membrane systems.	2.1	Describe their responsibilities regarding potential accidents, health hazards and the environmental impact, whilst working in the workplace in relation to: • Below ground level. • Confined spaces. • At height. • At proximity to fragile roofs. • Tools and equipment. • Materials and substances. • Moving and storing materials by manual handling and mechanical lifting.
		2.2	Describe the organisational security procedures for tools, equipment and personal belongings in relation to: • Operative. • Site. • Workplace. • Vehicles. • Company. • General public. • Customer.
		2.3	Explain what the accident reporting procedures are and who is responsible for making reports.
		2.4	Describe the types of fire extinguishers and how and when they are used in relation to: • Water. • CO_2. • Foam. • Powder.
3	Maintain safe and healthy working practices when applying reinforced bitumen membrane systems.	3.1	Outline information for relevant, current legislation and official guidance and how it is applied.
		3.2	Use health and safety control equipment safely and comply with the methods of work to carry out the work in accordance with relevant legislation and official guidance when applying reinforced bitumen membrane systems.

3	*Cont.*	3.3	Demonstrate compliance with relevant legislation and official guidance relating to the following: • Methods of work. • Safe use of health and safety control equipment. • Safe use of access equipment. • Safe storage and distribution of materials, tools and equipment. • Specific risks to health. • Specific risks associated with asbestos containing materials. • Specific risk associated with respirable crystalline silica (RCS).
		3.4	Describe the importance of mental health awareness and wellbeing.
		3.5	Explain why, when and how health and safety control equipment, identified by the principles of prevention, should be used in relation to: • Collective protective measures. • Personal protective equipment (PPE). • Respiratory protective equipment (RPE). • Local exhaust ventilation (LEV).
		3.6	Describe how the relevant health and safety control equipment should be used in accordance with the given working instructions.
		3.7	Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills in relation to: • Fires, spillages, injuries. • Emergencies relating to occupational activities. • Identification of and reporting of asbestos containing materials. • Identification of silica.

3	*Cont.*	3.8	Describe how to report risks and hazards identified by the following: • Methods of work. • Risk assessment. • Personal assessment. • Manufacturers' technical information. • Statutory regulations. • Official guidance. • Control of Substances Hazardous to Health (COSHH).
4	Select the required quantity and quality of resources for the methods of work to apply reinforced bitumen membrane systems.	4.1	Select resources associated with own work in relation to: • Materials. • Components, fixings. • Tools. • Ancillary equipment.
		4.2	Describe why the characteristics, quality, uses, sustainability, limitations and defects associated with the resources are important and how defects should be rectified.
		4.3	Describe how to confirm that the resources and materials conform with the specification.

4	*Cont.*	4.4	Describe how the resources should be used and how any problems associated with the resources are reported in relation to: • Bitumen. • Reinforced bitumen membrane. • Air and vapour control layers. • Insulation. • Base layers. • Solvents. • Adhesives. • Pedestrian surfacing. • Surface protection. • Filter and drainage layers. • Outlets. • Gutters. • Pipes. • Vents. • Cap sheets. • Flashings. • Trims. • Movement joints. • Rooflights. • Associated materials. • Components. • Fixings and fittings. • Hand and/or power tools and ancillary equipment.
		4.5	Explain the organisational procedures to select resources, why they have been developed and how they are used.
		4.6	Describe how to identify any potential hazards associated with the resources and methods of work and how they are overcome.
		4.7	Describe how to calculate quantity, length, and wastage associated with the method and procedure to apply reinforced bitumen membrane systems.
5	Minimise the risk of damage to the work and surrounding area when applying reinforced bitumen membrane systems.	5.1	Comply with organisational procedures to protect the work and its surrounding area from damage by: • Maintaining a safe, clear and tidy work area. • Disposing of wate in accordance with current legislation.
		5.2	Explain why it is important to maintain a safe, clear and tidy work area.

5	*Cont.*	5.3	Describe how to protect work and its surrounding area from damage and the purpose of protection from general workplace activities, other occupations and adverse weather conditions and how to minimise the damage to existing building fabric.
		5.4	Explain how to minimise damage to the existing building fabric.
		5.5	Explain why and how the disposal of waste must be carried out safely in accordance with the following: • Environmental responsibilities. • Organisational procedures. • Manufacturers' information. • Statutory regulations. • Official guidance.
6	Complete the work within the allocated time when applying reinforced bitumen membrane systems.	6.1	Demonstrate completion of the work within the allocated time.
		6.2	Describe the programme of work to be carried out including the estimated and allocated time and explain why deadlines should be kept in relation to: • The types of progress charts, timetables and estimated times. • The organisational procedures for reporting circumstances which will affect the work programme.
7	Comply with the given contract information to apply reinforced bitumen membrane systems.	7.1	Demonstrate the following work skills when applying reinforced bitumen membrane systems: • Measuring. • Cutting. • Marking out. • Fitting. • Positioning. • Securing.
		7.2	Use and maintain: • Hand tools. • Power tools. • Ancillary equipment.
		7.3	Install air and vapour control layers (warm and cold roofs) and insulation.

7	*Cont.*	7.4	Apply one of the following methods of attachment for reinforced bitumen membrane systems: pour and roll, torch-on, flame free, cold applied, self-adhesive or hot melt to given working instructions relating to the following: • Base layers. • Cap sheets. • Edges and upstands. • Penetrations, pipes and vents. • Perimeters, gutters and rainwater outlets.
		7.5	Describe how the methods of work to meet the specification, are carried out and how problems are identified and reported by the application of knowledge for safe, healthy and environmental work practices, procedures and skills relating to the method and area of work: • Pre install/apply checks/preparation. • Install air and vapour control layers (AVCL). • Install insulation materials. • Use bitumen boilers (according to the system). • Use gas torches and/or hot air gun. • Install base layers including nailed layers. • Install cap sheets, including solar/fire protection. • Install vertical upstands, including internal/external corners, joints and junctions, straight and curved, and incorporating changes of plane and treatment of internal angles. • Install terminations (cover flashing, external trim, termination bar, junctions to other materials). • Install to perimeters (eaves, mono ridge, verges and drips), outlets (spigot, sump, parapet, overflow), pipes, structural penetrations (vertical, pitched and horizontal, including plinths and hand rolled collars), safety systems, internal gutters, stop ends, rooflights, hips, valleys and pedestrian finishes, incorporating vertical surfaces. • Apply membrane by pour and roll and/or hot melt method. • Apply membrane by torch-on method.

7	*Cont.*	7.5	• Apply membrane by flame free, cold applied and/or self-adhesive method. • Take into account the effects of temperature and weather conditions. • Implement snagging procedures and appropriate remedial work, including preparation for test procedures. • The relevance of an assessment of significance. • How to recognise specific requirements for structures of special interest, traditional construction, hard-to-treat buildings and historical significance. • Work with, around and in close proximity to plant and machinery. • Safely work at height using access and fall prevention equipment. • Use hand and power tools and ancillary equipment. • How and why operative care and maintenance of all hand and power tools and ancillary equipment is carried out.
		7.6	Describe the needs of other occupations.
		7.7	Describe the importance of applying, fairness, inclusion, and respect (FIR) when dealing with others.
		7.8	Explain the importance of team-work and communication, organisational procedures with respect to site behaviours, and how to challenge inappropriate site behaviours.

Endorsements

This unit has the following endorsement requirements:

***One** of the following:*

- *Pour and roll*
- *Torch on*
- *Flame free*
- *Cold applied*
- *Self-adhesive*
- *Hot melt*

Title:	Applying Reinforced Bitumen Membrane Systems in the Workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment, in accordance with the CITB Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated. This unit must be assessed against the endorsements detailed within the relevant NVQ Structure. Please refer to the NVQ Structure applicable to the qualification/occupational area in which the candidate is being assessed.
Sector Subject Area	5.2 Building and Construction
Availability For Use	Shared unit
Unit Guided Learning Hours	150
Assessment Hours	10

Title:	Conforming to General Workplace Health, Safety and Welfare in the Workplace
Unit Number:	M/508/6537

Learning Outcomes *The learner will be able to:*		**Assessment Criteria** *The learner can:*	
1	Comply with all workplace health, safety and welfare legislation requirements.	1.1	Comply with information from workplace inductions and any health, safety and welfare briefings attended relevant to the occupational area.
		1.2	Use health and safety control equipment safely to carry out the activity in accordance with legislation and organisational requirements.
		1.3	Comply with statutory requirements, safety notices and warning notices displayed within the workplace and/or on equipment.
		1.4	State why and when health and safety control equipment, identified by the principles of protection, should be used relating to types, purpose and limitations of each type, the work situation, occupational use and the general work environment, in relation to: • Collective protective measures. • Personal protective equipment (PPE). • Respiratory protective equipment (RPE). • Local exhaust ventilation (LEV).
		1.5	State how the health and safety control equipment relevant to the work should be used in accordance with the given instructions.
		1.6	State which types of health, safety and welfare legislation, notices and warning signs are relevant to the occupational area and associated equipment.
		1.7	State why health, safety and welfare legislation, notices and warning signs are relevant to the occupational area.
		1.8	State how to comply with control measures that have been identified by risk assessments and safe systems of work.

2	Recognise hazards associated with the workplace that have not been previously controlled and report them in accordance with organisational procedures.	2.1	Report any hazards created by changing circumstances within the workplace in accordance with organisational procedures.
		2.2	List typical hazards associated with the work environment and occupational area in relation to resources, substances, asbestos, equipment, obstructions, storage, services and work activities.
		2.3	List the current Health and Safety Executive top ten safety risks.
		2.4	List the current Health and Safety Executive top five health risks.
		2.5	State how changing circumstances within the workplace could cause hazards.
		2.6	State the methods used for reporting changed circumstances, hazards and incidents in the workplace.
3	Comply with organisational policies and procedures to contribute to health, safety and welfare.	3.1	Interpret and comply with given instructions to maintain safe systems of work and quality working practices.
		3.2	Contribute to discussions by offering/providing feedback relating to health, safety and welfare.
		3.3	Contribute to the maintenance of workplace welfare facilities in accordance with workplace welfare procedures.
		3.4	Safely store health and safety control equipment in accordance with given instructions.
		3.5	Dispose of waste and/or consumable items in accordance with legislation.
		3.6	State the organisational policies and procedures for health, safety and welfare, in relation to: • Dealing with accidents and emergencies associated with the work and environment. • Methods of receiving or sourcing information. • Reporting. • Stopping work. • Evacuation. • Fire risks and safe exit procedures. • Consultation and feedback.

3	*Cont.*	3.7	State the appropriate types of fire extinguishers relevant to the work.
		3.8	State how and when the different types of fire extinguishers are used in accordance with legislation and official guidance.
4	Work responsibly to contribute to workplace health, safety and welfare whilst carrying out work in the relevant occupational area.	4.1	Demonstrate behaviour which shows personal responsibility for general workplace health, safety and welfare.
		4.2	State how personal behaviour demonstrates responsibility for general workplace health, safety and welfare, in relation to: • Recognising when to stop work in the face of serious and imminent danger to self and/or others. • Contributing to discussions and providing feedback. • Reporting changed circumstances and incidents in the workplace. • Complying with the environmental requirements of the workplace.
		4.3	Give examples of how the behaviour and actions of individuals could affect others within the workplace.
5	Comply with and support all organisational security arrangements and approved procedures.	5.1	Provide appropriate support for security arrangements in accordance with approved procedures: • During the working day. • On completion of the day's work. • For unauthorised personnel (other operatives and the general public). • For theft.
		5.2	State how security arrangements are implemented in relation to the workplace, the general public, site personnel and resources.

Title:	Conforming to General Workplace Health, Safety and Welfare in the Workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment, in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated.
Sector Subject Area	5.2 Building and Construction
Availability For Use	Shared unit
Unit Guided Learning Hours	7
Assessment Hours	10

Title:	Conforming to Productive Working Practices in the Workplace
Unit Number:	T/508/6538

Learning Outcomes *The learner will be able to:*		**Assessment Criteria** *The learner can:*	
1	Communicate with others to establish productive work practices.	1.1	Communicate in an appropriate manner with line management, colleagues and/or customers to ensure that work is carried out productively.
		1.2	Describe the different methods of communicating with line management, colleagues and customers.
		1.3	Describe how to use different methods of communication to ensure that the work carried out is productive.
2	Follow organisational procedures to plan the sequence of work.	2.1	Interpret relevant information from organisational procedures in order to plan the sequence of work.
		2.2	Plan the sequence of work, using appropriate resources, in accordance with organisational procedures to ensure work is completed productively.
		2.3	Describe how organisational procedures are applied to ensure work is planned and carried out productively, in relation to: • Using resources for own and other's work requirements. • Allocating appropriate work to employees. • Organising the work sequence. • Reducing carbon emissions.
		2.4	Describe how to contribute to zero/low carbon work outcomes within the built environment.
3	Maintain relevant records in accordance with the organisational procedures.	3.1	Complete relevant documentation according to the occupation as required by the organisation.
		3.2	Describe how to complete and maintain documentation in accordance with organisational procedures, in relation to: • Job cards. • Worksheets. • Material/resource lists. • Time sheets.
		3.3	Explain the reasons for ensuring documentation is completed clearly and within given timescales.

4	Maintain good working relationships when conforming to productive working practices.	4.1	Carry out work productively, to the agreed specification, in conjunction with line management, colleagues, customers and/or other relevant people involved in the work to maintain good working relationships.
		4.2	Apply the principles of equality and diversity and respect the needs of individuals when communicating and working with others.
		4.3	Describe how to maintain good working relationships, in relation to: • Individuals. • Customer and operative. • Operative and line management. • Own and other occupations.
		4.4	Describe why it is important to work effectively with line management, colleagues and customers.
		4.5	Describe how working relationships could have an effect on productive working.
		4.6	Describe how to apply principles of equality and diversity when communicating and working with others.

Title:	Conforming to Productive Working Practices in the Workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment, in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated.
Sector Subject Area	05.2 Building and Construction
Availability For Use	Shared unit
Unit Guided Learning Hours	10
Assessment Hours	10

Title:	Moving, Handling and Storing Resources in the Workplace
Unit Number:	F/503/1171

Learning Outcomes *The learner will be able to:*		**Assessment Criteria** *The learner can:*	
1	Comply with given information when moving, handling and/or storing resources.	1.1	Interpret the given information relating to moving, handling and/or storing resources, relevant to the given occupation.
		1.2	Interpret the given information relating to the use and storage of lifting aids and equipment.
		1.3	Describe the different types of technical, product and regulatory information, their source and how they are interpreted.
		1.4	State the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
		1.5	Describe how to obtain information relating to using and storing lifting aids and equipment.
2	Know how to comply with relevant legislation and official guidance when moving, handling and/or storing resources.	2.1	Describe their responsibilities under current legislation and official guidance whilst working: • In the workplace. • In confined spaces. • Below ground level. • At height. • With tools and equipment. • With materials and substances. • With movement/storage of materials by manual handling and mechanical lifting.
		2.2	Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
		2.3	Explain what the accident reporting procedures are and who is responsible for making the reports.
		2.4	State the appropriate types of fire extinguishers relevant to the work.
		2.5	Describe how and when the different types of fire extinguishers, relevant to the given occupation, are used in accordance with legislation and official guidance.

3	Maintain safe working practices when moving, handling and/or storing resources.	3.1	Use health and safety control equipment safely to carry out the activity in accordance with legislation and organisational requirements when moving, handling and/or storing resources.
		3.2	Use lifting aids safely as appropriate to the work.
		3.3	Protect the environment in accordance with safe working practices as appropriate to the work.
		3.4	Explain why and when health and safety control equipment, identified by the principles of protection, should be used, relating to moving, handling **and/or** storing resources, and the types, purpose and limitations of each type, the work situation, occupational use and the general work environment, in relation to: • Collective protective measures. • Personal protective equipment (PPE). • Respiratory protective equipment (RPE). • Local exhaust ventilation (LEV).
		3.5	Describe how the health and safety control equipment relevant to the work should be used in accordance with the given instructions.
		3.6	State how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related hazards.
4	Select the required quantity and quality of resources for the methods of work to move, handle and/or store occupational resources.	4.1	Select the relevant resources to be moved, handled and/or stored, associated with own work.
		4.2	Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the occupational resources in relation to: • Lifting and handling aids. • Container(s). • Fixing, holding and securing systems.
		4.3	Describe how the resources should be handled and how any problems associated with the resources are reported.
		4.4	Explain why the organisational procedures have been developed and how they are used for the selection of required resources.

4	*Cont.*	4.5	Describe any potential hazards associated with the resources and methods of work.
5	Prevent the risk of damage to occupational resources and surrounding environment when moving, handling and/or storing resources.	5.1	Protect occupational resources and their surrounding area from damage in accordance with safe working practices and organisational procedures.
		5.2	Dispose of waste and packaging in accordance with legislation.
		5.3	Maintain a clean work space when moving, handling or storing resources.
		5.4	Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
		5.5	Explain why the disposal of waste should be carried safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6	Complete the work within the allocated time when moving, handling and/or storing resources.	6.1	Demonstrate completion of the work within the allocated time.
		6.2	State the purpose of the work programme and explain why deadlines should be kept in relation to: • Progress charts, timetables and estimated times. • Organisational procedures for reporting circumstances which will affect the work programme.

7	Comply with the given occupational resource information to move, handle and/or store resources to the required guidance.	7.1	Demonstrate the following work skills when moving, handling and/or storing occupational resources: • Moving • Positioning • Storing • Securing and/or using lifting aids and kinetic lifting techniques.
		7.2	Move, handle and/or store occupational resources to meet product information and organisational requirements relating to three of the following: • Sheet material. • Loose material. • Bagged or wrapped material. • Fragile material. • Tools and equipment. • Components. • Liquids.
		7.3	Describe how to apply safe work practices, follow procedures, report problems and establish the authority needed to rectify them when moving, handling and/or storing occupational resources.
		7.4	Describe the needs of other occupations when moving, handling and/or storing resources.

Title:	Moving, Handling and Storing Resources in the Workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment, in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated.
Sector Subject Area	05.2 Building and Construction
Availability For Use	Shared unit
Unit Guided Learning Hours	17
Assessment Hours	10

Title:	Preparing Surfaces for Membrane Roofing Systems in the Workplace
Unit Number:	L/615/2179

Learning Outcomes *The learner will be able to:*	**Assessment Criteria** *The learner can:*
1 Interpret the given information relating to the work and resources when preparing surfaces for membrane roofing systems.	1.1 Interpret and extract relevant information from: • Drawings. • Specifications. • Schedules. • Method statements. • Risk assessments. • Permits to work. • Manufacturers' information. • Electronic data. • Oral and written instructions. • Current regulations. • Site inductions. 1.2 Comply with information and/or instructions derived from risk assessments and method statements. 1.3 Describe why the organisational procedures have been developed and how they are implemented. 1.4 Describe different types of information, their source and how they are interpreted in relation to: • Drawings. • Specifications. • Schedules. • Method statements. • Risk assessments. • Permits to work. • Manufacturers' information. • Electronic data. • Oral and written procedures. • Current legislation. • Site inductions. 1.5 The range of relevant digital services, tools and systems, and how they are used. 1.6 The importance of organisational procedures to solve problems with the information and why it is important to follow them.

2	Know how to comply with relevant legislation and official guidance when preparing surfaces for membrane roofing systems.	2.1	Describe their responsibilities regarding potential accidents, health hazards and the environmental impact, whilst working in the workplace: • Below ground level. • In confined spaces. • At height. • In proximity to fragile elements. • With tools and equipment. • With materials and substances. • Moving and storing materials by manual handling and mechanical lifting.
		2.2	Describe the organisational security procedures for tools, equipment and personal belongings in relation to: • Operative. • Site. • Workplace. • Vehicles. • Company. • Customer. • The general public.
		2.3	Explain the accident reporting procedures and who is responsible for making reports.
		2.4	Describe the types of fire extinguishers and how they are used in relation to: • Water • CO_2. • Foam. • Powder.
3	Maintain safe and healthy working practices when preparing surfaces for membrane roofing systems.	3.1	Outline information for relevant, current legislation and official guidance and how it is applied.
		3.2	Use health and safety control equipment safely and comply with the methods of work to carry out the work in accordance with relevant legislation and official guidance.

3	*Cont.*	3.3	Demonstrate compliance with relevant legislation and official guidance relating to the following: • Methods of work. • Safe use of health and safety control equipment. • Safe use of access equipment. • Safe use, storage, handling and distribution of materials, tools and ancillary equipment. • Specific risks to health. • Specific risks associated with asbestos containing materials. • Specific risk associated with respirable crystalline silica (RCS).
		3.4	Explain why, when and how health and safety control equipment, identified by the principles prevention should be used, in relation to: • Collective protective measures. • Personal protective equipment (PPE). • Respiratory protective equipment (RPE). • Local exhaust ventilation (LEV).
		3.5	Describe how the relevant health and safety control equipment should be used in accordance with the work instructions.
		3.6	Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills in relation to: • Fires, spillages and injuries. • Emergencies relating to occupational activities. • Identification of and reporting asbestos containing materials. • Identification of silica.

3	*Cont.*	3.7	Describe how to report risks and hazards identified by the following: • Methods of work. • Risk assessment. • Personal assessment. • Manufacturers' technical information. • Statutory regulations. • Official guidance. • Control of Substances Hazardous to Health (COSHH).
4	Select the required quantity and quality of resources for the methods of work to prepare surfaces for membrane roofing systems.	4.1	Select resources associated with own work in relation to: • Materials. • Components and fixings. • Tools and ancillary equipment.
		4.2	Describe why the characteristics, quality, uses, sustainability, limitations and defects associated with the resources are important and how defects should be rectified.
		4.3	Describe how to confirm that the resources and materials conform with the specification.
		4.4	Describe how the resources should be used and how any problems associated with the resources are reported in relation to: • Primers. • Preparation coats. • Separating/isolating/carrier/cushion layers. • Joint tapes. • Screed materials. • Associated materials. • Components. • Fixings and fittings. • Hand and power tools. • Ancillary equipment.
		4.5	Explain the organisational procedures to select resources, why they have been developed and how they are used.
		4.6	Describe how to identify any potential hazards associated with the resources and methods of work and how they are overcome.

4	*Cont.*	4.7	Describe methods of calculating quantity, length, and wastage associated with the method and procedure to prepare surfaces for membrane roofing systems.
5	Minimise the risk of damage to the work and surrounding area when preparing surfaces for membrane roofing systems.	5.1	Comply with organisational procedures to protect the work and its surrounding area from damage by: • Maintaining a safe, clear and tidy work area. • Disposing of waste in accordance with current legislation.
		5.2	Explain why it is important to maintain a safe, clear and tidy work area.
		5.3	Describe how to protect work and its surrounding area from damage and the purpose of protection from general workplace activities, other occupations and adverse weather conditions.
		5.4	Explain how to minimise damage to the existing building fabric.
		5.5	Explain why and how the disposal of waste must be carried out safely in accordance with the following: • Environmental responsibilities. • Organisational procedures. • Manufacturers' information. • Statutory regulations. • Official guidance.
6	Complete the work within the allocated time when preparing surfaces for membrane roofing systems.	6.1	Demonstrate completion of the work within the estimated, allocated time.
		6.2	Describe the programme of work to be carried out including the estimated and allocated time and explain why deadlines should be kept in relation to: • Types of progress charts, timetables and estimated times. • Organisational procedures for reporting circumstances which will affect the work programme.

7	Comply with the given contract information to prepare surfaces for membrane roofing systems to the required specification.	7.1	Demonstrate the following work skills: • Measuring. • Cutting. • Marking out. • Fitting. • Positioning. • Securing.

		7.2	Use and maintain:
			• Hand tools.
			• Power tools.
			• Ancillary equipment including one of the following:
			  ○ LPG gas torch.
			  ○ Hot air gun.
			  ○ Electronic torch.

		7.3	Clean, dry and prepare surfaces as appropriate to the substrate to given working instructions for one of the following membrane roofing systems: • Reinforced bitumen. • Single ply. • Liquid applied.

7 *Cont.*

7.4 Describe how the methods of work to meet the specification are carried out and how problems are identified and reported by the application of knowledge for safe, healthy and environmental work practices, procedures and skills relating to the methods of work:

- Carry out remedial work to roofing backgrounds.
- Clean and dry surfaces and method.
- Prepare surfaces (as appropriate to the substrate) for reinforced bitumen, single ply and liquid applied membrane systems.
- Hot work permits.
- Apply primers/preparation coats.
- Install separating/isolating/cushion layers.
- Install joint tapes.
- The relevance of an assessment of significance.
- How to recognise specific requirements for the building structure.
- Work with, around and in close proximity to plant and machinery.
- Safely work at height using access and fall prevention equipment.
- Use all hand tools, power tools and ancillary equipment including LPG gas torch, hot air gun, electronic torch.
- How and why operative care and maintenance of all hand and power tools and ancillary equipment is carried out.

7.5 Describe the needs of other occupations.

7.6 Describe the importance of applying, fairness, inclusion, and respect (FIR) when dealing with others.

7.7 Explain the importance of teamwork and communication, organisational procedures with respect to site behaviours, and how to challenge inappropriate site behaviours.

Endorsements

This unit has the following endorsement requirements:

*Use and maintain **one** of the following:*

- *LPG gas torch*
- *Hot air gun*
- *Electronic torch*

Plus one of the following membrane roofing systems:

- *Reinforced bitumen*
- *Single ply*
- *Liquid applied*

Title:	Preparing Surfaces for Membrane Roofing Systems in the Workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment, in accordance with the CITB Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated. This unit must be assessed against the endorsements detailed within the relevant NVQ Structure. Please refer to the NVQ Structure applicable to the qualification/occupational area in which the candidate is being assessed.
Sector Subject Area	5.2 Building and Construction
Availability For Use	Shared unit
Unit Guided Learning Hours	100
Assessment Hours	10

Title:	Repairing Membrane Roofing Systems in the Workplace
Unit Number:	F/615/2180

Learning Outcomes *The learner will be able to:*	**Assessment Criteria** *The learner can:*
1 Interpret the given information relating to the work and resources when repairing membrane roofing systems.	1.1 Interpret and extract relevant information from: • Drawings. • Specifications. • Schedules. • Method statements. • Risk assessments. • Permits to work. • Manufacturers' information. • Electronic data. • Oral and written procedures. • Current legislation. • Site inductions.
	1.2 Comply with information and/or instructions derived from risk assessments and method statements.
	1.3 Describe why organisational procedures have been developed and how they are implemented.
	1.4 Describe different types of information, their source and how they are interpreted in relation to: • Drawings. • Specifications. • Schedules. • Method statements. • Risk assessments. • Permits to work. • Manufacturers' information. • Electronic data. • Oral and written procedures. • Current legislation. • Site inductions.
	1.5 The importance of organisational procedures to solve problems with the information, and why it is important to follow them.

2	Know how to comply with relevant legislation and official guidance when repairing membrane roofing systems.	2.1	Describe their responsibilities regarding potential accidents, health hazards and the environmental impact, whilst working in the workplace in relation to: • Below ground level. • In confined spaces. • At height. • In proximity to fragile elements. • With tools and equipment. • With materials and substances. • Moving and storing materials by manual handling and mechanical lifting.
		2.2	Describe the organisational security procedures for tools, equipment and personal belongings in relation to: • Operative. • Site. • Workplace. • Vehicles. • Company. • Customer. • The general public.
		2.3	Explain the accident reporting procedures and who is responsible for making reports.
		2.4	Describe the types of fire extinguishers and how and when they are used in relation to: • Water • CO_2. • Foam. • Powder.
3	Maintain safe and healthy working practices when repairing membrane roofing systems.	3.1	Outline information for relevant, current legislation and official guidance and how it is applied.
		3.2	Use health and safety control equipment safely and comply with the methods of work to carry out the work in accordance with relevant legislation and official guidance.

3	*Cont.*	3.3	Demonstrate compliance with relevant legislation and official guidance relating to the following: • Methods of work. • Safe use of health and safety control equipment. • Safe use of access equipment. • Safe use, storage, handling and distribution of materials, tools and ancillary equipment. • Specific risks to health. • Specific risks associated with asbestos containing materials. • Specific risk associated with respirable crystalline silica (RCS).
		3.4	Describe the importance of mental health awareness and wellbeing.
		3.5	Explain why, when and how health and safety control equipment, identified by the principles of prevention, should be used in relation to: • Collective protective measures. • Personal protective equipment (PPE). • Respiratory protective equipment (RPE). • Local exhaust ventilation (LEV).
		3.6	Describe how the relevant health and safety control equipment should be used in accordance with work instructions.
		3.7	Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills in relation to: • Fires, spillages, injuries. • Emergencies relating to occupational activities. • Identification of and reporting of asbestos containing materials.

3	*Cont.*	3.8	Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills in relation to: • Methods of work. • Risk assessment. • Personal assessment. • Manufacturers' technical information. • Statutory regulations. • Official guidance. • Control of Substances Hazardous to Health (COSHH).
4	Select the required quantity and quality of resources for the methods of work to repair membrane roofing systems.	4.1	Select resources associated with own work in relation to: • Materials. • Components and fixings. • Tools and ancillary equipment.
		4.2	Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources are important and how defects should be rectified.
		4.3	Describe how to confirm that the resources and materials conform with the specification.
		4.4	Describe how the resources should be used and how any problems associated with the resources should be reported in relation to: • Relevant membrane system materials. • Upstands. • Pipes. • Vents. • Rainwater outlets and associated materials. • Components. • Fixings and fittings. • Access equipment. • Hand and/or power tools. • Ancillary equipment.
		4.5	Explain the organisational procedures to select resources, why they have been developer and how they are used.
		4.6	Describe how to identify any potential hazards associated with the resources and methods of work and how they are overcome.

4	*Cont.*	4.7	Describe methods of calculating the quantity, length, and wastage associated with the method and procedure to repair membrane roofing systems.
5	Minimise the risk of damage to the work and surrounding area when repair membrane roofing systems.	5.1	Comply with organisational procedures to protect the work and its surrounding area from damage by: • Protecting the work and its surrounding area from damage. • Maintaining a safe, clear and tidy work area.
		5.2	Explain why it is important to maintain a safe, clear and tidy work area.
		5.3	Describe how to protect work and its surrounding area from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
		5.4	Explain how to minimise damage to the existing building fabric.
		5.5	Explain why and how the disposal of waste must be carried out safely in accordance with: • Environmental responsibilities. • Organisational procedures. • Manufacturers' information. • Statutory regulations. • Official guidance.
6	Complete the work within the allocated time when repairing membrane roofing systems.	6.1	Demonstrate completion of the work within the estimated, allocated time.
		6.2	Describe the purpose of work to be carried out including the estimated and allocated time and explain why deadlines should be kept in relation to: • The types of progress charts, timetables and estimated times. • The organisational procedures for reporting circumstances which will affect the work programme.

7	Comply with the given contract information to repair membrane roofing systems to the required specification.	7.1	Demonstrate the following work skills: • Removing. • Measuring. • Marking out. • Cutting. • Fitting. • Applying. • Positioning. • Securing.
		7.2	Use and maintain: • Hand tools. • Power tools. • Ancillary equipment applicable to roofing system.
		7.3	Repair reinforced bitumen and/or single ply and/or liquid applied membrane roofing systems to given working instructions relating to one of the following: • Damaged membrane. • Edges and upstands. • Penetrations, pipes and vents. • Perimeters, rainwater outlets.

7	*Cont.*	7.4	Describe how the methods of work to meet the specification, are carried out and how problems are identified and reported by the application of knowledge for safe, healthy and environmental work practices, procedures and skills relating to the method and area of work: • Identify and evaluate defects in the membrane and inspect condition of sub-strata. • Record and report findings including photographic or video evidence. • Take account of the local environment. • Remove debris and blockages. • Repair damaged reinforced bitumen membrane system, single ply membrane system or liquid membrane system. • Carry out appropriate repair to edges, upstands, penetrations, pipes, vents, perimeters and rainwater outlets. • Repair/replace damaged insulation/decking. • Repair/replace damaged associated materials and components. • Hot work permits. • The relevance of an assessment of significance. • How to recognise specific requirements for building structure. • Work with, around and in close proximity to plant and machinery. • Safely work at height using access and fall prevention equipment. • Use all hand and power tools and ancillary equipment including LPG gas torch, hot air gun, automatic hot air gun. • How and why operative care and maintenance of all hand and power tools and ancillary equipment is carried out.
		7.5	Describe the needs of other occupations.
		7.6	Describe the importance of applying, fairness, inclusion, and respect (FIR) when dealing with others.
		7.7	Explain the importance of teamwork and communication, organisational procedures with respect to site behaviours, and how to challenge inappropriate site behaviours.

Endorsements

<u>This unit has the following endorsement requirements:</u>

***One** of the following:*

- *Damaged membranes*
- *Edges and upstands*
- *Penetrations, Pipes and vents*
- *Perimeters, rainwater outlets*

Title:	Repairing Membrane Roofing Systems in the Workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment, in accordance with the CITB Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated. This unit must be assessed against the endorsements detailed within the relevant NVQ Structure. Please refer to the NVQ Structure applicable to the qualification/occupational area in which the candidate is being assessed.
Sector Subject Area	5.2 Building and Construction
Availability For Use	Shared unit
Unit Guided Learning Hours	110
Assessment Hours	10

Title:	Installing Decking for Flat Roof Coverings in the Workplace
Unit Number:	Y/615/2184

Learning Outcomes *The learner will be able to:*		**Assessment Criteria** *The learner can:*	
1	Interpret the information relating to the work and resources when installing decking for flat roof coverings.	1.1	Interpret and extract relevant information from: • Drawings. • Specifications. • Schedules. • Risk assessments. • Method statements. • Oral and written instructions. • Manufacturer's information.
		1.2	Comply with information and/or instructions derived from risk assessments and method statements.
		1.3	Describe why the organisational procedures have been developed and how they are implemented.
		1.4	Describe different types of information, their source and how they are interpreted in relation to: • Drawings. • Specifications. • Schedules. • Risk assessments. • Method statements. • Manufacturer's information. • Oral and written procedures for dealing with damaged and incorrect materials and resources. • Current legislation and regulations governing buildings.
		1.5	Describe the importance of reporting and rectifying inappropriate information.
		1.6	Describe the range of relevant digital services, tools, and systems and how they are used.

2	Know how to comply with environmentally responsible work practices to meet current legislation and official guidance when installing decking for flat roof coverings.	2.1	Describe the organisational procedures when dealing with potential accidents, health hazards, and the environmental impact, whilst working: • In the workplace. • Below ground level. • In confined spaces. • At height. • With tools and equipment, including plant equipment. • With materials and hazardous substances. • When moving and storing materials by manual handling and mechanical lifting.
		2.2	Describe the organisational security procedures for tools, equipment, and personal belongings, in relation to: • Operative. • Site. • Workplace. • Company. • Vehicles. • Customer. • The general public. • Plant equipment.
		2.3	Explain the accident and near miss reporting procedures and who is responsible for making reports.
		2.4	Describe the different types of fire extinguishers and how and when they are used in relation to: • Water. • CO_2. • Foam. • Powder.
3	Maintain safe and healthy work practices when installing decking for flat roof coverings.	3.1	Outline information for current legislation and official guidance and how it is applied.
		3.2	Use health and safety control equipment safely and comply with the methods of work to carry out the work in accordance with current legislation and official guidance.

3	*Cont.*	3.3	Demonstrate compliance with current legislation and official guidance to carry out the work and maintain safe systems of work relating to the following: • Safe use of access equipment or systems. • Safe use, storage, and handling of materials, tools, and equipment. • Specific risks identified through a risk assessment or during work. • Specific risks to health including mental health and wellbeing.
		3.4	Describe the importance of mental health awareness and wellbeing.
		3.5	Explain why, when, and how health and safety control equipment, identified by the principles of prevention should be used, in relation to: • Collective protective measures. • Personal protective equipment (PPE). • Respiratory protective equipment (RPE). • Local exhaust ventilation (LEV).
		3.6	Describe how the relevant health and safety control equipment should be used in accordance with the work instructions.
		3.7	Describe how to comply with environmentally responsible work practices to meet current legislation and official guidance.
		3.8	Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills, in relation to: • Fires, spillages, injuries. • Emergencies relating to occupational activities. • Identification and reporting of asbestos containing materials.

3	*Cont.*	3.9	Describe how to report risks and hazards identified by the following: • Methods of work. • Risk assessment. • Personal assessment. • Manufacturer's technical information. • Statutory regulations. • Official guidance. • Control of Substances Hazardous to Health (COSHH).
4	Select the correct quantity and quality of resources for the methods of work to install decking for flat roof coverings.	4.1	Select resources associated with own work in relation to: • Materials. • Components and fixings. • Tools and equipment.
		4.2	Describe why the limitations, sustainability, and defects associated with the resources are important and how defects should be rectified.
		4.3	Describe how to confirm that the resources and materials conform with the specified task.
		4.4	Describe how the resources should be used and how any problems associated with the resources are reported in relation to: • Particle boards. • Plywood. • Timber. • Single-skin metal sheeting. • Fixings and associated components. • Tools and equipment. • Digital equipment.
		4.5	Explain why the resources have been selected, and how they are used.
		4.6	Describe how to identify any potential hazards associated with the resources and methods of work, and how they are overcome.
		4.7	Describe methods of calculating the quantity, length, and wastage associated with the method and procedure to install decking for flat roof coverings.

5	Minimise the risk of possible damage to the work, its surrounding area and environment when installing decking for flat roof coverings.	5.1	Comply with organisational procedures to protect the work, its surrounding area and environment from possible damage by: • Maintaining a safe, clear, and tidy work space. • Disposing of waste in accordance with site procedures and current legislation.
		5.2	Explain why it is important to maintain a safe, clear, and tidy work space.
		5.3	Describe how to protect work, its surrounding area, and the environment from possible damage and the purpose of protection from general workplace activities, other trades, and adverse weather conditions.
		5.4	Explain how to minimise damage to the existing building fabric.
		5.5	Explain why and how the safe disposal of waste must be carried out in accordance with the following: • Environmental responsibilities. • Organisational procedures. • Manufacturer's information. • Site guidance.
6	Complete the work within the allocated time when installing decking for flat roof coverings.	6.1	Demonstrate completion of the work within the estimated and allocated time in accordance with organisational procedures, the programme of work and to meet the needs of others and the client.
		6.2	Describe the programme of work to be carried out including the estimated and allocated time and explain why deadlines should be kept.
7	Comply with the contract information to install decking for flat roof coverings efficiently to the required specification.	7.1	Demonstrate the following work skills: • Preparing the area. • Cutting materials to size. • Fitting, laying, and positioning, materials where required.
		7.2	Use and maintain tools and equipment.

7	*Cont.*	7.3	Install boarded timber roof decks or boarded single-skin metal decking to working instructions for the following: • Forming perimeter upstand details including metal, timber, cementitious and particle boards. • Creating falls as per the specification. • Forming outlets, openings, penetrations and checking datum points before fixing in place.
		7.4	Describe how to meet the contract specification in relation to the following: • How to install metal and timber decking substrate. • How to create falls including checking the specification and surveys to ensure the purlins and joists are set to the correct gradients. • How to form outlets, openings, and penetrations including checking named items are marked and set to correct datum points before fixing in place. • How to form metal, timber, and cementitious perimeter upstand details. • Why it is important to ensure the deck is secure and fit for purpose to accept the weight of the applied mastic asphalt system. • The importance of constraints relating to installing decking for flat roof coverings on historic and listed buildings. • Why it is important to identify and follow the installation quality requirements. • When to seek specialist advice. • The limits of your own authority. • How to work with, around, and in close proximity, to plant and machinery. • How to work at height. • How to use access equipment and safety protection equipment. • The importance of edge protection, leading edge procedures, safety nets, crash decks, and harnesses. • How to use tools and equipment. • How and why operative care and maintenance of tools and equipment is carried out.

7	*Cont.*	7.5	Describe the importance of applying, fairness, inclusion, and respect (FIR) when dealing with others.
		7.6	Describe the needs of other trades associated with installing decking for flat roof coverings.
		7.7	Explain the importance of teamwork and communication, including organisational procedures with respect to site behaviours, and how to challenge inappropriate site behaviours.

Title:	Installing Decking for Flat Roof Coverings in the Workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment, in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated. This unit must be assessed against the endorsements detailed within the relevant NVQ structure. Please refer to the NVQ structure applicable to the qualification/occupational area in which the candidate is being assessed.
Sector Subject Area	5.2 Building and Construction
Unit Guided Learning Hours	90
Assessment Hours	10

Title:	Installing Support Systems for Green Roofs in the Workplace
Unit Number:	D/615/2185

Learning Outcomes *The learner will be able to:*	**Assessment Criteria** *The learner can:*
1 Interpret the given information relating to the work and resources when installing support systems for green roofs.	1.1 Interpret and extract relevant information from: • Drawings. • Specifications. • Schedules. • Method statements. • Risk assessments. • Permits to work. • Manufacturers' information. • Electronic data. • Oral and written procedures. • Current regulations. • Site inductions.
	1.2 Comply with information and/or instructions derived from risk assessments and method statements.
	1.3 Describe why the organisational procedures have been developed and how they are implemented.
	1.4 Describe different types of information, their source and how they are interpreted in relation to: • Drawings. • Specifications. • Schedules. • Method statements. • Risk assessments. • Permits to work. • Manufacturers' information. • Electronic data. • Oral and written procedures. • Current legislation. • Site inductions.
	1.5 The range of relevant digital services, tools and systems, and how they are used.
	1.6 The importance of organisational procedures to solve problems with the information and why it is important to follow them.

2	Know how to comply with relevant legislation and official guidance when installing support systems for green roofs.	2.1	Describe their responsibilities regarding potential accidents and health hazards and the environmental impact, whilst working: • Below ground level. • In confined spaces. • At height. • At proximity to fragile roofs. • With tools and equipment. • With materials and substances. • Movement/storage of materials and by manual handling and mechanical lifting.
		2.2	Describe the organisational security procedures for tools, equipment and personal belongings in relation to: • Operative. • Site. • Workplace. • Vehicles. • Company. • Customer. • The general public.
		2.3	Explain the accident reporting procedures and who is responsible for making reports.
		2.4	Describe the types of fire extinguishers and how and when they are used in relation to: • Water. • CO_2. • Foam. • Powder.
3	Maintain safe and healthy working practices when installing support systems for green roofs.	3.1	Outline information for relevant, current legislation and official guidance and how it is applied.
		3.2	Use health and safety control equipment safely and comply with the methods of work to carry out the work in accordance with current legislation and official guidance.

3	*Cont.*	3.3	Demonstrate compliance with relevant legislation and official guidance relating to the following: • Methods of work. • Safe use of health and safety control equipment. • Safe use of access equipment. • Safe use, storage, handling and distribution of materials, tools and ancillary equipment. • Specific risks to health. • Specific risks associated with asbestos containing materials. • Specific risk associated with respirable crystalline silica (RCS).
		3.4	Describe the importance of mental health awareness and wellbeing.
		3.5	Explain why and when and how health and safety control equipment, identified by the principles of prevention, should be used, in relation to: • Collective protective measures. • Personal protective equipment (PPE). • Respiratory protective equipment (RPE). • Local exhaust ventilation (LEV).
		3.6	Describe how the relevant health and safety control equipment should be used in accordance with the instructions.
		3.7	Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills in relation to: • Fires, spillages, injuries. • Emergencies relating to occupational activities. • Identification of and reporting asbestos containing materials.

3	*Cont.*	3.8	Describe how to report risk and hazards identified by the following: • Methods of work. • Risk assessment. • Personal assessment. • Manufacturers' technical information. • Statutory regulations. • Official guidance. • Control of Substances Hazardous to Health (COSHH).
4	Select the required quantity and quality of resources for the methods of work to install support systems for green roofs.	4.1	Select resources associated with own work in relation to: • Materials. • Components and fixings. • Tools and ancillary equipment.
		4.2	Describe why the characteristics, quality, uses, sustainability, limitations and defects associated with the resources are important and how defects should be rectified.
		4.3	Describe how to confirm that the resources and materials conform with the specification.
		4.4	Describe how the resources should be used and how any problems associated with the resources are reported in relation to: • Drains. • Resistance layers. • Filters. • Irrigation systems. • Protection layers. • Substrate. • Associated materials. • Components. • Fixings and fittings. • Hand and/or power tools. • Ancillary equipment.
		4.5	Explain the organisational procedures to select resources, why they have been developed and how they are used.
		4.6	Describe how to identify any potential hazards associated with the resources and methods of work and how they are overcome.

4	*Cont.*	4.7	Describe methods of calculating the quantity, length, and wastage associated with the method and procedure to install support systems for green roofs.
5	Minimise the risk of damage to the work and surrounding area when installing support systems for green roofs.	5.1	Comply with organisational procedures to protect the work and its surrounding area from damage by: • Protecting the work and its surrounding area from damage. • Maintaining a safe, clear and tidy work area. • Disposing of waste in accordance with current legislation.
		5.2	Explain why it is important to maintain a safe, clear and tidy work area.
		5.3	Describe how to protect work and its surrounding area from damage and the purpose of protection from general workplace activities, other occupations and adverse weather conditions.
		5.4	Explain how to minimise damage to the existing building fabric.
		5.5	Explain why and how the disposal of waste must be carried out safely in accordance with the following: • Environmental responsibilities. • Organisational procedures. • Manufacturers' information. • Statutory regulations. • Official guidance.
6	Complete the work within the allocated time when installing support systems for green roofs.	6.1	Demonstrate completion of the work within the estimated, allocated time.
		6.2	Describe the purpose of the work programme and explain why deadlines should be kept in relation to: • The types of progress charts, timetables and estimated times. • The organisational procedures for reporting circumstances which will affect the work programme.

7	Comply with the given contract information to install support systems for green roofs to the required specification.	7.1	Demonstrate the following work skills: • Measuring. • Marking out. • Laying. • Fitting. • Joining. • Sealing. • Finishing. • Positioning. • Securing.
		7.2	Use and maintain: • Hand tools. • Power tools. • Ancillary equipment.
		7.3	Prepare and install support systems for green roofs to given working instruction for at least four of the following components: • Root/rhizome resistant layer. • Protection layer. • Irrigation system. • Drainage system. • Filter layer. • Substrate.

7	*Cont.*	7.4	Describe how to meet the contract specification in relation to the following: • Ensure the integrity of roof structure. • Protect underlying roof membrane(s). • Ensure appropriate layering of the green roof support system; root/rhizome resistant layers, protection layers, irrigation systems, drainage systems, filter layers and substrate. • Install measures to prevent slippage. • Identify the differences between intensive and extensive green roofs. • The relevance of an assessment of significance. • How to recognise specific requirements for structures of special interest, traditional construction, hard-to-treat buildings and historical significance. • Work with, around and in close proximity to plant and machinery. • Safely work at height using access equipment and fall prevention equipment. • How to use all hand tools, power tools and ancillary equipment. • How and why operative care and maintenance of all hand and power tools and ancillary equipment is carried out.
		7.5	Describe the needs of other occupations.
		7.6	Describe the importance of applying, fairness, inclusion, and respect (FIR) when dealing with others.
		7.7	Explain the importance of teamwork and communication, organisational procedures with respect to site behaviours.

Endorsements

This unit has the following endorsement requirements:

Four *of the following:*

- *Root/rhizome resistant layer*
- *Protection layer*
- *Irrigation system*
- *Drainage system*
- *Filter layer*
- *Substrate*

Title:	Installing Support Systems for Green Roofs in the Workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment, in accordance with the CITB Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated. This unit must be assessed against the endorsements detailed within the relevant NVQ structure. Please refer to the NVQ structure applicable to the qualification/occupational area in which the candidate is being assessed.
Sector Subject Area	5.2 Building and Construction
Availability For Use	Shared unit
Unit Guided Learning Hours	70
Assessment Hours	10

Title:	Installing Solar Collectors to Roofs in the Workplace
Unit Number:	H/615/2186

Learning Outcomes *The learner will be able to:*		**Assessment Criteria** *The learner can:*	
1	Interpret the given information relating to the work and resources when installing solar collectors to roofs.	1.1	Interpret and extract relevant information from drawings, specifications, schedules, method statements, risk assessments and manufacturers' information.
		1.2	Comply with information and/or instructions derived from risk assessments and method statements.
		1.3	State the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
		1.4	Describe different types of information, their source and how they are interpreted in relation to: • Drawings, specifications, schedules, method statements, risk assessments, manufacturers' information and regulations governing buildings.
2	Know how to comply with relevant legislation and official guidance when installing solar collectors to roofs.	2.1	Describe their responsibilities under current legislation and official guidance whilst working: • In the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement/storage of materials and by manual handling and mechanical lifting.
		2.2	Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
		2.3	Explain what the accident reporting procedures are and who is responsible for making reports.
3	Maintain safe working practices when installing solar collectors to roofs.	3.1	Use health and safety control equipment and access equipment safely to carry out the activity in accordance with legislation and organisational requirements when installing solar collectors to roofs.

3	*Cont.*	3.2	Explain why and when health and safety control equipment, identified by the principles of protection, should be used, relating to installing solar collectors to roofs, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: • Collective protective measures. • Personal protective equipment (PPE). • Respiratory protective equipment (RPE). • Local exhaust ventilation (LEV).
		3.3	Describe how the relevant health and safety control equipment should be used in accordance with the given instructions.
		3.4	State how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related hazards.
4	Select the required quantity and quality of resources for the methods of work to install solar collectors to roofs.	4.1	Select resources associated with own work in relation to materials, components, fixings, tools and equipment.
		4.2	Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources in relation to: • Solar collector installation kits. • Hand and/or powered tools and equipment.
		4.3	Describe how the resources should be used correctly and how problems associated with the resources are reported.
		4.4	Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
		4.5	Describe any potential hazards associated with the resources and method of work.
		4.6	Describe how to calculate quantity, length, area and wastage associated with the method/procedure to install solar collectors to roofs.

5	Minimise the risk of damage to the work and surrounding area when installing solar collectors to roofs.	5.1	Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
		5.2	Minimise damage and maintain a clean work space.
		5.3	Dispose of waste in accordance with legislation.
		5.4	Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
		5.5	Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6	Complete the work within the allocated time when installing solar collectors to roofs.	6.1	Demonstrate completion of the work within the allocated time.
		6.2	State the purpose of the work programme and explain why deadlines should be kept in relation to: • Types of progress charts, timetables and estimated times. • Organisational procedures for reporting circumstances which will affect the work programme.
7	Comply with the given contract information to installing solar collectors to roofs to the required specification.	7.1	Demonstrate the following work skills when installing solar collectors to roofs: • Removing, measuring, marking out, cutting, fitting, fixing, positioning, securing and replacing.
		7.2	Prepare for and install solar collectors to roof to given working instructions for one of the following: • Integrated photo voltaic. • Mounted photo voltaic. • Integrated solar thermal. • Mounted solar thermal.
		7.3	Reinstate roof coverings to given working instructions.
		7.4	Safely use and handle materials.
		7.5	Safely use hand tools, portable power tools and ancillary equipment.

7	*Cont.*	7.6	Safely store the materials, tools and equipment used when installing solar collectors to roofs.
		7.7	Describe how to apply safe work practices, follow procedures, report problems and establish the authority needed to rectify them, to: • Assess the installation area. • Check the direction the roof is facing. • Remove or leave out waterproofing elements. • Mark out for installation using given templates or dimensions. • Prepare and weatherproof penetrations. • Fix additional supports. • Secure fixtures, fittings and collector.
		7.8	Describe how to apply safe work practices, follow procedures, report problems and establish the authority needed to rectify them, to: • Reinstate roof covering including flashings. • Install solar panels during construction and as retrofit to existing buildings. • Use hand tools, power tools and equipment. • Work at height. • Use access equipment.
		7.9	Describe the needs of other occupations and how to effectively communicate within a team when installing solar collectors to roofs.
		7.10	Describe how to maintain the tools and equipment used when installing solar collectors to roofs.

Endorsements

This unit has the following endorsement requirements:

***One** of the following:*

- *Integrated photo voltaic*
- *Mounted photo voltaic*
- *Integrated solar thermal*
- *Mounted solar thermal*

Title:	Installing Solar Collectors to Roofs in the Workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment, in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated. This unit must be assessed against the endorsements detailed within the relevant NVQ Structure. Please refer to the NVQ Structure applicable to the qualification/occupational area in which the candidate is being assessed.
Sector Subject Area	5.2 Building and Construction
Availability For Use	Shared unit
Unit Guided Learning Hours	20
Assessment Hours	5

Title:	Applying Single Ply Membrane Roofing Systems in the Workplace
Unit Number:	L/615/2182

Learning Outcomes *The learner will be able to:*		**Assessment Criteria** *The learner can:*	
1	Interpret the given information relating to the work and resources when applying single ply membrane systems.	1.1	Interpret and extract relevant information from: • Drawings. • Specifications. • Schedules. • Method statements. • Risk assessments. • Permits to work. • Manufacturers' information. • Electronic data. • Oral and written instructions. • Current regulations. • Site inductions.
		1.2	Comply with information and/or instructions derived from risk assessments and method statements.
		1.3	Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
		1.4	Describe different types of information, their source and how they are interpreted in relation to: • Drawings. • Specifications. • Schedules. • Method statements. • Risk assessments. • Permits to work. • Manufacturers' information. • Electronic data. • Oral and written procedures. • Current regulations. • Site inductions.
		1.5	The range of relevant digital services, tools and systems, and how they are used.
		1.6	The importance of organisational procedures to solve problems with the information, and why it is important to follow them.

2	Know how to comply with relevant legislation and official guidance when applying single ply membrane systems.	2.1	Describe their responsibilities regarding potential accidents, health hazards and the environmental impact, whilst working: • In the workplace. • Below ground level. • At height. • In proximity to fragile roofs. • In confined spaces. • With tools and equipment. • With materials and substances. • With movement/storage of materials. • By manual handling. • Mechanical lifting.
		2.2	Describe the organisational security procedures for tools, equipment and personal belongings in relation to: • Operative. • Site. • Workplace. • Vehicles. • Company. • Customer. • The general public.
		2.3	Explain what the accident reporting procedures are and who is responsible for making reports.
		2.4	Describe the following types of fire extinguishers and how and when they are used: • Water. • CO_2. • Foam. • Powder.
3	Maintain safe and healthy working practices when applying single ply membrane systems.	3.1	Outline information for relevant, current legislation and official guidance and how it is applied.
		3.2	Use health and safety control equipment safely and comply with the methods of work to carry out the activity in accordance with current legislation and organisational requirements when applying single ply membrane systems.

3	*Cont.*	3.3	Demonstrate compliance with given information and relevant legislation when applying single ply membrane systems in relation to: • Safe use of access equipment. • Safe use and handling of materials, tools and equipment. • Safe storage and distribution of materials, tools and equipment. • Specific risks to health. • Specific risks associated with asbestos containing materials. • Specific risk associated with respirable crystalline silica (RCS).
		3.4	Describe the importance of mental health awareness and wellbeing.
		3.5	Explain why and when and how health and safety control equipment, identified by the principles of prevention, should be used relating to applying single ply membrane systems, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: • Collective protective measures. • Personal protective equipment (PPE). • Respiratory protective equipment (RPE).
		3.6	Describe how the relevant health and safety control equipment should be used in accordance with the given working instructions.
		3.7	Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills in relation to: • Fires, spillages, injuries. • Emergencies relating to occupational activities. • Identification of and reporting of asbestos containing materials. • Identification of silica.

3	*Cont.*	3.8	Describe how to report risks and hazards identified by the following: • Methods of work. • Risk assessment. • Personal assessment. • Manufacturers' technical information. • Statutory regulations. • Official guidance. • Control of Substances Hazardous to Health (COSHH).
4	Select the required quantity and quality of resources for the methods of work to apply single ply membrane systems.	4.1	Select resources associated with own work in relation to: • Materials. • Components. • Fixings. • Tools and equipment.
		4.2	Describe why the characteristics, quality, uses, sustainability, limitations and defects associated with the resources are important and how defects should be rectified.
		4.3	Describe how to confirm that the resources and materials conform with the specification.

4	*Cont.*	4.4	Describe how the resources should be used and how any problems associated with the resources are reported in relation to: • Mechanical fixings. • Air and vapour control layers. • Insulation. • Single ply roofing membranes. • Water control membranes. • Ballast. • Solvents. • Adhesives. • Pedestrian surfacing. • Protection layers. • Separation layers. • Filter and drainage layers. • Outlets. • Gutters. • Pipes. • Vents. • Flashings. • Trims. • Movement joints. • Rooflights. • Associated materials. • Components. • Fixings and fittings. • Hand and/or power tools. • Ancillary equipment.
		4.5	Explain the organisational procedures to select resources, why they have been developed and how they are used.
		4.6	Describe how to identify any potential hazards associated with the resources and methods of work and how they are overcome.
		4.7	Describe how to identify any potential hazards associated with the resources and methods of work and how they are overcome.
5	Minimise the risk of damage to the work and surrounding area when applying single ply membrane systems.	5.1	Comply with organisational procedures to protect the work and its surrounding area from damage by: • Maintaining a safe, clear, and tidy work area. • Disposing of wate in accordance with current legislation.

5	*Cont.*	5.2	Explain why it is important to maintain a safe, clear, and tidy work area.
		5.3	Describe how to protect work and its surrounding area from damage and the purpose of protection from general workplace activities, other occupations and adverse weather conditions.
		5.4	Explain how to minimise damage to the existing building fabric.
		5.5	Explain why and how the disposal of waste must be carried out safely in accordance with the following: • Environmental responsibilities. • Organisational procedures. • Manufacturers' information. • Statutory regulations. • Official guidance.
6	Complete the work within the allocated time when applying single ply membrane systems.	6.1	Demonstrate completion of the work within the allocated time.
		6.2	Describe the purpose of the work programme and explain why deadlines should be kept in relation to: • Types of progress charts, timetables and estimated times. • Organisational procedures for reporting circumstances which will affect the work programme.
7	Comply with the given contract information to apply single ply membrane systems to the required specification.	7.1	Demonstrate the following work skills when applying single ply membrane systems: • Measuring. • Cutting. • Marking out. • Fitting. • Positioning and securing.
		7.2	Use and maintain hand tools, power tools and ancillary equipment.
		7.3	Install air and vapour control layers (warm roofs and inverted roofs) and insulation.

7 *Cont.*

7.4 Apply two of the following single ply membrane roofing systems:

- Adhered.
- Ballasted.
- Mechanically fixed.

To given working instructions, relating to the following:

- Protection layers.
- Separation layers.
- Water control membranes (inverted roofs only).
- Edges and upstands.
- Penetrations, pipes and vents.
- Perimeters, gutters and rainwater outlets.

7.5 Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to:

- Pre install/apply checks/preparation.
- Install air and vapour control layers (AVCL).
- Install insulation materials.
- Install protection layers.
- Install separation layers.
- Apply single ply membrane adhered systems.
- Apply single ply membrane mechanically fixed systems.
- Apply single ply membrane ballasted systems.
- Install vertical upstands, including internal/external corners, joints and junctions, straight and curved, and incorporating changes of plane and treatment of internal angles.
- Install terminations (cover flashing, external trim, termination bar, junctions to other materials).
- Install to perimeters (mono ridge, eaves, verges and drips), outlets (spigot, sump, parapet overflow), pipes, structural penetrations (vertical, pitched and horizontal, including plinths and hand rolled collars), safety systems, gutters, stop ends, rooflights, hips, valleys and pedestrian finishes, incorporating vertical surfaces.
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7	*Cont.*	7.5	• Use hot air, solvent weld and/or tape methods. • Take into account the effects of temperature and weather conditions. • Implement snagging procedures and appropriate remedial work, including preparation for test procedures. • The relevance of an assessment of significance. • How to recognise specific requirements for structures of special interest, traditional construction, hard-to-treat buildings and historical significance. • Work with, around and in close proximity to plant and machinery. • Safely work at height using access and fall prevention equipment. • To use all hand and power tools and ancillary equipment. • How and why operative care and maintenance of all hand and power tools and ancillary equipment is carried out.
		7.6	Describe the needs of other occupations.
		7.7	Describe the importance of applying, fairness, inclusion, and respect (FIR) when dealing with others.
		7.8	Explain the importance of team-work and communication, organisational procedures with respect to site behaviours, and how to challenge inappropriate site behaviours.

Endorsements

This unit has the following endorsement requirements:

Two *of the following:*

- *Adhered*
- *Ballasted*
- *Mechanically fixed*

Title:	Applying Single Ply Membrane Roofing Systems in the Workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment, in accordance with the CITB Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated. This unit must be assessed against the endorsements detailed within the relevant NVQ structure. Please refer to the NVQ structure applicable to the qualification/occupational area in which the candidate is being assessed.
Sector Subject Area	5.2 Building and Construction
Availability For Use	Shared unit
Unit Guided Learning Hours	120
Assessment Hours	10

Title:	Applying Liquid Membrane Systems in the Workplace
Unit Number:	R/615/2183

Learning Outcomes *The learner will be able to:*		**Assessment Criteria** *The learner can:*	
1	Interpret the given information relating to the work and resources when applying liquid membrane systems.	1.1	Interpret and extract relevant information from: • Drawings. • Specifications. • Schedules. • Method statements. • Risk assessments. • Permits to work. • Manufacturers' information. • Oral and written instructions. • Site inductions.
		1.2	Comply with information and/or instructions derived from risk assessments and method statements.
		1.3	Describe why the organisational procedures have been developed and how they are implemented.
		1.4	Describe different types of information, their source and how they are interpreted in relation to: • Drawings. • Specifications. • Schedules. • Method statements. • Risk assessments. • Permits to work. • Manufacturers' information. • Electronic data. • Oral and written procedures. • Current legislation. • Site inductions.
		1.5	The range of relevant digital services, tools and systems, and how they are used.
		1.6	The importance of organisational procedures to solve problems with the information, and why it is important to follow them.

2	Know how to comply with relevant legislation and official guidance when applying liquid membrane systems.	2.1	Describe their responsibilities regarding potential accidents, health hazards and the environmental impact whilst working in the workplace: • Below ground level. • In confined spaces. • At height. • At proximity to fragile roofs. • With tools and equipment. • With materials and substances. • Moving and storing materials by manual handling and mechanical lifting.
		2.2	Describe the organisational security procedures for tools, equipment and personal belongings in relation to: • Operative. • Site. • Workplace. • Vehicles. • Company. • Customer. • The general public.
		2.3	Explain the accident reporting procedures and who is responsible for making reports.
		2.4	Describe the types of fire extinguishers and how and when they are used: • Water. • CO_2. • Foam. • Powder.
3	Maintain safe and healthy working practices when applying liquid membrane systems.	3.1	Outline information for relevant, current legislation and official guidance and how it is applied.
		3.2	Use health and safety control equipment safely and comply with the methods of work to carry out the work in accordance with relevant legislation and official guidance.

3	*Cont.*	3.3	Demonstrate compliance with relevant legislation and official guidance relating to the following: • Methods of work. • Safe use of health and safety control equipment. • Safe use of access equipment. • Safe use, storage, handling and distribution of materials, tools and ancillary equipment. • Specific risks to health. • Specific risks associated with asbestos containing materials. • Specific risk associated with respirable crystalline silica (RCS).
		3.4	Describe the importance of mental health awareness and wellbeing.
		3.5	Explain why, when and how health and safety control equipment, identified by the principles of prevention, should be used, in relation to: • Collective protective measures. • Personal protective equipment (PPE). • Respiratory protective equipment (RPE). • Local exhaust ventilation (LEV).
		3.6	Describe how the relevant health and safety control equipment should be used in accordance with the working instructions.
		3.7	Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills in relation to: • Fires, spillages, injuries. • Emergencies relating to occupational activities. • Identification of and reporting of asbestos containing materials. • Identification of silica.

3	*Cont.*	3.8	Describe how to report risks and hazards identified by the following: • Methods of work. • Risk assessment. • Personal assessment. • Manufacturers' technical information. • Statutory regulations. • Official guidance. • Control of Substances Hazardous to Health (COSHH).
4	Select the required quantity and quality of resources for the methods of work to apply liquid membrane systems.	4.1	Select resources associated with own work in relation to: • Materials. • Components and fixings. • Tools and ancillary equipment.
		4.2	Describe why the characteristics, quality, uses, sustainability, limitations and defects associated with the resources are important and how defects should be rectified.
		4.3	Describe how to confirm that the resources and materials conform with the specification.

4 *Cont.*

4.4 Describe how the resources should be used and how any problems associated with the resources are reported in relation to:

- Single pack.
- Multi pack and heated liquid components.
- Air and vapour control layers (AVCL).
- Insulation.
- Preparation coats.
- Base coats.
- Topcoats.
- Reinforcements.
- Solvents.
- Adhesives.
- Pedestrian surfacing.
- Protection layers.
- Separating layers.
- Outlets.
- Gutters.
- Pipes.
- Vents.
- Flashings.
- Trims.
- Movement joints.
- Rooflights.
- Associated materials.
- Components.
- Fixings and fittings.
- Brushes.
- Rollers.
- Trowels.
- Squeegees.
- Spray equipment.
- Hand and/or power tools.
- Ancillary equipment.

4.5 Explain the organisational procedures to select resources, why they have been developed and how they are used.

4.6 Describe how to identify any potential hazards associated with the resources and methods of work and how they are overcome.

4.7 Describe methods of calculating quantity, length, area and wastage associated with the method and procedure to apply liquid membrane systems.

5	Minimise the risk of damage to the work and surrounding area when applying liquid membrane systems.	5.1	Comply with organisational procedures to protect the work and its surrounding area from damage by: • Maintaining a safe, clear and tidy work area. • Disposing of waste in accordance with current legislation.
		5.2	Explain why it is important to maintain a safe, clear and tidy work area.
		5.3	Describe how to protect work and it surrounding area from damage and the purpose of prevention from general workplace activities, other occupations and adverse weather conditions.
		5.4	Explain how to minimise damage to the existing building fabric.
		5.5	Explain why and how the disposal of waste must be carried out safely in accordance with the following: • Environmental responsibilities. • Organisational procedures. • Manufacturers' information. • Statutory regulations. • Official guidance.
6	Complete the work within the allocated time when applying liquid membrane systems.	6.1	Demonstrate completion of the work within the allocated time.
		6.2	Describe the programme of work to be carried out including estimated and allocated time and explain why deadlines should be kept in relation to: • Types of progress charts, timetables and estimated times. • The organisational procedures for reporting circumstances which will affect the work programme.
7	Comply with the given contract information to apply liquid membrane systems to the required specification.	7.1	Demonstrate the following work skills: • Mixing. • Brushing. • Rollering. • Measuring. • Cutting. • Positioning. • Securing.

7 *Cont.*

7.2 Use and maintain:

- Hand tools.
- Power tools.
- Ancillary equipment.

7.3 Install air and vapour control layers (warm and cold roofs) and insulation.

7.4 Apply liquid membrane systems incorporating reinforcement to given working instructions relating to the following:

- Liquid component preparation.
- Base coats.
- Finishing coats.
- Edges and upstands.
- Penetrations, pipes and vents.
- Perimeters, gutters and rainwater outlets.

7.5 Describe how the methods of work to meet the specification, are carried out and how problems are identified and reported by the application of knowledge for safe, healthy and environmental work practices, procedures and skills relating to the method and area of work:

- Install air and vapour control layers (AVCL)
- Install insulation materials.
- Prepare single pack, multi pack and heated liquid components by mixing and heating techniques.
- Apply liquid membrane systems with control of application thickness by brush, roller, trowel, squeegee and spray application.
- Apply multiple coats including base and finish coats, implementing applicable control and constraints.
- Install reinforcements systems utilising both fleece and glass fibre.
- Install vertical upstands, including internal/external corners, joints and junctions, straight and curved and incorporating changes of plane and treatment of internal angles.
- Install terminations (cover flashing, external trim, termination bar, junctions to other materials).

7	*Cont.*	7.5	• Install to perimeters (eaves, mono ridge, verges and drips), outlets (spigot, sump parapet, overflow), pipes, structural penetrations (vertical, pitched and horizontal, including plinths and hand rolled collars), safety systems, internal gutters, stop ends, rooflights, hips, valleys and pedestrian finishes, incorporating vertical surfaces. • Take into account the effects of temperature and weather conditions. • Implement snagging procedures and appropriate remedial work, including preparation for test procedures. • The relevance of an assessment of significance. • How to recognise specific requirements for structures of special interest, traditional construction, hard-to-treat buildings and historical significance. • Work with, around and in close proximity to plant and machinery. • Safely work at height using access and fall prevention equipment. • How to use all hand and power tools and ancillary equipment. • How and why operative care and maintenance of all hand, power tools and ancillary equipment is carried out.
		7.6	Describe the needs of other occupations.
		7.7	Describe the importance of applying, fairness, inclusion, and respect (FIR) when dealing with others.
		7.8	Explain the importance of teamwork and communication, organisational procedures with respect to site behaviours, and how to challenge inappropriate site behaviours.

Title:	Applying Liquid Membrane Systems in the Workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordance the CITB Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated.
Sector Subject Area	5.2 Building and Construction
Availability For Use	Shared unit
Unit Guided Learning Hours	120
Assessment Hours	10

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