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1.0 About EAL

Since **1964, EAL (Excellence, Achievement and Learning)** has been awarding vocational qualifications and apprenticeship components for engineering, building services and related sectors.

Developed to the highest technical standard, our qualifications are regularly updated to reflect regulatory, employer and technical changes. We support the providers of our qualifications with an unparalleled level of service to ensure that learners are well prepared for the roles they plan to take on.

EAL recognise the value of skills in the work environment as one of the five key drivers of productivity; essential for economic growth and bringing a number of wider social benefits. Through its programme of continuous improvement EAL strives to meet the demand from employers for high performing, high quality products.

In 2012, EAL changed its name from EMTA Awards Limited to **Excellence, Achievement and Learning**, to better reflect its wide reaching position across industry – providing qualifications, not only in Engineering and Manufacturing, but also specialising in Building Services Engineering, Gas Utilisation, Environmental Technologies, Business Services and closely related sectors.

1.1 Equal opportunities and diversity

EAL expects its centres to enable Learner's to have equal access to training and assessment for qualifications in line with the Equality Act 2010 and protected characteristics. Further details can be located in the EAL Equal Opportunities and Diversity Policy:

<http://www.eal.org.uk/centre-support/centre-support/policies-and-important-documents>

1.2 Customer service and feedback

Customer service is a fundamental part of EAL's commitment to you. EAL aims to ensure that all customers receive a high quality efficient service. We are always interested in feedback and if you have any comments or feedback on our qualifications, products or services, please contact the customer services team:

EAL Customer Services

Tel: +44 (0)1923 652 400

Email: customercare@eal.org.uk

2.0 Achievement of the Qualification

The qualification is achieved when all the necessary units have been completed. The centre will then be able to apply for the learner's certificate of achievement. The learners will also receive a certificate of unit credit, listing all the units they have achieved.

This manual must be used in conjunction with the delivery and assessment of any individual units to ensure that assessment requirements and methodologies are consistently applied.

In order to articulate the specific level of skills, knowledge and behaviours required to be achieved and assessed to demonstrate full occupational skills in line with the relevant apprenticeship standard. The employers in the trailblazer group have developed a more detailed Employer Occupational Brief (EOB).

The overarching EOB informs awarding organisations of the required elements of both knowledge and vocational skills within the apprenticeship standard. It also provides a clear basis for the development of the assessment of the apprenticeship and enables the sector to maintain world class levels of quality to ensure that the credibility and consistency of the apprenticeship outcome is maintained.

The EOB comprises of a number of documents including the rules of combination and the qualification assessment strategy requirements both of which are included in this manual. The EOB also contains the units of competence that make up the qualification.

Also contained within the EOB are the apprenticeship standard and the accompanying assessment plan and both these documents should be read in conjunction with this manual.

EAL Level 2 Diploma in Engineering Operations (Skills)

Apprenticeships covered by this qualification manual are:

- **Operations - Engineering - Level 2**

The apprenticeship standards and the assessment plans for this apprenticeship can be found here:

Apprenticeship standard for - Engineering Operative:

<https://www.instituteforapprenticeships.org/apprenticeship-standards/engineering-operative/>

There are various other qualifications which this qualification could relate to. Details on these can be obtained from the [EAL website](#) or alternatively contact:

EAL Customer Services

Tel: +44 (0)1923 652 400

Email: customercare@eal.org.uk

2.1 Qualification support materials

The following assessment support materials are available for this qualification:

- **Training sign off**

Sufficient training must be carried out prior to the commencement of the formal assessment process; evidence must be available to show that the relevant training has been carried out prior to the assessment of the performance and skills criteria. The evidence that training has been completed to a sufficient level must be signed and dated by both the trainer and learner. Failure to provide evidence that sufficient training has taken place will result in the delay or failure in the certification of this qualification or individual units.

- **Units of competence**

These are derived from the Employer Units of Competence (EUC). These documents allow both the learners and the assessor to record the progress through the qualification selected. The units contain the performance to be assessed, the knowledge to be assessed and the evidence required from the learners to demonstrate their skills.

2.2 Funding for this qualification

EAL accredits qualifications via regulatory bodies. The regulatory bodies then pass the information to the relevant funding agencies. Once funding is available, centres will be able to check and register against the learning aim to ensure funding is drawn down. If you are unsure whether funding is available, the first point of contact should be via your internal funding system, or alternatively contact EAL for information.

3.0 Centre and qualification approval

Centres wishing to run this qualification will need to comply with this qualification manual and EAL's centre approval criteria for the qualification. Centres must also put in place the appropriate physical and human resources and administration systems to deliver the qualification effectively.

For *existing* EAL centres to put the qualification on their centre remit:

Create and complete a qualification approval application form in Smarter Touch and submit to EAL.

For *non* EAL centres to gain centre approval to run the qualification:

EAL Customer Services will be pleased to help. Please contact them on:

EAL Customer Services

Tel: +44 (0)1923 652 400

Email: customercare@eal.org.uk

4.0 Qualification specific information

EAL Level 2 Diploma in Engineering Operations (Skills)

The qualification has a minimum 470 GL(H) and 470 Total Qualification Time.

Mandatory Units: *All three mandatory units must be completed*

EAL code	Unit title	GL(hrs)	Ofqual code
AUEC2-001	Complying with Statutory Regulations and Organisational Safety Requirements	50	H/507/6927
AUEC2-002	Working Efficiently and Effectively in Advanced Manufacturing and Engineering	50	K/507/6928
AUEC2-003	Using and communicating Technical Information	40	M/507/6929

Optional Units:

A minimum of **four** optional units must be chosen from the following:

Four optional units is a minimum requirement; therefore employers may require their apprentices to achieve more units in order to meet their specific business needs.

EAL Code	Unit Title	GL(hrs)	Ofqual Code
AUEC2-004	Conducting Business Improvement Activities	80	H/507/6930
AUEC2-005	Producing Components using Hand Fitting Techniques	140	K/507/6931
AUEC2-006	Maintaining Mechanical Devices and Equipment	140	M/507/6932
AUEC2-007	Assembling and Testing Fluid Power Systems	140	T/507/6933
AUEC2-008	Maintaining Fluid Power Equipment	140	A/507/6934
AUEC2-009	Maintaining Electrical Equipment/Systems	150	F/507/6935
AUEC2-010	Wiring and Testing Electrical Equipment and Circuits	140	J/507/69367
AUEC2-011	Wiring and Testing Programmable Controller Based Systems	150	L/507/6937
AUEC2-012	Producing Mechanical Assemblies	150	R/507/6938
AUEC2-013	Preparing and Using Lathes for Turning Operations	150	Y/507/6939
AUEC2-014	Preparing and Using Milling Machines	150	L/507/6940
AUEC2-015	Preparing and using semi-automatic MIG, MAG and flux cored arc welding equipment	150	R/507/6941
AUEC2-016	Assembling and Testing Electronic Circuits	140	Y/507/6942
AUEC2-017	Maintaining Electronic Equipment/Systems	150	D/507/6943
AUEC2-018	Preparing and Using Industrial Robots	140	H/507/6944
AUEC2-019	General Turning, Milling and Welding Applications	180	K/507/6945
AUEC2-020	Forming and Assembling Pipework Systems	140	M/507/6946

Optional Units: Continued

EAL Code	Unit Title	GL(hrs)	Ofqual Code
AUEC2-021	Preparing and Proving CNC Machine Tool Programs	140	T/507/6947
AUEC2-022	Producing Sheet Metal Components and Assemblies	140	A/507/6948
AUEC2-023	Maintaining and Testing Process Instrumentation and Control Devices	150	F/507/6949
AUEC2-024	Producing components by rapid prototyping techniques	110	T/507/6950
AUEC2-029	Using Computer Software Packages to Assist with Engineering Activities	80	R/507/6955
AUEC2-030	Producing CAD Models (Drawings) using a CAD System	110	Y/507/6956
AUEC2-031	Producing Electrical or Electronic Engineering Drawings using a CAD System	110	D/507/6957
AUEC2-032	Producing Engineering Project Plans	80	H/507/6958
AUEC2-033	Preparing and Using Grinding Machines	150	F/508/4954
AUEC2-034	Preparing and Using CNC Turning Machines	140	F/508/4968
AUEC2-035	Preparing and Using CNC Milling Machines	140	J/508/4972
AUEC2-036	Preparing and Using CNC Machining Centres	140	R/508/4974
AUEC2-037	Carrying Out Heat Treatment of Engineering Materials	90	Y/508/4975
AUEC2-038	Producing Mechanical Engineering Drawings using a CAD System	110	D/508/4976
AUEC2-039	Assembling, Wiring and Testing Electrical Panels/Components Mounted in Enclosures	140	H/508/4977
AUEC2-040	Forming and Assembling Electrical Cable Enclosure and Support Systems	130	M/508/4979
AUEC2-041	Preparing and Using Electro Discharge Machines	150	H/508/4980
AUEC2-042	Preparing and Using Manual TIG or Plasma-arc Welding Equipment	150	K/508/4981
AUEC2-043	Preparing and Using CNC Fabrication Equipment	140	M/508/4982
AUEC2-044	General Welding Applications	150	L/508/4987
AUEC2-045	Producing Tool and Die Assemblies	150	F/615/8397
AUEC2-046	Produce Composite Mouldings Using Pre-Preg Techniques	140	J/615/8398
AUEC2-047	Carrying Out Repairs to Composite Mouldings	140	T/615/8400
AUEC2-048	General Machining, Fitting and Assembly Applications	120	F/615/8402
AUEC2-049	General Fabrication and Welding Applications	120	J/615/8403
AUEC2-050	General Electrical and Electronic Engineering Applications	120	L/615/8404
AUEC2-051	General Maintenance Engineering Applications	120	R/615/8405
AUEC2-052	Carrying Out Aircraft Detail Fitting Activities	140	D/615/8407
AUEC2-053	Installing Aircraft Mechanical Fasteners	110	H/615/8408

Optional Units: Continued

EAL Code	Unit Title	GL(hrs)	Ofqual Code
AUEC2-054	Restoring Mechanical Components to Usable Condition by Repair	230	J/617/0275
AUEC2-055	Assembling Fluid Power Components to Mechanical Equipment	490	L/617/0276
AUEC2-056	Assembling Electrical or Electronic Components to Mechanical Equipment	490	R/617/0277
AUEC2-057	Assembling Pipework Components to Mechanical Equipment	490	Y/617/0278
AUEC2-058	Producing Composite Mouldings using Wet Lay Up Techniques	420	D/617/0279
AUEC2-059	Producing Components by Acrylic Moulding	320	R/617/0280
AUEC2-060	Vacuum Forming Composite Materials	320	Y/617/0281
AUEC2-061	Trimming Composite Mouldings using Hand Tools	320	D/617/0282
AUEC2-062	Identifying Defects in Composite Mouldings	230	H/617/0283
AUEC2-063	Applying Surface Finishes to Composite Mouldings	320	K/617/0284
AUEC2-064	Bonding Composite Mouldings	230	M/617/0285
AUEC2-065	Producing Composite Assemblies	420	T/617/0286
AUEC2-066	Carrying Out Inspection Activities on Optical Components	420	A/617/0287
AUEC2-067	Preparing and Using Manual Metal Arc Welding Equipment	150	F/617/0288
AUEC2-068	Preparing and Using Manual Oxy/fuel Gas Welding Equipment	140	J/617/0289
AUEC2-069	Preparing and Using Manual Flame Brazing and Braze Welding Equipment	110	A/617/0290
AUEC2-070	Producing Aircraft Detail Assemblies	140	F/617/0291
AUEC2-071	Producing Platework Components and Assemblies	140	J/617/0292
AUEC2-072	Cutting and Shaping Materials using Thermal Cutting Equipment	140	L/617/0293
AUEC2-073	Preparing and Proving CNC Fabrication Machine Tool Programs	140	R/617/0294
AUEC2-074	Using Wood for Pattern, Modelmaking and Other Engineering Applications	150	Y/617/0295
AUEC2-075	Assembling Pattern, Model and Engineering Woodwork Components	140	D/617/0296
AUEC2-076	Producing Composite Mouldings using Resin Flow Infusion techniques	140	H/617/0297
AUEC2-077	Producing and Preparing Sand Moulds and Cores for Casting	140	K/617/0298
AUEC2-078	Producing and Preparing Molten Materials for Casting	140	M/617/0299
AUEC2-079	Producing Cast Components by Manual Means	130	Y/617/0300
AUEC2-080	Fettling, Finishing and Checking Cast Components	110	D/617/0301
AUEC2-081	Finishing Surfaces by Applying Coatings or Coverings	90	H/617/0302
AUEC2-082	Finishing Surfaces by Applying Treatments	90	K/617/0303

Optional Units: Continued

EAL Code	Unit Title	GL(hrs)	Ofqual Code
AUEC2-083	Preparing and Manoeuvring Armoured Fighting Vehicles AFVs for Maintenance and Transportation	140	M/617/0304
AUEC2-084	Handing Over and Confirming Completion of Maintenance or Installation Activities	130	T/617/0305
AUEC2-085	Carrying Out Fault Location on Mechanical Equipment	260	A/617/0306
AUEC2-086	Carrying Out Maintenance Activities on Mechanical Equipment	350	F/617/0307
AUEC2-087	Carrying out Scheduled Maintenance Activities on Mechanical Equipment	190	J/617/0308
AUEC2-089	Stripping and Rebuilding Motorsport Vehicles Pre-Competition	140	J/617/2950
AUEC2-090	Inspecting a Motorsport Vehicle During a Competition	140	L/617/2951
AUEC2-091	Diagnosing and Rectifying Faults on Motorsport Vehicle Systems During Competition	150	R/617/2952
AUEC2-092	Carrying out Maintenance Activities on Motorsport Vehicle Electrical Equipment	150	H/617/2969
AUEC2-093	Stripping and Rebuilding Motorsport Engines Pre-Competition	140	Y/617/2970

Barred Combination/s:

- Only one of the three CAD units 30, 31 and 38 may be undertaken as the apprentices' choice of optional units. However they can be undertaken as additional units if required by the employer.
- Only one of the welding units 15, 19, 42, 44, 49, 67, 68 or 69 may be undertaken as the apprentices' choice of optional units. However they can be undertaken as additional units if required by the employer.
- Unit 19 cannot be undertaken if any of the following machining units have been undertaken as the apprentices' choice of optional units i.e. units 13, 14, 34, 35, 36, 48 or 75.
- Only one of the following units 12 or 45 may be undertaken as the apprentices' choice of optional units. However they can be undertaken as additional units if required by the employer.
- Only one of the following units 5 or 52 may be undertaken as the apprentices' choice of optional units. However they can be undertaken as additional units if required by the employer.
- If Unit 48 is undertaken then Units 5, 12, 13, 14, 34, 35, 36, 45 or 52 cannot be undertaken as the apprentices' choice of optional units. However it can be undertaken as an additional unit if required by the employer.
- If Unit 49 is undertaken then Units 15, 19, 22, 40, 42, 43 or 44 cannot be undertaken as the apprentices' choice of optional units. However it can be undertaken as an additional unit if required by the employer.
- If unit 50 is undertaken then Units 10, 11, 16, or 39 cannot be undertaken as the apprentices' choice of optional units. However it can be undertaken as an additional unit if required by the employer.
- If unit 51 is undertaken then Units 6, 8, 9, 11, 17, or 23 cannot be undertaken as the apprentices' choice of optional units. However it can be undertaken as an additional unit if required by the employer.

5.0 Assessment strategy

Employers in the engineering sector have produced this assessment strategy to:

- Support the implementation and delivery of the apprenticeship standard.
- Provide clarity for Awarding Organisations on what constitutes Skills performance.
- Encourage and promote consistent assessment of skills and technical knowledge requirements.
- Promote cost effective delivery and assessment plans.

This document also provides definitions for:

- The qualifications and experience required for Assessors/Trainers/Teachers and Internal Quality Assurers.
- The assessment environment for the development of occupational Skills qualifications.
- Access to assessment.

And requirements relating to:

- Carrying out occupational skills assessments.
- Performance evidence requirements for occupational skills
- Assessing knowledge and understanding.
- Use of witness testimonies.
- Continuing professional development.
- Quality control of assessment.

Occupational competence qualifications (Foundation phase)

5.1 Assessors

Assessor requirements to demonstrate effective assessment practice

Assessment must be carried out by competent Assessors that as a minimum must hold the Level 3 Award in Assessing Competence in the Work Environment. Current and operational Assessors that hold units D32 and/or D33 or A1 and/or A2 as appropriate to the assessment being carried out, will not be required to achieve the Level 3 Award as they are still appropriate for the assessment requirements set out in this unit assessment strategy. However, they will be expected to regularly review their skills, knowledge and understanding and where applicable undertake continuing professional development to ensure that they are carrying out workplace assessment to the most up to date Employer Units of Competence.

Assessor technical requirements

Assessors must be able to demonstrate that they have verifiable, relevant and sufficient technical competence to evaluate and judge performance and knowledge evidence requirements as set out in the relevant outcomes in the Employer Units of Competence.

This will be demonstrated either by holding a relevant technical qualification or by proven industrial experience of the technical areas to be assessed. The assessor's competence must, at the very least, be at the same level as that required of the Apprentice in the units being assessed.

Assessors must also:

Be fully conversant with the Awarding Organisation's assessment recording documentation used for the Employer Units of Competence, against which the assessments and quality assurance are to be carried out, plus any other relevant documentation and system and procedures to support the QA process.

5.2 Assurer requirements (internal and external)

Internal quality assurance must be carried out by competent Internal Quality Assurers that as a minimum must hold the Level 4 Award in the Internal Quality Assurance of Assessment Processes and Practices. Current and operational Internal Quality Assurer that hold internal quality assurance of units V1 or D34 will not be required to achieve the Level 4 Award as they are still appropriate for the quality assurance requirements set out in this unit assessment strategy. Quality Assurers must be familiar with, and preferably hold, either the nationally recognised Assessor units D32 and/or D33 or A1 and/or A2 or the Level 3 Award in Assessing Competence in the Work Environment.

External quality assurance must be carried out by competent External Quality Assurers that as a minimum must hold the Level 4 Award in the External Quality Assurance of Assessment Processes and Practices. Current and operational External Quality Assurers that hold external quality assurance of units V2 or D35 will not be required to achieve the Level 4 Award as they are still appropriate for the quality assurance requirements set out in this unit assessment strategy. Quality Assurers must be familiar with, and preferably hold, either the nationally recognised Assessor units D32 and/or D33 or A1 and/or A2 or the Level 3 Award in Assessing Competence in the Work Environment.

External and Internal Quality Assurers will be expected to regularly review their skills, knowledge and understanding and where applicable undertake continuing professional development to ensure that they are carrying out workplace Quality Assurance of Assessment Processes and Practices to the most up to date Employer Units of Competence.

Quality Assurers, both internal and external, will also be expected to be fully conversant with the terminology used in the Employer Units of Competence against which the assessments and quality assurance are to be carried out, the appropriate Regulatory Body's systems and procedures and the relevant Awarding Organisation's documentation, systems and procedures within which the assessment and quality assurance is taking place.

Specific technical requirements for internal and external Quality Assurer

Internal and external Quality Assurers for the Employer Units of Competence must be able to demonstrate that have verifiable, sufficient and relevant industrial experience, and must have a working knowledge of the processes, techniques and procedures that are used in the engineering industry.

The following tables show the recommended levels of technical competence for Assessors, internal and external Quality Assurers.

Technical requirements for assessors and Quality Assurer

Position	Prime activity requirements	Support activity requirements	Technical requirements (see notes)
Assessor	Assessment skills	Internal quality assurance systems	Technical competence in the areas covered by the Employer Units of Competence being assessed
Internal Quality Assurer	Quality assurance skills	Assessment knowledge	Technical understanding of the areas covered by the Employer Units of Competence being verified
External Quality Assurer	Quality assurance skills	Assessment understanding	Technical awareness of the areas covered by the Employer Units of Competence being verified

Notes:

1. Technical **competence** is defined here as a combination of practical skills, knowledge, and the ability to apply both of these, in familiar and new situations, within a real working environment.
2. Technical **understanding** is defined here as having a good understanding of the technical activities being assessed, together with knowledge of relevant Health & Safety implications and requirements of the assessments.
3. Technical **awareness** is defined here as a general overview of the subject area, sufficient to ensure that assessment and evidence are reliable, and that relevant Health and Safety requirements have been complied with.
4. The competence required by the Assessor, internal and external Quality Assurer, in the occupational area being assessed, is likely to exist at three levels as indicated by the shaded zones in the

Technical competence:	An ability to discuss the general principles of the competences being assessed	An ability to describe the practical aspects of the competence being assessed	An ability to demonstrate the practical competences being assessed
Job role:			
Assessor			
Internal Quality Assurer			
External Quality Assurer			

5.3 Assessment environment

Assessment Environment of the Employer Units of competence

The evidence put forward for the Employer Units of Competence are intended to have a wide application throughout the engineering sector. It is necessary therefore to have a flexible approach to the environment in which the units are delivered and assessed.

There will be learners who have been working in an industry for some time and wish to acquire a broad range of basic competencies as part of an existing job role or to enable career progression. The units will satisfy that need. Where this is the case assessment should take place within the learner's normal workplace/environment.

However, there is much to be gained by acquiring the basic engineering competencies whilst working in a sheltered environment. This is due to an on-going emphasis on safety critical work activities and the need to ensure flexibility of assessment opportunities to both maintain and enhance the provision of competent personnel within the industry. This assessment method will allow a minimum safe level of skills, knowledge and understanding to be achieved and demonstrated by the learner prior to being exposed to the hazards of the industrial environment, thus minimizing the risk of injury to themselves and other employees.

It is recognised that not all learners who wish to achieve the Employer units of competence would require this form of assessment. Only those who are judged to be potentially at risk would need to provide evidence of a minimum level of skills, knowledge and understanding to enter the industrial environment

Examples of this are:

Where the hazardous nature of the engineering occupations mean that the learner requires close supervision whilst they provide evidence of competence involving safety critical activities.

- For reasons of age, people entering an industrial training environment are gradually introduced to the "world of work", this helps them mature and grow in confidence as well as providing evidence of their engineering skills.
- Learners with special assessment requirements benefit from the close supervision offered by this type of environment whilst providing evidence of skills.
- Adult learners new to the industry or to a specific skill area can provide evidence with out fear of making mistakes which could prove to be dangerous and/or expensive.
- Where equipment to be used or worked on by approved, licensed or competent people (such as the aircraft industry) learners can only provide the necessary evidence that they have achieved a level of skills, knowledge and understanding in-order that they may prepare themselves for future employment.
- Penal institutions where learners wish to provide evidence of a vocational achievement in-order that they may prepare themselves for future employment.

For the above reasons the assessment of a learners skills in a sheltered environment is acceptable for the qualification where the environment replicates that expected in industry.

Where applicable, the machinery, tools, materials, equipment and resources used must be representative of industry standards and there must be sufficient equipment/resources available for each learner to demonstrate their competence individually. Work pieces or work outcomes assessed must be the learners own work and should be actual work examples that combine the skills, techniques required by the Employer units so that achievement will properly reflect the learners skills as specified in the unit assessment criteria.

Assessors must therefore ensure that the skills are fully transferable to the workplace. Other aspects that should be considered could include:

- Environmental conditions such as lighting conditions, noise levels and the presence of hazards
- Pressure of work such as time constraints and repetitive activities
- Producing actual work pieces or work outcomes and the consequence of making mistakes and the effect this has on customer, supplier and departmental relationships

Access to assessment

There is no entry requirements required for the Employer Units of Competence unless this is a legal requirement of the process or the environment in which the apprentice is working in. Assessment is open to any apprentice who has the potential to reach the assessment requirements set out in the relevant units.

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

Carrying out assessment of the occupational skills qualifications

The Employer Units of Competence have been specifically developed to cover a wide range of activities. The evidence produced for the units will, therefore, depend on the skills and knowledge required by employer and specified in the apprentices training plan. The skills section of the Employer Units of Competence makes reference to a number of optional items listed in the Skills section of the units **(for example 'any three from five')**. This is the minimum standard set by employers.

Where the unit requirements gives a choice of optional areas, assessors should note that apprentices do not need to provide evidence of the other areas to complete the unit, unless specified by the employer (in this example above, two items) particularly where these additional items may relate to other activities or methods that are not part of the apprentices normal workplace activities or required by the employer.

Performance evidence requirements of the occupational competence qualifications

Performance evidence must be the main form of evidence gathered. In order to demonstrate consistent skills are performance for a unit, a minimum of **two** different examples of performance of the unit activity will be required. Items of performance evidence often contain features that apply to more than one unit, and can be used as evidence in any unit where they are suitable.

Performance evidence must be:

- Products of the apprentices work, such as items that have been produced or worked on, plans, charts, reports, standard operating procedures, documents produced as part of a work activity, records or photographs of the completed activity.

Together with:

- Evidence of the way the apprentice carried out the activities, such as witness testimonies, assessor observations or authenticated apprentice reports of the activity undertaken.

Skills performance is more than just carrying out a series of individual set tasks. Some units may contain statements that require the apprentice to provide evidence that proves they are capable of combining various features and techniques. Where this is the case, separate fragments of evidence would not provide this combination of features and techniques and, therefore, will not be acceptable as demonstrating skills performance.

If there is any doubt as to what constitutes suitable evidence the internal/external quality assurer should be consulted.

Training sign off

Sufficient training must be carried out prior to the commencement of the formal skills assessment process; evidence must be available to show that the relevant training has been carried out prior to the assessment of the performance and skills criteria. The evidence that training has been completed to a sufficient level must be signed and dated by both the trainer and learner.

Failure to provide evidence that sufficient training has taken place will result in the delay or failure in the certification of this qualification or individual units.

Assessing knowledge and understanding requirements in the occupational skills qualifications

Knowledge and understanding are key components of skills performance, but it is unlikely that performance evidence alone will provide enough evidence in this area. Where the apprentice's knowledge and understanding is not apparent from performance evidence, it must be assessed by other means and be supported by suitable evidence.

Knowledge and understanding can be demonstrated in a number of different ways. It is recommended that oral questioning and practical demonstrations are used perhaps whilst observing the apprentice undertake specific tasks, as these are considered the most appropriate for these units. Assessors should ask enough questions to make sure that the apprentice has an appropriate level of knowledge and understanding, as required by the unit.

Evidence of knowledge and understanding will **not** be required for those items in the skills section of the Employer Units of Competence that have not been selected by the employer.

The achievement of the specific knowledge and understanding requirements in the units may not simply be inferred by the results of tests, exams or assignments from other units such as in the technical knowledge qualifications or other training programs. Where evidence is submitted from these sources, the assessor must, as with any assessment, make sure the evidence is valid, reliable, authentic, directly attributable to the apprentice, and meets the full knowledge and understanding requirements of the unit. Awarding Organisations should be able to provide advice and guidance where evidence from technical knowledge qualification tests and/or assignments can be mapped and used to meeting the requirements of the occupational skills unit requirements.

Where oral questioning is used the assessor must retain a record of the questions asked, together with the apprentice's answers.

5.4 Witness testimony

Where 'observation' is used to obtain performance evidence, this must be carried out against the unit assessment criteria. Best practice would require that such observation is carried out by a qualified Assessor. If this is not practicable, then alternative sources of evidence may be used.

For example, the observation may be carried out against the assessment criteria by someone else that is in close contact with the apprentice. This could be a team leader, supervisor, mentor or line manager who may be regarded as a suitable witness to the apprentices skills. However, the witness must be technically competent in the process or skills that they are providing testimony for, to at least the same level of expertise as that required of the apprentice. It will be the responsibility of the assessor to make sure that any witness testimonies accepted as evidence of the apprentices skills are reliable, auditable and technically valid.

Maximising opportunities to use assessment evidence

One of the critical factors required in order to make this assessment strategy as efficient and effective as possible and to ease the burden of assessment, is the Assessors ability and expertise to work in partnership with the apprentice and their employer to provide advice and guidance on how to maximise opportunities to cross reference performance and knowledge evidence to all relevant Employer Units of Competence. For example if a knowledge statement is repeated in a number of separate Employer Units of Competence and the expected evidence/response to that statement is the same including the context, then the same piece of evidence should be cross referenced to the appropriate units. As stated above evidence from technical knowledge qualification test and assignments etc. should be used where this is valid, reliable and can be attributed to the individual apprentice.

5.5 Continuing Professional Development (CPD)

Centres must support their staff to ensure that they have current technical knowledge of the occupational area, that delivery, mentoring, training, assessment and quality assurance are in line with best practice, technical advancements and that they will take account of any national or legislative developments.

Assessors/Teachers/Trainers/Lecturers (as applicable):

Must understand the Engineering Technician (UK specifications) requirements when providing guidance to learners. They will be required to provide a signed declaration confirming they have read and understood the Engineering Technician UK specifications and the evidence requirements to meet the engineering technician (UK specifications) criteria.

Must understand the requirements of the specific apprenticeship standard – End of scheme assessment recording document.

Must understand the requirements of the specific apprenticeship standard – Behavioural framework and the review and assessment recording documentation.

5.6 External quality control of assessment

There are two major activities in which EAL interacts with the centre in relation to the external quality control of assessment for this qualification and these are:

- **Recognition:** When a centre decides to offer the qualification, the EAL External Quality Assurer (EQA) ensures that the centre is suitably equipped and prepared for delivery and assessment.
- **Engagement:** Throughout the ongoing delivery of the qualification EAL, through EQA monitoring and other mechanisms will review the quality and consistency of assessment and internal quality assurance and recommend actions to address issues of concern.

Recognition

In granting approval, EAL, normally through its EQAs, will ensure that the prospective centre:

- Meets any procedural requirements specified by EAL.
- Has sufficient and appropriate physical and staff resources.
- Meets relevant health and safety and/or equality and access requirements.
- Has a robust plan for the delivery, assessment and QA for the qualification (including, where appropriate, scope for involving employers).

EAL may decide to visit the centre to view the evidence provided.

Engagement

EAL, through EQA engagement and other mechanisms will ensure that:

- A strategy is developed and deployed for the on-going monitoring of the centre – this will be based on an active risk assessment of the centre, and will include details of the learner, assessor and internal quality assurer's sampling strategy and the rationale behind this.
- The centre's internal quality assurance processes are effective in learner assessment.
- Outcomes of internal assessment are verified, through sampling, to ensure standards are being maintained.
- Sanctions are applied to a centre where necessary and that corrective actions are taken by the centre and monitored by the EQA.
- Reviews of EAL's external auditing arrangements are undertaken.

6.0 About the units of competence

This qualification is made up of a number of units of competence which EAL has derived from the Employer Units of Competence (EUC) which set out the collective performance and skills requirements and underpinning knowledge requirements. These documents allow both the apprentices and the assessor to record the progress through the qualification. The units contain the performance to be assessed, the knowledge to be assessed and the evidence required from the apprentices to demonstrate their skills.

All units in this qualification contain the following information:

- Apprenticeship sector and unit title.
- Guided learning hours (GLH).
- Unit overview.
- Performance and skills to be assessed and evidenced.
- Underpinning knowledge to be assessed and evidenced.

The individual unit GL (hrs) values have been based on the credit values of comparable NVQ units used within the advanced manufacturing sector (1 credit = 10 Learning hours (both guided and non-guided)).

The GL (hrs) values can include the following examples in line with regulatory requirements: (this is not an exhaustive list and other examples could be used as outlined in regulatory guidance):

- Supervised Teaching and Learning.
- Supervised Work-based Learning.
- All forms of assessment which takes place under immediate guidance or supervision of an appropriate individual (Lecturer, Supervisor, Tutor, Mentor, etc.), including where the assessment is competence based and may be turned into a learning opportunity.
- Supervised e-learning.
- Oral and written questioning.
- Workplace induction.
- Supervised work: Student works under supervision of employer/direct supervisor.
- Final assessment: Student is supervised by employer/direct supervisor during the assessment.

The guided learning value of the individual units is used to calculate the Total Qualification Time (rounded to the nearest whole number) in line with the qualification structure and optional unit requirements to represent the time it would take an average apprentice to complete this unit, this could include any of the list above or/and other elements as appropriate to unit being undertaken.

The rationale has been developed using the comparable NVQ credit values as these are the most robust figures as they were originally developed in conjunction with employer input with guidance from the relevant employer Led skills organisations.

EAL will keep under review the number of hours it has assigned to each qualification for the Total Qualification Time and Guided Learning and revise the number of hours if appropriate.

This may result in the GL and TQT values being changed in line with feedback from centres, providers, employers.

6.1 Learner's portfolio building and referencing

For guidance to assessment and exemplars on completing documentation including completed assessment routes, and assessment planning documentation refer to EAL centre guidance.

For further information please contact:

EAL Customer Services

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Email: customercare@eal.org.uk

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Appendix 1: Learners registration and certification

Learners must be registered on the qualification using a specific qualification number. Using this number will ensure the correct materials for the learners are received.

The registration number for the qualification Level 2 Diploma in Engineering Operations (Skills) is as follows:

Qualification Title	Qualification Number
EAL Level 2 Diploma in Engineering Operations (Skills)	603/3220/7

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