



Part of the
Enginuity Group

Qualification Manual

EAL Diploma in Gas Engineering at SCQF Level 6

Qualification Code: R664 04



This Qualification Manual Relates to the following:

EAL Diploma in Gas Engineering at SCQF Level 6

Qualification Number: R664 04

Pathway CH - Central Heating Installation and Maintenance Engineer
(EUSGU0 TBC)

Pathway CHG - Central Heating and Gas Fires Installation and Maintenance Engineer
(EUSGU0 TBC)

Pathway CHC - Central Heating and Cookers Installation & Maintenance Engineer
(EUSGU0 TBC)

Pathway CHA - Central Heating and Appliance Installation and Maintenance Engineer
(EUSGU0 TBC)

Pathway CHWA - Central Heating and Appliance (including Warm Air) Installation and Maintenance
Engineer
(EUSGU0 TBC)

Pathway FCO - First Call Operative
(EUSGU0 TBC)

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1.0 About EAL

Since 1964 EAL (Excellence Achievement and Learning) has been the specialist awarding organisation for the industry and related sectors. Our commitment to partnering industry together with the focus on our core sectors gives us an unrivalled understanding of the skills employers need. This results in qualifications that carry weight and respect with employers which deliver real career benefits for learners.

We support the delivery network with an unparalleled level of service to ensure that learners are well prepared for the roles they plan to take on. Through its programme of continuous improvement, EAL strives to meet the demand from employers for high performing, high quality products.

1.1 Equal opportunities and diversity

EAL expects its centres to enable learners to have equal access to training and assessment for qualifications in line with equalities legislation. 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>

Note: Where learners taking the qualification in a region where legislation, organisations, regulations detailed does not apply, relevant legislation should be substituted. For example: The Health and Safety at Work etc. Act 1974 shall be substituted in Northern Ireland by The Health and Safety at Work (Northern Ireland) Order 1978.

1.2 Customer experience and feedback

Customer Experience 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 Experience team:

EAL Customer Experience
Tel: +44 (0)1923 652 400
Email: Customer.Experience@eal.org.uk

2.0 Introduction to the Qualification

What is this qualification?

This qualification in gas engineering covers the knowledge and the skills relevant to both installation and maintenance engineers working on gas appliances in domestic and small commercial premises and dealing with upstream and downstream gas emergencies.

The qualification is based on National Occupational Standards (NOS) which describe the skills, knowledge and understanding to undertake a particular job or task to a nationally recognised level of competence.

Who is this qualification for?

This qualification is predominantly for learners who want to be gas installation and maintenance engineers working in the gas industry in UK, Isle of Man and Guernsey. The qualification may also be suitable for learners who are interested in gas utilisation and/or are considering a career change. The qualification has been specifically designed as a competence component in the Modern Apprenticeship Framework.

It is suitable for learners aged:

- 16-18
- 19+

What does this qualification cover?

This qualification has seven core mandatory units, and six optional pathways. Learners must complete all of the mandatory units plus one pathway which will provide them with the competence to work in the Gas Utilisation sector, the structure is listed in section 3.

The optional pathways are relevant to either central heating installation and maintenance, central heating and appliance installation and maintenance engineers which cover installation and maintenance of gas water heating and wet central heating appliances, domestic gas space heating appliances, domestic gas cookers, tumble dryers and leisure appliances, ducted gas warm air heaters or dealing with upstream or downstream gas emergencies.

Typical Job roles include:

Gas Installation and Maintenance Engineer
First Call Operative

2.1 Accreditation & Industry Support for this Qualification

These qualifications are:

- Accredited qualification at level 6
- Endorsed by employers as facilitating progression to an apprenticeship and/or one or more of the industry recognised qualifications at level 6*

*Letters of endorsement from employers and other organisations can be viewed on the EAL website.

2.2 Achievement of the Qualification

The qualification will be achieved when the learner has successfully completed:

- The SEVEN mandatory units, including any related Centre marked assignments/practical tests and externally marked exams.
- ONE of the six pathways, including any related Centre marked assignments/practical tests, portfolio development and on-site practical assessments

2.3 What are the Progression Opportunities?

The qualifications also provide progression onto related BSE qualifications.

Further information can be obtained from the EAL Website or alternatively contact:

EAL Customer Experience
Tel: +44 (0)1923 652 400
Email: Customer.Experience@eal.org.uk

2.4 Qualification Support Materials

The following materials are available for these qualifications:

- **Delivery packs:** which contain the qualification units, all relevant tutor guidance relating to the delivery and assessment and marking schemes for internally assessed practical and theory assessments
- **Learner assessment packs:** which contain the qualification units, the internally assessed practical and theory assessments, assessment checklists and all associated guidance for learners
- **Controlled knowledge assessments:** which contain knowledge assessments that must be completed by the learner under appropriately controlled conditions
- **#Matters of Gas Safety Workbooks (MoGS):** which contain knowledge and practical assessments that must be completed by the learner under appropriately controlled conditions
- ***Practice question paper/s:** for the externally set and marked on-screen test, with feedback to learners on their performance.

These documents are not available from our on line services portal and must be requested from your current EQA and these will be sent out electronically, this is to ensure centres are registered and future updates can be sent out to the correct individuals at a centre.

*The practice papers are available to schedule online as per externally set and marked examinations.

All other materials can be accessed by EAL registered Centres from the EAL Website www.eal.org.uk

2.5 IGEM/IG/1 Recognition of Training

The requirements around gas training that lead to Gas Safe Registration have changed to reflect the concerns raised from Industry with the view that training quality is varied across all entry routes:

- Framework Qualifications
- Managed Learning Programmes/ACS
- Apprenticeship Standards (Trailblazers)

It was also noted how the training content differs across these routes and the areas of concern included:

- Durations
- Portfolio content
- Work experience
- Range of competence

With these issues raised and the work being completed around the Lofstedt report on cutting red tape, EU Skills and IGEM formed a working panel to look to produce a new training document which would regulate training and produced the IGEM/IG/1 Standards of Training in Gas Work document which was first published in April 2014.

As an EAL centre you will fall under our recognition and will need to meet our latest requirements around training and use the latest documentation for training which comprises of the following:

Domestic appliance installation and maintenance

- Delivery and Learners packs for all gas related aspects – these should form the basis of your scheme of work and lesson plans and must cover our requirements at the very least, but you can enhance them as you see fit.

First Call Operative

- Delivery and learners packs have been developed for the core knowledge (DSG6 1.1, 1.2, 1.3, 1.4, 1.5) that is generic across all pathways – these should form the basis of your scheme of work and lesson plans and must cover our requirements at the very least, but you can enhance them as you see fit.
- For units DSG6 3.21, DSG6 3.22, DSG6 3.12, DSG6 3.13, DSG6 3.15, DSG6 3.16, DSG6 3.17 Centres will need to have their training materials approved by EAL and have a signed SLA in place prior to any learners being registered on the FCO pathway.
- Training packs agreed for delivery will form the basis of the X200, which will be developed by EAL.

Generic documents

- Bespoke X200 for the qualifications you offer, which now include training specific sections and include training feedback and evaluation forms
- IQA documentation – EAL provide templates, but if you use your centre specific materials please ensure all our requirements are met, these also include specific training standardisation meetings.
- SLA agreement agreeing to follow these new requirements, this will sit under your current SLA's you currently have in place.

These updated materials will be found in the relevant qualification materials under Delivery Packs.

This will mean as a centre offering gas related qualifications you will need a signed Service Level Agreement for training in place and your training will be quality assured at the appropriate time by your EQA and may also be included in our recognition audits by the relevant body.

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3.0 Rule of Combination (Qualification Structure)

EAL Diploma in Gas Engineering at SCQF Level 6

This qualification will be obtained by the learner once they have successfully completed the **seven mandatory units** and **one pathway** from the optional units listed below.

Mandatory units:

Unit	Unit title	Level	Credit	SQA Code
DSG6 1.1	Understanding health and safety in gas utilisation	6	5	UN91 04
DSG6 1.2	Understanding scientific principles in gas utilisation	6	5	UN92 04
DSG6 1.3	Understanding combustion and properties of gas	6	7	UN93 04
DSG6 1.4	Understanding buildings, services and structures	6	13	UN94 04
DSG6 1.5	Understanding gas safety	6	11	UN95 04
DSG6 3.5	Install gas pipework up to 35mm	6	2	UN96 04
DSG6 3.6	Gas tightness testing and direct purging	6	12	UN97 04

Learners must also take the following specific mandatory units within their chosen pathway.

Pathway CH - Central Heating Installation and Maintenance Engineer

This qualification pathway has 110 Credits.

Unit	Unit title	Level	Credit	SQA Code
DSG6 2.3	Specific Core Installation and Maintenance	6	13	UN98 04
DSG6 3.3	Install domestic gas water heaters and wet central heating appliances	6	13	UN99 04
DSG6 3.4	Maintain gas water heating and wet central heating appliances	6	13	UP01 04
PDH6 12	Electrical Work and the Control of Plumbing and Domestic Heating Systems	6	14	UP02 04
DGU5 1.5	Water Supply (Water Fittings) Regulations and Water Byelaws in the UK	5	1	UP03 04
DGU6 1.6	The installation, commissioning and safety aspects of hot water systems for domestic use in accordance with UK building regulations	6	1	UP04 04
	Optional unit			
DMES6 4	Domestic central heating system installation and maintenance techniques	6	21	UP18 04

Completion of this Qualification Combination will enable Gas Safe Registration in the following categories: CCN 1, CENWAT 1

Pathway CHG - Central Heating and Gas Fires Installation and Maintenance Engineer

This qualification pathway has 123 Credits.

Unit	Unit title	Level	Credit	SQA Code
DSG6 2.3	Specific Core Installation and Maintenance	6	13	UN98 04
DSG6 3.3	Install domestic gas water heaters and wet central heating appliances	6	13	UN99 04
DSG6 3.4	Maintain gas water heating and wet central heating appliances	6	13	UP01 04
DSG6 3.7	Install domestic gas space heating appliances	5	7	UP05 04
DSG6 3.8	Maintain domestic gas space heating appliances	6	6	UP06 04
PDH6 12	Electrical Work and the Control of Plumbing and Domestic Heating Systems	6	14	UP02 04
DGU5 1.5	Water Supply (Water Fittings) Regulations and Water Byelaws in the UK	5	1	UP03 04
DGU6 1.6	The installation, commissioning and safety aspects of hot water systems for domestic use in accordance with UK building regulations	6	1	UP04 04
Optional unit				
DMES6 4	Domestic central heating system installation and maintenance techniques	6	21	UP18 04

Completion of this Qualification Combination will enable Gas Safe Registration in the following categories: CCN 1, CENWAT 1, HTR 1

Pathway CHC - Central Heating and Cookers Installation and Maintenance Engineer

This qualification pathway has 121 Credits.

Unit	Unit title	Level	Credit	SQA Code
DSG6 2.3	Specific Core Installation and Maintenance	6	13	UN98 04
DSG6 3.3	Install domestic gas water heaters and wet central heating appliances	6	13	UN99 04
DSG6 3.4	Maintain gas water heating and wet central heating appliances	6	13	UP01 04
DSG6 3.1	Install domestic gas cookers, tumble dryers and leisure appliances	6	6	UP07 04
DSG6 3.2	Maintain domestic gas cookers, tumble dryers and leisure appliances	6	6	UP08 04
PDH6 12	Electrical Work and the Control of Plumbing and Domestic Heating Systems	6	14	UP02 04
DGU5 1.5	Water Supply (Water Fittings) Regulations and Water Byelaws in the UK	5	1	UP03 04
DGU6 1.6	The installation, commissioning and safety aspects of hot water systems for domestic use in accordance with UK building regulations	6	1	UP04 04
Optional unit				
DMES6 4	Domestic central heating system installation and maintenance techniques	6	21	UP18 04

Completion of this Qualification Combination will enable Gas Safe Registration in the following categories: CCN 1, CENWAT 1, CKR , LAU 1, LEI 1

Pathway CHA - Central Heating and Appliance Installation and Maintenance Engineer

This qualification pathway 135 Credits.

Unit	Unit title	Level	Credit	SQA Code
DSG6 2.3	Specific Core Installation and Maintenance	6	13	UN98 04
DSG6 3.3	Install domestic gas water heaters and wet central heating appliances	6	13	UN99 04
DSG6 3.4	Maintain gas water heating and wet central heating appliances	6	13	UP01 04
DSG6 3.7	Install domestic gas space heating appliances	5	7	UP05 04
DSG6 3.8	Maintain domestic gas space heating appliances	6	6	UP06 04
DSG6 3.1	Install domestic gas cookers, tumble dryers and leisure appliances	6	6	UP07 04
DSG6 3.2	Maintain domestic gas cookers, tumble dryers and leisure appliances	6	6	UP08 04
PDH6 12	Electrical Work and the Control of Plumbing and Domestic Heating Systems	6	14	UP02 04
DGU5 1.5	Water Supply (Water Fittings) Regulations and Water Byelaws in the UK	5	1	UP03 04
DGU6 1.6	The installation, commissioning and safety aspects of hot water systems for domestic use in accordance with UK building regulations	6	1	UP04 04
	Optional unit			
DMES6 4	Domestic central heating system installation and maintenance techniques	6	21	UP18 04

Completion of this Qualification Combination will enable Gas Safe Registration in the following categories: CCN 1, CENWAT 1, CKR 1, LAU 1, LEI 1, HTR 1

Pathway CHWA - Central Heating and Appliance (including Warm Air) Installation and Maintenance Engineer

This qualification pathway has 146 Credits.

Unit	Unit title	Level	Credit	SQA Code
DSG6 2.3	Specific Core Installation and Maintenance	6	13	UN98 04
DSG6 3.3	Install domestic gas water heaters and wet central heating appliances	6	13	UN99 04
DSG6 3.4	Maintain gas water heating and wet central heating appliances	6	13	UP01 04
DSG6 3.7	Install domestic gas space heating appliances	5	7	UP05 04
DSG6 3.8	Maintain domestic gas space heating appliances	6	6	UP06 04
DSG6 3.1	Install domestic gas cookers, tumble dryers and leisure appliances	6	6	UP07 04
DSG6 3.2	Maintain domestic gas cookers, tumble dryers and leisure appliances	6	6	UP08 04
DSG6 3.10	Install gas fired ducted air heaters and appliances	6	6	UP09 04
DSG6 3.11	Maintain gas fired ducted air heaters and appliances	6	5	UP10 04
PDH6 12	Electrical Work and the Control of Plumbing and Domestic Heating Systems	6	14	UP02 04
DGU5 1.5	Water Supply (Water Fittings) Regulations and Water Byelaws in the UK	5	1	UP03 04
DGU6 1.6	The installation, commissioning and safety aspects of hot water systems for domestic use in accordance with UK building regulations	6	1	UP04 04
	Optional unit			
DMES6 4	Domestic central heating system installation and maintenance techniques	6	21	UP18 04

Completion of this Qualification Combination will enable Gas Safe Registration in the following categories: CCN 1, CENWAT 1, CKR 1, LAU 1, LEI 1, HTR 1, DAH 1

Pathway FCO - First Call Operative

This qualification pathway has 246 Credits.

Unit	Unit title	Level	Credit	SQA Code
DSG6 2.1	Specific Core Metering	6	23	UP11 04
DSG6 2.2	Specific Core Emergency	6	49	UP12 04
DSG6 3.12	Install gas meters and regulators (2.5 to 16.0m ³ /hr)	5	12	UP13 04
DSG6 3.13	Install gas meters and regulators (2.5 to 1076m ³ /hr)	6	25	UP14 04
DSG6 3.15	Respond to Reported Upstream Gas Emergencies	6	35	UP15 04
DSG6 3.16	Respond to Reported Downstream Gas Emergencies	6	35	UP16 04
DSG6 3.17	Strength testing, gas tightness testing and direct purging	6	12	UP17 04
	Optional unit			
DMES6 4	Domestic central heating system installation and maintenance techniques	6	21	UP18 04

Completion of this Qualification Combination will enable Gas Safe Registration in the following categories: CESP 1, MET 1/2, MET4, TPCP1A, REGT1, REGT2

4.0 Centre and Qualification Approval

Centres wishing to run the qualification will need to comply with the Qualification Manual and EAL's centre recognition criteria for this qualification upon accreditation and launch. Centres must also put in place the appropriate physical and human resources and administration systems to effectively run the qualification. Please refer to Section 5 for the requirements of centre staff involved in the delivery of the qualification.

For existing EAL Centres to put the qualification on your centre remit:

- To add this Qualification to your Centre Qualification 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:

- Please contact the EAL Customer Experience Team who will be delighted to hear from you:
Tel: +44 (0)1923 652400
Email: Customer.Experience@eal.org.uk

5.0 Profiles and Requirements

The staff involved in the delivery of this qualification at the Centre must meet ALL of the requirements in this section.

5.1 Staff Responsible for Registering and Certifying Learners

Centres are required to appoint a suitable member of staff who can take responsibility for registering learners onto the qualification, submitting entries for externally set assessments to EAL, and taking receipt of external assessment procedures. They may also be responsible for applying to EAL for learner certificates. The role may be undertaken by the same person who undertakes quality assurance (see Section 5.4).

5.2 Teaching Staff

Teaching staff must have knowledge and understanding of:

- The occupations covered by this qualification.
- The qualification structure and content.
- The learning outcomes and assessment criteria they are delivering.

It is a recommendation that teaching staff will:

- Have 2 years' experience in teaching/training
- or**
- Be working towards an appropriate teaching/training qualification (e.g. Cert Ed or Learning and Development trainer units)
- or**
- Hold an appropriate teaching/training qualification (e.g. Cert Ed or Learning and Development trainer units)

5.3 Principal Assessors

The Centre **MUST** provide EAL with the names of any Principal Assessors who will undertake assessment, so that these can be approved prior to them carrying out an assessment role.

Where Principal Assessors undertake assessments in the workplace, and are not supported by a suitable gas operative, then they or their employer must be a member of an appropriate Gas Registration Body in accordance with the Gas Safety (Installation and Use) Regulations. In these circumstances they should also hold suitable insurance for this activity.

In addition to the qualifications listed below, the Principal Assessor must be able to provide appropriate documented evidence that demonstrates they have a minimum of 2 years post qualification proven occupational experience in the activities they will be assessing. Particular attention should be paid to providing evidence of occupational experience in the gas safety critical areas being assessed.

Principal Assessors must be technically qualified and should hold one of the following qualifications:

- C&G / SQA - S/NVQ in Domestic Natural Gas (Level 3);
- or**
- C&G - 662 Certificate for Service Engineers (Gas);
- or**
- C&G - 598-2 Certificate in Gas Installation Studies;
- or**
- C&G - 660 Certificate in Gas Fitting - Final

This list is not considered exhaustive and other 'Mechanical Engineering Services' (MES) or 'Building Engineering Services' (BES) qualifications at Level 3/SCQF Level 6 or equivalent may be considered acceptable. Centres must submit requests to confirm the acceptability of other qualifications to their External Quality Assurer for a decision regarding the acceptability of other qualifications. The External Quality Assurer must keep a record of any such decisions.

Principal Assessors for all units must:

- Be vocationally and occupationally competent in the areas they are assessing
- Have knowledge and understanding of the assessment criteria they are assessing
- Have knowledge and understanding of the qualification structure, content and assessment components
- Understand the assessment process

Centre Based Assessors must hold:

- Level Three Award "Assessing Vocationally Related Achievement"
- or**
- Level Three Certificate "Assessing Vocationally Related Achievement"
- or**
- A1* or D32 /D33 with an Upgrade to A1 as a minimum
- or**
- SQA Accredited Learning and Development Unit L&D 9DI – Assess workplace competence using direct and indirect methods (replaces Units A1)*

Workplace Assessors must hold:

- Level Three Award "Assessing Competence in the Work Environment"
- or**
- Level Three Certificate "Assessing Vocationally Related Achievement"
- or**
- SQA Accredited Learning and Development Unit L&D 9D Assess workplace competence using direct methods
- or**
- A2 or D32 with an upgrade to A2 as a minimum *

* The Teaching Qualification for Secondary Education (TQSE) or the Teaching Qualification for Further Education (TQFE) (which is recognised in Scotland) these awards are acceptable providing they are the versions that are recognised as equivalents to the A1 award plus appropriate CPD.

Assessors holding D units must have evidence of Continuing Professional Development (CPD) to demonstrate compliance with the A units.

Note: 'Candidate Assessors' who are working towards their Assessor qualifications and who do not have the requisite 2 years' experience must be supervised by a Qualified Assessor. Candidate Assessors must have a clear action plan for achieving the Assessor qualification(s). Assessor approval will be withdrawn if a relevant qualification has not been attained within 18 months.

Evidence of CPD will be sought by the External Quality Assurer for all Assessors approved to assess for the centre.

5.4 Expert Observer

The Centre MUST provide EAL with the names of any Expert Observers who will undertake assessment, so that these can be approved prior to them carrying out an assessment role.

Where Expert Observers undertake assessments in the workplace, then they or their employer must be a member of an appropriate Gas Registration Body in accordance with the Gas Safety (Installation and Use) Regulations. In these circumstances they should also hold suitable insurance for this activity.

In addition to the qualifications listed below, the Expert Observer must be able to provide appropriate documented evidence that demonstrates they have a minimum of 2 years post qualification proven occupational experience in the activities they will be assessing. Particular attention should be paid to providing evidence of occupational experience in the gas safety critical areas being assessed.

Expert Observers must be technically qualified and should hold one of the following qualifications:

- C&G / SQA - S/NVQ in Domestic Natural Gas (Level 3);
- or**
- C&G - 662 Certificate for Service Engineers (Gas);
- or**
- C&G - 598-2 Certificate in Gas Installation Studies;
- or**
- C&G - 660 Certificate in Gas Fitting - Final

This list is not considered exhaustive and other 'Mechanical Engineering Services' (MES) or 'Building Engineering Services' (BES) qualifications at Level 3/SCQF Level 6 or equivalent may be considered acceptable, with the appropriate and current ACS categories being assessed. Centres must submit requests to confirm the acceptability of other qualifications to their External Quality Assurer for a decision regarding the acceptability of other qualifications. The External Quality Assurer must keep a record of any such decisions.

Expert Observers must:

- Be vocationally and occupationally competent in the areas they are assessing
- Have knowledge and understanding of the assessment criteria they are assessing
- Have knowledge and understanding of the qualification structure, content and assessment components
- Understand the assessment process

This Expert Observer must complete relevant training provided by the centre and this must include the requirements of assessment and the completion of related direct observation documentation. The training must be documented and recorded within quality assurance documentation and be subject to annual review by EAL.

Expert Observers will be subject to the same internal quality assurance process as Principal Assessors and will initially be subject to *enhanced quality assurance.

5.5 Quality Assurance Staff

This relates to staff undertaking internal verification of assessment. The Centre MUST provide EAL with the names of any Internal Quality Assurers who will undertake internal quality assurance, so that these can be approved prior to them carrying out this role.

Internal quality assurance staff for all units must:

- Be familiar with the occupation(s) covered by this qualification
- Have knowledge and understanding of the qualification structure and content
- Understand the assessment process and the role of quality assurance

Internal quality assurance staff must also hold the following:

- Level Three Certificate "Assessing Vocationally Related Achievement"

or

- A1 or D32/D33 with an upgrade to A1 as a minimum

or

- Learning and Development Unit L&D 9DI – Assess workplace competence using direct and indirect methods

And

- Level Four Award " Internal Quality assurance of assessment processes and practice"

or

- Level Four Certificate "leading the Internal Quality assurance of assessment processes and practice"

or

- V1 or D34 with an upgrade to V1 as a minimum*

*The Teaching Qualification for Secondary Education (TQSE) or the Teaching Qualification for Further Education (TQFE) (which is recognised in Scotland) these awards are acceptable providing they are the versions that are recognised as equivalents to the A1 award plus appropriate CPD.

Internal Quality Assurers holding D units must have evidence of CPD to demonstrate compliance with the A and V units

or

- SQA Accredited Learning and Development Unit L&D 11 "Internally monitor and maintain the quality of workplace assessment"

It is recommended that 'Candidate Internal Quality Assurers have a clear action plan for achieving the IQA qualification(s).

IQA approval will be withdrawn if the qualification / units have not been attained within 18 months.

Where quality assurance staff themselves do not hold a suitable technical qualifications they must have access to technical expertise from qualified personnel, who hold the relevant qualifications, to support them where the verification requires technical support and interpretation.

Continuing professional development of internal quality assurance staff

The occupational experience of quality assurance staff must be updated on a regular basis and be periodically confirmed via continuing professional development (CPD) via the Assessment Centre. This will be quality assured by EAL.

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It is the responsibility of each internal quality assurance staff member to identify and make use of opportunities for CPD, such as industry conferences, access to trade journals, and Professional Body/ Trade Association events, at least on an annual basis to enhance and upgrade their professional development and technical knowledge. It is imperative that records are kept of all such CPD opportunities/occasions and that they provide evidence of cascading such technical knowledge and industry intelligence to all relevant colleagues.

Note:

Where either Expert Observers, Expert Witnesses and Mentors are the same person the centre must identify, record and mitigate any conflicts of interest and risk to impartiality

5.6 Direct observations

Direct observations must be carried out by a Principal Assessor or Expert Observer

Where direct observation is carried out by the expert observer, the observation documentation must be counter signed by the principal assessor and subject to *enhanced quality assurance.

Note:

*Enhanced quality assurance could include, additional IQA observations, detailed feedback, regular review, increased sampling and detailed action planning.

5.7 Expert Witness

Witness Testimony evidence can only be accepted if the testimony is completed by a technically and occupationally competent witness and will normally be in the form of a completed and signed Reflective account with other supporting evidence (e.g. company or employer job sheets, photographic evidence).

The evidence provided by Witness Testimony and other non-observed sources must be substantiated by an Assessor (e.g. by confirming the suitability of the witness and by professional discussion). Once the evidence has been substantiated and suitably documented, then it can be referenced appropriately by the Assessor.

Where "Expert Witnesses" are used in the assessment process they must be:

- Sector competent individuals who can attest to the learner's performance in the workplace.
- Occupationally competent and have **suitable industry experience.
- Demonstrate proof of gas safe registration
- It is not necessary for expert witnesses to hold an assessor qualification, as a qualified assessor must assess the performance evidence provided by an expert witness.
- Evidence from expert witnesses must meet the tests of validity, reliability, authenticity and sufficiency.
- Expert witnesses will need to demonstrate:
 - they have relevant current knowledge of industry working practices and techniques,
 - that they have no conflict of interest in the outcome of their evidence.

The EAL External Quality Assurer will be able to give further advice on the use of witness testimony.

Note:

**Suitable experience - personnel will have experience applying their skills and associated competences within industry and it is expected they have a minimum of 2 years post qualification experience

5.8 Mentor

The primary responsibilities of a mentor are to offer support and guidance to learners throughout the Programme and confirm suitability for assessment.

The mentor should be occupationally competent and have suitable industry experience

5.9 Learners with Particular Requirements

There are no formal entry requirements for this qualification; however centres should ensure that the learners have the potential to achieve this qualification. Learners must have the minimum levels of literacy and numeracy to complete the learning outcomes and the external assessment.

Centres should make learners with particular requirements aware of the content of the qualification and they should be given every opportunity to successfully complete the qualification. EAL will consider any reasonable suggestions for, and from, those with disabilities that would help them to achieve the learning outcomes without compromising the standards required.

Age Restrictions

Learners must be at least 16 years of age.

5.10 Staff invigilating external assessments

This relates to staff that are conducting and controlling exam sessions only; assessor requirements are given in 5.3.

These personnel must:

- Have experience in conducting and controlling exam sessions
- or**
- Be supervised, conducting this function, by an individual experienced in conducting and controlling exam sessions
 - Have knowledge, understanding and compliance to EAL examination procedures 'Procedures for Conducting the Exam Component within EAL Qualifications' (EAF 1), see website.

Note; A tutor/assessor who has prepared the learners for the subject of the exam must not be the sole Supervisor at any time during an exam of that subject(s).

5.11 Physical Resources

Safe working is a key issue and all practical activities conducted within the centre must be subject to up to date risk assessments. All learners must be properly supervised and wear the correct personal protective equipment. Arrangements for first aid and emergency action in case of accident must be in place.

Where practical based assignments are used within knowledge units, the required resources will be clearly detailed within the documentation.

Revisions or amendments to EAL drawings are permissible subject to the written agreement of the EAL External Quality Assurer.

5.12 Conflict of Interests

Assessors involved in providing direct training to a learner, either as part of a group or on a 'one to one' basis should not carry out assessment for any of those trained aspects.

Alternatively, centres must agree effective quality control measures (includes enhanced IQA and data monitoring) with EAL to ensure that any potential conflicts of interest do not have an adverse effect on assessment outcomes. Any potential conflict of interest must be documented and available for scrutiny in line with EAL's conflict of interests policy

6.0 Assessment

The following table indicates the assessment components that are included in the qualification and for each component:

- Who is responsible for setting and marking the component.
- How the component is quality assured.

Assessment component	Set by	Marked by	Method of quality assurance	
			Internal	External
On-screen examination ¹	EAL	EAL	Examination invigilation	Verification and continuous monitoring via EQA visits
Centre marked practical/ theory assessments ²	EAL	Centre	On-going standardisation within the Centre	Verification and continuous monitoring via EQA visits

1. Refer to Section 6.1 External Assessment.

2. Refer to Section 6.2 Internal (EAL Set and Centre Marked) Assessments.

The learner must pass **ALL** assessments to achieve the qualification.

A breakdown showing the assessment requirements for each unit is shown in the table below:

EAL code	Unit title	On-screen exam	Centre marked theory (MoGS)/ practical (RWE) assessment
DSG6 1.1	Understanding health and safety in gas utilisation	YES	NO
DSG6 1.2	Understanding scientific principles in gas utilisation	YES	NO
DSG6 1.3	Understanding combustion and properties of gas	YES	MoGS Workbook
DSG6 1.4	Understanding buildings, services and structures	YES	MoGS Workbook
DSG6 1.5	Understanding gas safety	YES	MoGS Workbook
DSG6 3.5	Install gas pipework up to 35mm	NO	MoGS/RWE Workbook
DSG6 3.6	Gas tightness testing and direct purging	NO	MoGS/RWE Workbook
DSG6 2.1	Specific Core Metering	NO	YES RWE Workbooks
DSG6 2.2	Specific Core Emergency	NO	YES RWE Workbooks
DSG6 2.3	Specific core installation and maintenance	YES	YES RWE Workbooks

Assessment - continued:

EAL code	Unit title	On-screen exam	Centre marked theory (MoGS)/ practical (RWE) assessment
DSG6 3.3	Install domestic gas water heaters and wet central heating appliances	NO	MoGS/RWE Workbooks
DSG6 3.4	Maintain gas water heating and wet central heating appliances	NO	MoGS/RWE Workbooks
DSG6 3.7	Install domestic gas space heating appliances	NO	MoGS/RWE Workbooks
DSG6 3.8	Maintain domestic gas space heating appliances	NO	MoGS/RWE Workbooks
DSG6 3.1	Install domestic gas cookers, tumble dryers and leisure appliances	NO	MoGS/RWE Workbooks
DSG6 3.2	Maintain domestic gas cookers, tumble dryers and leisure appliances	NO	MoGS/RWE Workbooks
DSG6 3.10	Install gas fired ducted air heaters and appliances	NO	MoGS/RWE Workbooks
DSG6 3.11	Maintain gas fired ducted air heaters and appliances	NO	MoGS/RWE Workbooks
DSG6 3.12	Install gas meters and regulators (2.5 to 16.0m ³ /hr)	NO	MoGS/RWE Workbooks
DSG6 3.13	Install gas meters and regulators (2.5 to 1076m ³ /hr)	NO	MoGS/RWE Workbooks
DSG6 3.15	Respond to Reported Upstream Gas Emergencies	NO	MoGS/RWE Workbooks
DSG6 3.16	Respond to Reported Downstream Gas Emergencies	NO	MoGS/RWE Workbooks
DSG6 3.17	Strength testing, gas tightness testing and direct purging	NO	MoGS/RWE Workbooks
DGU5 1.5	Water Supply 'Water Fittings' Regulations and Water Byelaws in the UK	YES	NO
DGU6 1.6	The installation, commissioning and safety aspects of hot water systems for domestic use in accordance with UK building regulations	YES	YES
DMES6 4	Domestic central heating system installation and maintenance techniques	YES	YES
PDH6 12	Electrical Work and the Control of Plumbing and Domestic Heating Systems	YES	YES

Important Notes

1. The assessment requirements set out in this document must be met in full.

6.1 External assessment

External assessment comprises an externally set and marked on-screen multiple-choice examination, which has been designed to assess the knowledge and understanding in the core mandatory unit.

A specification for the examination, indicating the number of questions to be set for each learning outcome is provided in Appendix 1.

Key Points

- The external examination is available on demand
- The examination must be undertaken by the learner under controlled examination conditions, in accordance with EAL's Procedures for Conducting the Exam Component within EAL Qualifications' (EAF 1)
- The EAL co-ordinator within the Centre will assume responsibility for liaison and correspondence regarding the external assessment component
- Centres will be sampled and spot checks will be carried out by EAL to ensure examinations are delivered in accordance with EAL published procedures.

Re-taking externally set and marked examinations

Learners who fail to achieve a pass in the externally set and marked examination will be permitted to re-take this examination after feedback and appropriate tuition has taken place.

The re-sits for externally set and marked examinations will be subject to the current published charges.

Practice papers

A practice paper is available to learners, which can be accessed via the EAL website (see Section 2.4). The practice paper is not part of the formal assessment arrangements and marks from this paper will therefore NOT count towards the qualification.

6.2 Internal assessment

Internal assessment includes practical and/or theory assessments, which have been designed to assess the knowledge, understanding and skills of learners for individual units. The internal assessment for each unit is set by EAL and marked by members of the delivery team at the Centre. All assessment decisions are then subject to internal standardisation and external quality assurance.

Internal assessments involve collecting and evaluating evidence that demonstrates achievement of the learning outcomes in each unit. The internal Matters of Gas Safety assessments are accompanied by marking criteria, checklists and other materials to ensure that the delivery team is consistent in their approach to internal assessments across learners. The internal assessments and the accompanying marking/assessment criteria can be found in the individual units within the Matters of Gas Safety Workbooks and Learner Packs. Centres are responsible for ensuring that internal assessments are suitably controlled to ensure that assessment decisions are valid and reliable, and that work submitted for assessment by learners is prepared and produced by them independently, without assistance from others, and free of plagiarism.

Where the assessment takes the form of written/short answer or multiple choice question papers, these should be treated as controlled assessments therefore imposing the necessary restrictions on the learner, as necessary. Guidance sheets have also been created to hand out to the learners, to ensure they are aware how to complete the multiple choice and short answer questions papers.

All learning outcomes of the qualification must be assessed. In order to help meet this requirement it is advised that learners should produce a logbook/portfolio where they can file and make reference to evidence that shows their achievements against the learning outcomes. Centres should also maintain an assessment and feedback record for each learner, which details the evidence evaluated against the learning outcome and the feedback given to the learner. These records must be available to the External Quality Assurer.

Re-taking internal assessments

Learners who fail to achieve a pass in the internally marked controlled assessments will be permitted to re-take after feedback and appropriate tuition has taken place.

Standardisation of internal assessments

Members of the internal quality assurance team at the Centre have an important role to play in ensuring that internal assessment is standardised. In particular, they should work with tutor/assessors to ensure that the correct procedures are being followed at all times, and to ensure that assessment decisions taken by different assessors are consistent, fair and reliable. Key activities will include:

- Meeting with tutor/assessors (individually and collectively) throughout the course to discuss quality assurance and standardisation issues and provide support and guidance where needed.
- Observing tutor/assessors and giving them feedback to help improve their assessment technique.
- Sampling learner evidence across different learner cohorts to ensure that appropriate standards have been met.
- Arranging cross-marking of learner work to compare results and agree benchmarks.

6.3 Additional assessment requirements

Generic Core Knowledge Units

All knowledge criteria must be evidenced by learners. EAL has used a variety of assessment methods which will demonstrate that learners have successfully met the unit criteria. These can include closed book written questions, open book written questions, recorded oral questions, projects and assignments.

Specific Core Knowledge and Performance Units

All knowledge and performance criteria must be evidenced by learners. EAL has used a variety of assessment methods which will demonstrate that learners have successfully met the unit criteria. These can include closed book written questions, open book written questions, recorded oral questions, projects, assignments, evidence from practical assessments conducted in a RWE and evidence from practical assessments conducted in the workplace.

Optional Knowledge and Performance Units

All knowledge and performance criteria must be evidenced by learners. EAL will ensure that the "Assessment Strategy Evidence and Assessment Requirement Tables" produced for each unit are followed. A variety of assessment methods can be used to demonstrate that learners have successfully met the unit criteria. These can include closed book written questions, open book written questions, recorded oral questions, projects, assignments, evidence from practical assessments conducted in a RWE and evidence from practical assessments conducted in the workplace.

Matters of Gas Safety

EAL will ensure that all units and the associated "matters of gas safety criteria" are referenced to those issued by Energy & Utility Skills. The "matters of gas safety criteria" are updated on a yearly cycle and any changes must be implemented in line with the industry requirements agreed with Gas Safe Register.

Important note

These Matters of Gas Safety (MoGS) workbooks are kept in line with the current requirements issued by EU Skills, allowing these qualifications to remain ACS aligned, and the requirements are updated every 12 months to reflect any changes within industry, these changes do not always impact on the requirements for this qualification staying ACS aligned, therefore EAL will only issue new workbooks with the changes affecting alignment with ACS and any changes will be communicated to centres allowing for them to be incorporated in current and future delivery.

For example: if the IGE/UP/1B Testing procedure changed six months prior to the candidate completing the qualification, all assessments including testing from the change date, must be completed against the changed procedure standard

Centres **must** ensure they are using the current Matters of Gas Safety Workbooks.

These documents are not available from our on line services portal and must be requested from your current EQA and these will be sent out electronically, this is to ensure centres are registered and future updates can be sent out to the correct individuals at a centre.

Realistic Working Environment (RWE) Assessments

RWE simulated assessment may only be used as specified and, if necessary, with the prior approval of the External Quality Assurer (see the guidance notes "**Centre Guidance for Developing Assessments for Simulation/Replication**" in Smarter Touch). Any approval given by the External Quality Assurer **MUST** be recorded and filed in the centre's Quality Manual and in the 'Learner's Portfolio' for audit purposes.

These assessments will normally be installation and maintenance activities conducted in a workshop area. These areas are considered to be a 'managed' environment because there is a degree of control over the conditions under which the activity is undertaken. The simulation activities and areas will normally include:

- real time pressures;
- a range of appliances, applicable to the assessment types;
- a variety of flue types, e.g. Type 'B', Type 'C', natural & fanned draught with a range of construction methods;
- a range of potential hazards that could realistically be found in a domestic dwelling, e.g. combustible surfaces, opening windows, doors, fans, curtains etc. (Note: these hazards may be simulated);
- a range of installation conditions, e.g. surface installation, under floor installation, through wall installation etc.
- a range of building material types, e.g. brick walls, block walls, plaster board and timber walls.

The RWE must take account of health and safety requirements for risk assessments, gas safety related issues and against other activities where generating evidence is limited.

Recognition of Prior Learning (RPL)

Recognition of Prior Learning (RPL) evidence is an acceptable source of evidence for these qualifications. All evidence shall be sufficient, valid, reliable, authentic and current (within the last three years).

For evidence of gas safety competence the following constraints shall apply:

- Certificates covering the competence criteria for Gas Safe Registration are acceptable as RPL evidence. However, as these do not attest to competence in the other essential aspects of gas installation and maintenance, all unit requirements must be satisfied in full to achieve the qualification. All evidence of current gas safety competence must be demonstrated throughout the qualification being undertaken.

ACS acceptance as part of a regulated qualification

ACS evidence can be accepted against RWE assessments and relevant knowledge and understanding criteria contained in the Matters of Gas Safety criteria. The requirements are as follows:

- a) ACS obtained prior to registration.

Where ACS is obtained prior to registration all assessments of experience and workplace assessment requirements tabulated in this document must be completed and evidenced prior to qualification completion.

- b) ACS obtained whilst undertaking the qualification.

Where ACS is obtained whilst undertaking a qualification, all the assessment of experience and work place evidence requirements tabulated within this document must be achieved prior to the

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completion of the ACS.

Note: The relevant ACS assessments, must have at least 36 months remaining until the individual assessments expire at the time of claiming the full /SCQF qualification.

All RPL evidence must be approved by the centre's RPL Advisor. The RPL Advisor shall hold D36 or equivalent. Due consideration needs to be given the risks involved in accepting third party certificated evidence, not least the consideration that the third party certificate may be withdrawn at any time without the knowledge of the centre who have accepted it as evidence.

Gathering Evidence

In order to achieve a qualification, Learners must produce sufficient evidence of competence. Documentation must be provided to ensure that evidence of competence is gathered, organised and recorded in a uniform manner across all centres.

Where appropriate, learners may provide evidence of prior learning (see RPL Section of section 6)

Witness testimony may be used as supporting evidence to cover the range of activities not covered naturally by workplace assessment. This evidence will normally be via a completed document signed by a 'Technically and Occupationally Competent Witness' (the centre's EQA will be able to give further advice on the use of witness testimony).

Note: Witness testimony is not acceptable as evidence to meet the "Matters of Gas Safety" criteria, incorporated into each qualification.

The Learner's Portfolio

The learner portfolio documents the evidence which will demonstrate learner progress. It records their assessment achievement, development and work experience leading to the attainment of their chosen qualification.

The 'Learner's Portfolio' could be made up of a combination of the following:

- Summary of the results from knowledge & understanding question papers
- Summary of the results from assessments (RWE/Workplace)
- Assessment sheets
- Copies of all learner specific questions together with a record of the answers given (oral or written)
- Feedback sheets
- Workplace experience evidence
- Witness statements
- Work method statements
- Evidence of prior learning (RPL Evidence)
- Assessor assessment plans - feedback to Learners
- Company or employer job sheets and specifications
- Curriculum Vitae
- Photographic evidence

Witness Testimony

Witness Testimony:

- can **NOT** be accepted as a primary source of evidence for all work activities.
- may be used as supporting evidence to cover the range of activities not covered by Workplace Assessment or RWE Assessment.

Witness Testimony evidence can only be accepted if the testimony is completed by a Technically and Occupationally Competent Witness and will normally be in the form of a completed and signed source of evidence with other supporting evidence (e.g. company or employer job sheets, photographic evidence). The centre's External Quality Assurer will be able to give further advice on the use of witness testimony.

The evidence provided by Witness Testimony and other non-observed sources must be substantiated by an Assessor (e.g. by confirming the suitability of the witness and by professional discussion). Once the evidence has been substantiated and suitably documented, then it can be referenced to the appropriate record of achievement by the Assessor.

Written and Oral Questioning

Assessors should use questioning where they consider it is appropriate to fully cover the subject area being assessed and to allow the Learner to evidence their full understanding.

When using oral questions, Assessors should be mindful of the effect their behaviour can have on the Learner's performance. Questions should be asked in the spirit of gaining information rather than pressurising a Learner by creating the atmosphere of a test.

ALL oral questions must be relevant to the assessment criteria and the Assessor **MUST NOT** coach or lead the Learner towards providing correct answers. The Assessor **MUST NOT** ask the Learner any 'leading' or 'closed' questions. Assessors should take care to ask clear questions.

Questions and the Learner's responses should be recorded on the appropriate assessment documentation.

Feedback

Learners shall be given feedback at appropriate times during the completion of their qualification, as determined suitable by the Assessor, employer, mentor, etc. This would normally be associated with an assessment activity with Assessor involvement and should be given as soon as practical after the completion of the activity.

It is important that a copy of all feedback and oral questioning sessions with Learners are kept for inclusion in the Learner Portfolio.

7.0 External Quality Control of Assessment

There are two major points where EAL interacts with the Centre in relation to the external quality control of assessment for a qualification and these are:

- **Approval** - when a centre takes on new qualifications, the awarding organisation, normally through an External Quality Assurer (EQA) ensures that the centre is suitably equipped and prepared to deliver the new qualification.
- **Monitoring** - throughout the on-going delivery of the qualification the awarding organisation, through EQA monitoring and other mechanisms must maintain and the quality and consistency of assessment of the qualification.

Approval

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 qualifications (including, where appropriate, scope for involving employers).

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

Monitoring

EAL, through EQA monitoring 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 assessor's sampling strategy and the rationale behind this.
- The Centre's internal quality assurance processes are effective in learner assessment.
- 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.

Appendix 1: Examination Specification

Unit: DSG6 01HS - Health and Safety		
Assessment type: Multiple choice Number of questions: 60 Closed book Each test will cover the knowledge learning outcomes of the unit as follows:		
Learning outcome	Knowledge learning outcome	Approximate percentage coverage
Understanding Health and Safety in Gas Utilisation		
1	Know the Health and Safety legislation	6
2	Know the health and safety measures for gas utilisation	10
3	Know the regulations covering the use and disposal of hazardous substances	8
4	Know manual handling methodology and lifting techniques	6
5	Know how to identify and respond to accidents which occur at work	9
6	Know the requirements for maintaining electrical safety, earthing protection systems and associated dangers	9
7	Know Fire safety	4
8	Know the safety requirements for working at heights	4
9	Know how to work safety in confined spaces	4
Total:		100%

Appendix 1: Examination Specification

Unit: DSG6 01B - Core knowledge		
Assessment type: Multiple choice Number of questions: 50 Closed book Each test will cover the knowledge learning outcomes of the unit as follows:		
Learning outcome	Knowledge learning outcome	Approximate percentage coverage
Understanding Scientific Principles in Gas Utilisation		
1	Know the Systeme Internationale (SI) units and uses within gas utilisation	4
2	Know the sources of energy and heat transfer	4
3	Know the combined gas laws	2
4	Know energy efficiency legislation	3
Understanding Combustion and Properties of Gas		
1	Know the natural gas supply network	2
2	Know the operation pressure regulators	3
3	Know the factors affecting pressure loss and the equipment used to measure gas pressure	3
6	Know the properties and Characteristics of NG and LPG	3
Understanding Buildings, Services and Structures		
1	Know the types and characteristics of construction materials	5
2	Know the construction methods of buildings and how to read and interpret plans	3
3	Know how to use hand and power tools within gas utilisation	7
Understanding Gas Safety		
14	Know how to safely work in customers premises and liaise with clients regarding the progress of the job	7
15	Know where to acquire information and documentation used during their daily work activities	2
16	Know the regulations in force to protect the environment and control waste	2
Total:		100%

Appendix 1: Examination Specification

Unit: DSG6 2.3A – Specific core installation and maintenance

Assessment type: Multiple choice

Number of questions: 20

Closed Book

The examination will cover the knowledge learning outcomes of the units as follows:

Learning outcome	Knowledge learning outcome	Percentage coverage
3	Know the construction and operation of chimneys used for domestic gas appliances	10%
5	Identify and complete the correct notices, forms and labels used in domestic gas utilisation	25%
6	Demonstrate how to work correctly and safely with electrical systems and components used in domestic gas utilisation	30%
11	Install and commission a small domestic gas installation	10%
12	Calculate the requirements for permanent ventilation in domestic gas utilisation environments	25%
	Total	100%

Unit: PDH6-01A – Electrical work and the control of plumbing and domestic heating systems

Assessment type: Multiple choice

Number of questions: 20

Closed Book

The examination will cover the knowledge learning outcomes of the units as follows:

Learning outcome	Knowledge learning outcome	Percentage coverage
1	Perform pre installation activity prior to undertaking electrical work on plumbing and domestic heating	75%
2	Apply industry standard safe isolation procedures	10%
3	Carry out the safe installation, testing and decommissioning of electrical systems	5%
4	Carry out the identification of faults and safe repair of electrical work	15%
	Total	100%

Appendix 1: Examination Specification

Unit: DGU6-1.5A – Water Supply 'Water Fittings' Regulations and Water Byelaws in the UK

Assessment type: Multiple choice

Number of questions: 30

Open Book

The examination will cover the knowledge learning outcomes of the units as follows:

Learning outcome	Knowledge learning outcome	Percentage coverage
1	Understand the requirements of the Water Supply (Water Fittings) Regulations and Water Byelaws	10
2	Understand terminology used to confirm requirements of the water regulations	7
3	Know the suitability of materials and substances in contact with water	10
4	Understand the requirements for water fittings	33
5	Know the design and installation requirements for a water supply system	33
6	Know the requirements for the prevention of cross connection to unwholesome water	7
Total		100%

Normative references for use in this open book examination:

- WRAS Water Regulations Guide (second edition)

Unit: DGU6-1.5B – Water Supply 'Water Fittings' Regulations and Water Byelaws in the UK

Assessment type: Multiple choice

Number of questions: 35

Open Book

The examination will cover the knowledge learning outcomes of the units as follows:

Learning outcome	Knowledge learning outcome	Percentage coverage
7	Know the backflow prevention fluid categories	3
8	Know the requirements for backflow prevention	5
9	Understand the guidance clauses relating to backflow prevention	46
10	Know the installation requirements for cold water services	3
11	Know the installation requirements for hot water services	15
12	Know the installation requirements for WC's, flushing devices and urinals approved for use	15
13	Know the types of bath, sink, showers and taps and their location and installation requirements	5
14	Know the consumption limitations for washing machines, dishwashers and other appliances	3
15	Know the requirements for water supplied for outside use	5
Total		100%

Normative references for use in this open book examination:

- WRAS Water Regulations Guide (second edition)

Appendix 1: Examination Specification

Unit: DGU6-1.6 – The installation, commissioning and safety aspects of hot water systems for domestic use in accordance with UK building regulations

Assessment type: Multiple choice

Number of questions: 30

Closed Book

The examination will cover the knowledge learning outcomes of the units as follows:

Learning outcome	Knowledge learning outcome	Percentage coverage
1	Understand the types and configurations of vented/unvented hot water systems including the design installation requirements	17%
2	Know the types and operation of specialist components used in hot water systems	13%
3	Understand the design requirements for hot water systems	17%
4	Know the installation and safety features of hot water systems and components	17%
5	Know the requirements for the installation of cold water components associated with hot water systems	7%
6	Be able to diagnose faults in hot water systems and components	10%
7	Know the commissioning requirements of hot water systems and components in accordance with design specifications	13%
8	Be able to diagnose faults in hot water systems and components	3%
9	Be able to confirm that unvented hot water systems have been serviced in accordance with manufacturer's instructions	3%
	Total	100%

Appendix 1: Examination Specification

Unit: DMES6 04 – Understand and apply Domestic Central Heating System Installation and Maintenance Techniques

Assessment type: Multiple choice
Number of questions: 40
Open book

Note: permitted normative reference documents for use by learners in this examination are specified below

The examination will cover the knowledge learning outcomes of the units as follows:

Learning outcome	Knowledge learning outcome	Percentage coverage
1	Know the uses of central heating systems in dwellings	5%
2	Know the types of central heating system and their layout requirements	23%
3	Know the site preparation techniques for central heating systems and components	12%
4	Know the installation requirements of central heating systems and components	25%
5	Know the service and maintenance requirements of central heating systems and components	10%
6	Know the decommissioning requirements of central heating systems and components	15%
7	Know the inspection and soundness testing requirements of central heating systems and components	10%
Total		100%

Normative references for use in this open book examination include:

- Water Regulations Guide by Laurie Young & Graham May, published by WRAS, 2000
- Building Regulations Approved Document A (D in Northern Ireland), freely downloaded at www.planningportal.gov.uk (www.dfpni.gov.uk in Northern Ireland)
- CIBSE Domestic Heating Design Guide, published by CIBSE, 2007
- Domestic Building Services Compliance Guide, freely downloaded at www.planningportal.gov.uk

Appendix 2: Learner Registration and Certification

Learners must be registered with EAL on a code which relates to the qualification -this must be completed prior to assessment. Both learner registration and certification can be completed on line at the EAL Website www.eal.org.uk. For paper based registration and certification use forms LRF1 Learner registration form, and CAF1A Certificate application form.

To Register the Learner on the Chosen Qualification Code:

Qualification Title	Code
EAL Diploma in Gas Engineering at SCQF Level 6	
Pathway CH - Central Heating Installation and Maintenance Engineer	R664 04 - CH
Pathway CHG -Central Heating and Gas Fires Installation and Maintenance Engineer	R664 04 - CHG
Pathway CHC - Central Heating and Cookers Installation & Maintenance Engineer	R664 04 - CHC
Pathway CHA - Central Heating and Appliance Installation and Maintenance Engineer	R664 04 - CHA
Pathway CHWA - Central Heating and Appliance (including Warm Air) Installation and Maintenance Engineer	R664 04 - CHWA
Pathway FCO - First Call Operative	R664 04 - FCO

