

South West Assessment and Training



We target your training needs

Managed Learning Programme New Entrants Gas Course



Introduction

South West Assessment and Training's New Entrant's Gas Course is a Managed Learning Programme for those wishing to enter the gas and heating industry but who don't necessarily have relevant experience or qualifications.

It is certificated by Cert-ain Certification Ltd and has been approved by the Gas Industry Standard Setting Body, Energy and Utility Skills.

On completion of the training, candidates will be at the correct-level to undertake Gas ACS training and assessment – a pre-requisite of becoming a Gas Safe Registered engineer.

Duration of the course

Candidates are required to fulfil a minimum number of guided hours. These are completed by attending our training and assessment centre for a number of weeks (please contact our office on **01579 348544** or by email at info@swaat.co.uk), in addition to completing further training using the TD gas manual, as well as on-line training and assessment (includes core skills and knowledge modules).

Entry requirements

Candidates must be at least 21 years of age and should possess reasonable levels of English and Mathematics.

Applicants will be required to gain and provide evidence of a range of relevant gas work experience under the supervision of a Gas Safe registered installer.

This is an intensive course requiring a large amount of home study to be undertaken.

Only upon successful completion of the MPL Gas Diploma course will candidates be able to proceed to undertake the ACS assessment(s) and any additional add-ons.

What materials will I need to undertake the course?

The course follows the TD gas manual, which is available from our office. Please contact us on **01579 348544** or by email at info@swaat.co.uk to obtain a copy.

Candidates will also need to bring with them a pair of protective footwear, for working in our practical workshop.

Do I need to bring any tools?

No - all tools and equipment are provided during the course.

Do I need photos?

Yes - as part of the evidence for the work that you undertake alongside a Gas Safe registered operative, you will need to provide at least one photograph of you undertaking an element of the work.

You will also require two passport photographs for certification. However, South West Assessment and Training are able to provide this service, if necessary. Please ask at our reception when attending the course for further details.

Course Content

The Domestic Gas Installer New Entrants Course starts with workplace health and safety requirements, before following on with the characteristics and basic principles of gas and then developing the basic skills for working in the gas industry.

The New Entrants Gas Course for Beginners includes training and assessment in the following areas:

- Introduction to gas and heating theory and principles
- Health and Safety including working at height, asbestos awareness and fire safety precautions
- Requirements and sizing of gas pipework
- Gas legislation, Building Regulations and British Standards
- Gas Industry Unsafe Situations Procedures
- Let-by and tightness testing of domestic natural gas installations
- Gas pressures
- Gas rating
- Identification and operation of gas safety controls
- Ventilation requirements
- Principles and requirements of chimneys (flues)
- Safe isolation of electrical installations
- Requirements for gas appliances

ACS assessment for Core Domestic Gas Safety (CCN1) and any appliances is **NOT included in the course**, as this is an additional element which can only be undertaken upon successful completion of the course and satisfactory evidence of workplace experience in the form of a portfolio, completed under the supervision of a registered gas engineer.

In addition to the on-site work portfolio you will be required to undertake a range of gas work within our Liskeard training centre.

Delegates MUST be registered with Gas Safe Register for a minimum of 6 months before being able to add additional gas qualifications such as CKR1 (cookers) and HTR1 (Fires) – if not undertaken at time of completing the ACS gas assessment.

On completion of the MLP New Entrants gas course, successful students will receive a recognised Managed Learning Programme training certificate from Cert-ain; necessary to access the ACS gas assessment. **Only when this certificate of competence has been received can the ACS assessment be undertaken.**

Training is provided in-centre, combined with distance learning through the comprehensive TD gas manual, online training and assessment thorough our learner support programme.

How is the training carried out 'in-centre'?

All of the training at our centre is carried out by experienced personnel who have a good in-depth knowledge and understanding of the gas industry.

Training is a mixture of theory and practical work to ensure that candidates not only know how to carry out the relevant practical tasks, but also gain an all-round knowledge of the subject.

Class-sizes are deliberately kept small so that individuals can get the most out of their learning experience, enabling questions to be answered and ensuring adequate time is spent in the appliance workshop carrying out practical tasks.

A range of appliances are available to work on enabling candidates to obtain a basic understanding of how to install that type of appliance, commissioning and servicing them.

Candidates will be assessed throughout the process to ensure that they meet the minimum requirements to progress.

What is required for the portfolio of evidence?

In order to successfully complete the course, it is a requirement that all candidates gain a MINIMUM of 12 weeks 'on-site' experience alongside an experienced Gas Safe registered engineer (or engineers).

This experience MUST be documented in a portfolio (provided on booking of the course) and be supported by at least one photograph taken in that workplace AND any documents supporting the fact that the work was undertaken (i.e. a copy of a landlord's safety certificate, service record etc.). It is understood that the signature of the candidate will not be on that paperwork but the signature of the Gas Safe registered engineer who is providing supervision to that candidate MUST be.

This evidence must include (but shall not be limited to) the following elements:

- Let-by testing
- Tightness testing
- Purging
- Re-establishing gas supplies and re-lighting appliances
- Pipework installation
- Checking ventilation
- Testing safety controls
- Inspection of flue systems
- Testing of flue systems
- Identification of appliance or pipework faults/defects
- Working on appliances relevant to the work categories undertaken

A MINIMUM number of **10 jobs per appliance type** (boiler, cookers/hobs, gas fires etc.) must be completed, two of which can be undertaken in the training centre. These jobs must comprise of commissioning, servicing or safety checking gas appliances OR a combination of all three areas of work. If installation of appliances is carried out there must also be supporting evidence that the candidate also commissioned those appliances (i.e. copy of completed benchmark certificate and photos). If you are looking to undertake the CENWAT1 ACS qualification (gas boilers/water heaters) then **four of these appliances submitted as evidence MUST be open-flued**. However, **two of these can be undertaken at the centre**.

Filling in the portfolio will be demonstrated during the course, however, **if you are working alongside a Gas Safe registered engineer in the meantime** and gathering evidence, gather as much as possible and document the work carried out, in the form of a report with photos. The information that will be required includes;

- Address of property
- Date the work was carried out
- What work was carried out (i.e. service, safety check etc.)
- Manufacturer and model of appliance(s)
- Type of appliance(s) – cooker, boiler etc.
- Flue type – flueless, open-flued or room-sealed
- Working pressure at the meter
- Inlet pressure at the appliance
- Burner pressure at the appliance (if applicable)
- Gas rate of the appliance
- Findings of ventilation check
- Results of any flue flow and/or spillage test (if applicable)
- Results of any combustion analysis carried out
- Findings of any visual inspection carried out
- Any remedial work carried out – repairs etc.
- Action taken in the event of any unsafe situation found

Additional information such as a copy of any combustion analysis check carried out is also very useful.

Example of the type of report required

Below is an example of the type of report required for the evidence portfolio;

Installation of Worcester Greenstar 24i Junior condensing gas combi boiler and central heating system

Before the new installation was started, a visual inspection of the meter was carried out. On/off tape was present on the emergency control valve (ECV) as well as an emergency telephone label on the front of the meter. 10mm earth bonding was within 600mm of the outlet of the meter and the seal was intact on the regulator. The meter was in good condition with no major rusting.

I carried out a let-by test by shutting off the ECV and ensuring that all appliances within the property were off (but isolation valves left in the open position, and the cooker lid raised to the upright position). The pressure was raised to 10mbar and the ECV shut off again. This was monitored for a period of 1 minute to ensure no rise in pressure took place. As this proved to be satisfactory it was followed by a tightness test by raising the pressure to 20mbar.

This was maintained for 1 minute to ensure it was satisfactory and then monitored for a further 2 minutes to ensure no pressure loss occurred. This also proved to be satisfactory.

A standing pressure of 22mbar was recorded which highlighted that there was plenty of gas present to the installation before the regulator began to 'work'. The boiler instruction manual was referred to as the boiler was to be installed in a large compartment. However, it was determined from the manual that no compartment ventilation was required.

There was plenty of clearance around the boiler for servicing and, as an RS horizontal flue was to be fitted the terminal position was checked. It was well within the manufacturer's recommendations regarding distances from openings into the building etc. and as it was over two metres from ground level, even though it was over a pathway, no terminal guard was required.

A 22mm gas supply pipe was required and as no boiler had previously been fitted in the property I installed this pipework directly to the cupboard. Once I had put in the clips ready for the pipework (I spaced these at 1 metre intervals which is well within the British Standard requirements) the pipe was run from just after the gas meter to just before the boiler.

The new boiler mounting jig was fixed to the wall and all the pipes connected to the jig. The boiler was lifted on to the jig and the horizontal flue fitted. 5 radiators and the pipe work were connected, as well as a towel rail which acted as the by-pass (no TRVs left permanently open). Hot and cold water pipe work was then connected. Due to the extremely high water pressure, a pressure reducing valve set at 3 bar was fitted just after the mains stop tap, reducing the pressure to all of the outlets within the property. This all fell in line with the requirements of the manufacturer's instructions.

An electrician had fitted a fused spur next to the boiler and, after carrying out basic electrical checks (earth continuity and polarity) a check was made to ensure that it was fitted with a 3 amp fuse. A room thermostat was also fitted and positioned in the downstairs hall, making sure it was the correct distance from any door, window or radiators. A central heating cleanser was added to the heating system through the towel rail, and then the heating system filled with water through the filling loop under the boiler, to a pressure of 1 bar.

All of the radiators were vented and the boiler checked to ensure that a pressure of 1 bar maintained. A tightness test was then carried out at the gas meter on completion of the work and no loss was found over the 3 minute period (1 minute stabilisation followed by 2 minutes of test).

A standing pressure was, again, recorded of 22mbar and the meter reading taken as a purge of the installation was required. All doors and windows were opened, the gas connection union underneath the boiler loosened and gas released to atmosphere. As the meter was a U6 and the pipe work did not exceed 28mm, the amount of gas needing to be purged was 35ft³ (0.01m³). When the required amount had been passed the union was retightened and sprayed with leak detection fluid.

The boiler was then turned on and activated in 'service' mode via the controls. The heating was turned up to maximum and a hot tap opened up fully in the bathroom, before the temperature of the hot water was checked and compared to that stated in the manufacturer's instructions. The working pressure at the meter was recorded as 21.5mbar and then compared to the boiler's inlet pressure, which was recorded as being 21mbar. As this was within the 1mbar permissible pressure drop across the installation pipe work, and greater than the minimum working pressure of 18.5mbar laid down by the manufacturer, this was acceptable.

All test nipples were sprayed with leak detection fluid once the pressures had been recorded and the test nipples replaced, to ensure that there was no leak left on the boiler.

After approximately 10 minutes of running the boiler at maximum rate the gas rate was calculated. As the gas meter is a U6 type the duration that the dial took to complete a full revolution was timed. The dial took 42 seconds to do a full revolution, so the gas rate was calculated as follows;

$$3600 / 42 = 85.71\text{ft}^3$$

$$85.71 \times 1040 = 89142.86 \text{ BTUs}$$

$$89142.86 / 3412 = 26.13\text{kW (GROSS)}$$

$$26.13 / 1.11 = \mathbf{23.54\text{kW (NET)}}$$

This compared with the manufacturer instructions which stated a gas rate of 24.49kW (NET).

A combustion analysis was taken whilst the boiler was running at full rate and the CO₂ was the main reading monitored. This was recorded as being 9.8% at maximum rate and 9.2% at minimum rate and both readings complied with the manufacturer's requirements even though the instructions gave these readings as being suitable 'after 30 minutes'.

The boiler was taken off service mode and left with the heating controls turned on. The heating was left on maximum for 2 hours as this was the recommended time for the cleanser to work in the heating system. The boiler was then turned off and the system flushed out. A system inhibitor was added before refilling of the heating system to 1 bar of pressure and venting of all the radiators had been carried out. The boiler was then turned back on and all of the controls checked to ensure they were working. The commissioning and Benchmark documents were completed and left with the customer, the controls explained to the customer, along with how the boiler operated and important things to look out for. The customer was also informed that the boiler should be serviced every 12 months by a Gas Registered operative.

Example of a photo suitable for the portfolio;

Photo 1 - Tightness testing the installation



What happens upon submission of the portfolio

The portfolio will be reviewed by an assessor to ensure that it meets the required standard. Provided that it does and all appropriate assessments have been satisfactorily completed, an application will be made for certification. It should be noted that the application can be rejected if it is determined by the certification body that the level of standard needed has not been met. If the certification body are happy that the necessary standards have been met a certificate will be sent to the candidate. Only upon receipt of this certificate will the candidate be eligible to apply to undertake the ACS gas assessment which, provided they successfully complete, will enable them to apply to join the Gas Safe register.

What happens if I am unsuccessful in any part of the MLP Gas course?

If a candidate is unsuccessful at completing one or more elements, they will be offered the chance for further training.

However, if they feel they have been unfairly treated there is a formal complaint procedure in place. Details of this procedure are available on our website; <http://www.swaat.co.uk/complaints.pdf>

What level of support can I expect during the course?

Our tutors offer the highest level of support throughout the course and are available to contact by email at other times.

What next?

We recommend that you obtain the gas manual at your earliest opportunity (at least four weeks before the commencement of the course) and begin reading the information. Make a list of the questions that you wish to raise before the course and bring them with you. The course is very intensive, so you must be prepared to devote time to learning and spending time going back over the information you have been taught.

We wish you the very best in your new career!



Photo: Gas bay at SWAAT, Liskeard