Changes to the commissioning of gas boilers from April 2013

From April 2013, boiler manufacturers will be recommending that the CO level in the flue gas is measured and recorded when a boiler is commissioned. Here, Registered Gas Engineer and the Heating and Hotwater Industry Council (HHIC) set out what the industry has agreed and how it will affect you.

The HHIC boiler manufacturers group have agreed new requirements to measure and record carbon monoxide (CO) levels, along with combustion ratio, when gas engineers commission a new boiler installation.

This means that, with effect from April 2013, boiler manufacturers are recommending that engineers should measure the level of CO in the chimney/flue gases and the combustion ratio using an electronic combustion gas analyser (ECGA - often known as a flue gas analyser or FGA). The measured CO level and combustion ratio must then be recorded on the appropriate commissioning documentation (eg, an HHIC Benchmark Commissioning Checklist, as supplied with every boiler sold in the UK).

From April 2014, this will become mandatory.

Gas Safe Register will be supporting this requirement through its inspection process and will take steps to defect an installation for **Building Regulations** non-compliance if the appropriate commissioning documentation is not correctly completed, including the measured CO level and combustion ratio.

Changes to Benchmark

HHIC boiler manufacturers already require engineers to correctly complete the Benchmark Commissioning Checklist as a condition of manufacturer warranty – hence the new requirement to record CO and combustion ratio on the checklist will also form part of these warranty conditions.

CO measurement on commissioning

It is important to ensure that ECGA testing is carried out correctly, using a practical and convenient procedure. HHIC Technical Panels, together with other industry organisations, have therefore developed and agreed a robust process for the measurement of CO using an ECGA when commissioning a condensing boiler.

This is outlined in a CO testing flowchart, which describes how flue integrity can be verified, how CO testing should be carried out, and when advice should be sought. The flowchart is intended as an agreed industry framework and further guidance from individual boiler manufacturers (eg, updates to installation instructions) and other sources (such as Gas Safe's Technical Bulletins) will be based on this.

All boilers are manufactured and tested to rigorous standards and are factory-set to ensure very low CO emissions. However, these further checks on the boiler and chimney/flue will help to identify any problems that may have arisen during installation, and will give both the householder and the registered gas engineer additional confidence that the heating system has been left in a safe working condition.

Why the changes?

These new measures have been agreed by HHIC and its members, together with major installation organisations and industry bodies including Gas Safe Register, Energy & Utility Skills, UKLPG and COGDEM. They are designed to improve CO safety in relation to new installations of condensing boilers.

HSE and BIS (Department for Business Innovation and Skills) have been involved in these discussions and fully support the industry's steps towards improving CO safety. OFTEC, the oil heating trade body, has also expressed its support and will be taking similar steps.

The changes follow concerns over a very small number of incidents in recent years involving newly installed condensing gas boilers fitted with air/gas ratio valves.

Investigations of these

incidents indicated that, due to a combination of different factors – including possible inappropriate adjustment of the gas valve and poor flue installation – high levels of CO were present in the combustion products of the appliances involved.

It should be emphasised that these incidents represented a tiny fraction of the 1.5 million (approximate) boiler installations carried out ever year.

The proposal to implement these new CO safety measures follows logically from the recent ACS requirement for gas engineers to be competent in using ECGAs, via CPA1. It also supports the conclusions of the All Party Parliamentary Gas Safety Group (now the All Party Parliamentary Carbon Monoxide Group), recently published as the report Preventing Carbon Monoxide Poisoning.

"From April 2013, the measured CO level and combustion ratio must be recorded on the appropriate commissioning documentation. From April 2014 this will become mandatory."

• Please turn the page to see the CO testing flow chart in full.

CO and combustion ratio check on commissioning a condensing boiler



BEFORE CO AND COMBUSTION RATIO CHECK

The boiler manufacturer's installation instructions should have been followed, gas type verified and gas supply pressure/rate checked as required prior to commissioning.

As part of the installation process, **ESPECIALLY WHERE A FLUE HAS BEEN FITTED BY PERSONS OTHER THAN THE BOILER INSTALLER**, visually check the integrity of the whole flue system to confirm that all components are correctly asembled, fixed and supported. Check that manufacturer's maximum flue lengths have not been exceeded and all guidance has been followed (eg, Technical Bulletin 008).

The flue gas analyser should be of the correct type, as specified by BS 7967.

Before use, the flue gas analyser should have been maintained and calibrated as specified by the manufacturer. The installer must have the relevant competence for use of the analyser.

Check and zero the analyser **IN FRESH AIR**, as per analyser manufacturer's instructions.

SET BOILER TO MINIMUM RATE

In accordance with boiler instructions, set boiler to operate at minimum rate (to minimum load condition). Allow sufficient time for combustion to stabilise.

NOTE: If the boiler instructions do not specify how to set boiler to minimum rate, contact the manufacturer's technical helpline for advice.

Boiler is operating satisfactorily No further actions required.

Ensure test points are capped, boiler case is correctly replaced and all other commissioning procedures are completed.

Complete Benchmark Checklist, recording CO and combustion ratio readings as required.