

CONSULTANT AND GAS EQUIPMENT SUPPLIER OFFER TIPS ON PART 6 TESTING TIMES AHEAD

Aware that ig manufacturers are getting conflicting interpretations from different sources regarding their continuing gas filling compliance under Part 6 of EN1279, we asked Mike Gaillard, technical director of independent consultancy company, **CEN Solutions Ltd**, to pick his way through the rules and spell out what manufacturers need to do. We then invited Malcolm Kemp, managing director of leading gas filling and gas fill testing equipment supplier, **Inagas Ltd**, to respond to Mike's explanation.

Mike Gaillard:

We are concerned here with the actual gas concentration in production ig units and the methods for proving ongoing compliance with EN 1279 Part 6, following the Type Test for gas filled units specified under Part 3.

The clue is to follow carefully and with common sense, the Part 6 rules for in-house production control for gas levels. If production methods are such that the risk of low gas concentrations is all but eliminated and the correct accuracy of fill is assured, the requirement for a routine test under Part 6 is avoided, thus saving both time and money.

How to achieve this happy state?

There are three key factors:

- Gas concentration measurement method (equipment and procedures) shall be calibrated with appropriate laboratory equipment prior to first use (EN1279 Part 6: Table A3 page 19 para 6).

- Under the production control regime (Table A3 page 19 para 5), machinery and equipment shall be periodically checked; once per shift and at periodic testing (Table A3 section 2).

- Product control, as specified in Table A3 Inspection or Test, for the daily testing of finished units after manufacture, may replace the gas concentration periodic test. Gas concentration must be measured in the sealed units at a frequency of one per 1,000 units with a minimum of three units per day or one unit if daily production is less than 100.

The routine periodic test is not required if testing accuracy is as Table

"IN SOME CASES, MANUFACTURING TECHNIQUES RESULT IN HIGH GAS LOSS BEFORE THE SECONDARY SEAL HAS BEEN APPLIED."

A3 Section 3, or if gas permeability test data (to prEN10204) is available from the sealant or permeable spacer supplier. If gas concentration is measured during a routine periodic test, it is conducted before the measurement of initial moisture content on the same units.

Sadly, I know at least one company that has advised that there is no requirement under the production control regulations to test gas filled units every day in-house. This advice not only exhibits an appalling lack of understanding, but it puts any recipient of such advice at severe risk of non-compliance, with all the attendant penalties that would incur.

The main area of concern is the control of the manufacturing process so that the customer's units have a correct level of gas fill. In some cases, manufacturing techniques result in high gas loss before the secondary seal has been applied. An inadequate gas fill outside the system description's tolerances will not only result in non-compliance, but would also be likely to result in the units not meeting the requirements of building standards. Trading Standards officers and other regulatory bodies could be expected to take a keen interest.

Responsible manufacturers who follow the production control procedures; who ensure that their manufacturing methods are efficient and who take advantage of the modern gas filling and gas fill testing equipment now available, need have no worries about maintaining compliance.

Malcolm Kemp:

It is refreshing to read a clear and concise summary of what ig unit companies need to do to maintain

their EN 1279 compliance for gas filled units. Mike Gaillard's first two bullet points are readily covered if: the gas filling and test equipment is calibrated before delivery and checked upon installation; and if the equipment has the facility for self-testing and calibration during operation. This is the case with all **Inagas** equipment. And we offer an annual calibration and equipment check service.

Mike's third point on testing units after manufacture is answered by the availability of reliable invasive and non-invasive test equipment that can carry out concentration tests to the requirements of Part 6 Table A3.

The concern about manufacturing methods is, in our experience, well-founded. We frequently encounter instances where units are correctly filled with between 85-95 per cent initial gas concentration but then lose half the gas in the crucial period between gas filling and sealing. Mike Gaillard has already described the possible consequences of non-compliance. In most cases, simple and easily implemented procedural changes can eliminate this risk and fill levels in finished units are easily confirmed with gas fill testers.

We recommend a 24 hour wait to allow the gas / air content of the unit to stabilise before seeking a truly accurate reading.

By following the advice Mike Gaillard gives above and by using correctly the modern filling and test equipment, manufacturers can legitimately avoid the expense of the routine gas concentration test that is currently available at only one UK Notified Body Test House.

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