

Gassing problems with heating systems after power flushing

Question

After the power flushing routine has been carried out, the system seems fine, but subsequently the engineer receives a call, sometimes within 24 hours, to say that the system has air in it. The system is bled, only to find that within a short time the customer is complaining of the same problem again.

Answer

When we have had feedback about gassing problems, reasons have been as follows:

1. The engineer has been keeping the water level in the Clearflow tank very (too low), and the pump has been pulling in air, as the suction intake is only just covered by the water in the tank. Apart from reducing the (desired) high flow rate, sometimes the water can become so aerated that even though radiators have been bled after the power flush, for several days after, the aerated water gradually releases the remaining air, and this tends to accumulate in the top of radiators. We always recommend at least 6" (15 cm) of water in the Clearflow tank.

2. Sometimes, after power flushing with PowerFlush FX2, if the system hasn't been circulated briefly with neutralising crystals, there has been a small residue of slightly acidic flushing material in the system. This can in some circumstances lead to some corrosion of radiators, which will liberate gas. The gas won't be air though, it will be hydrogen. Take a sample of gas from a bleed valve. Hold a plastic jug / beaker upside down over the bleed valve during the bleeding. If hydrogen is present, then as it is lighter than air, it rises and displaces the air in the beaker, leaving a pocket of hydrogen trapped in the upside down beaker. Hold a cigarette lighter under the beaker, and if it pops, then the gas is hydrogen.

If hydrogen is present, then corrosion is occurring, so suspect the above reason.

(N.B. Don't hold a cigarette lighter direct to a bleed valve to test for hydrogen - unless you want to risk scorched curtains and wall paper!)

Check the pH of the heating system system water - it should be very close to 7 (even if it has been treated with Systemsafe DM inhibitor, as this is a neutral formulation). If the water has a pH lower than 6 to 6.5, then this is probably the cause of the gassing. The best solution is to briefly flush the system with fresh water (whole system wide open) and then circulate for ten minutes some neutralising crystals through the system at standard dosage.

3. Occasionally, we hear of a system which continues to gas after every thing else has been tried, and for no plausible reason. Chemists term this 'runaway' corrosion and fortunately it is rare. In such cases, we formulate for the engineer a special version of Systemsafe DM inhibitor, with a much higher than normal level of "yellow metal inhibitor", and this often stops the unusual corrosion, by filming out on copper, brass, bronze, and effectively suppressing any galvanic corrosion.

If the gas produced is not hydrogen, but is air, then it HAS to come from somewhere – air is not a by-product of corrosion, but will be being pulled into the system, probably somewhere on the negative side of the circulator pump, and this needs checking.