ILPPWA 2019 report - leadinthewater.com - United Kingdom

International Lead Poisoning Prevention Week of Action 2019
leadinthewater.com - Twittersphere hashtag: #ILPPW2019

by Dr Simon Reddy 22 Nov 2019

Leadinthewater.com had a great World Health Organisation Lead Poisoning Prevention Week 2019 and here are some of the highlights!

It was our strategy to undertake a whole month of online activity to promote good public health and warn on the dangers of Lead in the home and schools in regard to lead or copper pipes with exposed lead solder – *externally* these plumbing components containing lead present a touch and dust hazard and *internally* the lead dissolves in stagnant water pipes to create poisonous drinking water or an environmental health hazard.

Leadinthewater.com got off to a good start with a feature on the dangerous scratch-test on lead recommended by UK plumbing and water authorities - advising the 'untrained' public to identify lead in their home by scraping away old paint (which may contain lead) and corrosion on the pipe to reveal the nature of the metal (copper or lead) used for plumbing.

Leadinthewater.com argued that the scratching activity on old lead and copper pipes can generate toxic dust putting the public at risk (see toxic dust in slide below). The promotors of the scratch test who include the UK Drinking Water Directorate do not seem to take into account that old pipes are probably coated in old paint which is likely to contain lead. The graphic below shows two pieces of water pipe painted white - and the paint has been scratched away to expose the metal underneath. If a silver metal is observed it indicates

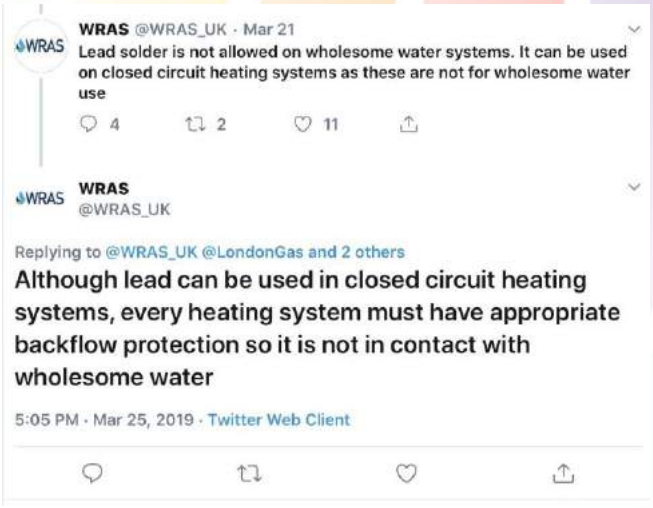
that the pipe is lead and if a brown metal observed the pipes are likely to be made of copper – in any case it makes no difference whether a home has lead pipes or copper pipes with lead solder joints – both types of plumbing are hazardous and likely to need the intervention of a plumbing expert trained in lead safety.

Leadinthewater.com challenging safety of scratch test for lead pipes?

The graphic in the slide above is taken from UTube identification of Lead pipes video (1min 10secs) produced by Watersafe UK showing the toxic lead dust which has been scraped from the pipes on the hands of the plumber – the film does not describe how the toxic paint and metal dust is cleaned away or whether it is left alone presenting an environmental risk to persons living in the dwelling. Moreover, there seems to be little if any advice given in the video for occupational health and safety of workers and public such as wearing a mask or personal protective equipment required for the toxic job in hand.

Another matter discussed during #ILPPW2019 was the widespread use of lead solder in the UK plumbing and gas industry for training and the regular use of lead solder by plumbers and Gas Safe Register Engineers on home distribution systems in 2019. The Water Supply (Water Fittings) Regulations 1999 prevent the use of lead solder on potable or wholesome drinking water supplies. It is a regulatory requirement that wholesome drinking water is provided by the water authority at the point of entry to buildings – **wholesome water** has to meet regulatory standards and tests to be classified as fit for human consumption.

Despite the current 1999 water regulations for England giving no authorisation for the use of lead solder on any plumbing or heating systems (which is in line with World Health Organisation guidelines) – on the contrary, the UK Water Regulations Advisory Scheme (WRAS) published guidance on the water regulations and they implied that lead solder was safe to use and the best course of action for central heating systems in 2019:



Water Regulations Advisory Scheme position on Lead Solder 2019

Nowhere in the 1999 Water Supply (Water Fittings) Regulations does it say that lead solder can be used on plumbing and heating applications such as wet central heating systems in buildings!

Part of the problem seems to be the way the Health and Safety Executive (HSE) have classified Lead Solder under European legislation. In March 2018 the harmonised standard for lead was agreed and the HSE in the UK in relation to Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). UK REACH prohibits the sale of lead solder to the general public but it can still be supplied to professional **users**.

As working professionals - teachers in Further Education colleges and plumbing engineers have taken the HSE bulletin to mean they are themselves professional **users** – however, the legislation only covers the sale of lead solder to professional **users** without specifying situations where lead solder can actually be **used** in practice – which is probably nowhere given the safety criteria that would have to be met when good alternatives are available! In order to clarify the matter about the legality and safety of lead solder use in the UK in 2019, leadinthewater.com published a relevant #ILPPW paper helping vocational skills teachers understand the facts about professional lead solder use

Owing to the dubious regulatory advice given by UK water and plumbing authorities concerned with drinking water, hundreds of images of boiler installations and plumbing systems on social media show Lead solder is still in widespread use in homes and public buildings like schools. Lead solder is also used widespread in Further Education Colleges where the toxin is a major risk to young people and women of childbearing capacity. It is our concern that plumbers and gas engineers soldering with lead, present an occupational health risk to themselves while impacting on other people in the environment when the solder is being used.

UK Further Education Colleges using lead solder - indicated by the blue/red/yellow colour of the reel (leadfree solder always has a green reel) and the grey dullness the lead solder appears when handled and soldered

Several UK Further Education Colleges, Training centres and their teachers published statements on social media supporting the use of lead solder on heating and gas in UK colleges. Organisations like the Chartered Institute of Plumbing and Heating Engineering (CIPHE) published an article in their professional journal endorsing the legal use of lead solder for closed heating systems and gas:

(at right)

CIPHE Journal P&H

New regulation

The Water Supply (Water Fittings) Regulations prohibit the use of lead on any part of a wholesome water system. While lead is allowed on closed-circuit heating and gas systems, any heating system using lead is legally required to be fitted with adequate backflow protection to ensure the complete safety of the drinking water supply.

leadinthewater.com challenged these unsupported guidelines espoused by professional plumbing and water authorities, arguing that there was no statutory support for the use of lead solder. In fact, widespread environmental and safety legislation sided against the use of lead solder anywhere when good alternatives were available and cost effective.

Leadinthewater.com were clear in their message that lead solder was not legal or safe to use on closed central heating systems or for gas distribution systems.

Leadinthewater.com argued that owing to The Water Supply (Water Fittings) Regulations 1999 lead solder was illegal for use on heating systems. The toxic nature of lead also raised the fluid category risk of the contents of the heating systems from the current category 3 risk (which allowed them to be permanently connected to the drinking water supply) to the highest risk of category 5 (dangerous to human health). Leadinthewater.com assessed the heating system contents at Fluid category 5 when lead solder is used and appropriate protection of the drinking water should apply.

The majority of central heating systems in the UK are closed which means they are filled-up via a filling-loop permanently connected to the drinking water supply in homes and buildings. The filling-loop consists of an isolation valve, a hose loop and a backflow protection device (rated at fluid category 3). Leadinthewater.com argued that with permanent connection to drinking water via inadequate category 3 device, a risk of backflow from a lead-filled central heating system was possible (when mains pressure fails), presenting a serious risk of contamination from fluid category 5 to the drinking water for millions of dwellings in the UK.

Moreover, leadinthewater.com could not find any legitimate regulatory support for the use of lead solder on closed central heating systems in England and Wales and it is our understanding that unsupported guidelines (not regulations) have been used by authorities to legitimise the legality of the use of lead solder in plumbing and heating work.

Another article published for #ILPPW2019 was about Brussels Police being poisoned at work by lead leaching from the station's drinking water taps. This story presented a good way of communicating the dangers of leaded legacy plumbing in older buildings.

Many schools in England have legacy pipes and plumbing fittings made from copper alloys such as brass taps which always contain toxic lead. These lead-filled legacy plumbing systems and fixtures can poison the water when left to stagnate. leadinthewater.com considers the impact of leaded plumbing on public health as representative of an **imbalance of power** in the way water safety is distributed in England's schools…the most powerful people get the best quality water and everyone accepts this as normal!

In England and Wales the water authorities are duty bound to provide wholesome water which is fit to drink at the point of entry to a dwelling or building – this is before the water enters the school building distribution system or plumbing system. The water authority may provide good quality water but when this water enters the school plumbing the quality deteriorates to the level of being dangerous. Despite stagnation risk to the quality of water being well documented, The Water Supply (Water Fittings) Regulations 1999 state that water in school buildings must only be 'suitable' for children - 'suitable' broadly relates to the quantity of water to meet demand/needs, making no reference to the quality of water.

Despite school drinking water in England being labelled ‘drinking-water’ the water does not have to meet wholesome water standards or regulations! In this sense ‘drinking water’ for children in schools in England does not necessarily need to be fit for human consumption!

This is not the case for Teachers in England who are protected under the Health and Safety at Work Act and they are entitled to wholesome water at work. However, it appears that for schools in England there are no water quality protections for children - compared to Welsh schools where both teachers and children are entitled to drink wholesome water by Law.

In England, Teachers are entitled to drink wholesome water in schools but children are not!
