

Fighting Germs

with hygienic copper surfaces

Angela Vessey, director of the Copper Development Association, looks at how the use of copper in washrooms is helping to reduce germs in healthcare situations.

Brass door handles and push plates are making a comeback in hospitals due to their inherent ability to kill germs – bacteria, viruses and fungi – around the clock. Often found in private hospitals to provide a homely or hotel feel, this new generation of handles, and other touch surface components, are uncoated – they are neither lacquered or chrome plated – unleashing the power of the antimicrobial copper within. These active surfaces look different to standard components and patients, staff and visitors need to understand how this new look can help maintain a hygienic environment.

There are now reams of scientific papers documenting how copper surfaces (and materials such as brass and bronze which contain copper) can very quickly kill millions of microbes applied to them. The most recent work has been carried out at the University of Southampton by Professor Bill Keevil who has proven copper kills MRSA, Clostridium difficile, E. coli and even Influenza A (H1N1) – all headline-making germs. Interestingly, while it is widely accepted that both silver and copper have antimicrobial properties, and indeed the use of silver in catheters and wound dressings is well known, Keevil recently reported that under typical indoor conditions, i.e. 22 degrees C and 50% relative humidity, silver-ion containing materials showed no activity. A higher temperature and humidity was needed for the silver material to show an effect. So for indoor touch surface applications, copper materials have the required performance.

Copper has also been proven to reduce contamination in a clinical setting with reductions of 90-100% reported on toilet seats, taps and push plates in a trial at Selly Oak. 80% of infectious diseases are spread by touch so, logically, reducing contamination on touch surfaces must mean reducing the risk of spreading disease. According to the trial leader, Professor Tom Elliott: “The findings of a 90 to 100% killing of those organisms, even after a busy day on a medical ward with items being touched by numerous people, is remarkable. So it may well offer us another mechanism for trying to defeat the spread of infection.”

So copper, brass and bronze surfaces can augment standard hygiene practices such as hand washing and cleaning and provide an additional barrier to germs, between cleans. Infection control can identify which surfaces would benefit from copper in particular areas. It's perhaps hardly surprising that studies have shown the areas closest to the patient – the bed rails, the over-bed table and the nurse-call button – to be most heavily contaminated. In the Selly Oak trial, door handles, push plates, grab rails, taps, light switches and sockets and toilet seats were just some of the copper components installed. If you are asking yourself whether this means hospitals will need to start bulk buying Brasso then think again. At Selly Oak, standard cleaning agents and protocols were used.

News of copper's outstanding antimicrobial performance in the Selly Oak trial is making infection control teams around the world consider

where best to deploy copper, brass and bronze fittings, furniture and equipment, but it's not just hospitals that can benefit. The Health Protection Agency reports on its website that the swine flu virus can survive on hard surfaces for up to 24 hours pushing hygiene up the agenda for all non-residential buildings, public buildings, offices, gyms and schools. Of course, effective cleaning will help to sanitise touch surfaces but only until the next contaminated hand makes contact. This is where an effective antimicrobial like copper comes into its own, keeping germs at bay between cleans.

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So, how will you recognise these new weapons in the fight against infection? Copper-containing materials come in a variety of guises ranging in colour from gold to bronze to silver depending on composition. Being active surfaces, they immediately set to work killing germs, and the surface appearance may dull or darken slightly, a process known as patination. Only poorly cleaned surfaces will discolour to a greater degree than this, and the bathroom fittings installed at Selly Oak show only a gentle patination, even after two years' service. Rest assured though that as this patination occurs, the surface is becoming even more effective at killing germs.

