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New Research is a Breath of Fresh Air for Heating and Air Conditioning Units

New research is under way to investigate how copper can combat the bacteria and fungi that cause foul odours and reduced efficiency in HVAC units where the damp and dark environment is the perfect breeding ground for germs.

The U.S. Department of Defense is funding research into antimicrobial copper components that can control the growth of organisms that grow in HVAC units. The units are installed at the military barracks at Fort Jackson in Columbia, South Carolina.

Charles Feigley, Ph.D., Professor of Environmental Health Sciences at the University of South Carolina, and principal investigator for the study, explained the need for this research:

“Improvements in building and construction methods have generally led to increased energy efficiency but, at the same time, these ‘tighter’ building envelopes tend to trap bacteria, leading to odours. The results of this real-world trial should encourage advancements in the design of HVAC systems.”



The trial is comparing the ability of antimicrobial copper HVAC components with the more commonly used aluminium components to control the growth of odour-causing bacteria and fungi in HVAC units. Components being replaced with copper are those in which microbial contaminants tend to thrive – cooling coils, heat exchange fins and drip pans. The trial is designed to test the effectiveness of copper surfaces in inhibiting the growth of microbes which are not only the source of foul odours, but can also build up on heat transfer surfaces and compromise the thermal efficiency of the unit. In addition to being antimicrobial, the copper elements are highly recyclable and are better thermal conductors than their aluminium counterparts.

In conjunction with the real-world field trial at Fort Jackson, a controlled laboratory study is taking place at the University of South Carolina in the Arnold School of Public Health.

This work builds on laboratory and clinical research on the antimicrobial efficacy of copper carried out in the UK at the University of Southampton and Selly Oak Hospital, Birmingham. The results support the use of copper, brass and bronze touch surfaces – door handles, push plates, grab rails, light switches etc - to help fight the spread of hospital-acquired infections.

The copper cooling coils, heat exchange fins and drip pans were manufactured by Luvata, a leading metal fabrication and component manufacturing company.

Ends

	
Copper cooling coil fins	Copper heat exchanger

For further information or hi res images, contact:

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