
Antimicrobial Copper in Guidelines and Ratings Schemes: Infection Control, Green and Healthy Buildings

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Antimicrobial
Copper



Introduction

As the evidence base for copper alloy touch surfaces has grown, and awareness become more widespread, they are being included in infection prevention and control horizon scanning and guidance, healthcare accreditation systems and green and healthy building schemes, around the world. This publication provides an overview of some of these schemes with pointers to the relevant sections.

Infection Prevention and Control



Health Protection Scotland Review and Practice Recommendations. Existing and emerging technologies used for decontamination of the healthcare environment - Antimicrobial Copper Surfaces, 2017

Health Protection Scotland (HPS) is a division of NHS National Services Scotland. It undertook a review of clinical evidence on copper alloy surfaces for environmental decontamination stating 'Antimicrobial copper surfaces provide an example of a novel technology that may supplement standard cleaning practices and potentially further reduce the transmission of nosocomial pathogens.'

The review rates the US trial that reported a 58% reduction in infections as SIGN 1+ (second highest) and level V (highest) of the McDonald-Arduino evidence hierarchy for environmental infection control. The review makes the following Grade C recommendation:

Copper alloy environmental and equipment surfaces may be considered for high-touch sites (e.g. bed rails) as an additional measure to supplement existing procedures for routine cleaning but does not replace the requirement for routine cleaning to be performed.



Healthcare Accreditation Scheme, Poland, 2016

National Centre for Quality Assessment in Healthcare

Centrum Monitorowania Jakości w Ochronie Zdrowia (CMJ) is a Polish Ministry of Health body and WHO collaborating centre which operates a hospital accreditation scheme to improve the quality and efficacy of services and patient safety standards.

In the accreditation standards, Chapter IX 'Infection Control' provides guidelines concerning the prevention of pathogen transmission by touch and states:

Reduction of microbial transmission should be achieved, inter alia, using frequently touched surfaces made from metals with antimicrobial properties, such as copper, brass and bronze, as per the US Environmental Protection Agency's registration.

CMJ's role is comparable to the Care Quality Commission and the National Institute for Health and Care Excellence in England.



EPIC3: National Evidence-Based Guidelines for Preventing Healthcare-Associated Infections in NHS Hospitals in England, 2014

In these NICE-accredited guidelines, copper is recognised under 'Emerging technology' for its ability to continuously and significantly reduce bioburden:

Four non-randomised, experimental studies, conducted in clinical environments, demonstrated significant reductions in microbial burden of between 80% and 90% on high-touch surfaces coated with metallic copper and/or its alloys compared with similar non-copper surfaces.



ECRI: Top 10 Technology Watch List for the Hospital C-Suite, 2014

ECRI published a Watch List 'Copper Surfaces: How Many Are Needed in a Hospital Room to Prevent Hospital-acquired Infections?' which concludes that implementation of copper and copper alloy surfaces might not only improve patient health outcomes, but might also save the healthcare system significant funds.

The ECRI Institute is a globally-renowned non-profit organisation, dedicated to bringing the discipline of applied scientific research to discover which medical procedures, devices, drugs, and processes are best, to enable its international members to improve patient care.



CNESH: Top 10 New & Emerging Health Technology Watch List, 2014

The Canadian Network for Environmental Scanning in Health published this Watch List reporting:

Lower levels of bacteria on copper surfaces in an ICU setting have led to a reduction in rates of healthcare-acquired infection. This new technology, which is intended to deliver antibacterial activity in between regular cleaning intervals, is purported to have antibacterial properties that last the product's lifetime. It appears the antimicrobial copper surfaces achieve a 99.9% reduction in both gram-negative and gram-positive bacteria within two hours of exposure.

Green and Healthy Building Schemes

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Finnish Building Information Foundation Indoor Hygiene - General Criteria: RT1, 2017

Antimicrobial materials for high-touch surfaces are included as a measure to meet defined hygiene ratings for a variety of building types, including healthcare, education and food processing. Copper is recognised as the most effective and best known antimicrobial material.

See 4. Infection Control Indoors; 4.1 Surfaces, Fixtures and Fittings; 4.1.1 Antimicrobial Materials.



International WELL Building Standard™, 2016

The WELL Building Standard™ is an evidence-based system for measuring, certifying and monitoring the performance of building features that impact health and well-being. WELL is administered by the International WELL Building Institute™ (IWBI), a public benefit corporation whose mission is to improve human health and well-being through the built environment. It is third-party certified by Green Business Certification Inc which administers the Leadership in Energy and Environmental Design (LEED) programme.

Antimicrobial Copper meets the requirement of Section 27 Antimicrobial Activity For Surfaces - Part 1: High-touch Surfaces:

Antimicrobial surfaces (countertops and fixtures in bathrooms and kitchens, and all handles, doorknobs, light switches and elevator buttons) comprised of a material that is abrasion-resistant, non-leaching and meets EPA testing requirements for antimicrobial activity are an optimisation option.



Indian Green Building Council

IGBC Green Healthcare Facilities Rating System Guidelines, Pilot Version, 2016

In this Indian Green Building Council pilot scheme, copper surfaces approved by International Copper Association India comply with SH Credit 1: Sanitisation and Hygiene: Infection Control within the Spaces: Antibacterial Surfaces. High-touch surfaces for upgrade are listed as bed rails, telephones, toilet seats, toilet flush handles and inner washroom doorknobs, referencing the US Centers for Disease Control Environmental Checklist for Monitoring Terminal Cleaning.

Further Information

For the latest information, and links to the different schemes, please visit:

www.antimicrobialcopper.org/uk/amc-guidelines-ratings

Copper and copper alloys are engineering materials that are durable, colourful and recyclable and are widely available in various product forms suitable for a range of manufacturing purposes. Copper and its alloys offer a suite of materials for designers of functional, sustainable and cost-effective products.

Copper and certain copper alloys have intrinsic antimicrobial properties (so-called 'Antimicrobial Copper') and products made from these materials have an additional secondary benefit of contributing to hygienic design. Products made from Antimicrobial Copper are a supplement to, not a substitute for standard infection control practices. It is essential that current hygiene practices are continued, including those related to the cleaning and disinfection of environmental surfaces.

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