

Biomaster

Product protection for building materials

In large, contained structures where many people co-exist in close proximity - office blocks, hospitals, hotels and cruise ships - specifying the right materials can provide a fresher, more hygienic environment and reduce the risk of illness caused by internal pollutants.

In hygiene critical environments, the basic fabric of the building can provide an exposure pathway for harmful microbes often overlooked by regular maintenance and cleaning protocols.

- Legionella pneumophila, if left to its own devices, likes to grow in the warm water in a building's cooling towers. When mists from that water are conducted into a building via the ventilation system, mass illness can result.
- Another building-related disease caused by Legionella is Pontiac fever, marked by fever, chills, headaches and body aches.
- Poor indoor air quality can exacerbate 'sick building syndrome' leading to headaches, nausea, dizziness, irritability, itchy eyes and respiratory illnesses, among other problems.
- Mould and damp can affect not only the health of the buildings, but also the health of those who live within them.

People are much more likely to suffer poor health when living in an unhealthy building.¹

- One out of six Europeans – or the equivalent of Germany's population – report living in unhealthy buildings. In some countries, that number is as high as one out of three.²
- Bacterial contamination in water-damaged buildings has been identified as a potential cause of health problems, including infection and respiratory conditions such as asthma.³
- Indoor surface mould can impair the functioning of many processes from air conditioning units to electrical circuits. Surfaces of materials on which mould is growing get stained or discoloured and may disintegrate over time.⁴
- Norovirus outbreaks are relatively common on cruise ships. Once an infected person gets on-board a ship, the virus can be spread quickly, mainly through hand contact with surfaces.⁵

Our solution: 24/7 infection control by design

Biomaster reduces the risk of cross-contamination round the clock by inhibiting the growth of harmful bacteria on surfaces.

- Biomaster can be introduced into almost any item found in hotels, restaurants and commercial kitchens offering product protection resulting in fewer bacteria on surfaces.
- The active antimicrobial agent is built into the product during the manufacturing

process, so the protection lasts for the useful lifetime of the treated article.

- The active ingredient in Biomaster only imparts antimicrobial properties and does not affect the basic colour or surface finish of any product in which it is used.
- Independently tested in thousands of applications, Biomaster is proven to inhibit the growth of most types of harmful bacteria.

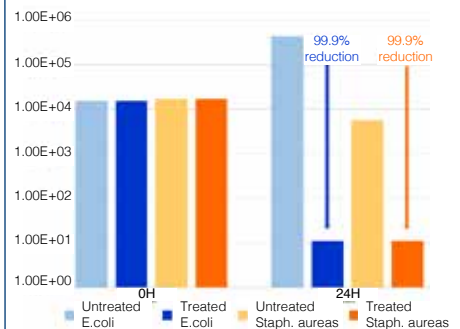
¹ & ² EU Commission (Healthy Homes Barometer 2017)
³ University of Cincinnati Academic Health Centre

⁴ University of Quebec
⁵ US Centre for Disease Control and Prevention



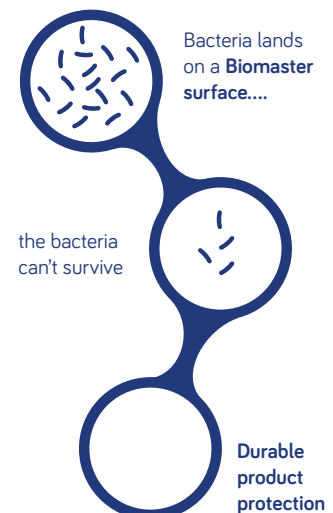
How effective is Biomaster?

In typical tests, after 24 hours surfaces treated with Biomaster showed a reduction in the levels of E.coli and Staphylococcus aureus by over 99% achieving ISO 22196:2011.



ISO 22196 results comparing bacterial load on an untreated surface with a Biomaster protected surface

How does Biomaster work?



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Biomaster can be built into any permanent architectural feature to provide effective antimicrobial protection for the lifetime of the product. Here are a few examples of how Biomaster offers round the clock surface protection for building materials

Cabling



A global manufacturer of cabling systems for top-quality and highly efficient network infrastructures has developed a line of outlets and patch cords with Biomaster protection.

The range is highly suitable for health institutions and similar deployment areas which have an inherent risk of infection. The plastic components contain inbuilt antimicrobial technology to inhibit the growth of bacteria in compliance with ISO 22196.

Ductwork



The quality of air distributed through the ductwork in a building is an increasing concern for the Heating, Ventilation and Air Conditioning (HVAC) industry.

Ductwork panels and components coated with Biomaster technology provide an integrated antibacterial protected surface that inhibits the growth of mould, bacteria and fungi, offering protection between cleans.

Fixtures & fittings



Antimicrobial powder coatings can be applied to fixtures and fittings including finishes for door and window frames, handles and push plates.

Among the many innovative products available for architectural use are a corrosion protection coating system for steel substrates and a series of lower curing temperature powder coatings, resulting in significant energy savings.

Floor coatings



Antimicrobial surface coatings for floors offer a hard wearing, abrasion resistant 100% PU screed available in a wide range of colours.

Sealants



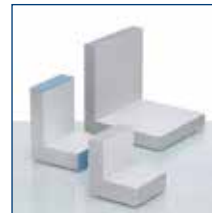
Antimicrobial adhesives, grout and other sealants treated with Biomaster technology can inhibit the build up of mould, fungi and bacteria and help to complement cleaning regimes.

Wall cladding



Wall cladding pioneered by Biomaster has been tested in hygiene-critical environments and is proven to outperform other wall finishes, preventing the growth and spread of dangerous bacteria such as *Streptococcus faecalis*, *Salmonella typhimurium* and MRSA.

Cladding and doorsets from this range are simple to install, fire-resistant, easy to clean and available in a wide range of colours.



An ultra-hygienic antimicrobial sheet material is a high quality alternative to MDF. Its' smooth, non-porous and totally waterproof surface ensures

easy cleaning. It can be fabricated using conventional tools and equipment and is currently specified in hygiene-critical environments including hospitals, GP surgeries and dentists.

Wall coatings



Biomaster protected trade paint is a quick drying, water-based coating incorporating Biomaster antimicrobial protection. It is a tough,

scrubbable, durable, stain resistant matt emulsion and is suitable for all normal interior wall and ceiling surfaces.

Water filters & supply hose



Some pathogens including *Legionella* are common contaminants of water supplies and can lead to nosocomial infections.

Biomaster protected filter housings act as an immediate transmission barrier against waterborne contaminants. They are easily installed, compatible with systemic water treatments and cost efficient.

Biomaster-treated WRAS approved hose and tube are also suitable for use in all potable water supply applications where antimicrobial properties are critical.