



Antimicrobial Powder Coating.

The antimicrobial powder coating of air handling units inhibits the growth even of multiresistant germs. Its high and sustained effectiveness has been certified.

Antimicrobial powder coating

Air is the prime necessity of life. Therefore, its purity and microbiological cleanliness are very important. Air handling units treat the air, and have to ensure its sustained quality. Operators, installers and designers of air handling units are in charge here.

Adding substances with demonstrably long-lasting effectiveness to the surface coating of air handling units provides a valuable contribution to the reduction even of multiresistant germs.

To avoid the risk of biofilm formation in air handling units, robatherm offers air handling units with a special, long-acting powder coating that incorporates antimicrobial additives. Sustained effectiveness of these additives has been certified by an independent, approved testing institute.

Settling and proliferation of microorganisms

Under certain conditions, microorganisms such as bacteria, fungi or algae can settle and proliferate on any imaginable surface where they form a thin mucus layer, the biofilm.

This layer also protects the microorganisms. In the biofilm, their immunity against nutrient shortage, extreme pH and temperature fluctuations, bactericides, but also UV and X-radiation increases. This counteracts cleaning and preventive measures that rely on heat, cleaning agents or radiation.

Combating microorganisms continuously by means of antimicrobial powder coating is a suitable supportive precaution.

Hazard prevention

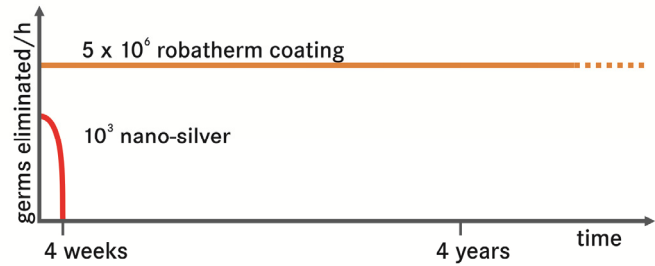
Designers, installers and operators of air handling units have the responsibility to ensure that the occupants of a building are not endangered by microorganisms from the air handling units. The standards regarding ambient air are very high, especially in medical areas. In the health care environment, a perfect hygienic and comfortable indoor climate is of primordial importance. But also in factories, a permanently active antimicrobial coating applied on the devices provides additional security. Especially the effectiveness against multiresistant bacteria (such as MRSA, VRE) is very beneficial for laboratories, hospitals and health care facilities.



Sustained, effective protection

An antibacterial coating based on commercial nano-silver may initially give demonstrable results. However, in most cases the antimicrobial action weakens after only a few weeks.

The antimicrobial additives incorporated in the robatherm powder coating are organometallic substances having an ionizing effect; they are not nanomaterials. Ion emitters and catalysts adhere to the carrier substances of the molecular complex. Thus, new germicidal ions are being formed continuously.



Drastic reduction of germs

The action of the additives is predominantly based on the ionization. Such is the impact of the ions on the metabolic systems of the cells that primitive organisms will die off. In this way the antimicrobial powder coating prevents their proliferation. During this process, up to 5 million germs per hour and per square centimeter are eliminated.

Advantage over conventional additives

Unlike antibacterial agents, which only combat bacteria (pneumococci, staphylococci, E. coli bacteria, MRSA), the additives incorporated in the powder coating also act against algae, yeast fungi (Candida Albicans) and mold fungi (Apergillus Niger).

The additives prevent the colonization of the surface by microorganisms. The long-term effectiveness provides the essential advantage over conventional nano-silver systems.

In spring 2010, the very high effectiveness against Gram-positive and Gram-negative bacteria and the effectiveness against mold fungi have been certified by an independent, approved testing institute.

In summer 2014, a expert's report confirmed that the effectiveness of the antimicrobial powder coating had remained practically unaltered.

Prior to the test, the samples had undergone four years of exposure to the extract air flow of an air handling unit under real operating conditions.

ISEGA - Forschungs- und Untersuchungs-Gesellschaft mbH
 Aschaffenburg

BERICHT
 Auftrag Nr.: 57554 Seite 1 von 3 Seiten
 Auftraggeber: robatherm GmbH + Co. KG
 Industriestraße 29
 85331 Burgau
 Auftragsdatum: 07.05.2014
 Eingang des Probenmaterials: 12.05.2014
 Herkunft des Probenmaterials: vom Auftraggeber
 Untersuchungszweck: Wirksamkeitsprüfung an zwei beschichteten Metallplattenraster nach JIS Z 2801

Durchführung der Untersuchungen
 Prüfzeitraum: 13.05.2014 bis 26.05.2014

1. Prüfung der antimikrobiellen Wirksamkeit
 Die Bestimmung erfolgte gemäß JIS Z 2801:2010

Quadratische Prüflinge mit einer Kantenlänge von 4 cm
 festlegen, von denen 100 der Prüflinge werden die
 ten mit Neutralisatorlösung abgespült und die Keimzahl z
 ge wurden in einer feuchten Kammer gelagert. Nach 24 h
 onlösung gespült und die Keimzahl auf dem Prüfling bei
 fachbestimmte durchgeführt.

Testorganismus: *Staphylococcus aureus* MRSA
 Aufgabekonzentration: 200 µg/Prüfling

Die Bestimmung erfolgte gemäß JIS Z 2801:2010

Dr. (Derm.)
 Dr. (Bakteri.)
 Dipl.-Biologin
 Mikrobiologie

robatherm
Industriestrasse 26
89331 Burgau, Germany

Tel. +49 8222 999-0
Fax +49 8222 999-222
info@robatherm.com
www.robatherm.com

robatherm
the air handling company