



## 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

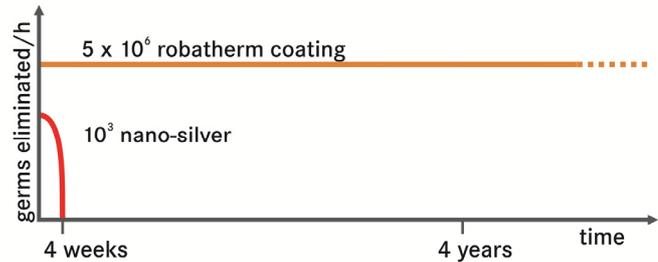
Designers, installers and operators of air handling units have the responsibility to ensure that the occupants of a building are not endangered by microorganisms from the air handling units. The standards regarding ambient air are very high, especially in medical areas. In the health care environment, 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.

Seite 3 von 3 Seiten  
Datum: 04.05.2014

ISEGA - Forschungs- und Untersuchungs-Gesellschaft mbH Aschaffenburg  
Auftrag Nr.: 57554  
vom 07.05.2014

Größe der Prüflinge: 4,0 x 4,0 cm  
(Prüflinge werden herstellungsbedingt ein Loch an der Ecke auf)

24 h  
Die Neutralisation durch  
zahl wurde wie folgt bewirkt:

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Aschaffenburg, 04.05.2014  
Berat.: Dr. Bester  
Schn.

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

(Dr. Derra)  
(Dr. Bester)  
Dipl.-Biologin  
Mikrobiologie

Die Berichtsblätter sind nur auf die hier beschriebenen Proben, Informationen + statistische Daten zum Ergebnis und auf Auftrag annehmbar.

Gesamtleiter: Dr. Ingrid Derra - Handelsregister: HRB 8100  
Dr. Ingrid Derra ist Geschäftsführerin und Rechtsanwältin sowie Mitglied der Rechtsanwaltskammer Aschaffenburg.  
Prüfingenieur und Sachverständiger: Dr. Ingrid Derra  
Prüfingenieur und Sachverständiger: Dr. Ingrid Derra  
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DAKKS  
DIN EN ISO 9001:2008  
DIN EN ISO 14001:2004

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**robatherm**  
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