

TNO Nutrition and Food Research

Summary of Research



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Antimicrobial activity of BioGuard Coating according to the TNO Seed Layer Method

Introduction

Armstrong Building Products GmbH, Münster (Germany), developed BioGuard Coating, a finish paint, which is applied to BioGuard ceiling panels for protection against microbial attack.

TNO Nutrition and Food Research, Zeist (NL), examined the antimicrobial activity of BioGuard Coating according to the TNO Seedlayer Method.

Materials and Methods

Test specimen

A sample of BioGuard Coating was provided by Armstrong Building Products GmbH, Münster (Germany) as the test specimen. The sample was received on 28 January 2002 at the TNO facilities in Zeist and registered under the code M3119/01/0843 BioGuard Coating.

Test method

The Seedlayer Method is an agar diffusion type method, intended to determine qualitatively the antimicrobial activity of materials. Small teflon rings, containing a solid culture medium inoculated with a test organism (the seed layer), are positioned on the material under test. Strains of six bacterial species (*Pseudomonas aeruginosa*, *Escherichia coli*, *Salmonella typhimurium*, *Staphylococcus aureus*, *Listeria monocytogenes* and *Bacillus subtilis*), two yeast species (*Saccharomyces cerevisiae* and *Candida albicans*), and two mould species (*Aspergillus niger* and *Trichoderma harzianum*) are used as the test organisms. After 1, 2, 3 and 4 days of incubation the seedlayer is examined for growth inhibition of the test organisms.

Results and Conclusions

For the test specimen BioGuard Coating no visible (micro)colonies were observed in the seedlayers inoculated with the test organisms, except for *Pseudomonas aeruginosa* ATCC 15442. For this bacterium moderate growth inhibition was observed in one of the duplicate tests.

The results of the Seedlayer tests demonstrate that BioGuard Coating inhibited moderately to strongly the growth of the bacterial test organisms, and inhibited strongly the growth of the fungal test organisms.

Signature

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