

DUROPAL MICROPLUS®

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THE ANTIBACTERIAL SURFACE
FOR INTERIOR DESIGN PROJECTS

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DUROPAL
HPL IS OUR WORLD

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ADDED VALUE FOR INTERIOR DESIGN PROJECTS

DUROPAL MICROPLUS® – ANTIBACTERIAL SURFACE

Those who set the trends of tomorrow for interior design projects would do well to choose the new antibacterial surface Duropal microPLUS®. The integrated hygiene protection offers active and effective protection against bacteria. Genuine added value – in certified quality.

It is a fact: bacteria are our constant companions, whether at home, in public places, health care facilities or hospitals. The triggers of allergies and infections are a constant and serious problem. Even with repeated use, chemical detergents that contain aggressive substances have little effect – and also place a burden on us and on nature. It is a problem for which Duropal has now developed the solution. And one thing you can be sure of: Duropal microPLUS® re-defines tomorrow's hygiene standards.



A team of experts has spent some 15 months developing the new antibacterial surface Duropal microPLUS® – with much success, as is confirmed by certificates from the independent test institutes SGS FRESNIUS and ISEGA. The answers to our three questions to Dr Kurt Nonninger, director of research and development at Duropal, also tell us: Duropal microPLUS® offers key advantages for interior design projects.



INTERVIEW WITH THE DEVELOPER

THREE QUESTIONS ABOUT DUROPAL MICROPLUS® – ANSWERED BY DR KURT NONNINGER

Duopal: Dr Nonninger, let's start with the most important question: just how effective is Duropal microPLUS®?

Nonninger: Two scientific standards apply for the scientific confirmation: one is American, the other Japanese. Here in Europe, the Japanese one seems to apply. At least that's the opinion of the leading institutes. Four specific test germs are placed on the surface being tested, and after 24 hours we analyse how many of them have survived. If all four of the bacteria have been destroyed, then it can be assumed that the whole range of bacteria is covered. In this case, we carried on optimising Duropal microPLUS® until we had achieved a significant reduction in the germs of more than 99 percent.

What was your main consideration during the development of the product?

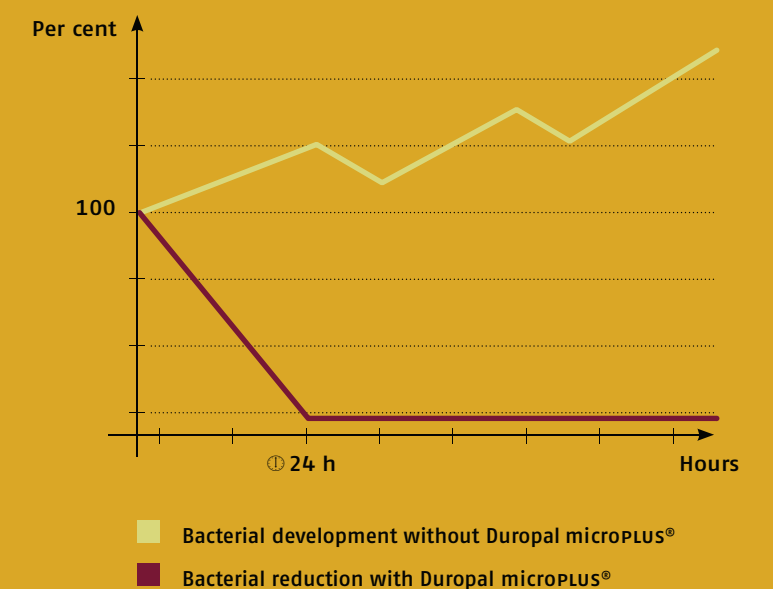
That the product should be safe for humans. So we excluded any substances that could be harmful to humans from the outset and worked on the project until we were able to choose a bactericidally effective product that is also used in shampoos, toothpastes and creams. We then developed

a combination that works technically in production, kills germs and is safe for humans. The latter has also been confirmed unreservedly by independent test institutes. We also carried out tests on artificial perspiration. We checked to see whether perspiration enables the substances in Duropal microPLUS® to be released from the surface. Here, too, the results confirmed: absolutely safe. If we summarise the results of all these tests, then we know the product is absolutely safe for contact with the skin and with foods. It has also been confirmed that the product works permanently and, with regard to the relevant materials, does not cause any evaporation worthy of mention. I am so proud that we have managed to achieve all this.

What do you think will be the main areas of application for Duropal microPLUS®?

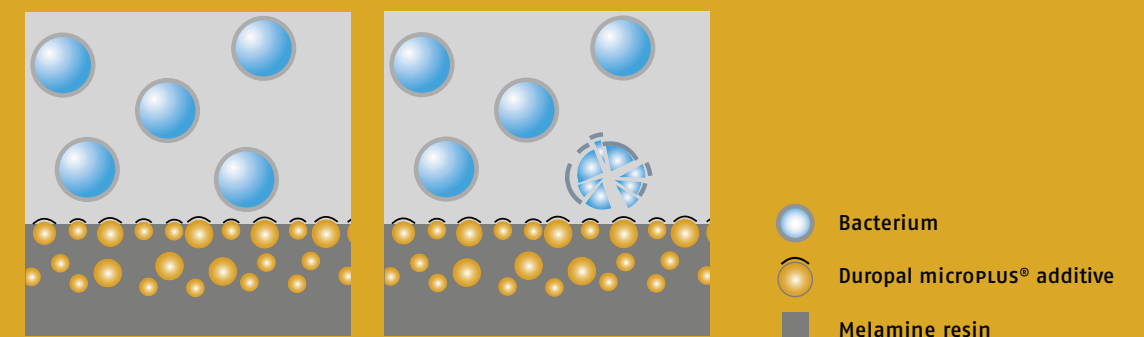
Well, obviously first of all in hospitals. But generally also in any other buildings with a high level of public traffic and where bacteria are transmitted quickly and easily. There, too, it is important to significantly reduce the concentration of bacteria that are, for instance, left on a surface after touching it.

Let's also look at fitness facilities and swimming baths – and changing rooms. Here, too, Duropal microPLUS® offers highly effective protection against the risk of bacterial transfer. Of course, domestic bathrooms and kitchens can also be fitted with Duropal microPLUS®.



Bacteria grow at incredible speeds at room temperature within a 24-hour period. Duropal microPLUS® reduces bacteria by more than 99 per cent over the same period.

microPLUS®



The integrated protection of microPLUS® neutralises, permanently and effectively, the ability of bacteria to grow and multiply. Duropal microPLUS® quickly ensures physical penetration of the bacterium cell wall. Thanks to the even distribution, Duropal microPLUS® is present and effective throughout the surface – and so remains effective for the duration of the product life cycle even under the most demanding conditions. There is no transfer or emission to, for instance, foods or into the air.

TESTED SAFETY

Trust and safety for the lifetime of the product. The new antibacterial surface Duropal microPLUS® meets this requirement in full. This has been confirmed by test results and certificates from the independent and renowned test institutes SGS FRESENIUS and ISEGA. The result: Duropal microPLUS® works safely, permanently and effectively against bacteria. It is also completely suitable for use with food, and safe to process. SGS FRESENIUS has confirmed it: Duropal microPLUS® reduces common bacteria by more than 99 per cent in 24 hours. Even scratches and areas of wear will not affect the antibacterial effects. Your advantage: trust and safety for the lifetime of the product.

Comparison of the antibacterial effects of various materials (test results SGS FRESENIUS)

(effectiveness to the power of ten)

TEST BACTERIA

| Bacteria | Material | Duropol microPLUS® | Real stone/ granite | Ceramics | Real metal | PVC | Acrylic | Mineral materials |
|--------------------------------|----------|--------------------|---------------------|-----------|----------------|-----------|-----------|-------------------|
| <i>Pseudomonas aeruginosa</i> | | > 4.9 | -0.6 | < -0.6 | 0.2 | -0.3 | -0.5 | 0.3 |
| <i>Staphylococcus aureus</i> | | > 4.8 | 0.2 | 0.3 | 1.8 | 0.2 | 0.2 | 0.6 |
| <i>Salmonella choleraesuis</i> | | > 4.9 | 0.1 | 0.3 | 2.1 | 0.2 | 0.1 | 0.5 |
| <i>Escherichia coli</i> | | > 4.4 | < -1.0 | < -1.0 | < -0.1 | < -0.8 | < -1.0 | < -0.5 |
| Results | | highly effective | no effect | no effect | minimal effect | no effect | no effect | no effect |

The result: compared with other tested materials, the antibacterial effect of Duropol microPLUS® was more than 1,000 times more effective.



_ 01



_ 02

_ 01 Extracts from the certificate for the antibacterial efficacy of Duropol microPLUS® – SGS INSTITUT FRESENIUS GmbH, Taunusstein:

Duropol microPLUS® demonstrated a strong antibacterial effect in all microbiological evaluations (based on JIS Z 2801), i.e. a minimum of 99 per cent of all bacteria had been destroyed within 24 hours.

Only positive results were achieved in the relevant tests into the long-term effect of Duropol microPLUS® products with an antibacterial finish. Maximum damage was

caused to Duropol microPLUS® surfaces in a simulation of the life cycle. The antibacterial effect remained entirely unaffected.

_ 02 Extract from the declaration of no objection regarding Duropol microPLUS® – test and research centre ISEGA Forschungs- und Untersuchungs-Gesellschaft mbH Aschaffenburg:

The product Duropol microPLUS®, as per the samples presented, may safely be used as a surface in kitchens where food is prepared and processed and in sanitary facilities.





AREAS OF APPLICATION

HYGIENE HAS MANY ASPECTS

You can now offer your interior design customers a material with genuine added value and with benefits that speak for themselves: the antibacterial surface Duropal microPLUS®. The result is trust and safety everywhere where hygiene is important – and especially in health care and interior design projects.

HEALTH AND CARE

Have you ever caught an illness in hospital? According to the Deutsche Gesellschaft für Krankenhaushygiene e.V., Germany's association for hygiene in hospitals, this is far from unusual: even though a patient's original illness may be cured, many develop new infections by succumbing to one of the many bacteria that occur in a hospital. Even medical disinfectants are only of limited benefit. This is a problem that arises wherever working activities are based around health and care: in doctors' surgeries, nursing homes, or in medical research. This is where the new antibacterial surface Duropal microPLUS® sets the hygiene standards for tomorrow. Patients, people needing care – and staff, too – can feel safe.

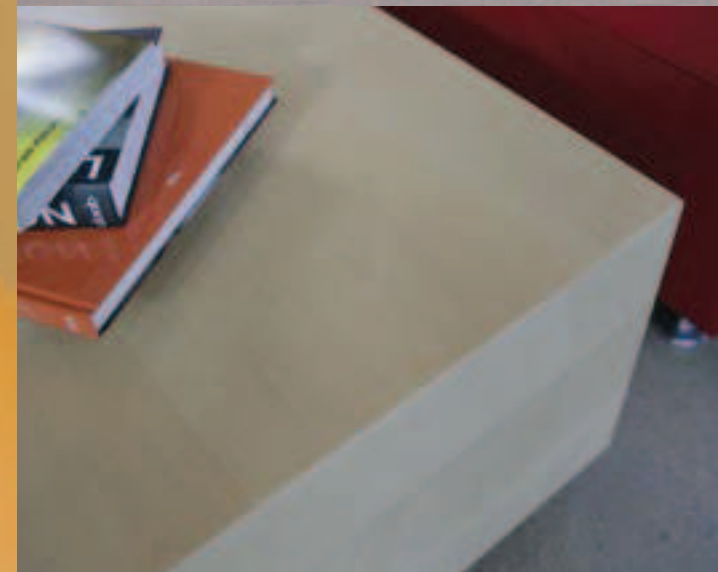


Wherever people are involved in health and care, Duropal microPLUS® will set hygiene standards for tomorrow.



INTERIOR DESIGN PROJECTS

It can be as simple as touching the bar in your favourite pub, using a public toilet or going to the swimming pool: in any of these everyday activities, bacteria can be quickly transmitted. People who are responsible for public buildings or catering facilities have a high level of responsibility towards their customers or guests. Especially in areas with a high level of public traffic, bacteria have a particularly easy life. So our tip is: when it comes to design projects in areas with large amounts of public traffic, advise your customers to use Duropal microPLUS®.



An antibacterial surface creates added values that will delight your interior project customers.

