



P R () T E C T

Antibacterial for Life.



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A collage of people in various poses on a red background, illustrating the concept of 'Happy on the floor'. The people are shown from a top-down perspective, engaged in different activities: a man lying on his back with hands behind his head, a woman sitting cross-legged with a laptop, a man playing a guitar, a woman holding a camera, a man holding a sign, a woman with a dog, a man with a laptop, a woman with a dog, and a man with a guitar. The overall mood is relaxed and joyful.

HAPPY ON THE FLOOR

Happy on the floor is a way of life: freedom, breaking the rules, happiness, changing habits. Throwing yourself on the ground, rolling around, living life from down below, changing perspectives has always been beautiful and liberating. For children of course, but also for grown-ups, from established professionals to more elusive spirits, life on the ground is the rediscovery of external and internal points of views.

It is for all of these people that the Panariagroup Research Centre has developed PROTECT, an exclusive line of extremely high performance antimicrobial floor and wall tiles, designed for healthy, safe and protected living spaces.

To ultimately live in spaces and on surfaces with absolute freedom and peace of mind.

HAPPY ON THE FLOOR. BUT WITH NO SURPRISES.


It is said that there is more bacteria on one hand than people on planet Earth. How is it possible then to live with surfaces freely, especially flooring?

The solution has arrived thanks to the Panariagroup Research Centre, which has created the PROTECT line. Besides being beautiful and remarkably resistant, PROTECT antimicrobial surfaces have been created with Microban® technology, developed by the world leader in the sector: a true antimicrobial shield built into the ceramic product that eliminates up to 99.9% of bacteria on the surface. The result is a surface which is consistently protected, with high levels of hygiene, unalterable from wear and tear and climatic conditions.

PROTECTION WHICH IS INVISIBLE, BUT ETERNAL.

Silver is the base ingredient of this technology: integrated permanently into PROTECT products during the industrial firing phase, at over 1200 °C, making it constantly active, 24-7, day and night, throughout the life cycle of the product. When bacteria come in contact with the treated surface, Microban® technology acts by blocking their metabolism; in this way it interrupts the life cycle of bacteria and their ability to spread. **This is why the PROTECT line is unique in its kind and without competitor.**


The infographic is set against a bright yellow background. It features five white circular callouts, each containing an icon, a title, and descriptive text. Scattered around these callouts are several small, realistic images of people in various poses: a person sitting cross-legged reading, a person lying on their back, a person sitting and holding a baby, a person lying on their side, a person sitting and talking on a phone, a person lying on their back, a person sitting and reading, and a person lying on their back. The overall design is clean and modern, emphasizing the benefits of the PROTECT line.



POWERFUL ACTION

kills up to 99.9% of bacteria


The technology used in PROTECT products, based on silver ions blocks the metabolism of bacteria, eliminating them and preventing their proliferation.



CONTINUOUS PROTECTION

24 hours a day


Unlike other technologies, such as those based on the use of Titanium Dioxide, the protective shield is always active, day and night, with or without sunlight and it does not need UV rays for activation.



ETERNAL EFFECTIVENESS

thanks to technology integrated into the product

Silver ions, permanently integrated into the tile at the moment of firing, are active throughout the life cycle of the product and always guarantee a high level of protection between cleaning operations.



QUALITY GUARANTEED

the partnership with Microban®

PROTECT is guaranteed by the partnership with Microban®, the world's leading company in the use of antimicrobial technology applied to numerous sectors and products. Furthermore it complies with international safety regulations and it is tested by specialized independent laboratories.

ALEX

FREE TO GROW UP.

For little Alex the time has arrived to explore a new environment: the world. Starting from down below, because that is where they start to crawl, slide, roll, laugh and even sleep, and free to do so without any worries. For this reason, both at home and at day care, PROTECT antimicrobial surfaces are the best travel companions!



PROTECT SURFACES ARE IDEAL IN HOUSES,
KINDERGARTENS, GAMES ROOMS, NURSERIES, PLAYROOMS.

WHY PROTECT IS BETTER:

- **MORE HYGIENIC AND EASIER CLEANING**

The level of cleanliness of the product can be visibly improved with PROTECT antimicrobial technology, and while not a substitute for normal cleaning, it allows complete and easier cleaning, rendering it less expensive and allowing you to reach a better level of protection between cleaning operations.

- **IT ALSO ELIMINATES SUBSTANCES WHICH ARE NOT VISIBLE**

Bacteria are invisible, but that doesn't mean they are not there! Thanks to PROTECT antimicrobial technology the growth of bacteria is significantly limited on floor and wall tiles, kitchen countertops, etc.

- **LESS BACTERIA, LESS ODOURS**

The presence of bacteria can cause odours, just think of the exercise equipment found in gyms. Reducing bacteria reduces the odours.



ANTIMICROBIAL EVERYWHERE

The continuous antimicrobial action of the PROTECT line prevents the formation of biofilms, colonies of bacteria that form a slimy coating on surfaces, which are difficult to clean and can compromise the tile itself by fading colours or adding resistant and smelly mildew. PROTECT technology is especially effective with bacteria such as *Escherichia coli*, *Klebsiella pneumoniae* and *Staphylococcus aureus*, very frequent in any environment.

PROTECT ANTIMICROBIAL SURFACES ARE RECOMMENDED FOR DOMESTIC ENVIRONMENTS BUT ALSO:



Restaurants, canteens, countertops for kitchens

Greater hygiene in environments where the presence of food is essential.



Healthcare environments, medical clinics

A weakened and sensitive immune system requires the utmost care in these environments.



Gyms, health clubs, spas

Antimicrobial surfaces in sports and wellness centres are a guarantee of extreme care for clients.



Airports, shopping centres, schools

Centres where large numbers of people are present require scrupulous controls to prevent the growth of bacteria.

EVERY PRODUCT CAN BE PROTECT.

The antimicrobial technology can be integrated into all types of products, formats, surfaces, finishes including products created 'on demand'. Also, unlike other technologies, it does not whiten the surface in which it is incorporated.

PROTECT SURFACES ARE IDEAL IN SCHOOLS,
THEATRES, CREATIVE WORKSHOPS, SHARING SPACES.

C

EMMA

FREE TO EXPLORE.

In every aspect of her life Emma looks for a new emotion, a different path, a discovery that may help make her future amazing. For this reason she loves all spaces, especially where she can lie on the ground, where it is easier to create because you can see things through the eyes of freedom. And PROTECT, among all her discoveries, is by far the one that allows her to start designing her tomorrow.



THE RESEARCH: A LEADING GROUP IN THE INDUSTRY

Research and Development is at the core of Panariagroup that, over the years, has developed into one of the groups at the forefront of the industry. Panariagroup has established an important Research Centre made of highly qualified personnel: technicians, engineers, architects and researchers. Every day, they study new solutions to successfully compete in the field of floor and wall tiles, thus maintaining the position of market leader.

MICROBAN® TECHNOLOGY. COMPLIANCE WITH SAFETY REGULATIONS

The use of Microban® antimicrobial technologies for Panariagroup PROTECT laminated porcelain and porcelain tiles is in full compliance with global regulatory bodies which govern the production applications and uses adopted by the market. In the United States, the Environmental Protection Agency (EPA) has regulatory jurisdiction and in the EU, the biocidal active components of Microban® antimicrobial additives are notified in

accordance with the Biocidal Products Regulation (BPR) No. 528/2012 for the relevant product types in accordance with their end use application. The Microban® additive used in Panariagroup PROTECT ceramic tile products is also approved for use in direct food contact applications regulated under the Food Contact Materials Framework Regulation (EC) No. 1935/2004. It is also registered with the EPA (Environmental Protection Agency) and FDA (Food and Drug Administration) in the United States.

THOROUGHLY TESTED APPLICATIONS

To substantiate the antimicrobial claims, Panariagroup and Microban® also use external independent laboratories which are highly specialized at carrying out ISO 22196 or ASTM E3031-15 testing, such as IMSL (Industrial

Microbiological Services Limited) in the UK and Artest in Italy.

FREE TO FEEL GOOD

Microban® silver ion based technology, integrated into PROTECT antimicrobial surfaces, has a powerful action against bacteria but has no harmful effect on the environment nor human health and well-being.



ANGELA

FREE TO MOVE.

Angela loves to work out. After a long day at the Office, carrying out her duties, confined to her desk, she can't wait to let her hair down at the gym. Here she can finally devote herself to her favourite activities, because only when you exercise do you truly feel free to focus on what matters: your well-being. And PROTECT antimicrobial surfaces are the best personal trainers anyone could want.

PROTECT SURFACES ARE IDEAL IN GYMS, SAUNAS, CHANGING ROOMS, YOGA AND PILATES CENTRES, MASSAGE PARLOURS.



THE STRENGTH OF A WORLDWIDE LEADING PARTNER: MICROBAN®

Panariagroup has chosen to develop PROTECT products together with Microban®, the world's leading antimicrobial technology brand. Thanks to its global approach, Microban® technology is known and appreciated by more than 250 brands worldwide and used in more than 1000 products, not only in construction but also in commercial and consumer goods.

Microban®, which has been operating for over 25 years, has managed to establish itself as a world leader through painstaking research and constant innovation. The company's areas of operation have been extended into all sectors which need antimicrobial solutions, like bathroom and kitchen accessories, sinks and toilets. But that's not all: even in the commercial sector, wherever

there is a proliferation of micro-organisms and mould, Microban® is able to intervene effectively, helping to create a healthy environment and to protect the products in question from bacteria, damage and bad odours. There are numerous types of objects and materials that can rely on this technology: changing tables, food boxes, elevators, mattresses, professional cleaning equipment and much more.

Globally, Microban® has partnered up with many brands such as: Whirlpool, Bata shoes, as well as Rubbermaid, Johnson & Johnson, 3M, Gap, Fila and Sharp, all companies focused on innovation and consumer protection. And of course, Panariagroup.

MICROBAN®

IS USED BY

FILA **SHARP** ***Bata***

3M

Whirlpool
HOME APPLIANCES

Rubbermaid®

Johnson & Johnson

PROTECT SURFACES ARE IDEAL FOR BUSY AREAS, SHOPPING CENTRES,
HOSPITALS, WORKPLACES, TRAIN STATIONS, AIRPORTS, SPORTS GROUNDS.

DIEGO E ANNA FREE TO DESIGN.

Diego and Anna leave nothing to chance, a serious architect wouldn't do that. For this reason they design spaces and environments relentlessly and with obsessive precision, creating ideas that genuinely solve any housing need. Starting from the flooring, a fundamental base for all actions, reaching up to the sky. Why choose PROTECT, because among all the surfaces available this is a choice which is anything but superficial.



FAQ

1. What is silver-based antimicrobial technology?

PROTECT products are made with Microban®, an active antimicrobial 'ingredient' that can be added to a wide range of consumer, industrial and medical products to prevent the growth of bacteria on the surface of the item. As it is integrated at the point of manufacture it offers a long-term solution to the prevention of bacterial growth, reducing the risk of cross-contamination. The technology developed by Microban® and Panariagroup on PROTECT porcelain tiles and slabs is silver-based.

2. Is the silver shield antimicrobial technology for PROTECT line products always active?

Yes - The silver antimicrobial technology developed for traditional porcelain and laminated porcelain products from the PROTECT line, offers antimicrobial protection constantly, day and night, 24 hours a day, with and without sunlight and, unlike other technologies, does not need UV light to be effective.

3. Can the antimicrobial technology be applied to tiles of any colour?

Yes - Microban® silver antimicrobial technology does not alter or whiten the original colour of the ceramic surface (unlike other technologies), and can therefore be applied onto any coloured tiles and slabs, even the darker ones.

4. Which micro-organisms is this protection effective against?

The Microban® antimicrobial additive developed for PROTECT products is effective against a range of gram positive and gram negative bacteria such as *Escherichia coli*, *Staphylococcus aureus* and *Klebsiella pneumoniae*.

5. Is the action of Microban® antimicrobial technology permanent on PROTECT tile surfaces?

Yes - The Microban® protection developed for Panariagroup is not an organic based treatment applied to finished products (such as in the case of waxes or resins), but is permanently integrated into the tile during the industrial firing process. Therefore, it can't be washed away or consumed.

6. Does this protection begin working immediately?

Yes - The integrated protection in PROTECT line products is always active. As soon as bacteria and germs come into contact with the surface, the protection developed with Microban® immediately begins to prevent them from growing and interrupts the reproductive cycle. Since they are unable to grow or reproduce - the tile surface stays cleaner for longer.

7. Does this protection wear off over time?

No - Microban® active ingredients are incorporated into PROTECT line of products during the manufacturing process. Evenly distributed throughout the surface this technology actively protects the entire surface area throughout the entire lifecycle of the product.

8. What is the main advantage provided by the antimicrobial protection in PROTECT products?

This technology, together with regular cleaning operations, contributes to improved hygiene levels and reduces the risk of cross-contamination, and guarantees an additional level of protection in any environment. This protection provides a continuous action against the growth of bacteria that cause biofilms, bad odours and cross contamination.

9. Is this protection safe?

Yes - Microban® antimicrobial technology used in PROTECT line products has a long history of safe use. In addition, this technology is used in various industrial and consumer healthcare products, such as detergents, water filters, stationery and much more. The active Microban® antimicrobial protection used in PROTECT tile surfaces is notified in Europe in accordance with the Biocidal Products Regulation (BPR) No. 528/2012 and has undergone extensive independent laboratory testing.

10. Are ceramic surfaces naturally resistant to bacteria?

No - Even though many ceramic tiles have a non-porous surface, which provides an important benefit in keeping bacteria from penetrating, bacteria can still multiply and grow on the surface.

As Microban® antimicrobial technology is integrated into PROTECT products, it prevents the growth of bacteria on the tile surface, where it is most needed.

11. Do PROTECT products need to be cleaned?

Yes - The antimicrobial protection is not a substitute for a thorough cleaning routine. This silver-based technology provides an added level of hygiene protection that helps fight the growth of harmful bacteria and prevent cross-contamination.

12. Is it necessary to follow particular precautions when installing products from the PROTECT line?

No - These products are installed in the same manner as normal tiles, following the procedures in force in various countries and described in Panariagroup installation guidelines and Technical Manuals.

13. Is it easy to clean PROTECT line products?

Yes, cleaning PROTECT line items is easy, as indicated in the general catalogue. As the action of the active agents of Microban® happens on the surface of the tile, it is important not to use any cleaning products that create a film that would block the contact between the tile and the bacteria. During cleaning and care activities, do not use

detergents containing wax or that create films on the surface and do not apply resin, wax, protective substances, etc.

14. How does this protection differ from that of disinfectants?

Detergents and disinfectants are an immediate but short term solution. They offer a very limited residual activity after the drying of the treated surface. Bacteria can then very quickly start to grow and reproduce. On the other hand Microban® antimicrobial additives, integrated in PROTECT products, guarantee long lasting protection, continuously working to prevent the growth of bacteria everyday and throughout the entire lifecycle of the product.

15. Can antimicrobial tiles contribute to generate resistant strains of bacteria?

Dangers from resistant strains of bacteria are primarily related to antibiotic resistance in which bacteria no longer respond to a specific antibiotic. The Microban® antimicrobial additives designed for the ceramic tiles and slabs of the PROTECT line are not antibiotic. They have multiple targets and modes of action on the bacteria (unlike the majority of antibiotics which are target specific). This reduces the risk of potential resistant strain development.

For further information and to download the attachments related to the PROTECT line, visit the website protect.panariagroup.it



INFORMATION FOR DESIGNERS AND BUILDING SUPERVISORS

Data for tender specifications, Panariagroup PROTECT porcelain:

Porcelain tiles and slabs with a high "antibacterial" activity, capable of reducing up to 99.9% of *Escherichia coli*, *Klebsiella pneumoniae* and *Staphylococcus Aureus* bacteria (ISO 22196 or ASTM E3031-15 standards) thanks to the action of Microban® silver-based, integrated technology registered under the European Biocidal Products Regulation (BPR) No. 528/2012.

Porcelain tiles and slabs with antibacterial properties:

- active day and night, 24 hours a day;
- active both in light and dark conditions, with no need to use UV lamps;
- active on the surface of the material;
- permanent, integrated into the surface during industrial firing at a temperature of 1200 °C (It is not a surface treatment applied after firing);
- active over time, resistant to wear, lasting for the lifetime of the tiles, it is permanent and does not to be retreated over the lifecycle of the product.

Available "antibacterial" porcelain tiles and slabs:

- available on all colours of the collection, even the darkest (Microban® technology integrated in PROTECT products does not "whiten" dark colours)
- on natural and honed (lappata) finishes.

"Antibacterial" porcelain stoneware tiles and slabs, ideal for any environment, especially those that call for a high standard of hygiene and cleanability, such as:

- hotels, restaurants, canteens,
- hospitals, operating theatres,
- wellness centres, spas, swimming pools, gyms, showers,
- retirement homes, schools, nursery schools,
- agricultural and food industries, slaughterhouses,
- public areas and offices,
- public and private kitchens and bathrooms.

LEED Buildings

PROTECT tiles with Microban® technology manufactured by Panariagroup entitle you to be awarded 1 point for the ID 1 Innovation in Design Credit (ref. NC, CI, CS and SCHOOLS LEED Rating Systems).

Antimicrobial grouts

There are antimicrobial grout products available to both the consumer and trade market, to ensure protection on the entire surface.

Information for installation and cleaning

PROTECT products are installed in the same manner as other tiles, following the procedures in force in various countries and described in the installation rules and Technical Manuals of Panariagroup laminated porcelain.

For information about cleaning and care of Panariagroup PROTECT porcelain and laminated porcelain, refer to the instructions given in the general catalogues and instruction manuals.

Since the antibacterial action of Microban® active principles is exerted on the surface of the tile, it is important to prevent films of any kind from forming on the surface since these may prevent contact between bacteria and the ceramic tile. During cleaning and care activities, do not use detergents containing wax or that create films on the surface, rinse thoroughly and do not apply resin, wax, protective substances, etc.

GLOSSARY

Bacterium

Single-celled microscopic organisms that lack nuclei and other organized cell structures. "Bacteria" is the plural form of "bacterium." While several bacterial species are pathogenic (capable of causing disease), many are non-infectious.

Microorganism

An individual form of life that is capable of growing, metabolising nutrients, and reproducing. Organisms can be unicellular or multicellular. They are scientifically divided into five different groups that include prokaryotes, protists, fungi, plants, and animals. A microorganism is an organism of microscopic or sub-microscopic size, such as a bacterium.

Cross contamination

Transmission of microorganisms from contaminated materials, surfaces, articles or humans to non-contaminated materials, surfaces etc.

DNA

Deoxyribonucleic acid. A nucleic acid that carries the genetic information in the cell and is capable of self-replication.

Ag Ion (silver ion)

A silver ion is a silver atom which has lost one electron and therefore carries a positive charge.

Active substance as defined by the Biocidal Products Regulation

A substance or microorganism including a virus or a fungus having a general or specific action on or against harmful organisms.

Biocidal Product

Active substances and preparations containing one or more active substances, put up in the form in which they are supplied to the user, intended to destroy, deter, render harmless, prevent the action of, or otherwise exert a controlling effect on any harmful organism by chemical or biological means.

Biocide

This is an active substance or biocidal product as defined by the Biocidal Products Regulation.

Biofilm

Communities of microorganisms attached to a surface. Microorganisms undergo profound changes during their transition from planktonic (free-swimming) organisms to cells that are part of a complex, surface-attached community.

Gram-positive bacteria

These are able to be stained with a special violet/blue stain and therefore show up under the microscope.

Gram-negative bacteria

These bacteria do not retain the violet / blue stain and need to be stained with a special counter-stain, which gives them a pink / red colouration under the microscope.

Escherichia coli

E. coli are a consistent inhabitant of the human intestinal tract. Pathogenic strains of *E. coli* can be responsible for urinary tract infections, intestinal diseases such as gastroenteritis and neonatal meningitis. *E. coli* serve as an indicator of faecal contamination of water and can also be found outside the body in contaminated water environments.

Staphylococcus aureus

S. aureus are Gram-positive spherical bacteria which occur in microscopic irregular clusters resembling grapes. *S. aureus* mainly colonises human nasal passages but can also be found on the skin, mucous membranes such as in the oral cavity and the gastrointestinal tract. They can also be found in soil. *S. aureus* can cause surgical infection and skin infections. They can also cause skin lesions such as boils and styes and more serious infections such as pneumonia and urinary tract infections.

Klebsiella pneumoniae

K. pneumoniae are Gram-negative rod shaped bacteria. They belong to the normal intestinal flora of man. Most frequent *K. pneumoniae* infections include lower respiratory tract and catheter-associated urinary tract infections.





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