shield plus

by Panaz™

protective intelligent fabric

Fast acting, effective and durable anti – microbial fabrics and vinyls. Proven to be effective against Coronavirus.

Hygienic protection with over 15 years clinical usage.






For over 35 years Panaz has been a major textile supplier to the National Health Service in the UK and the global healthcare industry. During that time, we have led the development of anti-microbial treatments for interior furnishing fabrics, initially with research and development instigated to inhibit the spread of hospital acquired infections such as MRSA, klebsiella and the C diff spore. However, since the emergence of coronavirus, variants such as SARS2 Covid-19 attention has now turned towards protecting people during their everyday lives.

Our Shieldplus fabrics have been used effectively in clinical situations for over 15 years. By using Panaz fabrics treated with Shieldplus, environments can be made safer and with the largest collection of fabrics treated with Shieldplus in Europe, design, flame retardancy and comfort need not be compromised.

Routes to infection

The routes to infection are many and diverse and it is difficult to quantify the role of the environment in the transfer of infection. Some research reports suggest that 19% of contamination is attributed to the immediate environment, others as much as 40%. The greatest risk for people is contamination in the immediate vicinity or from airborne particulates.

We all know that ‘coughs and sneezes spread diseases’ but so do contaminated surfaces.

How long the new coronavirus can live on surfaces

Surface	Lifespan
Paper and Tissue paper**	3 hours
Copper*	4 hours
Cardboard*	24 hours
Wood**	2 days
Cloth**	2 days
Stainless steel*	2-3 days
Polypropylene plastic*	3 days
Glass**	4 days
Paper money**	4 days
Outside of surgical mask**	7days

* At 69.8 F to 73.4 F (21 C to 23 C) and 40% relative humidity.
** At 71 F and 65% relative humidity.

In the Workspace

As work environments change and become more mobile and collaborative, companies are providing shared spaces to offer a versatile and flexible mode of working. With the increase of shared workstations comes the need to minimize the spread of harmful bacteria.

Recent studies have indicated the following:

- More than 10 million germs are located around the average workstation, including seating.
- 72% of people report going to work despite being sick.
- 80% of infections can be transmitted by touch.
- Workers in open plan offices reported taking 63% more sick days than those in private offices.

In Cruise & Hospitality

Hospitality environments by their very nature are public areas and frequented by many people. Providing hospitality guests with a clean and secure environment can only enhance their experience and wellbeing and bring a sense of comfort to the hotel operations team.

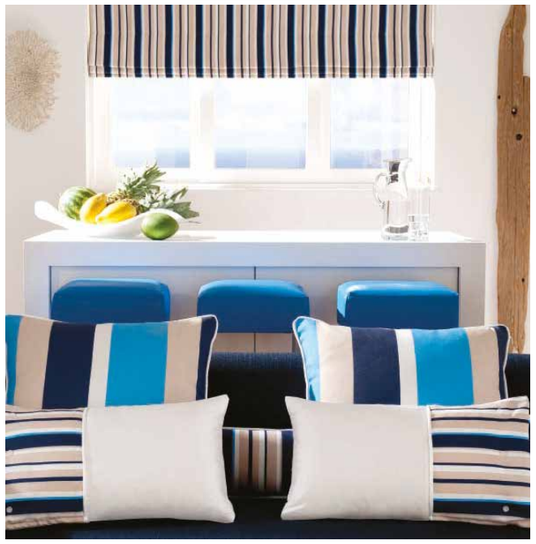
The costs associated with bacterial or virus outbreaks and the reputational damage it causes can be very significant. Any opportunity to minimise this risk by instigating a hygiene protocol along with protective fabrics will reduce damage significantly.

In Healthcare

Hospital acquired infections have been increasing globally at a significant rate. The impact such infections have on patient safety, health and well-being brings distress to both them and their families. This burden to human welfare is compounded by the financial cost to the NHS in terms of service delivery not to the hospital alone but to the extended network of healthcare services with prolonged inpatient stay, further treatments, outpatient consultations and subsequent visits to GPs and community care.

In Education

Educational facilities now host students from home countries and from a broad array of geographical locations around the world. It is essential that the facilities offered to them while they learn, socialise and sleep create the safest environment possible. The use of Shieldplus on furnishings and upholstery is an effective and durable anti-microbial answer to provide a barrier and reduce infection.



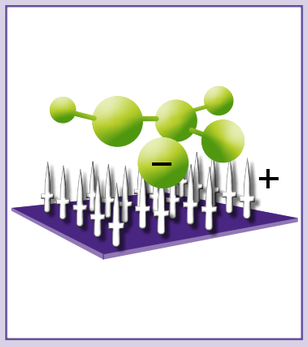
Why is Shieldplus so effective?

The vast majority of antimicrobials work by migrating (or leaching) from the surface they are applied to. These conventional leaching types of anti-microbials such as silver and copper leave the textile and chemically enter or react with the micro-organism, essentially acting as a poison. These can initially be effective, but they are soon used up and depleted in the process of working, washing, drying etc. This depletion can be harmful as it may encourage the micro-organism to mutate or become immune to the treatment.

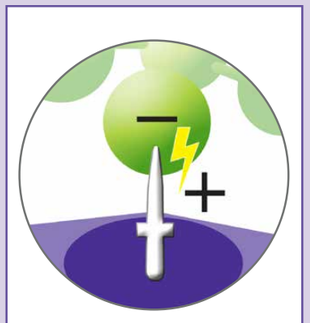
Not only do they deplete but they also take too long to do their job (up to 4 hours) and they are environmentally harmful.

Our effective alternative, Shieldplus, is a nano-technology, a non-migrating (non-leaching) antimicrobial protection that acts on the physical structure of the cell by piercing the cell wall. This non-migrating technology is based upon the application of a permanent coating on the textile. This coating destroys bacteria on contact. It is permanently attached to the textile: it attracts, pierces, deactivates and electrocutes the biochemicals within each microbe or virus.

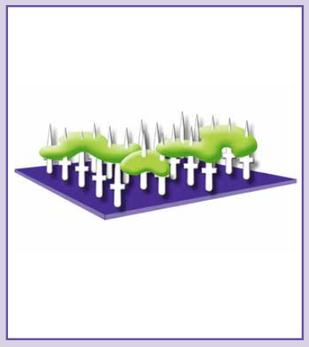
How it works:



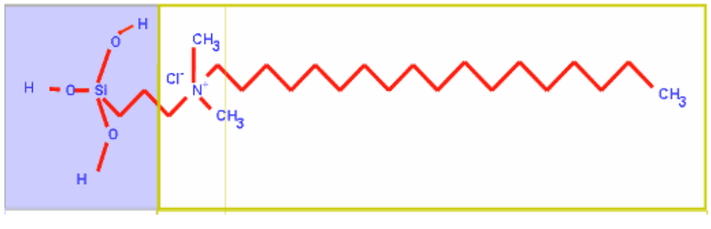
Negatively charged micro-organisms are attracted onto the positively charged molecular coating of Shieldplus.



Cell wall is pierced, killing the microbe and preventing growth and proliferation.



Shieldplus provides a safe and optimal antimicrobial protection, even after frequent cleaning.



Chemical molecular chain demonstrating adhesion to the fabric and the carbon piercing mechanism.

Germ spectrum of efficiency

Bacteria

Clostridium difficile **spore**
Micrococcus sp.
Mycobacterium smegmatis
Staphylococcus epidermidis
Mycobacterium tuberculosis
Enterobacter agglomerans
Brucella cania
Acinetobacter calcoaceticus
Brucella abortus
Staphylococcus aureus (pigmented)
Brucella suis
Staphylococcus aureus (non-pigmented)
Streptococcus mutans
Klebsiella pneumoniae ATCC 4352
Bacillus subtilis
Pseudomonas aeruginosa
Bacillus cereus
Pseudomonas aeruginosa
Clostridium perfringens
Pseudomonas aeruginosa PDR-10
Haemophilus influenzae
Streptococcus faecalis
Haemophilus suis

Escherichia coli ATCC 23266
Aspergillus fumigatus
Tricophyton mentagrophytes
Aspergillus versicolor
Tricophyton interdigitalie
Aspergillus flavus
Trichoderma flavus
Aspergillus terreus
Chaetomium globusum
Penicillium chrysogenum
Rhizopus nigricans
Penicillium albicans
Cladosporium herbarum
Penicillium citrinum
Aerobasidium pullulans
Penicillium elegans
Fusarium nigrum
Penicillium funiculosum
Fusarium solani
Penicillium humicola
Gliocladium roseum
Penicillium notatum
Oospora lactis
Penicillium variabile

Stachybotrys atra
Lactobacillus casei
Escherichia coli
Leuconostoc lactis
Proteus mirabillis
Listeria monocytogenes
Proteus mirabillis
Propionibacterium acnes
Citrobacter diversus
Proteus vulgaris
Salmonella typhosa
Pseudomonas cepacia
Salmonella choleraesuis
Pseudomonas fluorescens
Corynebacterium bovis
Xanthomonas campestris
Aspergillus niger
Mucor sp.

Yeast

Saccharomyces cerevisiae
Candida albicans 1

Algae

Oscillatoria borneti LB143
Schenedesmus quadricauda
Anabaena cylindrica B-1446-1C
Gonium sp. LB 9c

Selenastrum gracile B-325
Volvox sp. LB 9
Pleurococcus sp. LB11

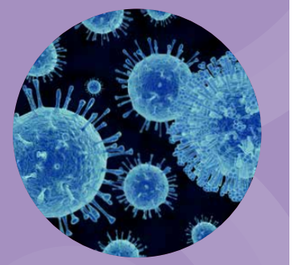
Chlorella vulgarus

Virus

Norovirus
Coronavirus


E-COLI


MRSA


NOROVIRUS

The Soil Test

Shieldplus antimicrobial lasts and lasts and lasts and lasts... How do we know? We conducted the SOIL TEST.

This is the most severe biological exposure for textile products. We took a piece of Panaz flame retardant curtain fabric treated with Shieldplus and a piece of competitor fabric with a conventional silver leaching antimicrobial and immersed them both into a warm, moist, live soil.

Imagine the burial of an antimicrobial fabric in a ‘live’ compost for 28 days at 30 degrees. This represented an intense acceleration of microbial activity over a significant period of time. There are billions of micro-organisms found in a gram of compost so the fabric is put under extreme duress.

Following this confinement, samples of the Shieldplus and silver technology fabrics were sent to the laboratory for antimicrobial testing. Following heat sterilisation, the fabrics were tested for antimicrobial activity against MRSA and E.coli.

Testing for non-leaching silver antimicrobials performed under dynamic contact conditions: ASTM E2149-10 and testing for leaching antimicrobials AATCC147: 2004.

Results

Conventional silver leaching technology results

Parallel Steak Method AATCC 147:2004 for Leaching Antimicrobials.

“The competitor’s test product showed no zone of inhibition when place in contact with MRSA. Limited growth was observed underneath the fabric indicating low level of antimicrobial protection”. In other words, the antimicrobial had depleted over time and no longer afforded protection.

Shieldplus™ 1 - Conclusions

Shieldplus™ gained a near perfect result.

To quote our laboratory:

“The product Shield 1 was determined to have antimicrobial activity against both MRSA and E.coli.
The test material produced a 4.01 log reduction (99.99%) against MRSA and a 99.98% (3.75 log) reduction against E.coli.”

The Responsible Choice

Extensive testing and verification lie at the foundation of our claims. Certificates demonstrating the speed, the efficacy and the safety of our products are readily available. Including demonstrable effectiveness against the Nora and Coronavirus.

Many antimicrobials are literally toxic. Shieldplus has been tested to ISO 10993-5:2009 Biological evaluation of medical devices Part 5: Tests for in vitro cytotoxicity and proven non-toxic.

Panaz has conducted these tests to provide assurance that the final product is safe to use.

Key Features and Benefits

Bonded
Resilient to high temperatures and rigorous washing.

Permanent
Durable for the useful life of most products.

No Migration
Won't leach into the environment or transfer to other articles or to the skin - no "zone of inhibition".

Variety of end uses
Can be applied to varying weight base cloths.

Active Hygiene
Controls the development of dust mites by destroying some fungi necessary in the dust mite's food chain.

Tried and tested
No arsenic, heavy metals, polychlorinated phenols.

Not a chemical poison
More than 30 years in the market.

Mechanical deactivation
Does not induce microbial mutation or bioaccumulation.

Effective Quality control
simple analytical and visible test is available to detect the presence of the anti-microbial.

Unmatched safety profile
Not harmful for human and environment, important toxicity data is available

Odourless and colourless

Panaz®

www.panaz.com

To specify fabrics from the Panaz fabric portfolio with Shieldplus finish please consult the Panaz website or price lists, or contact the Panaz international sales office in Europe, the UK or USA.

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