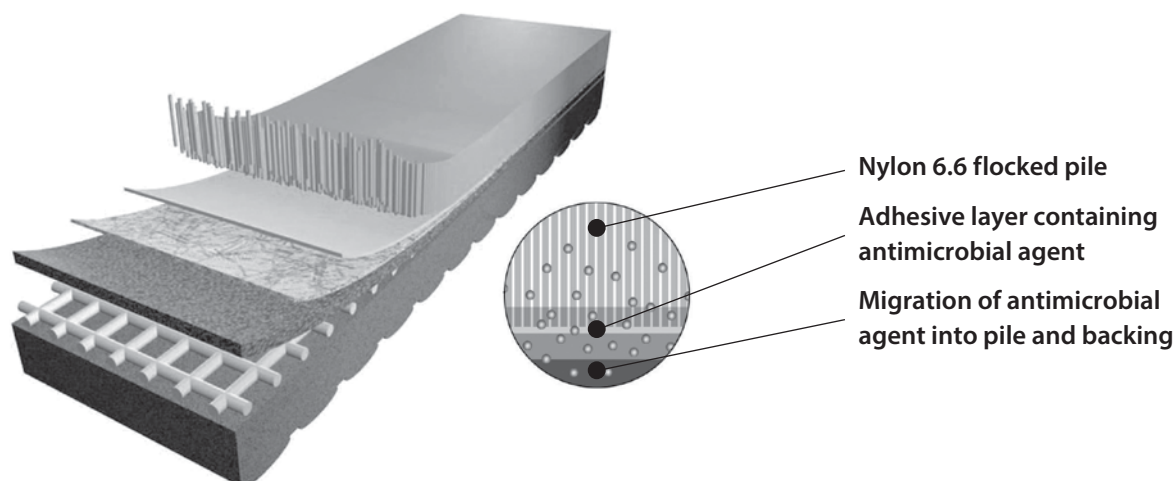


INFECTION CONTROL AND AIR QUALITY IMPROVEMENT OF FLOTEX FLOCKED FLOOR COVERINGS

The structure of Flotex includes an integral antimicrobial agent



Qualifications for Flotex with antimicrobial agent

AATCC174 parts 1, 2 and 3

- Including *Proteus vulgaris*.

SN195 920

- *S. aureus* (gram positive).
- *S. aureus* (MRSA) (gram positive).
- *Bacillus subtilis* (gram positive).
- *Escherichia coli* (gram negative).
- *K. pneumoniae* (gram negative).

SAN BIO 12/9

- *Tricho. mentagroph* (fungi).

CAMRASO E6-6:2002

- *E. coli*.

ISO 846

- Parts A, B & C.

Antimicrobial treatment

- Active ingredient is based on a zinc compound.
- Registered for use in carpets by the US Environmental Protection Agency (EPA) number 3090-218.
- Meets the requirements of the US FDA and EU Directive 2002/72 for use in PVC coming into contact with foodstuffs.
- Used in skin contact applications (such as anti-dandruff shampoos).
- Not a carcinogen, mutagen, teratogen or a skin sensitiser.
- Free from Arsenic, Cadmium, Lead, Mercury or other toxic heavy metals, phenols or formaldehyde.
- Does not contain VOC's.
- Does not accumulate in the environment.

Some key benefits of Flotex with antimicrobial treatment

- Effectively combats the development of stale odours that are associated with bacterial growths feeding on absorbed liquids and soil.
- The antimicrobial treatment controls the growth of *E. coli* and other potentially harmful organisms (gram positive and gram negative).
- The spread and growth of athlete's foot fungi is inhibited on Flotex and has been tested in independent laboratories.
- Prevents the growth of MRSA (Methicillin Resistant *Staphylococcus aureus*) on Flotex.

Proven to be effective under the most rigorous testing

Method

Samples were subjected to 20 hot water extractions (also known as steam cleaning) with standard detergent at 70°C (as complying with ISO 11379 – textile floor coverings: laboratory cleaning procedure using spray extraction). Then tested in accordance with AATCC 174 to assess durability of antimicrobial protection.

Then tested in accordance with AATCC 174 to assess the durability of the antimicrobial protection.

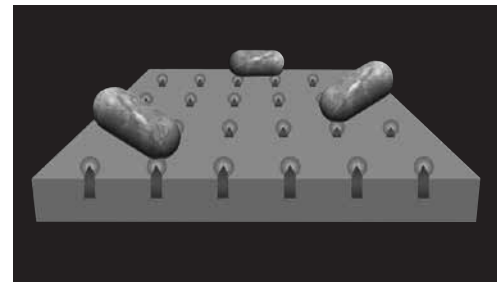
Results	% reduction in bacteria	
	gram +	gram -
As produced	99.96%	99.95%
After 20 washes	99.96%	99.87%
Conclusion No deterioration in effectiveness recorded		

Antimicrobial treatment

Mode of action

- The active ingredient is anchored in the substrate during manufacturing.
- Microbes draw near the surface of the protected substrate.
- The active ingredient electrically depolarises* the microbes' membrane and thus deactivates them. Since the active ingredient is built-in, the effect is durable.

*E. Ermolayeva, D. Sanders, Mechanism of Pyrithione-Induced Membrane Depolarization in *Neurospora crassa*, Appl. and Environmental Microbial. 3385–3390, 1995.



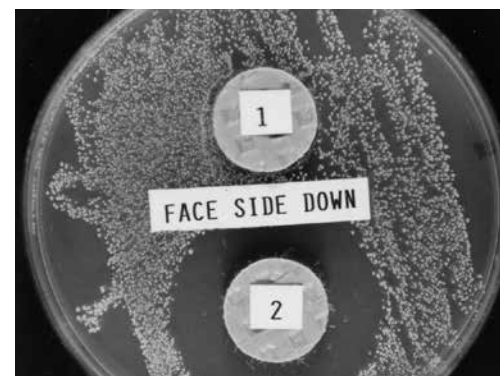
Evaluating antibacterial effect

Test method SN 195 920

Agar plate test

Here, a sample of the carpet is placed in contact with agar gels that have been inoculated with bacteria *Staphylococcus aureus* and *Klebsiella pneumoniae*.

Both pile and backing are tested. After incubation the samples are assessed. There should be a minimum of no growth of bacteria in the contact area with the carpet. Ideally, there should be a 'zone of inhibition' around the sample where the bacteria have failed to grow.

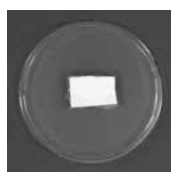


1. Standard flooring. 2. Flotex.

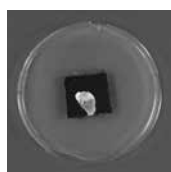
Comparing products – Test method SN 195 920



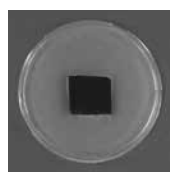
Standard Flotex



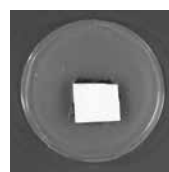
PVC backed sports floor



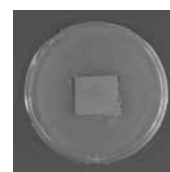
Bitumen backed impervious nylon 6.6 carpet



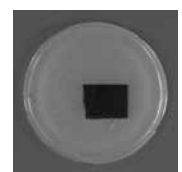
Studded rubber floor tile



Latex backed impervious polypropylene carpet



PVC safety floor



Wood effect vinyl

No growth where gel is in contact with Flotex and a zone of inhibition extending around the sample – **PASS**

These generic products show no inhibition of growth and no zone of inhibition – **FAIL**

Allergy approved

Flotex releases over twice as many allergens compared to the cleaning of conventional carpets. More harmful allergens are thus removed, creating a more comfortable environment for asthma and allergy sufferers.

