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Antibacterial Properties of Resco AntiBac Panel

Background:

The panel marketed by Resco as Antibac, is a compact laminate panel from Maica Laminates. The manufacturers of this product claim that it uses “silver ion technology from Biocote” which is “proven to reduce levels of microbes” and “provides safe and long lasting protection”. Reference is made to JIS Z2801 and ISO 22196 standards for determining antimicrobial activity.

As an independent microbiologist, I undertook to examine these claims and to determine whether they are sound.

Materials and Methods:

Samples of the following products were supplied by Resco:

- Maica Panel prior to the addition of silver ion technology
- Antibac Panel

Plastic petri dish material was used as a negative control sample.

A method based on both JIS Z2801 and ISO 22196 was developed, the key principles were:

- *Staphylococcus aureus* (NZRM 147) and *E. coli* (NZRM 480) were grown to 1×10^6 cells/ml in BHI broth
- Test piece samples 50mm * 50mm were sterilised with ethanol and 100µl of bacterial culture applied
- Sterile plastic film (40mm * 40mm) was overlaid
- Inoculated test pieces were incubated at 35°C/24 hours
- Sample and film were stomached with 10ml Neutralising Buffer to recover microorganisms
- Bacteria were enumerated on Standard Plate Count Agar incubated at 35°C/48 hours
- Log differences between materials were calculated.

Results and Discussion:

	Log Reduction	
	Staph. aureus	E. coli
Petri Dish (Negative Control)	0.0	ND
Maica Panel	-0.2	ND
Antibac Panel	4.8	ND

Clear evidence of antibacterial activity by the Antibac panel against *Staph. aureus* was noted. The log reduction level of 4.8 exceeds the Maica claim of 99.99% (4 log units).

Antibacterial activity against *E. coli* could not be determined since the inoculated bacteria did not survive the 24 hour incubation period even on the negative Petri Dish control sample. This was possibly a function of uncontrolled humidity in the standard incubator used, but no further investigations were undertaken.

Conclusions:

A simple equivalent test to JIS Z2801 and ISO 22196 for determining antibacterial activity was developed. The manufacturers claim that Antibac kills >99.99% (4 log) of *Staph. aureus* was confirmed. The antibacterial activity against *E. coli* could not be determined within the constraints of the equipment and time available.