PRODUCT SPECIFICS

Antimicrobial Wall Cladding

BioClad is the world's first proven antimicrobial PVC hygienic wall cladding. Antimicrobial silver ion is impregnated into the hygienic cladding panels at the time of manufacture. This helps stop the growth of bacteria and mould which works continuously for the lifetime of the panels, reducing levels of bacteria such as MRSA, E Coli, Legionella, Salmonella and mold (including Aspergillus Niger) by up to 99.99%. Please visit www.bioclad.com for more information.

The World's No.1 Antimicrobial PVC Wall Cladding System

WHAT IS BIOCLAD?

BioClad – The World's First Antimicrobial PVC Wall Cladding Containing BioCote® Technology

BioClad antimicrobial hygienic wall cladding is a unique product, ideal for almost any environment where a hygienic surface finish is paramount. PVC wall cladding has become an increasingly popular alternative to traditional methods because it offers a range of sophisticated finishes and colours while maintaining its hygienic integrity.

BioClad are continuously developing and improving our range of hygienic wall cladding products and services to provide our customers with the most comprehensive hygienic solutions and the highest standards in design and function.

BioClad PVC wall cladding has silver ions embedded at the time of manufacture, which means that antimicrobial protection is active throughout every sheet and provides 24/7 protection for the lifetime of the product. BioClad antimicrobial wall cladding remains effective even when scratched because our antimicrobial protection cannot be washed away.

The BioClad PVC cladding system is effective at significantly reducing the incidence of bacteria, microbes, protozoans and fungi. This has been proven in both clinical and independent field trials. BioClad panels are now widely used throughout our own National Health Service (NHS)

WHAT DOES BIOCLAD DO?

Utilising Antimicrobial Technology, BioClad will:

- ✓ Inhibit growth of MRSA, E.coli, Legionella, Salmonella and Mould by up to 99.9% PROVEN
- ✓ Continues to control bacteria 24/7
- ✓ Guaranteed protection for expected lifetime of BioClad
- ✓ BioClad will guarantee ADDED VALUE to your hygienic cladding package

WHAT IS BIOCOTE® TECHNOLOGY

BioClad is the world's first proven antimicrobial PVC hygienic wall cladding. Antimicrobial silver ion is impregnated into the hygienic cladding panels at the time of manufacture. This helps stop the growth of bacteria and mould which works continuously for the lifetime of the panels, reducing levels of bacteria such as MRSA, E Coli, Legionella, Salmonella and mould (including Aspergillus Niger) by up to 99.99%.

BioClad has been proven to work in real-world environments. An independent study was undertaken in a UK care home kitchen where 35 surfaces were tested for their bacteria levels. The BioClad hygienic wall cladding registered a 0 level of bacteria. BioClad incorporates silver ion antimicrobial technology. Silver ion technology is a safe, natural antimicrobial that is added at our point of manufacture ensuring it is present throughout our virgin PVC sheets.

WHERE CAN IT BE USED?

CASE STUDY: FIRST EVER TRIAL AT HEARTLANDS HOSPITAL

BioCote® – Proven reduction in bacterial contamination in the hospital environment

BACKGROUND

The control of healthcare-associated infections (HCAIs) remains a priority for healthcare providers, who are employing a combination of infection prevention and control strategies, including hand hygiene, cleaning, training and the adoption of new technologies, to tackle the problem.

As a result, a wide range of infection control products and technologies are emerging on the market, including antimicrobial technology.

BioCote Ltd works with equipment manufacturers, engineering silver ion technology into a variety of healthcare related products, helping them to resist the growth of bacteria and mould on their surface. Silver is an ideal antimicrobial agent because it has a high efficacy against a wide range of medically-important microorganisms and is regarded as non-toxic.

For the NHS to employ new technologies and products they need to show a demonstrable ability to contribute positively to infection control. The use of any product that claims it has antimicrobial efficacy should be supported by a robust evidence-base.

AIM

A pilot study, conducted at the Heart of England NHS Foundation Trust, investigated to what extent BioCote® antimicrobial products can reduce microbial contamination in a healthcare environment.

95.8%	92.6%	43.5%
Reduction in the total hospital environment	Reduction in BioCote protected products	Reduction in adjacent non-protected products

In laboratory tests, BioCote® antimicrobial materials regularly demonstrate reductions in counts of E. coli and S.aureus greater than 95%, compared with untreated samples.
The aim of this study was to determine to what degree this high level of antimicrobial efficacy could be achieved in a real-life hospital environment.

STUDY

Two outpatient units provided the environments for this 18 month pilot study. Unit A was refurbished with BioCote®-treated products including blinds, tiles, door handles, sack holders and light switches and also a number of untreated products. A similar, refurbished outpatient ward containing untreated items (unit B), served as a control. Both outpatient units were similar in terms of volume of people, layout and floor-surface area and were subjected to standard cleaning practice. Both were allowed to function for 12 months before swabbing commenced.

Swabs were collected over a five month period from BioCote®-treated and untreated products in both outpatient units. Swabs were processed for total counts of viable bacteria and results expressed as average counts of colony-forming units (CFUs).

RESULTS

CFU counts from BioCote®-treated products in unit A were between 62% and 98% lower than from comparable, untreated products in unit B.

The products used in the trial were manufactured from a variety of materials e.g plastics and fabrics. CFU counts from these different materials were also compared. CFU counts from BioCote®-treated materials were between 70% (fabrics) to 99% (laminates) lower than untreated equivalents.

CFU counts from BioCote®-treated products in unit A were compared with CFU counts from untreated products in both unit A and unit B. CFU counts on untreated products in unit A were also compared to untreated products in unit B.

This three way comparison provides the following results: the average CFU count from any BioCote® treated product was 95.8% lower than that from any untreated product in unit B the average CFU count from any BioCote® treated product was 92.6% lower than that from any untreated product in the same environment (unit A) the average CFU count from any untreated product in unit A was 43.5% lower than that from any untreated product in unit B.

DISCUSSION

Results suggest that BioCote® antimicrobial products will demonstrate the same high level of antimicrobial efficacy in a real-life environment as seen in laboratory tests, e.g an average bacterial reduction of 95.8%.

In addition to the effect of standard cleaning, BioCote® antimicrobial products showed sustained reductions in bacterial counts, compared to untreated products. Because BioCote® technology does not wear out or wipe off surfaces it can provide a continuous decontamination effect. Treated products can complement cleaning practices, helping to continually reduce levels of bacteria on surfaces and in the wider healthcare environment.

Bacterial contamination on untreated products in unit A was on average 43.5% lower compared with untreated products in unit B. This suggests that a reduction in bacteria on BioCote® antimicrobial surfaces results in lower numbers of bacteria on other surfaces because there are fewer bacteria being transferred. Using a number of antimicrobial objects in a healthcare environment may therefore help the decontamination of the wider environment.

CONCLUSIONS

This study, first published in the Journal of Infection Prevention1, highlights the ability of BioCote®-treated antimicrobial products to reduce levels of bacteria contaminating healthcare settings.

BIOCLAD MICROBIAL TESTS

Bioclad E-Coli MRSA Test

IMSL INDUSTRIAL MICROBIOLOGICAL SERVICES LTD

CERTIFICATE OF ANALYSIS

CUSTOMER

BioCote Ltd.
BioCote House,
Oak Court, Pilgrim's Walk,
Prologis Park,
Coventry,
CV6 4QH
UK

CERTIFICATE NO. 1022237.58/7861

CUSTOMER REF. 70/385

SAMPLE DETAILS

BIOCLAD

DATE RECEIVED 30/07/2013

ORDER NO.

METHOD: Determination of Antibacterial Activity using Test Based on MOD ISO 22196

DATE ANALYSED 31/07/2013

DATE REPORTED 02/08/2013

RESULTS (AS CFU CM^{-2})

SAMPLE	SPECIES	CONTACT TIME		REDUCTION (INITIAL)	
		0 hrs	24 hrs	Log 10	%
POLYPROPYLENE	*E coli*	2.1E+04	5.6E+05		
TREATED PVC SHEET PASTEL GREEN	*E coli*	2.1E+04	< 11.11	≥ 3.28	≥ 99.95%
POLYPROPYLENE	MRSA	1.6E+04	1.4E+03		
TREATED PVC SHEET PASTEL GREEN	MRSA	1.6E+04	< 11.11	≥ 3.16	≥ 99.93%

Key: NS = Poor survival on control supplied.

The above data show the difference in the population following contact with the surface of the samples listed for 24 hours at 35°C under a RH of > 95% relative to the initial population.

IMSL MICROBIOLOGICAL SERVICES LTD
PALE LANE
HARTLEY WINTNEY
HANTS RG27 8DH
UK

MANAGING DIRECTOR
Peter D Askew

Industrial Microbiological Services Ltd Registered in England No 3264423 Registered Office The Oddfellows Hall Oxford Road Reading Berkshire RG1 7NG

Advanced BioClad Fire Certification

BTTG FIRE TECHNOLOGY SERVICES

Date: 10 August 2010
Our Ref: 2702046A1/7/10
Your Ref:
Order No:

Advanced Hygienic
Contracting Ltd

Results

The test results relate only to the behaviour of the test specimens of the product under the particular conditions of test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

Time for flame spread to reach (s) (mm)					Flame spread at 1.5 min (mm)	Maximum flame spread (mm)	Time to reach maximum flame spread (s)
165	215	265	455	710			
--	--	--	--	--	60	60	60
--	--	--	--	--	60	60	60
--	--	--	--	--	60	60	60
--	--	--	--	--	60	60	60
--	--	--	--	--	60	60	60
--	--	--	--	--	60	60	60

The results indicate that the sample met the performance requirements of Class 1.

The information contained on page no's 1/3 of this certificate is hereby certified to be a correct statement of the tests and investigations carried out by FTS on the materials referred to.

Signed B Chambers Date 10 August 2010
B Chambers
Fire Technician

Reported By Date 10 August 2010
P Doherty
Operational Head

BIOCLAD & VOC SPECIFICATION

Antimicrobial PVC Sheets (White)
Special 2 Part Adhesive
Welding Joints with Antimicrobial Rods
Covering Materials
2 Part Bottom H-Trim

SPECIFICATIONS, ACCREDITATIONS AND INSTALLATIONS

K13/145 RIGID SHEET

BioClad® Antimicrobial Rigid Sheet Panelling BioClad® single skin UPVC sheet available in White and Pastel shades and Vivid Gloss sheets.

Finish	Satin
Thickness	2.5mm
Size	2500mm x 1220mm
	2800mm x 1220mm
	3050mm x 1220mm
Max Temperature	60°C
Weight	3.5kg per m^2

SUITABLE SUBSTRATES

12.5mm plasterboard, mechanically fixed plywood, sand and cement rendering 1:3 with steel trowel finish, dust free good quality fair faced brick or blockwork, ceramic tiles which are securely bonded to substrate and degreased, 9mm (minimum) W.B.P resin bonded to substrate.

METHOD OF FIXING

Sheets are fully bonded to suitable substrate with trowel applied BioClad 2-part polyurethane adhesive or BioClad® 1-part water based acrylic adhesive.

CUTTING

Fine toothed blade jigsaw or circular saw with fine TCT sawblade whilst sheet is supported.

JOINTS

Sheets can be sealed by hot welding providing a water-tight finish or joined with matching PVC single and 2-part silicon free trim systems.

BETWEEN SHEET AND FLOOR

Sheets can be overlaid or trim fixed to a vinyl flooring system. Tile and resin flooring trims also available.

INTERNAL/EXTERNAL CORNERS

BioClad® can be thermoformed on site to provide a seamless uniform corner arrangement.

CLEANING

Regular hot soapy water is sufficient for regular cleaning and a mild cleaning product, such as Jif/Cif, is suitable for stubborn marks. Mild solvents may also be used but NOT an abrasive cleaner. Steam cleaning is suitable under 60°C and power hosed no closer than 600mm.

CHEMICAL RESISTANCE

BioClad® is resistant to a wide range of chemicals found within the medical, healthcare and food production industries – Full chemical resistance data report available upon request.

FIRE RATINGS

UK - BS 476 Class 1/0
EU - EN13501 B-S3-D0
USA - ASTM E84 Class A
CAN - Can/UCL-S102.2 Tested
AUS - AS NZS 3837 1998 Tested

BIOCIDAL PRODUCT REGULATION

BioClad® contains silver phosphate glass antimicrobial technology to preserve and prevent degradation caused by microbial growth. Biocide certified by ECHA, FDA, EPA and is BDR compliant. Antimicrobial is an additional line of defence beyond antibacterial with the power to kill fungi, microbes and protozoans as well as bacteria. BioClad's antimicrobial additive is HACCP certified.

WARRANTY/GUARANTEES

Product 20 year warranty. Lifetime warranty on antimicrobial protection.

STORAGE

Sheets to be stored flat and left at ambient room temperature for 24 hours. Minimum temperature 13°C. Maximum Temperature 40°C. Avoid direct sunlight whilst storing.

LIMITATIONS OF USE

Maximum temperature of 60°C. Sheets can NOT be used near naked flame. Full technical information and consultation available from our technical department.

INSTALLATION AND FITTING

Advanced BioClad® Single Skin PVC Panel

Installation and Fitting

Installation

Advanced PVC is a very versatile system which can be easily installed in almost any building.

Wall Preparation

Walls should be level and flat. Remove high spots and fill low spots. Advanced adhesive can be applied to any solid wall or wall surface, eg plaster, gypsum, board, brick, poured concrete, concrete block etc. it can also be applied directly to tiled surfaces that are firmly fixed to the wall. All surfaces must be dry and clean.

Cutting

A jigsaw is the best method of cutting the sheeting.
A fine toothed hand saw can also be used.

Jointing

Fully sealed joints are made using Advanced high impact PVC Silicone free gasket trim system which incorporates a co-extruded seal unique to Advanced. Joints can also be welded upon request.

Internal/external corners

Advanced PVC is normally thermoformed on site, so window and door reveals are neatly clad without an edge joint.

Fixing

Sheets are fixed using a fully bonded method with a trowel for advanced adhesive (or gun applied polymer adhesive subject to wall substrate).

Advanced Panel Adhesive

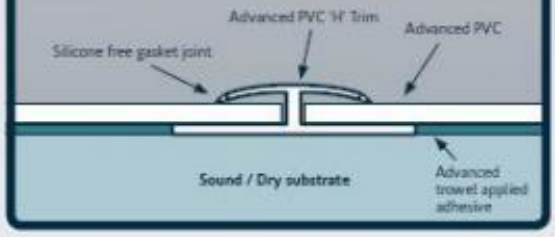
This provides a quick and simple method to fit hygienic PVC cladding to most substrates. This polyurethane adhesive is applied to the back of the panels or onto substrate to give a solid all over bond.

The adhesive is easy to spread and should be applied with a notched trowel (see diagram). To ensure a 100% transfer of adhesive, apply firm, even pressure to the complete surface area when the panels are offered to the wall.

Fitting

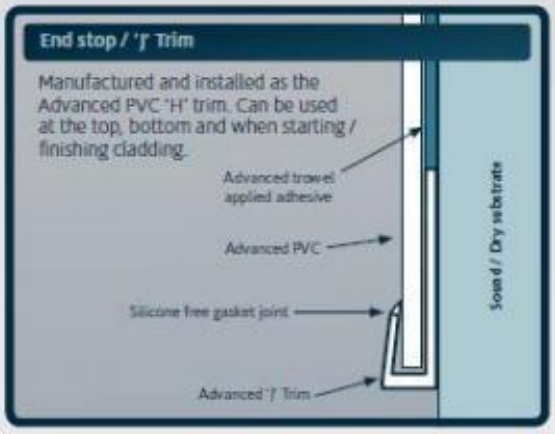
PVC 'H' Trim Single Part

This high impact PVC co-extrusion is fixed to walls and the sheets pushed into each section. The silicone free gasket joint ensures a water-tight seal that can be power hosed or handwashed and will provide a full sealed easy clean finish.



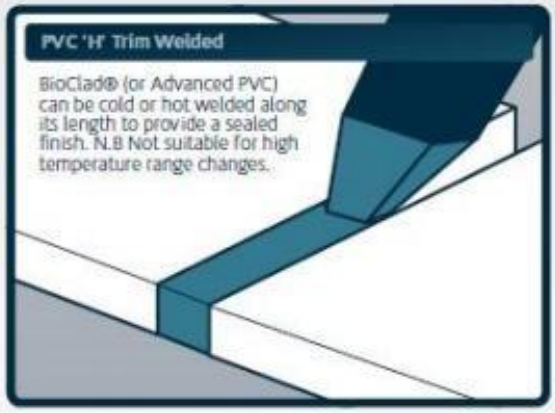
End stop / 'J' Trim

Manufactured and installed as the Advanced PVC 'H' trim. Can be used at the top, bottom and when starting / finishing cladding.



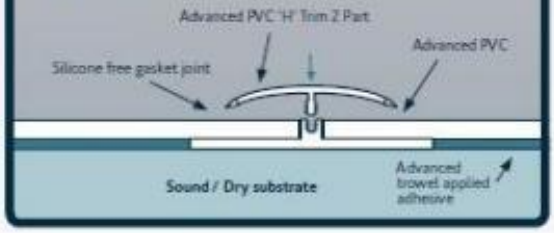
PVC 'H' Trim Welded

BioClad® (or Advanced PVC) can be cold or hot welded along its length to provide a sealed finish. N.B Not suitable for high temperature range changes.



PVC 'H' Trim 2 Part

This high impact PVC co-extrusion is fixed to walls and the sheets pushed into each section. The silicone free gasket joint ensures a water-tight seal that can be power hosed or handwashed and will provide a full sealed easy clean finish.



VINYL FLOORING SPECIFICATION:

Anti-Bacterial Protection
Cove Former by 5 mm
Economical ESD protection
Electrical resistance of R ≤108 ohms
Color Required (Blue)

BioFloor® 15 YEAR WARRANTY

BioFloor® warrants that its safety floor covering ranges shall perform in accordance with their published specification and shall maintain their features for a period of 15 years.

BioFloor® must be installed using BioFloor® specially formulated adhesives, recommended procedures, maintained in accordance with the BioFloor® cleaning guide, subjected to fair wear and tear and fully inspected before cutting and installation.
***For full terms and conditions see the BioFloor® warranty document.**

BioFloor® SPECIFICATION

ANTIMICROBIAL	ISO –22196: 2011	Log10 ≥ 4.83 – 99.9%
Flooring type	EN13845 EN13553	Safety Flooring
Roll dimensions	EN426	2.0m x 20m = 40 m2
Overall thickness	EN428	2.0mm
Weight	EN430	2.45kg/m2
Classification	EN649 EN685	Commercial 34 Industrial 43
Sound insulation	ISO140-8	5 dB
Indentation	EN422	≤ 0.10mm
Wear resistance	EN-660-2	GROUP T
SLIP RESISTANCE	Appendix A (Wet Pendulum) Appendix D (Oil-Wet)	P3 (R10) P4/5 (R11 & R12)
Wear layer	EN429	2.0mm
Flexibility	EN435	PASS 20mm mantrel
Dimensional stability	EN434	<0.4%
Chemical resistance	EN 423	Good SRM20 – has good resistance to dilute acids, organic solvents and alkalis
Colour fastness	EN 20105-B02	Method 3 >6
FIRE performance	EN 13501-1 ISO 9239-1 ISO 11925-2 EC95/28 FMVSS302, CMVSS302 BS 6853:1999 BS 476 pt 7 Din 5510-1 (R10) Din 5510-2 (R11 & R12) CAN/ULC – S102.2 – TESTED	Class Bfl-s1 Critical Radient Flux ≥8kW/m2 Smoke Obscuration <750% minutes PASS PASS PASS Cat 1b Class1 SF2 (R10) SF3 (R11 & R12)