

Product:

Reflex Antimicrobial LT

Exopack™ Advanced Coatings
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Reflex Antimicrobial LT Hardcoated Polyester

Application

Membrane Touch Switch and Fascia-panel manufacture

Features and Benefits

Contains Antimicrobial Agent (SteriTouch®)
 Excellent Print Receptive Coating
 Abrasion Resistant
 Chemical Resistant
 UL Listed Base Film
 UV & Solvent Inks
 Embossable

Reflex Antimicrobial LT incorporates SteriTouch® antimicrobial additive during the manufacturing process.

Based on innovative silver technology SteriTouch® is designed to reduce the growth of harmful organisms such as bacteria, mould and fungi.

All SteriTouch® additives have FDA EFSA and EPA approvals, importantly, they also have BPD (biocidal products directive) support, enabling their use throughout Europe.

The Reflex range of products are high grade overlay films developed to meet the exacting requirements of Screen Printers, Membrane Touch Switch and Fascia-panel manufacturers and their end users.

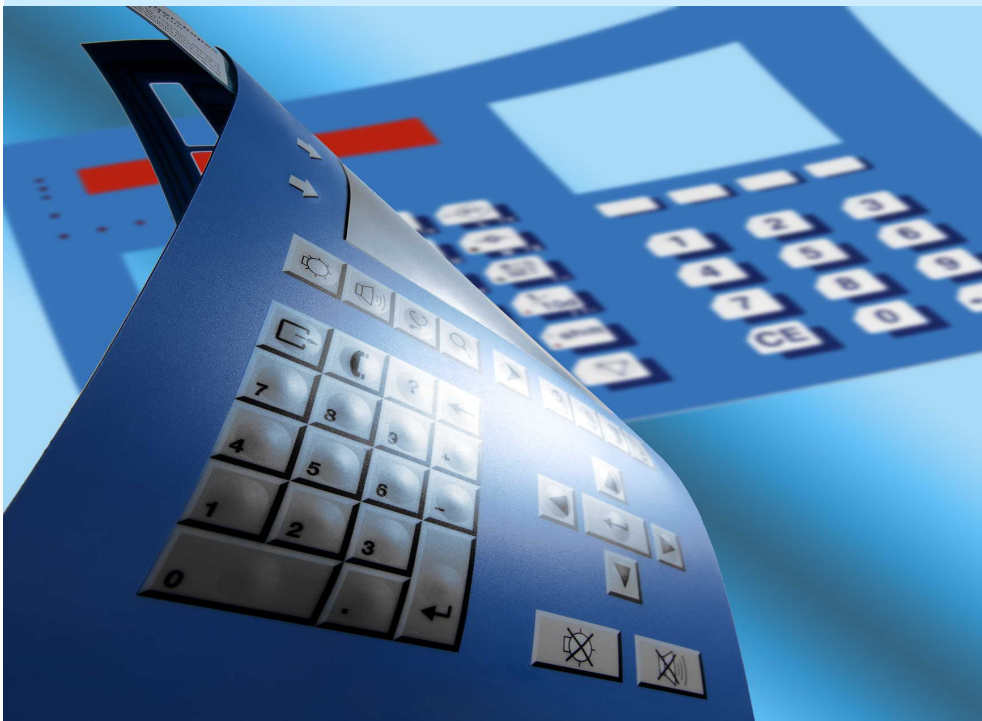
Based on optical grade heat-stabilised polyester it has a typical residual shrinkage of less than 0.3%

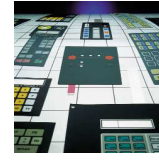
Reflex is coated in 1000 Class Clean Rooms, on one side with a well proven print receptive layer for UV and solvent base inks and on the other side with an advanced UV cured resin.

The integration process ensures even distribution of the SteriTouch® antimicrobial agent throughout the textured hardcoat and the film surface providing a reliable, stable bacterial barrier.

Exopack Advanced Coatings has achieved the optimum performance in hardness, embossability, chemical resistance, extensive switch life and the ability to be die-cut.

Reflex products are designed for interior use only and backed up by a programme of customer oriented development work to respond to customer needs.





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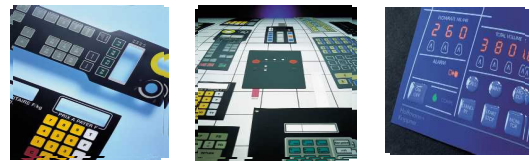
PROPERTIES	TEST METHOD	TYPICAL VALUES UNITS		
General		125 micron	175micron	
Total Thickness	Caliper	145	195	microns
The following properties are given for Reflex LT 125				
Optical				
Light Transmission	ASTM D1003	88		%
Gardner Haze	QCTM 137**	62		%
Gloss Level (60°)	ASTM D2457	18		
Yellowness Index	ASTM E313-05	1.5	2.0	
Mechanical				
Switch Test	See notes (a)	>3Million		flexes
Mar Resistance: Pencil	See notes (b)	2H		
Taber Abrader	QCTM 149** See notes (c))	6		%
Rub Test	See notes (d)	> 1 Million		Rubs
Cross Hatch Adhesion	ASTM D3359	4B		
Electrical				
Volume Resistivity	ASTM D257*	10 ¹⁵		ohm/m
Surface Resistivity	ASTM D257*	10 ¹³		ohm/sq
Dielectric Strength	ASTM D149*	125		kV/mm
Thermal				
Usage Temperatures	Suggested Minimum	-40		°C
	Suggested Maximum	150(80°C if embossed)		°C
Dimensional Stability				
MD	30 mins @ 120°C	- 0.30		%
TD	30 mins @ 120°C	+/- 0.1		%
Flammability	UL Flame Class*	HB		
Chemical				
Spot Test	ASTM 1308	See Technical Manual		%
Immersion Test	MEK 24hrs	Satisfactory		
Chemical Resistance	DIN42 115	See Technical Manual		

* Figures derived from DuPont Teijin Films™ (Melinex® O) ** Figures derived from Internal Test Methods

Notes

- (a) Switch Life: A standard rubber finger (45° Shore hardness) is used to flex an embossed dome switch continuously at a rate of 2 flexes/second. Pressure applied must be sufficient to force the apex of the dome to make contact with the support table. The switch should be examined at regular intervals to check for weight loss due to particles flaking off or cracking.
- (b) Pencil Test: Increasingly hard grades of pencil lead are scored across the surface of the coated PET. The point of the pencil is moved along the surface of the film with increasing force until the pencil breaks or until the surface of the coated film is scratched. The tests are continued until the pencil scratches the surface. The value given is the highest hardness value which does not scratch the coated film.
- (c) Taber Test: A Taber abrader (CF10F Type 4 wheel; 250g load; 10 cycles) is used to abrade the test sample. Measurement of the haze value, before and after abrasion, are taken and the change recorded. The average of three test samples is given.
- (d) Rub Test: A test sample of the coated film is embossed to give a rim profile. The sample is then tested with repeated rubs with a standard rubber finger (45° Shore hardness) which travels along the surface of the film and over the rim. The 'finger' is weighted on a cantilever with a 500g weight. There should be no signs of wear and no evidence of coating delamination.

Reflex Antimicrobial LT



TREATMENT	BACTERIA/MOULD	TEST RESULT	TEST METHOD
None	E-coli	Biocidal Pass	JIS Z 2801:2000
None	PS.Aeruginosa	Biocidal Pass	JIS Z 2801:2000
None	Sal.Enteritidis	Biocidal Pass	JIS Z 2801:2000
None	Kl. Pneumoniae	Biocidal Pass	JIS Z 2801:2000
None	B.Cereus	Biocidal Pass	JIS Z 2801:2000
None	MRSA	Biocidal Pass	JIS Z 2801:2000
None	As.Niger	Biocidal Pass	JIS Z 2801:2000
None	Pe.Funiculosum	Biocidal Pass	JIS Z 2801:2000
None	Str.Mutans	Biocidal Pass	JIS Z 2801:2000
Soaked in IPA for 24 hrs	E-coli	Biocidal Pass	JIS Z 2801:2000
Soaked in IPA for 24 hrs	MRSA	Biocidal Pass	JIS Z 2801:2000
Soaked in Chlorine Bleach for 24 hrs	MRSA	Biocidal Pass	JIS Z 2801:2000
Soaked in Chlorine Bleach for 24 hrs	E-coli	Biocidal Pass	JIS Z 2801:2000
Soaked in Ethanol for 24 hrs	MRSA	Biocidal Pass	JIS Z 2801:2000
Soaked in Ethanol for 24 hrs	E-coli	Biocidal Pass	JIS Z 2801:2000
Soaked in Quaternary Ammonium for 24 hrs	MRSA	Biocidal Pass	JIS Z 2801:2000
Soaked in Quaternary Ammonium for 24 hrs	E-coli	Biocidal Pass	JIS Z 2801:2000
Soaked in Phenol Base Disinfectant for 24 hrs	MRSA	Biocidal Pass	JIS Z 2801:2000
Soaked in Phenol Base Disinfectant for 24 hrs	E-coli	Biocidal Pass	JIS Z 2801:2000
15 Year Lifetime Test*	E Coli	Biocidal Pass	JIS Z 2801-01
15 Year Lifetime Test*	As.Niger	Biocidal Pass	AATCC Method 30
15 Year Lifetime Test*	MRSA	Biocidal Pass	JIS Z 2801-01
Abraded ¹	MRSA	Biocidal Pass	JIS Z 2801:2000
UV Exposed (Front & Back) ²	MRSA	Biocidal Pass	JIS Z 2801:2000
Embossed ³	MRSA	Biocidal Pass	JIS Z 2801:2000

*Film samples are tested by LawLabs using standard test protocols that simulate real life cleaning regimes representing a period of 15 years

¹Simulated Wear Test

²Simulated Graphics Printing and Window Lacquer

³Tested on Embossed Samples



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