



# LabGuardian™

Chemical Resistant Compact Grade Laminates



"Greenlam LabGuardian" chemical resistant compact laminate is designed specifically to shield surfaces from chemical abuse. Resistant to harsh chemicals, bases, solvents as well as harsh cleaning agents, LabGuardian is a durable and cost effective substitute to epoxy, slate and stainless steel.



		Part 2 & 3: 2005		VALUES	TYPICAL VALUES
<b>CLASSIFICATION</b>					
Thickness	mm	EN 438-4-5	13.0 ± 0.60	13.0 ± 0.40	
Resistance to Dry Heat at 180° C	Rating	EN 438-2-16	Not worse than 4	5	
Resistance to Surface Wear	Rev.	EN 438-2-10	350 (min)	600	
Resistance to Immersion in Boiling Water (2 hours)		EN 438-2-12			
a) Mass Increase	%		2.0 (max)	0.20	
b) Thickness	%		2.0 (max)	0.70	
c) Appearance	Rating		Not worse than 4	5	
Dimensional Stability at Elevated Temperature		EN 438-2-17			
a) Longitudinal	%		0.30 (max)	0.07	
b) Transverse	%		0.60 (max)	0.14	
Resistance to Impact by Large Diameter Ball					
a) Drop Height	cm	EN 438-2-21	1800	2500	
b) Diameter of Indentation	mm		10 (max)	7	
Resistance to Scratching	N	EN 438-2-25	2.0 (min)	4.0	
Resistance to Staining					
Group 1 & 2	Rating		5	5	
Group 3	Rating	EN 438-2-26	4	≥ 4	
Resistance to Cigarette Burns	Rating	EN 438-2-30	Not worse than 3	4	
Resistance to Water Soak at 65°C for 48 hours	Rating	IS 2046:1995, Annexure Y	Not worse than 4	5	
Resistance to Crazeing	Rating	EN 438-2-24	Not worse than 4	5	
Flexural Modulus	Mpa	EN ISO 178:2003	9000 (min)	11000	
Flexural Strength	Mpa	EN ISO 178:2003	80 (min)	120	
Tensile Strength	Mpa	EN ISO 527-2:1996	60 (min)	90	
Density	g/cm <sup>3</sup>	EN ISO 1183-1:2004	1.35	1.45	
Chemical & Stain Resistance	Conforms to SEFA 8.1-PL-2010; Chemical Spot Test* (Test Report available on request)				

		NEMA 9-2009		TYPICAL VALUE
Thickness	mm	13.00 +/- 0.60	13.00 +/- 0.40	
Appearance		No ABC defects	No ABC defects	
Straightness	mm/meter (max)	1.5	1.2	
Diagonal Difference	mm (max)	6	3	
Flatness (allowable warp)	mm (max)	12	6	
Light Resistance	Rating (min)	Slight Effect	Slight Effect	
Cleanability	Rating (max)	20	10	
Stain				
a) Reagents 1-10	Rating (min)	No Effect	No Effect	
b) Reagents 11-15	Rating (min)	Moderate Effect	Slight Effect	
Boiling Water Resistance	Rating (min)	No Effect	No Effect	
High Temperature Resistance	Rating	Slight Effect	No Effect	
Ball Impact Resistance	mm (in) (min)	1900 (75")	2540 (100")	
Dimensional Change				
a) Machine Direction	% (max)	0.3	0.15	
b) Cross Direction	% (max)	0.7	0.3	
Room Temperature Dimensional Stability				
a) Machine Direction	% (max)	0.3	0.1	
b) Cross Direction	% (max)	0.7	0.2	
Wear Resistance	Cycles (min)	400	600	
Scratch Resistance	N (min)	2.5	4.0	
Flexural Strength				
a) Machine Direction	Mpa (min) (MD)	124	130	
b) Cross Direction	Mpa (min) (CD)	82.7	85	
Flexural Modulus				
a) Machine Direction	Mpa (min) (MD)	11000	11500	
b) Cross Direction	Mpa (min) (CD)	9650	10000	
Tensile Strength				
a) Machine Direction	Mpa (min) (MD)	124	135	
b) Cross Direction	Mpa (min) (CD)	82.7	90	
Chemical & Stain Resistance	Conforms to SEFA 8.1-PL-2010; Chemical Spot Test* (Test Report available on request)			



Greenlam  
LAMINATES

# TEST RESULTS

## LEGEND

Level 0

No detectable change.

Level 1

Slight change in colour or gloss.

Level 2

Surface etching or severe staining.

Level 3

Cratering, swelling, or erosion of surface and significant deterioration.

Acids	Level	Solvents	Level	Bases	Level	General reagents	Level	Stains & indicators	Level
Aqua Regia: Sulphuric Acid 77%: 65% Nitric Acid (1:1:1)	0	Acetone	0	Ammonium Hydroxide 25%	0	Copper Sulphate 5%	0	Crystal Violet 0.1%	0
Chromic Trioxide (Chromic Acid Cleaning Solution) 60%	0	Amyl Acetate	0	Sodium Hydroxide 10%	0	Ethylene Glycol	0	Gentian Violet 1 %	1
Formic Acid 90%	0	Carbon Tetrachloride	0	Sodium Hydroxide 20%	0	Ferric Sulphate 5%	0	Malachite Green 0.1%	2
Glacial Acetic Acid 99%	0	Chloroform	0	Sodium Hydroxide 40%	0	Gasoline	0	Methyl Red 0.1%	0
Hydrochloric Acid 37%	0	Dimethylformamide	0	Sodium Hydroxide Flakes	0	Hydrogen Peroxide 3%	0	Methylene Blue 0.1%	0
Hydrofluoric Acid 85%	0	Ethyl Alcohol	0			Karl Fischer Reagent	0	Phenolphthalein 0.1%	0
Nitric Acid 20%	0	Ethyl Acetate	0			Kerosene	0	Thymol Blue 0.1%	0
Nitric Acid 30%	0	Formaldehyde 37%	0			Mineral Oil	0		
Nitric Acid 65%	0	Methanol	0			Potassium Permanganate 0.1%	1		
Perchloric Acid	2	Methyl Ethyl Ketone	0			Silver Nitrite 5%	1		
Phosphoric Acid 85%	0	Methylene Chloride	0			Sodium Hypochlorite 5%	0		
Sulphuric Acid 33%	0	N-hexane	0			Trisodium Phosphate 30%	0		
Sulphuric Acid 77%	0	Phenol Solution 80%	0			Urea 5%	0		
Sulphuric Acid 96%	0	Tetrahydrofuran	0			Vegetable Oil (Olive)	0		
		Toluene	0			Water	0		
		Xylene	0			Zinc Chloride (saturated solution)	0		

## About LabGuardian

Manufactured using the unique patented Electron Beam Curing (EBC) Acrylic Resins, GreenlamLabGuardian is the perfect choice for laboratories. Through this technology, the decorative paper is fully impregnated with resins. Without intermediate curing or drying, the paper is then treated with a multi-layer coating of electron beam-curing acrylic resins. This process not only makes the laminate highly resistant to most of the chemicals but also makes the laminate non porous which stops the bacterial growth on the surface, also making it an anti-bacterial product.

Greenlam LabGuardian laminates have been tested by PSB Singapore as per SEFA 1999 Clause 8.1. As per SEFA 1999 Clause 8.1, the laminates were tested for their effectiveness at room temperature for a period of 16 hours, after which they were rinsed off with water and evaluated again after 24 hours.

## Benefits

- ▲ Chemical resistant
- ▲ Cleansing agent tolerant
- ▲ Easy to maintain
- ▲ Durable
- ▲ Cost effective

## Application areas

LabGuardian is meant for all horizontal and vertical surfaces that are subjected to harsh chemicals, alkalis, acids and strong cleaning agents.

Some of these surfaces are:

- ▲ Nurses' stations
- ▲ Physician and dentist's examining and treatment rooms
- ▲ Laboratories and pathologists' workrooms
- ▲ Educational laboratories
- ▲ Photography labs and darkrooms
- ▲ Product testing facilities
- ▲ Beauty salons

## Certification & Commitment to Quality Assurance

- ▲ PSB, Singapore tested Certificate for SEFA 1999 Laboratory Furniture Casework, Shelving and Tables. Recommended Practices Clause 8.1 – Chemical Spot Test Certified
- ▲ GREENGUARD® Indoor Air Quality Certified
- ▲ GREENGUARD® Children and School Certified
- ▲ PSB Corps Surface Spread of Flame Certification
- ▲ PSB Corps Fire Propagation Certification

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