

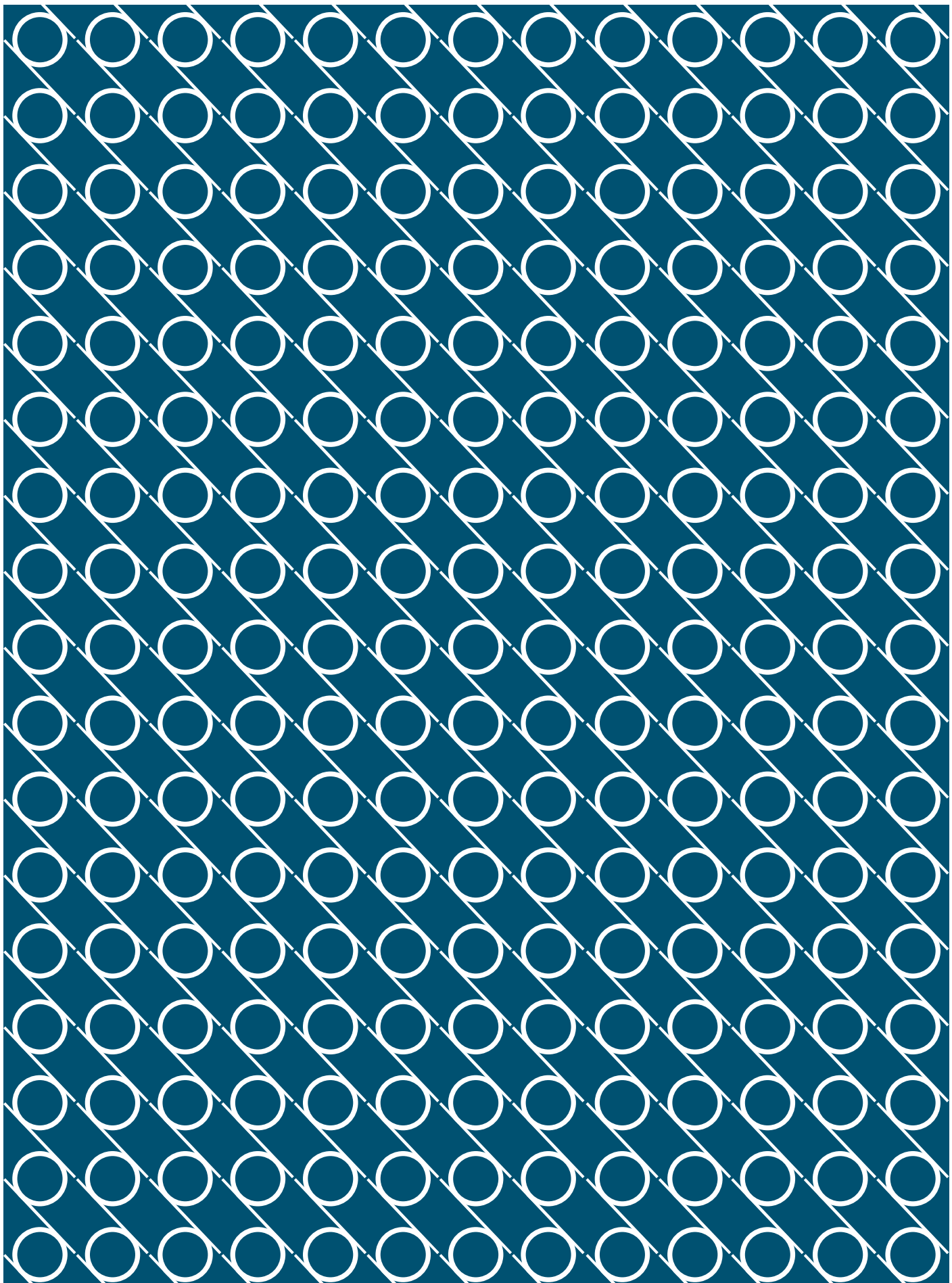
REPEL





# AND PROTECT

Safeguard your environment with Greenlam "SAFEGUARD™ PLUS"



INTRODUCING



**Introducing Greenlam Safeguard™ Plus Anti-Bacterial Compact Laminates for a safer, healthier environment. First ever in the industry. A complete range of anti-bacterial compact laminates. Safe, healthy living begins with GREENLAM®. With the ability to retard the growth of nearly 99% of common bacteria, these compacts are revolutionary additions to our environment-friendly collection.**

## ABOUT US



**For years, Asia's leading brand of Decorative Laminates, Greenlam has manufactured products which promise to perform beyond comparison. From developing technology to designs with superior functionality, Greenlam has always received appreciation from the industry and customers across the globe.**

And now Greenlam introduces yet another revolutionary product, Safeguard™ Plus Anti-Bacterial Compact Laminates, a complete range of anti-bacterial compact laminates. An exceptional product that retards the growth of microbes with utmost efficiency. This makes our living space free from any kind of germs, secure, hygienic, while further adding a spectacular look to the overall decor.

Backed by ISO 9001, ISO 14001, OHSAS 18001 awards for offering advanced product line along with world-class working systems, Greenlam has also received global recognitions, namely NEMA, BS and EN-438 for meeting rigid international standards. It has also received recognition with the prestigious GREENGUARD certification for producing eco-friendly and sustainable products.

# Greenlam Safeguard™ Plus Anti-Bacterial Compact Laminates retard the growth of nearly 99% of common form of bacteria on any decorative surface.

## BACTERIAL GROWTH



### THE TIME BOMB IS TICKING!

Bacteria is present everywhere. You can find them in the air, on food, plants and animals, in the soil, in the water, and on just about every other surface – including your own body. Bacterial growth is formidable adversaries because they're constantly mutating to breach your immune system's defenses. Knowing more about how germs work can increase your chances of avoiding infection. Many disease-causing bacteria produce toxins – powerful chemicals that damage cells and make you ill.

Have you ever realised how harmful they are? Don't you wish you were safeguarded against all bacterial growth for a 24/7 active lifestyle? Protecting your health and the health of those around you depends on many factors that may seem overwhelming when they are discussed at the same time. As with most life changes, practice will make it all seem simple. Now falling sick can be prevented with the solution that Greenlam Safeguard™ Plus Anti-Bacterial Compact Laminates bring to the world and make life seem that much nicer.



## THE PRODUCT

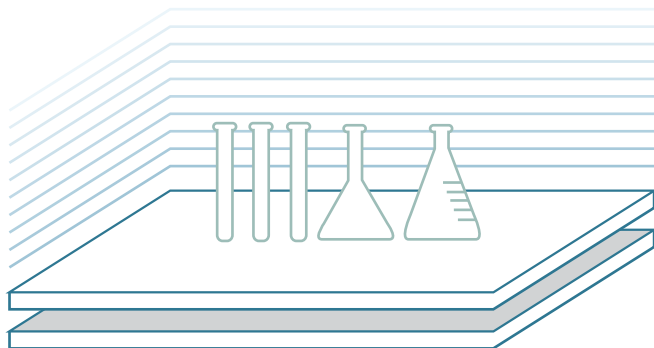
Greenlam Safeguard™ Plus Anti-Bacterial Compact Laminates retard the growth of nearly 99% of common form of bacteria on any decorative surface. Greenlam Safeguard™ Plus Anti-Bacterial Compact Laminates surface is produced by permanently incorporating a US-EPA approved, well known and widely used anti microbial agent during the manufacturing. The anti microbial agent used for manufacturing these laminates is also a common ingredient in many cosmetics and oral hygiene products in everyday use.

**For better accuracy, Safeguard™ Plus Anti-Bacterial Compact Laminates are tested as per two different standards by two different research centres.**

- ❑ As per ASTM G-22 Standards by Shri Ram Institute for Industrial Research, New Delhi
- ❑ As per JIS Z 2801 : 2000 Standard by SETCO, Singapore

**Common bacteria eradicated when you use Safeguard™ Plus Anti-Bacterial Compact Laminates in your interiors:**

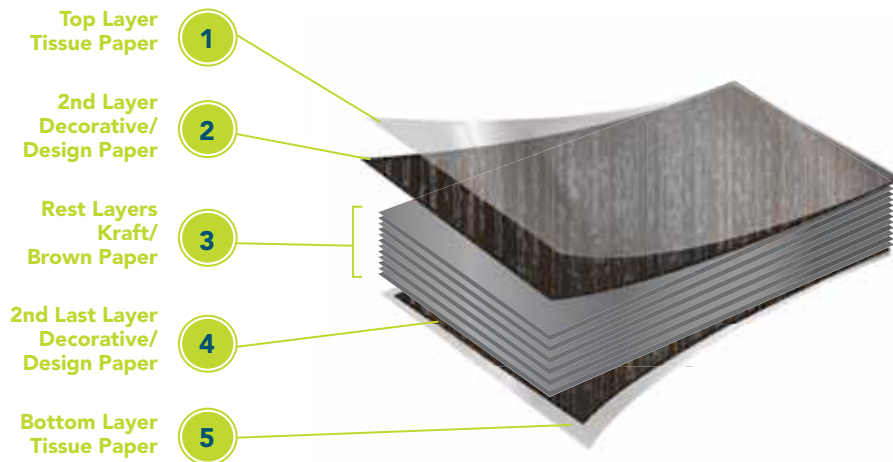
- ❑ Staphylococcus Aureus
- ❑ Streptococcus Faecalis
- ❑ Methicillin Resistant Staphylococcus Aureus
- ❑ Escherichia Coli
- ❑ Klebisella Pneumoniae
- ❑ Pseudomonas aeruginosa
- ❑ Salmonella typhimurin
- ❑ Kllebsiella pneumoniae





# CONSTRUCTION TECHNIQUE

Greenlam Safeguard™ Plus Anti-Bacterial Compact Laminates are treated with melamine resin and high microbial agents.



	COMPACT LAMINATE	GREENLAM SAFEGUARD™ PLUS ANTI-BACTERIAL COMPACT LAMINATES
1	Top Layer Tissue Paper	Treated with Melamine Resin only
2	2nd Layer Decorative/ Design Paper	Treated with Melamine Resin only
3	Rest Layers Kraft/ Brown Paper	Treated with Phenolic Resin
4	2nd Last Layer Decorative/ Design Paper	Treated with Melamine Resin only
5	Bottom Layer Tissue Paper	Treated with Melamine Resin only

## APPLICATION AREAS

**In all our activities in daily life, we strive to make minimum impact on the environment. Where it is unavoidable, we strive to reduce the negative effects as much as possible. In this endeavour, Greenlam Safeguard™ Plus Anti-Bacterial Compact Laminates play a vital role in protecting your personal space from all harmful microbes and bacterial agents and also improving the décor.**

The anti-bacterial compact laminates may be used in all areas where a laminate is applicable, especially:



### Hospitals & Health Care Facilities

Since bacteria can cause infections that cannot be seen, one can either ignore them or fear the illnesses they can cause. Usage of Greenlam Safeguard™ Plus Anti-Bacterial Compact Laminates in hospitals and health care centres reduces the contact with bacteria and viruses, thus giving everyone complete protection from bacterial growth.



### Restaurants

Many times, tables at restaurants are cleaned with dirty rags carrying all types of bad bacteria. Thus, the risk of transmission of bacteria from a person's hand to food increases greatly. Keeping food on the tables made of Greenlam Safeguard™ Plus Anti-Bacterial Compact Laminates reduces the risk of contamination and spreading of bacteria from one to the other.



### Kindergartens

Kids are prone to bacterial attack as compared to adults. Especially in schools, kids come in contact with bacteria on a daily basis. Because of that, they seem to be constantly spreading bacteria from one place to another. Greenlam Safeguard™ Plus Anti-Bacterial Compact Laminates when used as cabinets as part of vertical application and as tables as horizontal application can retard the growth of bacteria to a large extent, thus keeping the environment bacteria-free.

## APPLICATION AREAS



### Restrooms

Everyone uses public restrooms at one time or other, usually at malls, schools, theatres, stores, sporting events etc. Thousands of people visit the same restrooms. One can only imagine how many varieties of microbes are left by the users on doors, faucets, soap dispensers, towel dispensers and toilet flushers. Restrooms made of Greenlam Safeguard™ Plus Anti-Bacterial Compact Laminates help to counter bacteria at an amazing rate.



### Kitchens

Bacteria spreading in the kitchen are through hands that come in direct contact with the food or with the food left exposed to the atmosphere. Only Greenlam Safeguard™ Plus Anti-Bacterial Compact Laminates can make kitchens bacteria and germ-free.



### Laboratories

Every day, researchers and technologists work with harmful chemicals and reacting agents in the laboratory. An accidental spill of these agents may contaminate the hands which may soon pass and have a negative effect on the body. Using Greenlam Safeguard™ Plus Anti-Bacterial Compact Laminates in the laboratory will prove to be a big benefit as it provides bacterial protection to their health in this particular surrounding.

THE  
FINISHING  
TOUCH

All our **Safeguard™ Plus Anti-Bacterial Compact Laminates** come in two different finishes – raw silk or suede. Your choice of finishes can easily be applied across our wide selection of designs.



Solid Suede



Solid Raw Silk



Woodgrain Suede



Woodgrain Raw Silk

PATTERNS



GFA 5853  
Alu Taint

WOODGRAINS



**GWC 682**  
Hiland Pine



**GWC 770**  
Douglas Fur



**GWC 5006**  
Thansau Maple



**GWA 719**  
Mangfall Breech



**GWA 738**  
Oak



**GWC 5003**  
Philippines Teak



**GWC 5018**  
Brooks Walnut



**GWC 749**  
Sapele

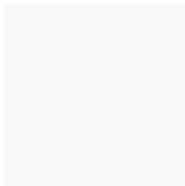


**GWE 5061**  
Fine Wenge

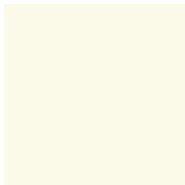


**GWE 5525**  
Hickory Oak

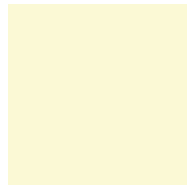
SOLIDS



**GSB 111**  
Designer White



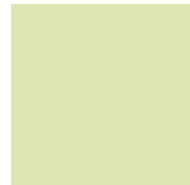
**GSB 113**  
Frosty White



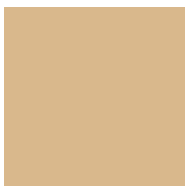
**GSC 124**  
Mysore Ivory



**GSA 121**  
Ivory



**GSC 133**  
Moonstone



**GSB 141**  
Beige



**GSC 163**  
Bay



**GSC 134**  
Mud Ash



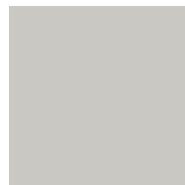
**GSC 230**  
Yellow



**GSC 217**  
Light Orange



**GSC 166**  
Blush Pink



**GSA 271**  
Light Grey



**GSA 275**  
Pearl Grey

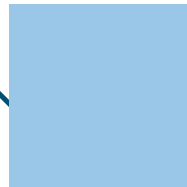
SOLIDS



**GSB 268**  
Dust



**GSC 261**  
Dark Grey



**GSC 284**  
Ozone



**GSC 291**  
Electric Blue



**GSC 297**  
Blue Galaxy



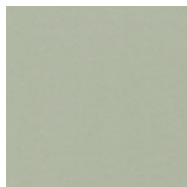
**GSC 257**  
Olive



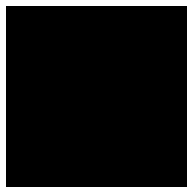
**GSC 248**  
Leaf Green



**GPA 923**  
Meta Silver



**GPA 929**  
Metaline Grey



**GSA 401**  
Black

# TEST CERTIFICATES

**SHIRAM INSTITUTE FOR INDUSTRIAL RESEARCH**  
(A unit of Shiram Scientific and Industrial Research Foundation)  
AA 1002 - 0001 20000 Certified Institute

**TEST CERTIFICATE** 000451754

**Sample No:** SR. 16. BALAKRISHNAN, BABURAO  
**Date:** 26.11.2009

**TEST RESULTS**  
**Performed in:** As per guidelines of ASTM G-22  
**Test in:** Bacterial Resistance Test  
**Test Organism in:** *Staphylococcus aureus*  
*Staphylococcus aureus*  
*Staphylococcus aureus*  
*Staphylococcus aureus*  
**Test conditions in:**  
Incubation temperature: 35±1°C  
Relative humidity: 85-95%  
Incubation period: 21 days  
**Test procedure used in:** Procedure A  
**Observation:** No bacterial growth was observed on the test specimen.

SR/16-11-2009  
SR/16-11-2009

*[Signature]*  
SHIRAM INSTITUTE FOR INDUSTRIAL RESEARCH  
AA 1002 - 0001 20000 Certified Institute

**SHIRAM INSTITUTE FOR INDUSTRIAL RESEARCH**  
(A unit of Shiram Scientific and Industrial Research Foundation)  
AA 1002 - 0001 20000 Certified Institute

**TEST CERTIFICATE** 000442057

**Sample No:** SR. 16. BALAKRISHNAN, BABURAO  
**Date:** 26.11.2009

**TEST RESULTS**  
**Performed in:** As per guidelines of ASTM G-22  
**Test in:** Bacterial Resistance Test  
**Test Organism in:** *Staphylococcus aureus*  
*Staphylococcus aureus*  
*Staphylococcus aureus*  
*Staphylococcus aureus*  
**Test conditions in:**  
Incubation temperature: 35±1°C  
Relative humidity: 85-95%  
Incubation period: 21 days  
**Test procedure used in:** Procedure A  
**Observation:** No bacterial growth was observed on the test specimen.

SR/16-11-2009  
SR/16-11-2009

*[Signature]*  
SHIRAM INSTITUTE FOR INDUSTRIAL RESEARCH  
AA 1002 - 0001 20000 Certified Institute

**WISCO** Page 1 of 2

**TEST REPORT** Date: 20/06/2011

**Subject:** Antimicrobial efficacy test on one sample of "Integrated Plus Compact Laminates (High Pressure Laminate)" was submitted by Customer. See Page 1 for lot no. (20090001) used during commissioning test.

**Test For:** Chemical Anti-Fungal Pen Test  
10 Sample (Grade: Green, 2, Level 2)  
Preparation: 1/2/10  
Area: Mr. Lin Wang

**Test Method:** Reference: Industrial Standard - ISO 22810:2008  
**Test Organism:** *Trichoderma reesei* ATCC 36203  
*Staphylococcus aureus* ATCC 43301  
*Micrococcus luteus* ATCC 43101  
*Pseudomonas aeruginosa* ATCC 27852  
*Schwiebiae japonica* ATCC 35061

Lot Sample No.	Sample Description
20090001	Integrated Plus Compact Laminates - High Pressure Laminate (20090001) - Green & Brown

**WISCO** Page 2 of 2

**Results of Antifungal Efficacy Test on Sample after 28 days of incubation at 25°C**

Test Organism	Mean Growth		Variance (%)		Log reduction
	CFU/ml	Log value	CFU/ml	Log value	
<i>Trichoderma reesei</i>	1.0 x 10 <sup>7</sup>	0.0	1.0 x 10 <sup>7</sup>	0.0	0.0
<i>Staphylococcus aureus</i>	2.0 x 10 <sup>7</sup>	4.0	1.0 x 10 <sup>7</sup>	0.0	0.5
<i>Micrococcus luteus</i>	1.0 x 10 <sup>7</sup>	0.0	1.0 x 10 <sup>7</sup>	0.0	0.0
<i>Pseudomonas aeruginosa</i>	1.0 x 10 <sup>7</sup>	0.0	1.0 x 10 <sup>7</sup>	0.0	0.0
<i>Schwiebiae japonica</i>	1.0 x 10 <sup>7</sup>	0.0	1.0 x 10 <sup>7</sup>	0.0	0.0

**Conclusion:** Based on the results obtained, the sample is considered to be effective against the Antifungal efficacy of lot (see Page 1) by reference to acceptance with ISO 22810:2008.

**WISCO**  
WISCONSIN INDUSTRIAL RESEARCH & CHEMICAL TECHNOLOGY SYSTEMS



## COMMITMENT TO QUALITY ASSURANCE

### **GREENGUARD Indoor Air Quality Certification**



GREENLAM® Compact Laminates are classified under the Low Emitting Product category by the GREENGUARD standards, meaning that harmful pollutants in the air are suppressed to the lowest levels. This is an assurance that our products are designed for use in office environments and other indoor spaces, and promote a healthier environment in these areas.

### **GREENGUARD Children and Schools Certification**



This certification, with a stricter criteria, means that GREENLAM® Compact Laminates are suitable for use in environments where children spend significant periods of time, including schools, daycares and healthcare facilities. To know more about the GREENGUARD certifications, visit [www.greenguard.org](http://www.greenguard.org)

### **PSB Corp Fire Resistance Certification**

#### **PSB Corp Surface Spread of Flame Testing**

In PSB Corp Surface Spread of Flame fire resistance tests, GREENLAM® brand of high-pressure decorative compact laminates achieved a Class One standard, according to criteria specified in British Standard 476 : Part 7 : 1997. This is the most optimal classification in the test, requiring the strictest compliance with local and international regulations.

#### **PSB Corp Fire Propagation Testing**

In tests according to criteria specified in British Standard 476 : Part 6 : 1989, GREENLAM® Compact Laminates achieved a fire propagation index of 15.2, proving strong fire resistance.

To know more about PSB fire certifications, visit [www.psbcorp.sg](http://www.psbcorp.sg)

# TECHNICAL SPECIFICATIONS

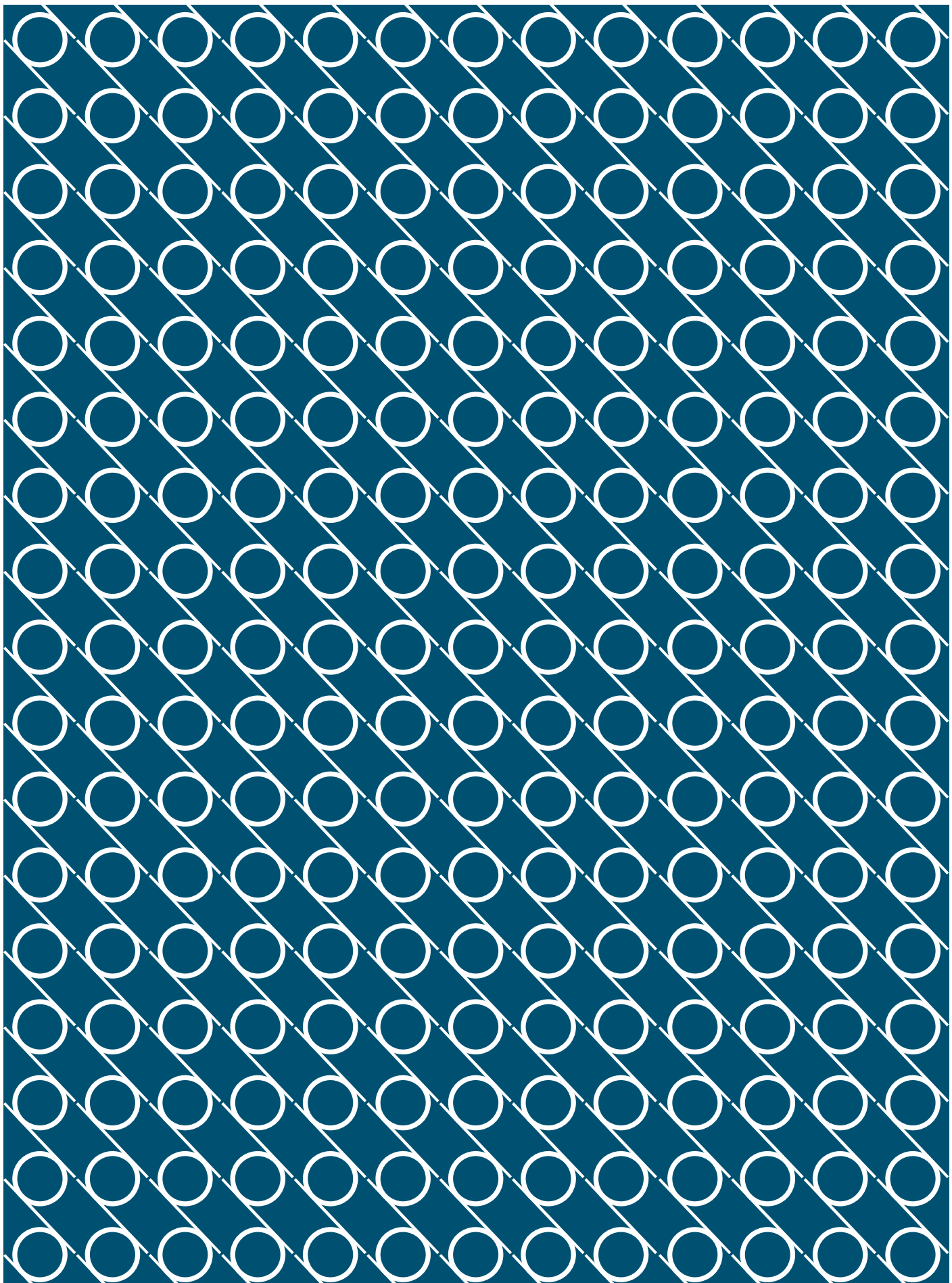
For your reference, technical specifications of our range of compact laminates are stated below:

Technical Specifications		12mm		
NO.	PROPERTIES	UNIT	Specified Values As Per DIN EN 438, BSEN 438 & IS 2046: 1995	GREENLAM® SAFEGUARD™ PLUS TYPICAL VALUE
1	Thickness Thickness tolerance	mm	12.0 ± 0.5 As agreed	12.0 ± 0.28
2	Resistance to dry heat at 180°C	Grade	Not worse than 4	5
3	Resistance to surface ware	Rev.	350 (Min.)	400
4	Resistance to immersion in boiling water a) Mass increase b) Thickness c) Appearance	% % Grade	2.0 (Max.) 2.0 (Max.) Not worse than 4	0.50 0.70 5
5	Dimensional stability at deviated temperature a) Longitudinal b) Transverse	% %	0.06 (Max.) 0.53 (Max.)	0.03 0.12
6	Dimensional stability at 20°C a) Longitudinal b) Transverse	% %	0.16 (Max.) 0.28 (Max.)	0.08 0.13
7	Resistance to impact by large diameter ball a) Drop height b) Diameter of indentation	cm mm	Under consideration 10 (Max.)	200 2
8	Resistance to scratch	N	2.0 (Min.)	2.50
9	Resistance to staining a) Group 1 & 2 b) Group 3 & 4	Grade Grade	Not worse than 5 Not worse than 4	6 5
10	Resistance to colour change a) In Xerox Arc Light b) In enclosed Carbon Arc Light	Grade Grade	Not worse than 6 Not worse than 5	6 5
11	Resistance to cigarette burns	Grade	Not worse than 3	4
12	Resistance to steam	Grade	Not worse than 4	5
13	Resistance to crazing	Grade	Not worse than 4	5
14	Resistance to moisture	Grade	Not worse than 4	5
15	Flexural modulus	Mpa	10000 (Min.)	11000
16	Flexural strength	Mpa	100 (Min.)	120
17	Tensile strength	Mpa	70 (Min.)	90

Greenlam Asia Pacific warrants that all its products are free from manufacturing defects and perfect fit for use under normal conditions. In case of any claims, the liability of the company is however limited to the cost of the product only.

Technical specifications of other thickness are available upon request.

Greenlam Safeguard™ Plus Anti-Bacterial Compact Laminates are available in following specs:-  
10mm to 18mm – 6ft by 6ft, 6ft by 12ft  
4mm to 18mm – 4.25ft by 10ft



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