



BIOTECH TESTING SERVICES

TEST REPORT

LAB NO. : 2000936/ 1

DATE: 26/03/2020

NAME OF CUSTOMER : GREENLAM INDUSTRIES LIMITED
ADDRESS : Plot no. E - 176/179, Phase-II,
RIICO Industrial Area, P.O Behror,
Dist. Alwar
REFERENCE : Letter Ref. Nil dated March 17, 2020
K. Attention: GSRA Sharma
DATE OF RECEIPT : 19/03/2020
DATE OF INITIATION : 19/03/2020
DATE OF COMPLETION : 26/03/2020
SAMPLE DESCRIPTION : LAMINATE SAMPLE LABELED AS:-

Sr. No.	Description
1.	Product Description:- Greenlam High Pressure Compact Laminate Thickness:- 12mm Décor No./Finish:- 113(Suede)
Untreated – Lab Control	

Name of Test:

Evaluation of Antimicrobial Activity of Laminate specimen

Name of Test Protocol:

JIS Z 2801: 2012 (amendment 1)

Test Organisms used for evaluating Antimicrobial activity:

1. Staphylococcus aureus ATCC 6538
2. Escherichia coli ATCC 8739
3. Klebsiella pneumoniae ATCC 4352
4. Meticillin Resistant Staphylococcus aureus (MRSA) S- 129
5. Pseudomonas aeruginosa ATCC 9027
6. Salmonella typhimurium ATCC 10749
7. Streptococcus faecalis ATCC 9790
8. Enterococcus faecalis ATCC 8459
9. Candida albicans ATCC 10231



BIOTECH TESTING SERVICES

Test Conditions:

Neutralizer used : Buffered Saline with Tween 80 - 0.01 %
 Contact Time : 24 hours at 37° C
 Incubation Temperature : 37° C for Bacteria; 28° C for Fungi
 Media and Reagent : Soyabean-casein digest agar for Bacteria; Sabouraud's dextrose agar for Fungi

RESULTS:

ANTIBACTERIAL ACTIVITY

1. Test Bacteria: Staphylococcus aureus ATCC 6538

Quantitative Assessment of Activity - JIS Z 2801: 2012				
Untreated: Conc. of Inoculum on untreated sample at 0 hours (A): 1.43×10^4				Log = 4.00
Untreated: Conc. of Inoculum on untreated sample after 24 hour (B): 1.52×10^5				Log = 5.18
Sample Identification	No. Bacteria on treated sample (C)	Log of Bacteria on treated sample	Antimicrobial Activity (R) (Log B-C)	Microbial Kill (% Reduction)
Product: Greenlam High Pressure Compact Laminate Thickness:- 12mm Décor No./Finish:- 113(Suede)	10	1.00	4.18	99.99

2. Test Bacteria: Escherichia coli ATCC 8739

Quantitative Assessment of Activity - JIS Z 2801: 2012				
Untreated: Conc. of Inoculum on untreated sample at 0 hours (A): 3.50×10^4				Log = 4.54
Untreated: Conc. of Inoculum on untreated sample after 24 hour (B): 1.60×10^5				Log = 5.20
Sample Identification	No. Bacteria on treated sample (C)	Log of Bacteria on treated sample	Antimicrobial Activity (R) (Log B-C)	Microbial Kill (% Reduction)
Product: Greenlam High Pressure Compact Laminate Thickness:- 12mm Décor No./Finish:- 113(Suede)	1370	3.13	2.07	99.14

3. Test Bacteria: Klebsiella pneumoniae ATCC 4352

Quantitative Assessment of Activity - JIS Z 2801: 2012				
Untreated: Conc. of Inoculum on untreated sample at 0 hours (A): 1.72×10^5				Log = 5.23
Untreated: Conc. of Inoculum on untreated sample after 24 hour (B): 2.60×10^5				Log = 5.41
Sample Identification	No. Bacteria on treated sample (C)	Log of Bacteria on treated sample	Antimicrobial Activity (R) (Log B-C)	Microbial Kill (% Reduction)
Product: Greenlam High Pressure Compact Laminate Thickness:- 12mm Décor No./Finish:- 113(Suede)	2400	3.38	2.03	99.07

• Samples are not drawn by the laboratory • Result relate only to the samples tested
 • This report shall not be reproduced except in full without prior permission of this laboratory

2000936/1
Page 2 of 4

4. Test Bacteria: Meticillin Resistant Staphylococcus aureus (MRSA) S- 129

Quantitative Assessment of Activity - JIS Z 2801: 2012				
Untreated: Conc. of Inoculum on untreated sample at 0 hours (A): 2.70×10^4				Log = 4.43
Untreated: Conc. of Inoculum on untreated sample after 24 hour (B): 4.10×10^5				Log = 5.61
Sample Identification	No. Bacteria on treated sample (C)	Log of Bacteria on treated sample	Antimicrobial Activity (R) (Log B-C)	Microbial Kill (% Reduction)
Product: Greenlam High Pressure Compact Laminate Thickness:- 12mm Décor No./Finish:- 113(Suede)	<10	<1	>4.61	>99.99

5. Test Bacteria: Pseudomonas aeruginosa ATCC 9027

Quantitative Assessment of Activity - JIS Z 2801: 2012				
Untreated: Conc. of Inoculum on untreated sample at 0 hours (A): 2.30×10^4				Log = 4.36
Untreated: Conc. of Inoculum on untreated sample after 24 hour (B): 2.00×10^5				Log = 5.30
Sample Identification	No. Bacteria on treated sample (C)	Log of Bacteria on treated sample	Antimicrobial Activity (R) (Log B-C)	Microbial Kill (% Reduction)
Product: Greenlam High Pressure Compact Laminate Thickness:- 12mm Décor No./Finish:- 113(Suede)	150	2.17	3.13	99.92

6. Test Bacteria: Salmonella typhimurium ATCC 10749

Quantitative Assessment of Activity - JIS Z 2801: 2012				
Untreated: Conc. of Inoculum on untreated sample at 0 hours (A): 2.70×10^4				Log = 4.43
Untreated: Conc. of Inoculum on untreated sample after 24 hour (B): 8.00×10^4				Log = 4.90
Sample Identification	No. Bacteria on treated sample (C)	Log of Bacteria on treated sample	Antimicrobial Activity (R) (Log B-C)	Microbial Kill (% Reduction)
Product: Greenlam High Pressure Compact Laminate Thickness:- 12mm Décor No./Finish:- 113(Suede)	70	1.84	3.06	99.91

7. Test Bacteria: Streptococcus faecalis ATCC 9790

Quantitative Assessment of Activity - JIS Z 2801: 2012				
Untreated: Conc. of Inoculum on untreated sample at 0 hours (A): 3.90×10^4				Log = 4.59
Untreated: Conc. of Inoculum on untreated sample after 24 hour (B): 7.00×10^4				Log = 4.84
Sample Identification	No. Bacteria on treated sample (C)	Log of Bacteria on treated sample	Antimicrobial Activity (R) (Log B-C)	Microbial Kill (% Reduction)
Product: Greenlam High Pressure Compact Laminate Thickness:- 12mm Décor No./Finish:- 113(Suede)	490	2.69	2.15	99.30



BIOTECH TESTING SERVICES

8. Test Bacteria: Enterococcus faecalis ATCC 8459

Quantitative Assessment of Activity - JIS Z 2801: 2012				
Untreated: Conc. of Inoculum on untreated sample at 0 hours (A): 4.00×10^4				Log = 4.60
Untreated: Conc. of Inoculum on untreated sample after 24 hour (B): 9.00×10^4				Log = 4.95
Sample Identification	No. Bacteria on treated sample (C)	Log of Bacteria on treated sample	Antimicrobial Activity (R) (Log B-C)	Microbial Kill (% Reduction)
Product: Greenlam High Pressure Compact Laminate Thickness:- 12mm Décor No./Finish:- 113(Suede)	710	2.85	2.10	99.21

9. Test Fungus: Candida albicans ATCC 10231

Quantitative Assessment of Activity - JIS Z 2801: 2010				
Untreated: Conc. of Inoculum on untreated sample at 0 hours (A): 2.10×10^4				Log = 4.32
Untreated: Conc. of Inoculum on untreated sample after 24 hour (B): 8.20×10^4				Log = 4.91
Sample Identification	No. Bacteria on treated sample (C)	Log of Bacteria on treated sample	Antimicrobial Activity (R) (Log B-C)	Microbial Kill (% Reduction)
Product: Greenlam High Pressure Compact Laminate Thickness:- 12mm Décor No./Finish:- 113(Suede)	40	1.60	3.31	99.95

The Standard Antimicrobial value of Evaluation $R \geq 2.0$

COMMENT:

When tested as specified, laminate labeled as Product: Greenlam High Pressure Compact Laminate; Thickness: 12mm; Décor No./Finish: 113(Suede); **PASSES** the Quantitative Assessment of activity for Staphylococcus aureus, Escherichia coli, Klebsiella pneumoniae, Meticillin Resistant Staphylococcus aureus, Pseudomonas aeruginosa, Salmonella typhimurium, Streptococcus faecalis, Enterofococcus faecalis and Candida albicans by JIS Z 2801: 2012 Test Method.



For BIOTECH TESTING SERVICES


Dr Shilpa U. Nair
Quality Manager
(Authorized Signatory)

2000936/1
Page 4 of 4

• Samples are not drawn by the laboratory • Result relate only to the samples tested
• This report shall not be reproduced except in full without prior permission of this laboratory