



BIOTECH TESTING SERVICES LLP

TEST REPORT

REPORT NO. : BTS2501564-02

DATE : 26-06-2025

NAME OF CUSTOMER : GREENLAM LIMITED
ADDRESS : PLOT NO.19 , 19A & 19A-1 IP Naidupet
Menakuru Village, Naidupet Mangal
Tirupati-524421
Andhra Pradesh, India
REFERENCE : Reference Letter No. Nil dated May 31, 2025
Kind Attention: Vishwanath Ramesh
DATE OF RECEIPT : 02-06-2025
DATE OF INITIATION : 03-06-2025
DATE OF COMPLETION : 18-06-2025
SAMPLE DESCRIPTION : Test sample labeled as

| Sample No. | Sample Details |
|-----------------------|--|
| 2501564/S01 | Sample-1- Prelaminated Particle board, Thickness- 18 mm, Design no.42501 , Design name-white |
| 2501564/S02 | Sample-2 - Prelaminated Particle board, Thickness- 25 mm, Design no.42511 , Design name-Metal Grey |
| Untreated Lab Control | |

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Name of Test :

JIS Z 2801: 2010; Amendment 1: 2012

Antibacterial products - Test for antibacterial activity & efficacy.

Test Organisms :

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

Experimental Conditions

| | |
|-------------------------|---|
| Sample Size | : 5cm x 5cm |
| No. of sets | : Triplicates |
| Pre-treatment of sample | : ETO Sterilisation |
| Inoculum Carrier | : 1:500 Nutrient Broth |
| Cover Film | : LDPE Film (4cm x 4cm) |
| Lab Control | : LDPE Film (5cm x 5cm) |
| Contact Time | : 24 hours at 35°C |
| Media and Reagent | : Soyabean-casein digest agar |
| Incubation Temperature | : 37° C for Bacteria; 28° C for Fungi |
| Neutrailiser Used | : Soyabean-casein digest agar for Bacteria; Sabouraud's dextrose agar for Fungi |

Compliance for Conditions of Valid test:

| Test Organism | Logarithmic value of number of viable bacteria untreated sample at 0 hours (Lmax- Lmin)/ Lmean | Average number of viable bacteria recovered immediately after inoculation from the Untreated specimen | The number of viable bacteria recovered from each Untreated specimen after incubation at specified contact duration |
|----------------------------------|--|---|---|
| Staphylococcus aureus ATCC 6538 | 0.012 | Confirms | Confirms |
| Klebsiella pneumoniae ATCC 4352 | 0.007 | Confirms | Confirms |
| Escherichia coli ATCC 8739 | 0.005 | Confirms | Confirms |
| Pseudomonas aeruginosa ATCC 9027 | 0.015 | Confirms | Confirms |
| Candida albicans ATCC 10231 | 0.015 | Confirms | Confirms |
| Enterococcus faecalis ATCC 8459 | 0.002 | Confirms | Confirms |

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| | | | |
|--|------------|---|--|
| Streptococcus faecalis ATCC 9790 | 0.01 | Confirms | Confirms |
| Salmonella typhimurium ATCC 10749 | 0.009 | Confirms | Confirms |
| Meticillin Resistant Staphylococcus aureus (MRSA) S- 129 | 0.007 | Confirms | Confirms |
| Acceptance | ≤ 0.2 | $6.2 \times 10^3 - 2.5 \times 10^4$ cells/cm ² | Shall not be less than 6.2×10^2 cells/cm ² (ISO 22196: 6.2×10^1 cells/cm ²) |

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Results:

ANTIBACTERIAL ACTIVITY

1. Test Organism : Staphylococcus aureus ATCC 6538

| Quantitative Assessment of Activity : JIS Z 2801: 2010; Amendment 1: 2012 | | | Av. Count | Log |
|---|---|---|--|--------|
| Untreated Lab Control : Inoculum on untreated sample at 0 hours (U_0) CFU/cm ² | | | 21250 | 4.33 |
| Untreated Lab Control : Inoculum on untreated sample at 24 hours (U_t) CFU/cm ² | | | 77500 | 4.89 |
| Sample Identification | No. of Bacteria on treated Sample (A_t) CFU/cm ² | Log of Bacteria on treated sample (A_t) | Antimicrobial Activity $R=(U_t-U_0) - (A_t-U_0)$ | |
| 2501564/S01 | <6.25 | <0.80 | >4.11 (99.99%) | PASSES |
| Sample-1- Prelaminated Particle board, Thickness- 18 mm, Design no.42501 , Design name-white | | | | |
| 2501564/S02 | 425 | 2.63 | 2.26 (99.45%) | PASSES |
| Sample-2 - Prelaminated Particle board, Thickness- 25 mm, Design no.42511 , Design name-Metal Grey | | | | |

2. Test Organism : Klebsiella pneumoniae ATCC 4352

| Quantitative Assessment of Activity : JIS Z 2801: 2010; Amendment 1: 2012 | | | Av. Count | Log |
|---|---|---|--|--------|
| Untreated Lab Control : Inoculum on untreated sample at 0 hours (U_0) CFU/cm ² | | | 19375 | 4.29 |
| Untreated Lab Control : Inoculum on untreated sample at 24 hours (U_t) CFU/cm ² | | | 120625 | 5.08 |
| Sample Identification | No. of Bacteria on treated Sample (A_t) CFU/cm ² | Log of Bacteria on treated sample (A_t) | Antimicrobial Activity $R=(U_t-U_0) - (A_t-U_0)$ | |
| 2501564/S01 | <6.25 | <0.80 | >4.30 (>99.99%) | PASSES |
| Sample-1- Prelaminated Particle board, Thickness- 18 mm, Design no.42501 , Design name-white | | | | |
| 2501564/S02 | 956 | 2.98 | 2.10 (99.21%) | PASSES |
| Sample-2 - Prelaminated Particle board, Thickness- 25 mm, Design no.42511 , Design name-Metal Grey | | | | |

3. Test Organism : Escherichia coli ATCC 8739

| Quantitative Assessment of Activity : JIS Z 2801: 2010; Amendment 1: 2012 | | | Av. Count | Log |
|--|---|---|--|------|
| Untreated Lab Control : Inoculum on untreated sample at 0 hours (U_0) CFU/cm ² | | | 23125 | 4.36 |
| Untreated Lab Control : Inoculum on untreated sample at 24 hours (U_t) CFU/cm ² | | | 293750 | 5.47 |
| Sample Identification | No. of Bacteria on treated Sample (A_t) CFU/cm ² | Log of Bacteria on treated sample (A_t) | Antimicrobial Activity $R=(U_t-U_0) - (A_t-U_0)$ | |

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Results:

3. Test Organism : Escherichia coli ATCC 8739

| Quantitative Assessment of Activity : JIS Z 2801: 2010; Amendment 1: 2012 | | | Av. Count | Log |
|---|---|---|--|--------|
| Untreated Lab Control : Inoculum on untreated sample at 0 hours (U_0) CFU/cm ² | | | 23125 | 4.36 |
| Untreated Lab Control : Inoculum on untreated sample at 24 hours (U_t) CFU/cm ² | | | 293750 | 5.47 |
| Sample Identification | No. of Bacteria on treated Sample (A_t) CFU/cm ² | Log of Bacteria on treated sample (A_t) | Antimicrobial Activity $R=(U_t-U_0) - (A_t-U_0)$ | |
| 2501564/S01 | 544 | 2.74 | 2.73 (99.81%) | PASSES |
| Sample-1- Prelaminated Particle board, Thickness- 18 mm, Design no.42501 , Design name-white | | | | |
| 2501564/S02 | 775 | 2.89 | 2.58 (99.74%) | PASSES |
| Sample-2 - Prelaminated Particle board, Thickness- 25 mm, Design no.42511 , Design name-Metal Grey | | | | |

4. Test Organism : Pseudomonas aeruginosa ATCC 9027

| Quantitative Assessment of Activity : JIS Z 2801: 2010; Amendment 1: 2012 | | | Av. Count | Log |
|---|---|---|--|--------|
| Untreated Lab Control : Inoculum on untreated sample at 0 hours (U_0) CFU/cm ² | | | 17500 | 4.24 |
| Untreated Lab Control : Inoculum on untreated sample at 24 hours (U_t) CFU/cm ² | | | 912500 | 5.96 |
| Sample Identification | No. of Bacteria on treated Sample (A_t) CFU/cm ² | Log of Bacteria on treated sample (A_t) | Antimicrobial Activity $R=(U_t-U_0) - (A_t-U_0)$ | |
| 2501564/S01 | <6.25 | <0.80 | >5.18 (>99.99%) | PASSES |
| Sample-1- Prelaminated Particle board, Thickness- 18 mm, Design no.42501 , Design name-white | | | | |
| 2501564/S02 | 1800 | 3.26 | 2.70 (99.80%) | PASSES |
| Sample-2 - Prelaminated Particle board, Thickness- 25 mm, Design no.42511 , Design name-Metal Grey | | | | |

5. Test Organism : Enterococcus faecalis ATCC 8459

| Quantitative Assessment of Activity : JIS Z 2801: 2010; Amendment 1: 2012 | | | Av. Count | Log |
|--|---|---|--|------|
| Untreated Lab Control : Inoculum on untreated sample at 0 hours (U_0) CFU/cm ² | | | 12250 | 4.09 |
| Untreated Lab Control : Inoculum on untreated sample at 24 hours (U_t) CFU/cm ² | | | 737500 | 5.87 |
| Sample Identification | No. of Bacteria on treated Sample (A_t) CFU/cm ² | Log of Bacteria on treated sample (A_t) | Antimicrobial Activity $R=(U_t-U_0) - (A_t-U_0)$ | |

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Results:

5. Test Organism : Enterococcus faecalis ATCC 8459

| Quantitative Assessment of Activity : JIS Z 2801: 2010; Amendment 1: 2012 | | | Av. Count | Log |
|---|---|---|--|--------|
| Untreated Lab Control : Inoculum on untreated sample at 0 hours (U_0) CFU/cm ² | | | 12250 | 4.09 |
| Untreated Lab Control : Inoculum on untreated sample at 24 hours (U_t) CFU/cm ² | | | 737500 | 5.87 |
| Sample Identification | No. of Bacteria on treated Sample (A_t) CFU/cm ² | Log of Bacteria on treated sample (A_t) | Antimicrobial Activity $R=(U_t-U_0) - (A_t-U_0)$ | |
| 2501564/S01 | 738 | 2.87 | 3.00 (99.90%) | PASSES |
| Sample-1- Prelaminated Particle board, Thickness- 18 mm, Design no.42501 , Design name-white | | | | |
| 2501564/S02 | 1206 | 3.08 | 2.79 (99.84%) | PASSES |
| Sample-2 - Prelaminated Particle board, Thickness- 25 mm, Design no.42511 , Design name-Metal Grey | | | | |

6. Test Organism : Streptococcus faecalis ATCC 9790

| Quantitative Assessment of Activity : JIS Z 2801: 2010; Amendment 1: 2012 | | | Av. Count | Log |
|---|---|---|--|--------|
| Untreated Lab Control : Inoculum on untreated sample at 0 hours (U_0) CFU/cm ² | | | 25000 | 4.40 |
| Untreated Lab Control : Inoculum on untreated sample at 24 hours (U_t) CFU/cm ² | | | 612500 | 5.79 |
| Sample Identification | No. of Bacteria on treated Sample (A_t) CFU/cm ² | Log of Bacteria on treated sample (A_t) | Antimicrobial Activity $R=(U_t-U_0) - (A_t-U_0)$ | |
| 2501564/S01 | 688 | 2.84 | 2.95 (99.89%) | PASSES |
| Sample-1- Prelaminated Particle board, Thickness- 18 mm, Design no.42501 , Design name-white | | | | |
| 2501564/S02 | 1206 | 3.08 | 2.71 (99.80%) | PASSES |
| Sample-2 - Prelaminated Particle board, Thickness- 25 mm, Design no.42511 , Design name-Metal Grey | | | | |

7. Test Organism : Salmonella typhimurium ATCC 10749

| Quantitative Assessment of Activity : JIS Z 2801: 2010; Amendment 1: 2012 | | | Av. Count | Log |
|--|---|---|--|------|
| Untreated Lab Control : Inoculum on untreated sample at 0 hours (U_0) CFU/cm ² | | | 14375 | 4.16 |
| Untreated Lab Control : Inoculum on untreated sample at 24 hours (U_t) CFU/cm ² | | | 231250 | 5.36 |
| Sample Identification | No. of Bacteria on treated Sample (A_t) CFU/cm ² | Log of Bacteria on treated sample (A_t) | Antimicrobial Activity $R=(U_t-U_0) - (A_t-U_0)$ | |

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Results:

7. Test Organism : Salmonella typhimurium ATCC 10749

| Quantitative Assessment of Activity : JIS Z 2801: 2010; Amendment 1: 2012 | | | Av. Count | Log |
|---|---|---|--|--------|
| Untreated Lab Control : Inoculum on untreated sample at 0 hours (U_0) CFU/cm ² | | | 14375 | 4.16 |
| Untreated Lab Control : Inoculum on untreated sample at 24 hours (U_t) CFU/cm ² | | | 231250 | 5.36 |
| Sample Identification | No. of Bacteria on treated Sample (A_t) CFU/cm ² | Log of Bacteria on treated sample (A_t) | Antimicrobial Activity $R=(U_t-U_0) - (A_t-U_0)$ | |
| 2501564/S01 | <6.25 | 0.80 | >4.59 (>99.99%) | PASSES |
| Sample-1- Prelaminated Particle board, Thickness- 18 mm, Design no.42501 , Design name-white | | | | |
| 2501564/S02 | 125 | 2.10 | 3.27 (99.95%) | PASSES |
| Sample-2 - Prelaminated Particle board, Thickness- 25 mm, Design no.42511 , Design name-Metal Grey | | | | |

8. Test Organism : Meticillin Resistant Staphylococcus aureus (MRSA) S- 129

| Quantitative Assessment of Activity : JIS Z 2801: 2010; Amendment 1: 2012 | | | Av. Count | Log |
|---|---|---|--|--------|
| Untreated Lab Control : Inoculum on untreated sample at 0 hours (U_0) CFU/cm ² | | | 19375 | 4.29 |
| Untreated Lab Control : Inoculum on untreated sample at 24 hours (U_t) CFU/cm ² | | | 762500 | 5.88 |
| Sample Identification | No. of Bacteria on treated Sample (A_t) CFU/cm ² | Log of Bacteria on treated sample (A_t) | Antimicrobial Activity $R=(U_t-U_0) - (A_t-U_0)$ | |
| 2501564/S01 | 156 | 2.19 | 3.69 (99.98%) | PASSES |
| Sample-1- Prelaminated Particle board, Thickness- 18 mm, Design no.42501 , Design name-white | | | | |
| 2501564/S02 | 679 | 2.83 | 3.05 (99.91%) | PASSES |
| Sample-2 - Prelaminated Particle board, Thickness- 25 mm, Design no.42511 , Design name-Metal Grey | | | | |

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Results:

ANTIFUNGAL ACTIVITY

1. Test Organism : Candida albicans ATCC 10231

| Quantitative Assessment of Activity : JIS Z 2801: 2010; Amendment 1: 2012 | | | Av. Count | Log |
|--|--|--|--|--------|
| Untreated Lab Control : Inoculum on untreated sample at 0 hours (U ₀) CFU/cm ² | | | 17500 | 4.24 |
| Untreated Lab Control : Inoculum on untreated sample at 24 hours (U _t) CFU/cm ² | | | 268750 | 5.43 |
| Sample Identification | No. of Fungi on treated Sample (A _t) CFU/cm ² | Log of Fungi on treated sample (A _t) | Antimicrobial Activity R=(U _t -U ₀) - (A _t -U ₀) | |
| 2501564/S01 | 19 | 1.28 | 4.15 (99.99%) | PASSES |
| Sample-1- Prelaminated Particle board, Thickness- 18 mm, Design no.42501 , Design name-white | | | | |
| 2501564/S02 | 31 | 1.49 | 3.94 (99.99%) | PASSES |
| Sample-2 - Prelaminated Particle board, Thickness- 25 mm, Design no.42511 , Design name-Metal Grey | | | | |
| The Standard Bacterial Effectiveness R > 2 log reduction | | | | |

***** End of Report *****



For Biotech Testing Services LLP

Dr. Shilpa U Nair
Quality Manager


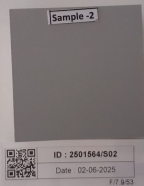
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Annexure

| 2501564/S01 | 2501564/S02 |
|---|---|
|  |  |

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