

TEST REPORT**LAB NO.:** 2301912/ 6**DATE:** 28/09/2023

NAME OF CUSTOMER : JSW PAINTS PRIVATE LIMITED
ADDRESS : Vasind, Shahapur,
Thane - 421604
REFERENCE : Your letter Ref. JSWP/ BTS/07/2023-24 dated August 23, 2023
Kind Attention: Anirudh Neswankar
DATE OF RECEIPT : 25/08/2023
DATE OF INITIATION : 25/08/2023
DATE OF COMPLETION : 28/09/2023
SAMPLE DESCRIPTION : Sample labeled as-

| Sr. No. | Description |
|-----------------------|-------------------------------|
| 6. | Halo Majestic Interiors Shine |
| | Uncoated Leneta panels |
| Untreated lab control | |



Name of Test:

JIS Z 2801: 2010; Amendment 1: 2012

Antibacterial products - Test for antibacterial activity and efficacy

Test Organisms used for evaluating Antimicrobial activity:

1. Staphylococcus aureus ATCC 6538
2. Escherichia coli ATCC 8739
3. Pseudomonas aeruginosa ATCC 9027
4. Klebsiella pneumoniae ATCC 4352
5. Enterococcus faecalis MTCC 3159
6. Enterococcus hirae ATCC 10541
7. Serratia marcescens ATCC 14756
8. Pseudomonas stutzeri MTCC 101
9. Vibrio cholerae 01 MTCC 3904
10. Bacillus subtilis ATCC 6633
11. Nocardia rugosa MTCC 10604
12. Shigella flexneri ATCC 29508
13. Staphylococcus epidermidis ATCC 7919
14. Alcaligenes faecalis ATCC 8750
15. Acinetobacter baumannii ATCC 19606
16. Pseudomonas putida ATCC 12633
17. Salmonella typhimurium ATCC 23564
18. Enterobacter aerogenes ATCC13048
19. Proteus mirabilis ATCC 25933
20. Bacillus cereus ATCC 14579
21. Streptococcus faecalis ATCC 29212
22. Meticillin Resistant Staphylococcus aureus ATCC 43300
23. Listeria monocytogenes ATCC 19112
24. Klebsiella pneumoniae ATCC 2146 - MBL strain
25. Enterobacter sakazakii ATCC 51329
26. Escherichia coli ATCC 25922
27. Corynebacterium minutissimum ATCC 23348
28. Streptococcus mutans MTCC 497
29. Vancomycin Resistant Enterococci ATCC 51299
30. Vancomycin Resistant Enterococci ATCC 2006
31. Citrobacter freundii ATCC 43864
32. Corynebacterium xerosis ATCC 7711
33. Proteus vulgaris ATCC 13315
34. Micrococcus luteus ATCC 11880
35. Klebsiella pneumoniae ATCC 700603 ESBL strain
36. Salmonella enterica MTCC 733
37. Sarcina luteus NCIM 2210
38. Escherichia coli K12 MTCC 1302
39. Burkholderia cepacia MTCC 12970
40. Clostridium perfringens ATCC 13124



BIOTECH TESTING SERVICES

Experimental Conditions:

| | |
|-------------------------|---|
| Sample Size | : 5cm x 5cm |
| Pre-treatment of sample | : ETO Sterilisation |
| Inoculum Carrier | : 1: 500 Nutrient broth |
| Cover Film | : LDPE Film |
| Lab Control | : LDPE Film |
| Contact Time | : 24 hours at 35° C |
| Media and Reagent | : For Bacteria - Soyabean-casein digest agar For Clostridium – Clostridial Agar |
| Incubation Temperature | : Bacteria - 37° C for 48 hours; Clostridium - 37° C for 48 hours (Anaerobic condition) |
| Neutralizer used | : SCDLP Broth |

Compliance for Conditions of Valid test:

| Test Bacteria | 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 after 24 hrs |
|---|--|---|--|
| Staphylococcus aureus ATCC 6538 | 0.007 | Confirms | Confirms |
| Escherichia coli ATCC 8739 | 0.002 | Confirms | Confirms |
| Pseudomonas aeruginosa ATCC 9027 | 0.011 | Confirms | Confirms |
| Klebsiella pneumoniae ATCC 4352 | 0.002 | Confirms | Confirms |
| Enterococcus faecalis MTCC 3159 | 0.005 | Confirms | Confirms |
| Enterococcus hirae ATCC 10541 | 0.002 | Confirms | Confirms |
| Serratia marcescens ATCC 14756 | 0.003 | Confirms | Confirms |
| Pseudomonas stutzeri MTCC 101 | 0.002 | Confirms | Confirms |
| Vibrio cholerae 01 MTCC 3904 | 0.005 | Confirms | Confirms |
| Bacillus subtilis ATCC 6633 | 0.008 | Confirms | Confirms |
| Nocardia rugosa MTCC 10604 | 0.014 | Confirms | Confirms |
| Shigella flexneri ATCC 29508 | 0.006 | Confirms | Confirms |
| Staphylococcus epidermidis ATCC 7919 | 0.005 | Confirms | Confirms |
| Alcaligenes faecalis ATCC 8750 | 0.004 | Confirms | Confirms |
| Acinetobacter baumannii ATCC 19606 | 0.005 | Confirms | Confirms |
| Pseudomonas putida ATCC 12633 | 0.007 | Confirms | Confirms |
| Salmonella typhimurium ATCC 23564 | 0.004 | Confirms | Confirms |
| Enterobacter aerogenes ATCC13048 | 0.006 | Confirms | Confirms |

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| Test Bacteria | 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 after 24 hrs |
|---|--|---|--|
| Proteus mirabilis ATCC 25933 | 0.002 | Confirms | Confirms |
| Bacillus cereus ATCC 14579 | 0.007 | Confirms | Confirms |
| Streptococcus faecalis ATCC 29212 | 0.002 | Confirms | Confirms |
| Meticillin Resistant Staphylococcus aureus ATCC 43300 | 0.004 | Confirms | Confirms |
| Listeria monocytogenes ATCC 19112 | 0.007 | Confirms | Confirms |
| Klebsiella pneumoniae ATCC 2146 - MBL strain | 0.002 | Confirms | Confirms |
| Enterobacter sakazakii ATCC 51329 | 0.004 | Confirms | Confirms |
| Escherichia coli ATCC 25922 | 0.002 | Confirms | Confirms |
| Corynebacterium minutissimum ATCC 23348 | 0.014 | Confirms | Confirms |
| Streptococcus mutans MTCC 497 | 0.005 | Confirms | Confirms |
| Vancomycin Resistant Enterococci ATCC 51299 | 0.002 | Confirms | Confirms |
| Vancomycin Resistant Enterococci ATCC 2006 | 0.009 | Confirms | Confirms |
| Citrobacter freundii ATCC 43864 | 0.009 | Confirms | Confirms |
| Corynebacterium xerosis ATCC 7711 | 0.002 | Confirms | Confirms |
| Proteus vulgaris ATCC 13315 | 0.003 | Confirms | Confirms |
| Micrococcus luteus ATCC 11880 | 0.003 | Confirms | Confirms |
| Klebsiella pneumoniae ATCC 700603 ESBL strain | 0.007 | Confirms | Confirms |
| Salmonella enterica MTCC 733 | 0.004 | Confirms | Confirms |
| Sarcina luteus NCIM 2210 | 0.004 | Confirms | Confirms |
| Escherichia coli K12 MTCC 1302 | 0.004 | Confirms | Confirms |
| Burkholderia cepacia MTCC 12970 | 0.011 | Confirms | Confirms |
| Clostridium perfringens ATCC 13124 | 0.010 | Confirms | Confirms |
| Acceptance | ≤ 0.2 | 6.2 × 10 ³ - 2.5 × 10 ⁴ cells/cm ² | Shall not be less than 6.2 × 10 ² cells/cm ² |

Results:
ANTIBACTERIAL ACTIVITY

1. Test Bacteria: Staphylococcus aureus ATCC 6538

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | count | Log | |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm2 | | 20600 | 4.31 | |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm2 | | 312500 | 5.49 | |
| Sample identification | No. Bacteria on treated sample CFU/cm2 (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | <6.25 | <0.80 | >4.70 | >99.998 |

2. Test Bacteria: Escherichia coli ATCC 8739

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | count | Log | |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm2 | | 19700 | 4.29 | |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm2 | | 312500 | 5.49 | |
| Sample identification | No. Bacteria on treated sample CFU/cm2 (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | <6.25 | <0.80 | >4.70 | >99.998 |

3. Test Bacteria: Pseudomonas aeruginosa ATCC 9027

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | count | Log | |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm2 | | 22500 | 4.35 | |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm2 | | 50600 | 4.70 | |
| Sample identification | No. Bacteria on treated sample CFU/cm2 (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | 112 | 2.04 | 2.66 | 99.778 |

4. Test Bacteria: Klebsiella pneumoniae ATCC 4352

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | count | Log | |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm2 | | 14800 | 4.17 | |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm2 | | 51800 | 4.71 | |
| Sample identification | No. Bacteria on treated sample CFU/cm2 (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | <6.25 | <0.80 | >3.92 | 99.988 |

5. Test Bacteria: Enterococcus faecalis MTCC 3159

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | | count | Log |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm2 | | | 10250 | 4.01 |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm2 | | | 23100 | 4.36 |
| Sample identification | No. Bacteria on treated sample CFU/cm2 (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | 12 | 1.06 | 3.31 | 99.946 |

6. Test Bacteria: Enterococcus hirae ATCC 10541

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | | count | Log |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm2 | | | 15750 | 4.20 |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm2 | | | 12310 | 4.09 |
| Sample identification | No. Bacteria on treated sample CFU/cm2 (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | <6.25 | <0.80 | >3.29 | >99.949 |

7. Test Bacteria: Serratia marcescens ATCC 14756

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | | count | Log |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm2 | | | 5930 | 3.77 |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm2 | | | 11700 | 4.07 |
| Sample identification | No. Bacteria on treated sample CFU/cm2 (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | <6.25 | <0.80 | >3.27 | >99.946 |

8. Test Bacteria: Pseudomonas stutzeri MTCC 101

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | | count | Log |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm2 | | | 13200 | 4.12 |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm2 | | | 9430 | 3.97 |
| Sample identification | No. Bacteria on treated sample CFU/cm2 (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | <6.25 | <0.80 | >3.18 | >99.934 |

9. Test Bacteria: *Vibrio cholerae* 01 MTCC 3904

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | | count | Log |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm2 | | | 12250 | 4.09 |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm2 | | | 218750 | 5.34 |
| Sample identification | No. Bacteria on treated sample CFU/cm2 (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | 1108 | 3.04 | 2.30 | 99.493 |

10. Test Bacteria: *Bacillus subtilis* ATCC 6633

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | | count | Log |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm2 | | | 58750 | 4.77 |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm2 | | | 56250 | 4.75 |
| Sample identification | No. Bacteria on treated sample CFU/cm2 (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | <6.25 | <0.80 | >3.95 | >99.989 |

11. Test Bacteria: *Nocardia rugosa* MTCC 10604

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | | count | Log |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm2 | | | 18750 | 4.27 |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm2 | | | 23750 | 4.38 |
| Sample identification | No. Bacteria on treated sample CFU/cm2 (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | <6.25 | <0.80 | >3.58 | >99.974 |

12. Test Bacteria: *Shigella flexneri* ATCC 29508

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | | count | Log |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm2 | | | 2750 | 3.44 |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm2 | | | 10375 | 4.02 |
| Sample identification | No. Bacteria on treated sample CFU/cm2 (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | <6.25 | <0.80 | >3.22 | >99.940 |

13. Test Bacteria: Staphylococcus epidermidis ATCC 7919

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | | count | Log |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm2 | | | 5280 | 3.72 |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm2 | | | 90625 | 4.96 |
| Sample identification | No. Bacteria on treated sample CFU/cm2 (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | 200 | 2.30 | 2.66 | 99.779 |

14. Test Bacteria: Alcaligenes faecalis ATCC 8750

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | | count | Log |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm2 | | | 37800 | 4.58 |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm2 | | | 89375 | 4.95 |
| Sample identification | No. Bacteria on treated sample CFU/cm2 (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | <6.25 | <0.80 | >4.16 | >99.993 |

15. Test Bacteria: Acinetobacter baumannii ATCC 19606

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | | count | Log |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm2 | | | 4750 | 3.68 |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm2 | | | 26250 | 4.42 |
| Sample identification | No. Bacteria on treated sample CFU/cm2 (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | <6.25 | <0.80 | >3.62 | >99.976 |

16. Test Bacteria: Pseudomonas putida ATCC 12633

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | | count | Log |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm2 | | | 41250 | 4.62 |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm2 | | | 287500 | 5.46 |
| Sample identification | No. Bacteria on treated sample CFU/cm2 (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | 490 | 2.69 | 2.77 | 99.830 |

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17. Test Bacteria: Salmonella typhimurium ATCC 23564

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | | count | Log |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm2 | | | 50000 | 4.70 |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm2 | | | 41250 | 4.62 |
| Sample identification | No. Bacteria on treated sample CFU/cm2 (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | 44 | 1.64 | 2.98 | 99.894 |

18. Test Bacteria: Enterobacter aerogenes ATCC13048

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | | count | Log |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm2 | | | 45000 | 4.65 |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm2 | | | 51250 | 4.71 |
| Sample identification | No. Bacteria on treated sample CFU/cm2 (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | 300 | 2.48 | 2.23 | 99.415 |

19. Test Bacteria: Proteus mirabilis ATCC 25933

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | | count | Log |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm2 | | | 30625 | 4.49 |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm2 | | | 25000 | 4.40 |
| Sample identification | No. Bacteria on treated sample CFU/cm2 (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | <6.25 | <0.80 | >3.60 | >99.975 |

20. Test Bacteria: Bacillus cereus ATCC 14579

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | | count | Log |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm2 | | | 19375 | 4.29 |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm2 | | | 16250 | 4.21 |
| Sample identification | No. Bacteria on treated sample CFU/cm2 (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | 18 | 1.26 | 2.95 | 99.885 |

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21. Test Bacteria: Streptococcus faecalis ATCC 29212

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | | count | Log |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm2 | | | 58750 | 4.77 |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm2 | | | 24375 | 4.39 |
| Sample identification | No. Bacteria on treated sample CFU/cm2 (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | <6.25 | <0.80 | >3.59 | >99.974 |

22. Test Bacteria: Meticillin Resistant Staphylococcus aureus ATCC 43300

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | | count | Log |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm2 | | | 29375 | 4.47 |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm2 | | | 41250 | 4.62 |
| Sample identification | No. Bacteria on treated sample CFU/cm2 (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | 25 | 1.39 | 3.23 | 99.939 |

23. Test Bacteria: Listeria monocytogenes ATCC 19112

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | | count | Log |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm2 | | | 39375 | 4.59 |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm2 | | | 60000 | 4.78 |
| Sample identification | No. Bacteria on treated sample CFU/cm2 (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | <6.25 | <0.80 | >3.98 | >99.990 |

24. Test Bacteria: Klebsiella pneumoniae ATCC 2146 - MBL strain

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | | count | Log |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm2 | | | 10250 | 4.01 |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm2 | | | 36250 | 4.56 |
| Sample identification | No. Bacteria on treated sample CFU/cm2 (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | 312 | 2.49 | 2.06 | 99.138 |

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25. Test Bacteria: Enterobacter sakazakii ATCC 51329

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | | count | Log |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm2 | | | 56250 | 4.75 |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm2 | | | 55000 | 4.74 |
| Sample identification | No. Bacteria on treated sample CFU/cm2 (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | <6.25 | <0.80 | >3.94 | >99.989 |

26. Test Bacteria: Escherichia coli ATCC 25922

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | | count | Log |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm2 | | | 48125 | 4.68 |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm2 | | | 113750 | 5.06 |
| Sample identification | No. Bacteria on treated sample CFU/cm2 (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | <6.25 | <0.80 | >4.26 | >99.995 |

27. Test Bacteria: Corynebacterium minutissimum ATCC 23348

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | | count | Log |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm2 | | | 18750 | 4.27 |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm2 | | | 50625 | 4.70 |
| Sample identification | No. Bacteria on treated sample CFU/cm2 (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | <6.25 | <0.80 | >3.91 | >99.988 |

28. Test Bacteria: Streptococcus mutans MTCC 497

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | | count | Log |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm2 | | | 26875 | 4.43 |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm2 | | | 13750 | 4.14 |
| Sample identification | No. Bacteria on treated sample CFU/cm2 (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | <6.25 | <0.80 | >3.34 | >99.955 |

29. Test Bacteria: Vancomycin Resistant Enterococci ATCC 51299

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | | count | Log |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm2 | | | 36875 | 4.57 |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm2 | | | 20000 | 4.30 |
| Sample identification | No. Bacteria on treated sample CFU/cm2 (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | <6.25 | <0.80 | >3.50 | >99.969 |

30. Test Bacteria: Vancomycin Resistant Enterococci ATCC 2006

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | | count | Log |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm2 | | | 26250 | 4.42 |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm2 | | | 115000 | 5.06 |
| Sample identification | No. Bacteria on treated sample CFU/cm2 (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | 31 | 1.49 | 3.57 | 99.973 |

31. Test Bacteria: Citrobacter freundii ATCC 43864

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | | count | Log |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm2 | | | 26250 | 4.42 |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm2 | | | 50625 | 4.70 |
| Sample identification | No. Bacteria on treated sample CFU/cm2 (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | <6.25 | <0.80 | >3.91 | >99.988 |

32. Test Bacteria: Corynebacterium xerosis ATCC 7711

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | | count | Log |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm2 | | | 12750 | 4.11 |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm2 | | | 14375 | 4.16 |
| Sample identification | No. Bacteria on treated sample CFU/cm2 (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | 44 | 1.64 | 2.52 | 99.696 |

33. Test Bacteria: *Proteus vulgaris* ATCC 13315

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | | count | Log |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm2 | | | 6600 | 3.82 |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm2 | | | 10500 | 4.02 |
| Sample identification | No. Bacteria on treated sample CFU/cm2 (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | <6.25 | <0.80 | >3.23 | >99.940 |

 34. Test Bacteria: *Micrococcus luteus* ATCC 11880

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | | count | Log |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm2 | | | 5810 | 3.76 |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm2 | | | 30000 | 4.48 |
| Sample identification | No. Bacteria on treated sample CFU/cm2 (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | <6.25 | <0.80 | >3.68 | >99.979 |

 35. Test Bacteria: *Klebsiella pneumoniae* ATCC 700603 ESBL strain

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | | count | Log |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm2 | | | 23125 | 4.36 |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm2 | | | 9625 | 3.98 |
| Sample identification | No. Bacteria on treated sample CFU/cm2 (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | <6.25 | <0.80 | >3.19 | >99.935 |

 36. Test Bacteria: *Salmonella enterica* MTCC 733

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | | count | Log |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm2 | | | 45625 | 4.66 |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm2 | | | 50000 | 4.70 |
| Sample identification | No. Bacteria on treated sample CFU/cm2 (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | <6.25 | <0.80 | >3.90 | >99.988 |

37. Test Bacteria: *Sarcina luteus* NCIM 2210

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | | count | Log |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm ² | | | 35625 | 4.55 |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm ² | | | 38750 | 4.59 |
| Sample identification | No. Bacteria on treated sample CFU/cm ² (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | <6.25 | <0.80 | >3.79 | >99.984 |

38. Test Bacteria: *Escherichia coli* K12 MTCC 1302

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | | count | Log |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm ² | | | 32500 | 4.51 |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm ² | | | 83750 | 4.92 |
| Sample identification | No. Bacteria on treated sample CFU/cm ² (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | 230 | 2.36 | 2.56 | 99.724 |

39. Test Bacteria: *Burkholderia cepacia* MTCC 12970

| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | | count | Log |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm ² | | | 34375 | 4.54 |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm ² | | | 28125 | 4.45 |
| Sample identification | No. Bacteria on treated sample CFU/cm ² (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | 156 | 2.19 | 2.26 | 99.444 |

40. Test Bacteria: *Clostridium perfringens* ATCC 13124

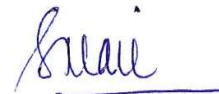
| Quantitative Assessment of Activity: JIS Z 2801: 2010; Amen. 1: 2012 | | | count | Log |
|--|---|-----------------------------------|---|------------------------------|
| Uncoated Leneta panels: Inoculum on untreated sample at 0 hours (U0) CFU/cm ² | | | 14375 | 4.16 |
| Uncoated Leneta panels: Inoculum on untreated sample after 24 hours (Ut) CFU/cm ² | | | 114375 | 5.06 |
| Sample identification | No. Bacteria on treated sample CFU/cm ² (At) | Log of Bacteria on treated sample | Antimicrobial Activity (R) (Log Ut- At) | Microbial Kill (% Reduction) |
| Halo Majestic Interiors Shine | <6.25 | <0.80 | >4.26 | >99.995 |

The Standard Antimicrobial value of Evaluation R \geq 2.0

COMMENT:

When tested as specified, sample labeled as **Halo Majestic Interiors Shine; PASSES** the Quantitative Assessment of activity for Staphylococcus aureus, Escherichia coli, Pseudomonas aeruginosa, Klebsiella pneumoniae, Enterococcus faecalis, Enterococcus hirae, Serratia marcescens, Pseudomonas stutzeri, Vibrio cholerae, Bacillus subtilis, Nocardia rugosa, Shigella flexneri, Staphylococcus epidermidis, Alcaligenes faecalis, Acinetobacter baumannii, Pseudomonas putida, Salmonella typhimurium, Enterobacter aerogenes, Proteus mirabilis, Bacillus cereus, Streptococcus faecalis, Meticillin Resistant Staphylococcus aureus, Listeria monocytogenes, Klebsiella pneumoniae, Enterobacter sakazakii, Escherichia coli, Corynebacterium minutissimum, Streptococcus mutans, Vancomycin Resistant Enterococci, Vancomycin Resistant Enterococci, Citrobacter freundii, Corynebacterium xerosis, Proteus vulgaris, Micrococcus luteus, Klebsiella pneumoniae, Salmonella enterica, Sarcina luteus, Escherichia coli, Burkholderia cepacia and Clostridium perfringens by **JIS Z 2801: 2010; Amendment 1: 2012 Test Method**.

For BIOTECH TESTING SERVICES

A handwritten signature in blue ink, appearing to read 'Shilpa'.

Dr Shilpa U. Nair
Quality Manager
(Authorized Signatory)