Greenlam
LAMINATES

# Technical Data Sheet

# TECHNICAL SPECIFICATIONS

Greenlam LAMINATES

| S. NO. | PROPERTIES | TEST STANDARD, EN 438: 2016 | UNIT | SPECIFIED VALUES | GRENLAM VALUES |
|---|---|---|---|---|---|
| 1 | Classification | EN 438-6- 4 | | EXTERIOR, SEVERE USE FLAME RETARDANT GRADE, EDF | |
| | **PHYSICAL & DIMENSIONAL PROPERTIES** | | | | |
| 2 | Nominal Thickness | | mm | 6.0 | |
| 3 | Thickness Variation | EN 438-2 – 5 | mm | 6.0 ± 0.40 | 6.0 ± 0.30 |
| 4 | Length and width Variation | EN 438-2 – 6 | mm | +10mm /-0mm | +5mm /-0mm |
| 5 | Edges Straightness | EN 438-2 – 7 | mm/M | 1.5 (max) | ≤ 1 |
| 6 | Edges Squareness | EN 438-2 – 8 | mm/M | 1.5 (max) | Complies |
| 7 | Flatness | EN 438-2 – 9 | mm/M | 5.0 (max) | Complies |
| 8 | Density | EN ISO 1183 -1:2004 | g/cm$^3$ | 1.35 | 1.38 |
| 9 | Dimensional Stability at Elevated Temperature | | EN 438-2 -17 | | |
| | Longitudinal Direction | | % | 0.30 (max.) | 0.18 |
| | Transverse Direction | | % | 0.60 (max) | 0.38 |
| | **MECHANICAL PROPERTIES** | | | | |
| 10 | Resistance to wet conditions, | EN 438-2 : 15 | | | |
| | Increase in mass | | % | 8.0 (max) | 4.1 |
| | Surface Rating | | Rating | 4 (min) | 5 |
| | Edge Rating | | Rating | 3 (min) | 3 |
| 11 | Resistance to climatic shock | EN 438-2 : 19 | Rating | Appearance -4 (min) | 4 |
| | | | Index | $D_s$ – 0.80 (min) | ≥ 0.95 |
| | | | Index | $D_m$ – 0.80 (min) | ≥ 0.95 |
| 12 | Resistance to Impact by Large Diameter Ball | | | | |
| | Drop Height | EN 438-2 -22 | mm | 1800 | 2000 |
| | Diameter of Indentation | | mm | 10 (max) | 7 |
| 13 | Resistance to Crazing | EN 438-2 -24 | Class | Not worse than 4 | 5 |
| 14 | Flexural Strength | EN ISO 178:2003 | Mpa | 80 (min) | 100 |
| 15 | Flexural Modulus | EN ISO 178:2003 | Mpa | 9000(min) | 10700 |
| 16 | Thermal Conductivity | EN 12524:2000 | W/M°K | No requirement | 0.24 |
| 17 | Resistance to fixing (Screw pull out strength) | ISO 13894-1; 9 | N | 2000 (min) | ≥2000 |
| | **SURFACE PROPERTIES** | | | | |
| 18 | Resistance to Scratching | EN 438-2 -25 | N | 3.0 (min) | > 3.0 |
| 19 | Resistant to wet heat (100°C ) | EN 438 -2-18 | Class | 4 (min) | 5 |
| 20 | Resistance to Water Vapour | EN 438-2-14 | Class | Not worse than 4 | 5 |
| 21 | Resistance to Dry Heat at 160° C | EN 438-2 -16 | Class | Not worse than 4 | 5 |
| 22 | Resistance to Surface Wear (Initial Point) | EN 438-2 -10 | Rev. | 150 (min) | 200 |
| 23 | Resistance to staining | EN 438-2 -26 | Class | | |
| | Group 1 & 2 | | | 5 | 5 |
| | Group 3 | | | 4 | ≥ 4 |
| 24 | Resistance to UV Light, after 1500 hours exposure | EN 438-2-28 | Rating | Grey Scale contrast-3 (min) | 3~4 |
| | | | | Appearance- 4 (min.) | 4~5 |
| 25 | Resistance to artificial weathering including light fastness, after 650 MJ/M² Radiant exposure | EN 438-2-29 | Rating | Grey Scale contrast-3 (min) | 3~4 |
| | | | | Appearance- 4 (min.) | 4~5 |
| | **FIRE PERFORMANCE** | | | | |
| 26 | Reaction to Fire | EN 13501-1 | Euroclass | B-s2, d0 | B-s1, d0 |
| 27 | Calorific Value | ISO 1716: 2010 | MJ/kg | 19.91 (max) | 19.88 |
| | **HEALTH CHARACTERISTICS** | | | | |
| 28 | Anti-bacterial Efficacy & activity | JIS 2801-2012 | | | |
| | % Reduction in 24 hours | | % | 95.0 (min) | 99.99 |
| | Activity after 24 hours | | Log Reduction | 2.0 (min) | Exceeds |
| 29 | Anti-Fungus Efficacy | ASTM G-21-2015 | | | |
| | Growth after 28 days | | Class | 1 | 0 ( No Growth) |

**CLASS (RATING) :** 1 = Surface Damage 2 = Severe appearance alteration 3 = Moderate Change 4 = Slight change visible from certain angle 5 = No Change

**Bacteria Tested:** 1. Pseudomonas Aeruginosa, 2. Enterococcus Faecalis, 3. Candida Albicans, 4. Pseudomonas Aeruginosa, 5. Escherichia Coli, 6. Klebsiella Pneumoniae, 7. MRSA (Methicillin Resistant Staphylococcus Aureus), 8. Salmonella Enterica

**Fungus Tested:** 1.Aspergillus niger, 2. Penicillium funicolosum, 3. Gliocladium virens, 4. Chaetobium globosum 5. Aurobasidium pullulans

**Note:** Greenlam products are manufactured thoroughly to standards. The values given above are to the best of knowledge but without liability/warranty, expressed or implied.

GREENLAM ANTI BACTERIAL COMPACT LAMINATES

GREENGUARD PRODUCT CERTIFIED FOR LOW CHEMICAL EMISSIONS UL.COM/GG UL 2818

GREENGUARD PRODUCT CERTIFIED FOR LOW CHEMICAL EMISSIONS UL.COM/GG UL 2818 GOLD

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CE

EN 438-2

Greenlam provides FSC® Certified product (Certificate No. SCS-COC-003328), on request.

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