



## Technical Data Sheet

### G-Bio<sup>®</sup>

G-Bio<sup>®</sup> is produced by a nano-technology which has antibacterial properties providing extra protection against the forming and existing of bacterias.

G-Bio<sup>®</sup> is an indispensable product for the areas where hygienic protection is essential. Antibacterial properties of G-Bio<sup>®</sup> ensure the elimination of 99% of bacterias within 24 hours; this claim is scientifically proven and certificated.

It has become a product which is used safely and increasingly in day to day applications such as kitchens, surgery rooms, swimming pools, saunas, toilets, countertops and benches. It is an incisive choice for hospitals, medical centers, houses and public buildings.

EN Classification		VGS, HGS, CGS
EN 438 3/4	Thickness Range	0,8mm - 20mm
	Dimensions	1400x3660mm / 1540x3050mm / 1540x3660mm

-   
WATER  
REPELLANT
-   
DRY HEAT  
RESISTANCE
-   
SCRATCH &  
ABRASION  
RESISTANCE
-   
LOW LIGHT  
REFLECTIVITY
-   
ANTI  
BACTERIAL
-   
HEAT & COLD  
RESISTANCE
-   
EASY TO  
CLEAN
-   
ULTRA COLOR  
INTENSITY
-   
IMPACT  
RESISTANCE
-   
RESISTANCE TO  
HOUSEHOLD AND  
LABORATORY  
CHEMICAL

Characteristics	Test Method	Test Value	Required Value
Thickness	EN 438-2 section 5	According to the required thickness	$2.0 \leq t < 3.0$ mm : $\pm 0.20$ mm $3.0 \leq t < 5.0$ mm : $\pm 0.3$ mm $5.0 \leq t < 8.0$ mm : $\pm 0.4$ mm $8.0 \leq t < 12.0$ mm : $\pm 0.5$ mm $12.0 \leq t < 16.0$ mm : $\pm 0.6$ mm $16.0 \leq t < 20.0$ mm : $\pm 0.7$ mm $20.0 \leq t < 25.0$ mm : $\pm 0.8$ mm $25.0 \leq t$ : According To Agreement customer / producer
Density	ISO 1183 - 1	1.4 gr/cm <sup>3</sup>	Min. 1.35 gr/cm <sup>3</sup>
Wear Resistance	EN 438-2(1) section 10 CGS <sup>(2)</sup>	IP = 185 Rev. Wear Value = 485 Rev.	Initial Point $\geq 150$ Rev. Wear Value $\geq 350$ Rev.
Scratch Resistance	EN 438-2 section 25 CGS	3 N 4 N	Flat Surface Min. 2 N Textured Surface Min. 3 N
Impact Resistance	EN 438-2 Big Ball section 21 CGS $2.0 \leq t < 6.0$ mm $t \geq 6.0$ mm	No Crack , 4,5 mm No Crack , 3,5 mm	1400 mm height : no crack, 10 mm Max. 1800 mm height : no crack, 10 mm Max.
Resistance To Crazing ( 20 Hours @ 80°C )	EN 438-2 section 24 CGS	Level 4	Min. level 4
Resistance to Dry Heat at 180°C	EN 438-2 section 16 CGS Flat / Textured Surface Finish	Level 5	Min. level 4
Resistance to Boiling Water	EN 438-2 section 12 CGS $2.0 \leq t < 5.0$ mm $t \geq 5.0$ mm Flat / Textured Surface Finish	2.2% 3.1% 0.55% 0.65% Level 5	Max. 5% in weight Max. 6% in thickness Max. 2% in weight Max. 2% in thickness Min. Level 4

Characteristics	Test Method	Test Value	Required Value
Resistance to Water Vapor	EN 438-2 section 14 CGS  Flat / Textured Surface Finish	Level 5	Min. Level 4
Resistance to Cigarette Burn	EN 438-2 section 30 CGS	Level 4	Min. Level 3
Resistance to Staining	EN 438-2 section 26 CGS  Group 1 + 2  Group 3	Level 5  Level 5	Min. level 5  Min. level 4
Flatness	EN 438-2 section 9 CGS  $2.0 \leq t < 6.0$ mm  $6.0 \leq t < 10.0$ mm  $t \geq 10.0$ mm	1.23 mm  1.46 mm  1.87 mm	Max. 8 mm / 1 M length  Max. 5 mm / 1 M length  Max. 3 mm / 1 M length
Light Fastness	EN 438-2 section 27 CGS  Grey Scale	Level 5	Min. level 4
High Temp. Stability 70°C	EN 438-2 section 17 CGS  $2.0 \leq t \leq 5.0$ mm  $t \geq 5.0$ mm	L : 0.22 mm W : 0.35 mm  L : 0.18 mm W : 0.23 mm	L : Max. 0.4 mm W : Max. 0.8 mm  L : Max. 0.3 mm W : Max. 0.6 mm
Tensile Strength	EN ISO 527 – 2 CGS	85 MPa	Min. 60 MPa
Flexural Strength	EN ISO 178 CGS	114 MPa	Min. 80 MPa
Flexural Modulus	EN ISO 178 CGS	16,522 MPa	Min. 9000 MPa
Thermal Conductivity	ASTM C 518	0.416 W/mK	---

Characteristics	Test Method	Test Value	Required Value
Coefficient Of Linear Thermal Expansion (COTE)	ASTM D696-08 <sup>(3)</sup>	$6.0 \times 10^{-6}$ mm / mm °c	—
Total Volatile Organic Compound Emission	ASTM D5116	< 0.010 mg/m2/hr	< 0.5 mg/m2/hr
Antibacterial Activity <sup>(3)</sup>	<p><b><u>JIS Z 2801 : 2000</u></b></p> <p>Staphylococcus Aureus ( ATCC 6538p )<sup>(6)</sup></p> <p>Pseudomonas Aeruginosa ( ATCC 12924 )<sup>(6)</sup></p> <p>E. Coli ( ATCC 25922 )<sup>(6)</sup></p> <p>Salmonella Cholearesuis ( ATCC 10708 )<sup>(6)</sup></p> <p><b><u>ISO 22196 : 2011</u></b></p> <p>Escherichia Coli ( ATCC 25922 )<sup>(6)</sup></p> <p>MRSA NCTS(8) 13142</p> <p>Staphylococcus Aureus ( ATCC 6538p )<sup>(6)</sup></p> <p>Pseudomonas Aeruginosa ( ATCC 9027 )<sup>(6)</sup></p> <p>Salmonella Cholearesuis ( ATCC 10708 )<sup>(6)</sup></p>	<p>R<sup>(4)</sup> = 2.84</p> <p>R<sup>(4)</sup> = 3.00</p> <p>R<sup>(4)</sup> = 3.11</p> <p>R<sup>(4)</sup> = 2.90</p> <p>R<sup>(7)</sup> ≥ 4.1</p> <p>R<sup>(7)</sup> ≥ 4.1</p> <p>R<sup>(7)</sup> = 4.0</p> <p>R<sup>(7)</sup> ≥ 4.1</p> <p>R<sup>(4)</sup> = 2.90</p>	<p>R<sup>(4)</sup> ≥ 2.00</p> <p>R<sup>(4)</sup> ≥ 2.00</p> <p>R<sup>(4)</sup> ≥ 2.00</p> <p>R<sup>(4)</sup> ≥ 2.00</p> <p>R<sup>(7)</sup> ≥ 2.0</p> <p>R<sup>(7)</sup> ≥ 2.0</p> <p>R<sup>(7)</sup> ≥ 2.0</p> <p>R<sup>(7)</sup> ≥ 2.0</p> <p>R<sup>(7)</sup> ≥ 2.0</p>
Available Decors <sup>(5)</sup>	- Snow White 3000 - Office Grey 3153	---	---

**Remarks :**

(1) Required Values Based on 438-4

(2) CGS = Compact Grade Standard Laminate

(3) The Antibacterial activity is tested with 4 &amp; 5 different types in each test method of bacteria and test reports are available upon request

(4) R = Value of Antimicrobial Activity

(5) For any other décor – only after technical approval

(6) ATCC = American Type Culture Collection

(7) Log10 reduction from initial CFU cm<sup>-2</sup>

(8) NCTC = National Collection of Type Cultures