LAMICOLOR®

LAMCO HPL COMPACT (CGS-CGF)

Self-supporting material (from 2 mm) consisting of layers of kraft paper impregnated with phenolic resins and an outer layer - on one or both sides - of decorative paper impregnated with aminoplastic resins; all bonded together by means of high pressure (9 MPa) and heat (150 °C). This material is produced in conformity to EN 438-4:2005.

PROPERTY	TEST METHOD (EN 438: 2005)	PROPERTY OR ATTRIBUTE	UNIT	VALUES CGS	VALUES CGF
Thickness ± tolerance	EN 438-2.5	thickness (t)	mm	2,0 ≤ t < 3,0 ± 0,20 3,0 ≤ t < 5,0 ± 0,30 5,0 ≤ t < 8,0 ± 0,40 8,0 ≤ t <12,0 ± 0,50 12,0 ≤ t < 16,0 ± 0,60 16,0 ≤ t < 20,0 ± 0,70 20,0 ≤ t < 25,0 ± 0,80 25,0 ≤ t to be agreed between supplier and customer	
Flatness	EN 438-2.9	maximum deviation	mm/mtl (1 side dec.)	50 (2,0 ≤ t ≤ 4,0)	50 (2,0 ≤ t ≤ 4,0)
			mm/mtl (2 side dec.)	8,0 (2,0 ≤ t < 6,0) 5,0 (6,0 ≤ t < 10,0) 3,0 (10,0 ≤ t)	8,0 (2,0 ≤ t < 6,0) 5,0 (6,0 ≤ t < 10,0) 3,0 (10,0 ≤ t)
Resistance to surface wear	EN 438-2.10	wear resistence	rvs	IP ≥ 150 A ≥ 350	IP ≥ 150 A ≥ 350
Resistance to immersion in boiling water	EN 438-2.12	mass increase	%	≤ 5 (2 ≤ t < 5) ≤ 2 (5 ≤ t)	≤ 7 (2 ≤ t < 5) ≤ 3 (5 ≤ t)
		thickness increase	%	≤ 6 (2 ≤ t < 5) ≤ 2 (5 ≤ t)	≤ 9 (2 ≤ t < 5) ≤ 6 (5 ≤ t)
		appear. gloss finish appear. other finish	rating	≥ 3 ≥ 4	≥ 3 ≥ 4
Resistance to dry heat (180°C)	EN 438-2.16	appear. gloss finish appear. other finish	rating	≥ 3 ≥ 4	≥ 3 ≥ 4
Resistance to wet heat (100°C)	EN 12721	appear. gloss finish appear. other finish	rating	≥ 3 ≥ 4	≥ 3 ≥ 4
Dimensional stability at elevated temperature	EN 438-2.17	cumulative dimensional change	% long. % transv.	(2 ≤ t ≤ 5) 0,40 0,80	(2 ≤ t ≤ 5) 0,40 0,80
			% long. % transv.	(5 ≤ t) 0,30 0,60	(5 ≤ t) 0,30 0,60
Res. to impact by large diameter ball	EN 438-2.21	drop height	mm (min)	1400 (2 ≤ t < 6) 1800 (6 ≤ t)	1400 (2 ≤ t < 6) 1800 (6 ≤ t)
		indentation diameter	mm (max)	10	10
Resistance to crazing	EN 438-2.24	appearance	rating	≥ 4	≥ 4
Resistance to scratching[(1)]	EN 438-2.25	smooth finishes texture finishes	rating	≥ 2 ≥ 3	≥ 2 ≥ 3

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Resistance to staining	EN 438-2.26	appear. groups 1-2 appear. groups 3	rating	5 ≥ 4	5 ≥ 4
Lightfastness	EN 438-2.27	contrast	grey scale rating	≥ 4	≥ 4
Resistance to cigarette burns	EN 438-2.30	appearance	rating	≥ 3	≥ 3
Resistance to water vapour	EN 438-2.14	appear. gloss finish appear. other finish	rating	≥ 3 ≥ 4	≥ 3 ≥ 4
Electrical resistance	EN 61340-4-1	R_V (23°C /50% RH)	Ohm	10^{9} - 10^{11}	10^{9} - 10^{11}
Thermal conductivity	DIN 52 612	-	W/m . ° K	0,25	0,25
Coefficient of linear thermal expansion	ASTM D 696	-	° C -1	L = 1,6 x 10^{-5} ca. T = 3,5 x 10^{-5} ca.	L = 1,6 x 10^{-5} ca. T = 3,5 x 10^{-5} ca.
Tensile strenght	EN ISO 527-2	stress	Mpa	≥ 60	≥ 60
Flexural strenght	EN ISO 178	stress	Mpa	≥ 80	≥ 80
Flexural modulus (E)	EN ISO 178	stress	Mpa	≥ 9000	≥ 9000
Density	ISO 1183	density	gr/cm^3	≥ 1,40	≥ 1,40

(1) Resistance to scratching is depending from finish and colour.
Note: The colour of individual lots may vary as a result of the technology and tyte of pigment used. Pay attention to the direction of the texture.

FIRE PERFORMANCE

TEST METHOD	STANDARD	CLASSIFICATION	
		CGF	CGS
Small flame and radiant panel	UNI 8457 UNI 9174 UNI 9177	class 1	class 1
Spread of flame	BS 476-7	class 1	class 2
Brandschacht	DIN 4102-1	B1	B2
Epiradiateur	NF P 92-501	M1	M2
Smoke dendity and toxicity	NF F 16-101	min F2	min F2
Reaction to fire SBI (EN 13823)	EN 13501-1	(3 ≤ t < 4) B-s2,d0 (t ≥ 4) B-s1,d0 (aluminium frame)(2)	(4 ≤ t < 6) D,s2-d0 (t ≥ 6) C,s1-d0 (aluminium frame)(2)
		(t ≥ 6) B-s2,d0 (any kind of frame)(2)	

(2) Fire behaviour depends on thickness and fitting of the HPL, from technical characteristics of the support and of the glue. The laminate manufacturer should be contacted for details of fire test reports and certifications held, and for information on fire test methods and specifications.