

12.0MM COMPACT HPLS

S. NO.	PROPERTIES	UNIT	SPECIFIED VALUE AS PER IS 2046:1995	AIROLAM TYPICAL VALUES
1	Classification		COMPACT-CGS	
2	Thickness	mm	12.0 ± 0.60	Complies
3	Length & Width of Panel	mm	+10/00mm	Complies
4	Resistance to Dry Heat at 180° C	Grade	Not worse than 4	5
5	Resistance to Surface Wear	Revolution	350 (min.)	>350
6	Resistance to Immersion in Boiling Water			
	a) Mass Increase	%	2.0 (max.)	0.33
	b) Thickness	%	2.0 (max.)	0.76
	c) Appearance	Grade	Not worse than 4	5
7	Dimensional Stability at Deviated Temperature			
	a) Longitudinal	%	0.25 (max.)	0.11
	b) Transverse	%	0.55 (max)	0.19
8	Dimensional Stability at 20°C Temperature			
	a) Longitudinal	%	0.16 (max.)	0.08
	b) Transverse	%	0.22 (max.)	0.13
9	Resistance to Impact by Large Diameter Ball			
	a) Drop Height	mm	1800 (min.)	2000
	b) Diameter of Indentation	mm	10 (max.)	7
10	Resistance to Scratching	N	2.0 (min.)	2.5
11	Resistance to Colour Change in Xenon Arc Lamp	Grade	Not worse than 6	6
12	Resistance to Staining Group 1 & 2	Grade	5	5
	Group 3 & 4	Grade	4	4
13	Resistance to Cigarette Burns	Grade	Not worse than 3	4
14	Resistance to Steam	Grade	Not worse than 4	5
15	Resistance to Moisture	Grade	Not worse than 4	5
16	Resistance to Crazing	Grade	Not worse than 4	4
17	Flexural Modulus	Mpa (min.)	10000 (min.)	10500
18	Flexural Strength	MPa(min.)	100 (min.)	112
19	Tensile Strength	MPa(min.)	70 (min.)	78
20	Density	g/cm <sup>3</sup>	1.35 (min.)	1.39
21	Screw Holding Capacity, ISO 13894-1: 2000, TM 15	N	4000	4500 (min.)

BIO-CHEMICAL PROPERTY	STANDARD	UNIT	REQUIREMENT	TEST RESULT
Antiviral Efficacy & Activity	ISO 21702-2019	% Reduction in10 minutes	No Requirement	90.0% (Min.)
		% Reduction in 30 minutes	No Requirement	99.0% (Min.)
Virus tested		SARS CoV-2		
Antibacterial Efficacy & Activity	ISO 21702-2019	% Reduction in 2 hours	No Requirement	90% (Min.)
		% Reduction in 24 hours	95.0 (Min.)	99.9% (Min.)
		Activity after 24 hours	2.0 (Min .)	Exceeds
Virus tested		MS2 Bacteriophage		
Antibacterial Efficacy & Activity	JIS 2801-2012	% Reduction in 24 hours	95.0 minimum	99.99
		Activity after 24 hours	2.0(Min)	Exceeds
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		
Antifungal Efficacy	ASTM G-21-2015	Growth after 28 days	Rating 1	Rating O (No Growth)
Fungus tested		1. Aspergillus niger, 2. Penicillium funicolosum, 3. Gliocladium virens, 4. Chaetobium globosum, 5. Aurobasidium pullulans		

- Airolam Compact Laminates can be made available in Fire Retardant, Lab Guardian (Chemical Resistant) and Antistatic variants.
- Dimensions of the boards offered:

Feet	mm
4’ x 8’	1220 x 2440
4’ x 10’	1220 x 3050
4.25’ x 10’	1300 x 3050
5’ x 6’	1525 x 1830
5’ x 12’	1525 x 3660
6’ x 6’	1830 x 1830
6’ x 8’	1830 x 2440
6’ x 12’	1830 x 3660

- Please refer to Index on range offering in above mentioned dimensions.
- Please contact your local representative for
  - a) other thickness and size
  - b) for complete range

S.NO.	PROPERTIES	UNITS	TEST METHOD AS PER EN 438 PART 2:2016	SPECIFICATION	TYPICAL AIROLAM ESD HPL
1	Classification & Specification		EN 438-3	D-275-Suede Finish* (*varies with finish in folder)	
2	Resistance to Surface Wear	Revolutions, (min)	EN 438-2 -10	150	650 min
3	Resistance to Scratching	N, (min)	EN 438-2 - 25	3.0	4.5 min
4	Resistance to immersion in boiling water, appearance	Rating (min)	EN 438-2-12	4	4, complies
5	Resistance to staining	Group 1 & 2 Rating (min)	EN 438-2 - 26	5	5
	Group 3 Rating (min)			4	4
6	Dimensional Stability at Elevated Temperature		EN 438-2 - 17		
	Longitudinal	% Max	L (a)	0.55	0.32
	Transverse	% Max	T (b)	1.05	0.69
7	Resistance to Impact by Large Diameter Ball (Optional)				
	a) Drop Height	mm (min)	EN 438-2 - 21	800	Complies
	b) Indent Diameter	mm (max)		10	5
8	Resistance to Impact Small Diameter Ball	N (min)	EN 438-2 - 20	25	Complies
9	Resistance to Dry Heat at 160° C	Rating (min)	EN 438-2 -16	4	4
10	Resistance to cracking under stress	Rating (min)	EN 438-2 - 23	4	4
11	Resistance to Wet Heat (100 °C)	Rating (min)	EN 438-2-18	4	4
12	Resistance to water vapour	Rating (min)	EN 438-2-14	4	4
13	Density	g/cm³ (min)	EN ISO 1183 -1:2004	1.35	1.40 ± 0.05
14	Light Fastness (Xenon Arc)	Contrast Grey scale rating	EN 438-2-27	4 to 5	5
ESD Properties as per IEC 61340 & ESD S-4.1, S-20.20					
15	Surface Resistance	Test Condition: Temperature: 25 °C, Humidity (%): 45%  Instrument Used: SURFACE RESISTIVITY METER		Preferred Value	Greenlam ESD HPL Results
	Surface to Ground Resistance (Max.)			< 1.0x10^9 Ohm/Square	Complies
	Point to Point Resistance (Max.)			< 1.0x10^8 Ohm/square	Complies

1. When cleaning the ESD surface becomes necessary, it is important to use non-abrasive cleaners only. If the surface is stained, baking soda and water may be used to remove the stain but excessive scrubbing may damage the surface.
2. It is important that no film or residue be left on the surface of the ESD top. Failure to thoroughly clean the surface will reduce the dissipative properties of the laminate. Work surface must be grounded for proper dissipation.

# TECHNICAL SPECIFICATIONS

**AIROLAM®**

makes it great

LAMINATE | PLY | PANEL | DOOR

S.NO.	PROPERTIES	UNITS	TEST METHOD AS PER EN 438 PART 2 & 4 : 2016	SPECIFIED VALUES AS IN EN 438 PART 6 : 2016	TYPICAL AIROLAM RESULTS
1	Classification		EN 438-6- 4	<b>EXTERIOR GRADE-SEVERE USE- FIRE RETARDANT GRADE (EDF)</b>	
	Panel Surface Quality				
2	Dirt, Spots or any similar surface defect	mm <sup>2</sup> /M <sup>2</sup>	EN 438-2, 6.2.4.2	2.0 (max.)	Complies
	Fibers, Hairs, Scratches and similar defects	mm/M <sup>2</sup>		20.0 (max.)	Complies
3	Thickness & Maximum Variation	mm	EN 438-2 – 5	6.0 ± 0.40	6.0 ± 0.25
				8.0 ± 0.50	8.0 ± 0.27
4	Length & Width	mm	EN 438-2 – 6	+10mm /-0mm	+5mm /-0mm
5	Flatness	mm/M	EN 438-2 – 9	5.0 (max.)	Complies
6	Edges Straightness	mm/M	EN 438-2 – 7	1.5 (max.)	≤ 1
	Edges Squareness	mm/M	EN 438-2 – 8	1.5 (max.)	Complies
	Resistance to Wet Conditions, Increase in Mass	%	EN 438-2 : 15	8.0 (max.)	4.1
7	Appearance				
	Surface Rating	Rating		4 (min.)	5
	Edge Rating	Rating		3 (min.)	3
	Dimensional Stability at Elevated Temperature		EN 438-2 – 17		
8	Longitudinal	%		0.30(max.)	0.15
	Transverse	%		0.60 (max.)	0.29
	Resistance to Impact by Large Diameter Ball		EN 438-2 – 21		
9	Drop Height	mm		1800	2000
	Diameter of Indentation	mm		10 (max.)	7
10	Resistance to Cigarette Burns	Rating	-		
11	Flexural Modulus	Mpa	EN ISO 178:2003	9000 (min.)	10000
12	Flexural Strength	Mpa	EN ISO 178:2003	80 (min.)	90
13	Density	g/cm <sup>3</sup>	EN ISO 1183 -1 :2004	1.35	1.38 to 1.42
14	Resistance to Fixing (Screw Pull-out Strength) - 8.0mm Thick Board	N	ISO 13894-1; 9	3000 (min.)	>3000
15	Thermal Conductivity/ Resistance	W/m <sup>2</sup> K	EN-12524:2000, EN-12664:2001	-	0.24

LIGHT FASTNESS AND WEATHER RESISTANCE PROPERTIES					
Resistance to Artificial Weathering including Light Fastness, after 650 MJ/M <sup>2</sup> Radiant Exposure	Contrast	EN 438-2-29	Grey Scale Rating	Not worse than 3	3~4
	Appearance	EN 438-2-29	Rating	Minimum 4	4~5
Resistance to UV Light, after 1500 hours Exposure	Contrast	EN 438-2-28	Grey Scale Rating	Not worse than 3	3~4
	Appearance	EN 438-2-28	Rating	Rating Minimum 4	4~5
Resistance to Climatic Shock		EN 438-2-19	Index Ds (min.)	0.95	≥ 0.95
			Index Dm (min.)	0.95	≥ 0.95
			Rating (min.)	4	≥ 4
FIRE PERFORMANCE PROPERTIES					
S. No.	Performance Property	Test Standard	Unit		GREENLAM CLADS VALUE
1	Reaction to Fire	Classification Standards EN 13501-1 : 2007 Tested according to EN 13823:2010 & EN 11925-2 :2010	Euro Class	Classification t≥ 6.0 mm B-S2,d0	B-S1,d0 Superior
		DIN 4102-1	German	B1	B1
		Classification Flame Spread Smoke Developed Index	North America	UL 723	A 0-25 0-450

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TECHNICAL SPECIFICATION FOR AIROLAM HD GLOSS HPL - 1.0MM

S.NO.	PROPERTIES	UNITS	TEST METHOD AS PER EN 438 PART 2 & 3 : 2016	SPECIFICATION	AIROLAM HD GLOSS VALUES
1	Classification	EN 438-3.5.3		HGS	
2	Thickness	EN 438-3 - 6.3	mm	1.00	0.95-1.06
	Thickness Variation		mm (max.)	± 0.10	± 0.06
3	Length & Width		mm	+10mm; -Nil	Conforms
4	Edges Squareness		mm/M	Deviation 1.5 (max.)	Conforms
5	Edges Straightness		mm/M	Deviation 1.5 (max.)	Conforms
6	Flatness		mm/M	Deviation 60 (max.)	Conforms
7	Resistance to Surface Wear, Initial Point	EN 438-2 - 10	Rev. (min.)	150	300
8	Resistance to Impact with Small Diameter Ball	EN 438-2 - 20	N (min.)	20	25
9	Resistance to Scratching	EN 438-2 - 25	Rating (min.)	3	≥ 4
10	Dimensional Stability at Elevated Temperatures	EN 438-2 - 17			
	Machine Direction		% (max.)	0.55	0.25
	Cross Direction		% (max.)	1.05	0.45
11	Resistance to Immersion in Boiling Water	EN 438-2 - 12	Rating (min.) Appearance	For Gloss Finish - 3	≥ 3
12	Resistance to Dry Heat at 160° C	EN 438-2 - 16	Rating (min.) Appearance	For Gloss Finish - 3	≥ 4
13	Resistance to Stains	EN 438-2 - 26			
	Group 1 & 2		Rating (min.) Appearance	5	5
	Group 3			4	≥ 4
14	Resistance to Water Vapour	EN 438-2 - 14	Rating (min.) Appearance	For Gloss Finish - 3	≥ 3
15	Resistance to Wet Heat at 100°C	EN 438-2 - 18	Rating (min.) Appearance	For Gloss Finish - 3	≥ 3
16	Light Fastness (Xenon-Arc Light)	EN 438-2 - 27	Rating (min.) Contrast	4 to 5	≥ 5
17	Density	EN ISO 1183 -1	g/cm <sup>3</sup> (min.)	1.35	1.40

BIO-CHEMICAL PROPERTY	STANDARD	UNIT	REQUIREMENT	TEST RESULT
Antiviral Efficacy & Activity	ISO 21702-2019	% Reduction in10 minutes % Reduction in 30 minutes	No Requirement No Requirement	90.0% (Min.) 99.0% (Min.)
Virus tested		SARS CoV-2		
Antibacterial Efficacy & Activity	ISO 21702-2019	% Reduction in 2 hours % Reduction in 24 hours	No Requirement 95.0 (Min.)	90% (Min.) 99.9% (Min.)
		Activity after 24 hours	2.0 (Min .)	Exceeds
Virus tested		MS2 Bacteriophage		
Antibacterial Efficacy & Activity	JIS 2801-2012	% Reduction in 24 hours Activity after 24 hours	95.0 minimum 2.0(Min)	99.99 Exceeds
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		
Antifungal Efficacy	ASTM G-21-2015	Growth after 28 days	Rating 1	Rating O (No Growth)
Fungus tested		1. Aspergillus niger, 2. Penicillium funicolosum, 3. Gliocladium virens, 4. Chaetobium globosum, 5. Aurobasidium pullulans		

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# TECHNICAL SPECIFICATIONS



S.No.	PROPERTIES	TEST STANDARD	UNIT	SPECIFIED VALUES	AIROLAM VALUES
1	Classification & Test Protocol	IS 2046 : 1995		HGS, Thickness 1.0 mm	
PHYSICAL & DIMENSIONAL PROPERTIES					
	Nominal Thickness		mm	1.0	
2	Thickness variation	Clause - 5.3	mm	1.0 ± 0.10	1.00 (min.)
3	Tolerance on Length	Clause - 5.4.6	mm	+10, -Nil	+6, -Nil
4	Tolerance on Width	Clause - 5.4.6	mm	+10, -Nil	+6, -Nil
5	Straightness of edges	Clause - 5.4.7	mm/m	1.5 (max.)	Conforms
6	Squareness	Clause - 5.4.8	mm/m	1.5 (max.)	Conforms
7	Density	EN ISO 1183 -1:2004	kg/m3	1360 - 1400	Conforms
8	Warping (Flatness)	Clause - 5.4.5	mm/m	120 (max.)	Conforms
9	Dimensional Stability at Elevated Temperatures				
	Longitudinal Direction	Annex - F	%	0.55 (max.)	Conforms
	Transverse Direction	Annex - F	%	1.05 (max)	Conforms
10	Dimensional Stability at 20°C				
	Longitudinal Direction	Annex - G	%	0.38 (max.)	Conforms
	Transverse Direction	Annex - G	%	0.60(max)	Conforms
MECHANICAL PROPERTIES					
11	Resistance to Immersion in Boiling Water				
	Mass Increase	Annex - D	%	10.0 (max.)	Conforms
	Thickness Increase	Annex - D	%	11.8 (max.)	Conforms
	Appearance	Annex - D	Grade	Not worse than 4	Conforms
12	Resistance to Impact by Small Diameter Ball				
	Spring Force	Annex - H	N	20	Conforms
13	Resistance to Cracking	Annex - K	Grade	Not worse than 4	Conforms
SURFACE PROPERTIES					
14	Resistance to Scratching	Annex - L	N	2.0 (min.)	3.0 (min.)
15	Resistant to Steam	Annex - T	Grade	Not worse than 4	Conforms
16	Resistance to Water Vapor	EN 438-2-14	Class	Not worse than 4	Conforms
17	Resistance to Dry Heat at 180° C				
	Gloss Finish	Annex - E	Grade	Not worse than 3	Conforms
	Other Finish	Annex - E	Grade	Not worse than 4	Conforms
18	Resistance to Surface Wear,	Annex - C	Rev.	350 (min.)	700 (min.)
19	Resistance to Cigarette Burns	Annex – P	Grade	Not worse than 3	Conforms
20	Resistance to staining				
	Group 1 & 2	Annex – M	Grade	Not worse than 5	Conforms
	Group 3 & 4	Annex – M	Grade	Not worse than 4	Conforms
21	Resistance to Color Change				
	In Xenon Arc Lamp	Annex – N	Grade	Not worse than 6	Conforms
22	Gloss Retention	ASTM D 523	%	No spec.	95 (min.)
HEALTH & ENVIRONMENTAL CHARACTERISTICS					
23	Food safe	EN 13130-1	-	-	YES
24	Contents' migration as per Food Commission Regulation	EN 1186-1, 3 & 14: 2002	Migration	Migration of Simulants is less than maximum permitted by Regulation	
25	Formaldehyde emission (release)	EN 16516-2017	ppm	0.1	0.02
26	Volatile Organic Compounds (VOC) Emission	ISO 16000-9	Class	-	A
		UL 2818 - 2013	Certification		
27	Anti-Viral Efficacy & activity	ISO 21702-2019			
	% Reduction in 24 hours		%	95% (min.)	99.9% (min.)
	Activity after 24 hours		Log Reduction	2.0 (min.)	Exceeds
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)

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AIROLAM GENERAL PURPOSE ANTIVIRUS, ANTIBACTERIAL, ANTIFUNGAL HPL - 1.0MM

S.NO.	PROPERTIES	UNITS	TEST METHOD BS PER EN 438 PART 2 & 3 : 2016	SPECIFICATION	AIROLAM HD GLOSS VALUES
1	Classification	EN 438-3.5.3		HGS	
2	Thickness Thickness Variation	EN 438-3 - 6.3	mm mm (max.)	1.00 ± 0.10	1.00-1.06 ± 0.06
3	Resistance to surface wear, Initial Point	EN 438-2 - 10	Rev. (min.)	150	200
4	Resistance to impact with small diameter ball	EN 438-2 - 20	N (min.)	20	25
5	Resistance to scratching	EN 438-2 - 25	Rating (min.)	3	≥ 3
6	Dimensional stability at elevated temperatures Machine direction Cross direction	EN 438-2 - 17	% (max.) % (max.)	0.55 1.05	0.25 0.45
7	Resistance to immersion in boiling water	EN 438-2 - 12	Rating (min.), Appearance	For Gloss finish - 3 For Other finish - 4	≥ 3 ≥ 4
8	Resistance to dry heat at 160° Ċ	EN 438-2 - 16	Rating (min.)	For Gloss finish - 3 For ther finish - 4	≥ 4 ≥ 5
9	Resistance to stains Group 1 & 2 Group 3	EN 438-2 - 26	Rating (min.)	5 4	5 ≥ 4
10	Resistance to Water Vapour	EN 438-2 - 14	Rating (min.)	For Gloss finish - 3 For Other finish - 4	≥ 3 ≥ 4
11	Resistance to Wet Heat (100°C)	EN 438-2 - 18	Rating (min.)	For Gloss finish - 3 For Other finish - 4	≥ 3 ≥ 4
12	Light Fastness (Xenon-arc light)	EN 438-2 - 27	Rating (min.) Contrast	4 to 5	≥ 5
13	Density	EN ISO 1183 -1	g/cm3 (min )	1 35	1 40

BIO-CHEMICAL PROPERTY	STANDARD	UNIT	REQUIREMENT	TEST RESULT
Antiviral Efficacy & Activity	ISO 21702-2019	% Reduction in10 minutes % Reduction in 30 minutes	No Requirement No Requirement	90.0% (Min.) 99.0% (Min.)
Virus tested		SARS CoV-2		
Antibacterial Efficacy & Activity	ISO 21702-2019	% Reduction in 2 hours % Reduction in 24 hours	No Requirement 95.0 (Min.)	90% (Min.) 99.9% (Min.)
Virus tested		Activity after 24 hours	2.0 (Min .)	Exceeds
Antibacterial Efficacy & Activity	JIS 2801-2012	% Reduction in 24 hours Activity after 24 hours	95.0 minimum 2.0(Min)	99.99 Exceeds
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		
Antifungal Efficacy	ASTM G-21-2015	Growth after 28 days	Rating 1	Rating O (No Growth)
Fungus tested		1. Aspergillus niger, 2. Penicillium funicolosum, 3. Gliocladium virens, 4. Chaetobium globosum, 5. Aurobasidium pullulans		

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# TECHNICAL SPECIFICATIONS

S.No.	PROPERTIES	TEST STANDARD	UNIT	SPECIFIED VALUES	AIROLAM VALUES	SPECIFIED VALUES	AIROLAM VALUES
1	Classification & Test Protocol	IS 2046 : 1995		HGS, Thickness 1.0 mm		HGS, Thickness 1.5 mm	
PHYSICAL & DIMENSIONAL PROPERTIES							
2	Nominal Thickness		mm	1.0		1.5	
3	Thickness variation	Clause - 5.3	mm	1.0 ± 0.10	Conforms	1.5 ± 0.15	Conforms
4	Tolerance on Length	Clause - 5.4.6	mm	+10, -Nil	Conforms	+10, -Nil	Conforms
5	Tolerance on Width	Clause - 5.4.6	mm	+10, -Nil	Conforms	+10, -Nil	Conforms
6	Straightness of edges	Clause - 5.4.7	mm/m	1.5 (max.)	Conforms	1.5 (max.)	Conforms
7	Squareness	Clause - 5.4.8	mm/m	1.5 (max.)	Conforms	1.5 (max.)	Conforms
8	Density	EN ISO 1183 -1:2004	kg/m3	1360 - 1400	Conforms	1360 - 1400	Conforms
9	Dimensional Stability at Elevated Temperatures						
	Longitudinal Direction	Annex - F	%	0.55 (max.)	Conforms	0.44 (max.)	Conforms
	Transverse Direction	Annex - F	%	1.05 (max)	Conforms	0. 86 (max)	Conforms
10	Dimensional Stability at 20°C						
	Longitudinal Direction	Annex - G	%	0.38 (max.)	Conforms	0.32 (max.)	Conforms
	Transverse Direction	Annex - G	%	0 60 (max )	Conforms	0 48 (max )	Conforms
MECHANICAL PROPERTIES							
11	Resistance to Immersion in Boiling Water						
	Mass Increase	Annex - D	%	10.0 (max.)	Conforms	7.5 (max.)	Conforms
	Thickness Increase	Annex - D	%	11.8 (max.)	Conforms	8.0 (max.)	Conforms
	Appearance	Annex - D	Grade	Not worse than 4	Conforms	Not worse than 4	Conforms
12	Resistance to Impact by Small Diameter Ball						
	Spring Force	Annex - H	N	20	Conforms	20	Conforms
13	Resistance to Cracking	Annex - K	Grade	Not worse than 4	Conforms	Not worse than 4	Conforms
SURFACE PROPERTIES							
14	Resistance to Scratching	Annex - L	N	2.0 (min.)	Conforms	2.0 (min.)	Conforms
15	Resistant to Steam	Annex - T	Grade	Not worse than 4	Conforms	Not worse than 4	Conforms
16	Resistance to Water Vapor	EN 438-2-14	Class	Not worse than 4	Conforms	Not worse than 4	Conforms
17	Resistance to Dry Heat at 180° C						
	Gloss Finish	Annex - E	Grade	Not worse than 3	Conforms	Not worse than 3	Conforms
	Other Finish	Annex - E	Grade	Not worse than 4	Conforms	Not worse than 4	Conforms
18	Resistance to Surface Wear	Annex - C	Rev.	350 (min.)	Conforms	350 (min.)	Conforms
19	Resistance to Cigarette Burns	Annex - P	Grade	Not worse than 3	Conforms	Not worse than 3	Conforms
20	Resistance to staining						
	Group 1 & 2	Annex - M	Grade	Not worse than 5	Conforms	Not worse than 5	Conforms
	Group 3 & 4	Annex - M	Grade	Not worse than 4	Conforms	Not worse than 4	Conforms
21	Resistance to Color Change						
	In Xenon Arc Lamp	Annex - N	Grade	Not worse than 6	Conforms	Not worse than 6	Conforms
HEALTH & ENVIRONMENTAL CHARACTERISTICS							
22	Food safe	EN 13130-1	-	-	YES	-	YES
23	Contents' migration as per Food Commission Regulation	EN 1186-1, 3 & 14: 2002	Migration	Migration of Simulants is less than maximum permitted by Regulation			
24	Formaldehyde emission (release)	EN 16516-2017	ppm	0.1	0.02	0.1	0.02
25	Volatile Organic Compounds (VOC) Emission	ISO 16000-9	Class	-	A	-	A
		UL 2818 - 2013	Certification				
26	Anti-Viral Efficacy & activity						
	% Reduction in 24 hours	ISO 21702-2019	%	95% (min.)	99.9% (min.)	95% (min.)	99.9% (min.)
	Activity after 24 hours		Log Reduction	2.0 (min.)	Exceeds	2.0 (min.)	Exceeds
27	Anti-bacterial Efficacy & activity						
	% Reduction in 24 hours	JIS 2801-2012	%	95.0 (min)	99.99	95.0 (min)	99.99
	Activity after 24 hours		Log Reduction	2.0 (min)	Exceeds	2.0 (min)	Exceeds
28	Anti-Fungus Efficacy						
	Growth after 28 days	ASTM G-21-2015	Class	1	0 (No Growth)	1	0 (No Growth)

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# TECHNICAL DATA SHEET

S. NO.	PROPERTIES	UNIT	TEST METHOD AS PER EN 438 Part 2 & 4 : 2016	SPECIFIED VALUES	TYPICAL AIROLAM RESULTS	SPECIFIED VALUES	TYPICAL AIROLAM RESULTS
1	CLASSIFICATION		EN 438-4-4	COMPACT GENERAL PURPOSE STANDARD, CGS		COMPACT GENERAL PURPOSE FLAME- RETARDANT, CGF	
	Surface Coating		---	ELECTRON BEAM CURED CHEMICAL RESISTANT RESIN			
			---	Available in black and brown colour cores. Unicore optional.			
	Size Offered	mm	---	1525mm x 3660mm - Single size to suit multiple cut sizes			
2	Surface Quality	mm <sup>2</sup> /M <sup>2</sup>	EN 438-4, 6.2.4.2	1.0 (max.)	Complies	1.0 (max.)	Complies
3	Fibers, Hairs & Scratches	mm/M <sup>2</sup>		10.0 (max.)	Complies	10.0 (max.)	Complies
4	Thickness & Maximum Variation	mm	EN 438-2-5	8.0 ± 0.50	8.0 ± 0.35	8.0 ± 0.50	8.0 ± 0.35
				13.0 to 16.0 ± 0.60	13.0 to 16.0 ± 0.40	13.0 to 16.0 ± 0.60	13.0 to 16.0 ± 0.40
5	Length & Width	mm	EN 438-2-6	+10mm /-0mm	+5mm /-0mm	+10mm /-0mm	+5mm /-0mm
6	Flatness	mm/M	EN 438-2-9	5.0 (max.)	Complies	5.0 (max.)	Complies
7	Edges Straightness	mm/M	EN 438-2-7	1.5 (max.)	≤ 1	1.5 (max.)	≤ 1
8	Edges Squareness	mm/M	EN 438-2-8	1.5 (max.)	Complies	1.5 (max.)	Complies
9	Resistance to Dry Heat at 160° C	Rating	EN 438-2-16	4 (min.)	5	4 (min.)	5
10	Resistance to Surface Wear, Initial point	Rev.	EN 438-2-10	150 (min.)	450 (min.)	150 (min.)	450 (min.)
11	Resistance to Water Vapour, Appearance	Rating	EN 438-2-14	4 (min.)	5	4 (min.)	5
12	Resistance to Immersion in Boiling Water (2 hours)		EN 438-2-12				
	a) Mass Increase	%		2.0 (max.)	0.62	3.0 (max.)	1.10
	b) Thickness	%		2.0 (max.)	0.92	6.0 (max.)	1.86
	c) Surface appearance	Rating		4 (min.)	5	4 (min.)	5
	d) Edge appearance			3 (min.)	4	3 (min.)	4
13	Dimensional Stability at Elevated Temperature		EN 438-2-17				
	a) Longitudinal	%		0.30(max.)	0.10	0.30 (max.)	0.18
	b) Transverse	%		0.60 (max)	0.21	0.60 (max)	0.38
14	Resistance to Impact by Large Diameter Ball		EN 438-2-21				
	a) Drop Height	mm		1800	2000	1800	2000
	b) Diameter of Indentation	mm		10 (max.)	7	10 (max.)	7
15	Resistance to Scratching, Force	Rating	EN 438-2-25	3 (min.)	4	3 (min.)	4
16	Resistance to Staining      Group 1 & 2	Rating	EN 438-2-26	5	5	5	5
	Group 3	Rating		4	≥ 4	4	≥ 4
	Chemical & Stain Resistance		SEFA 8.1-PL-2010	Not more than rating 3 against 4 chemicals	Complies	Not more than rating 3 against 4 chemicals	Complies
17	Resistance to Wet Heat (100°C), Appearance	Rating	EN 438-2-18	4 (min.)	5	4 (min.)	5
18	Resistance to Crazing, Appearance	Rating	EN 438-2-24	4 (min.)	5	4 (min.)	5
19	Resistance to Cigarette Burns	Rating	---	No requirement in the latest specification			
20	Flexural Modulus	Mpa	EN ISO 178:2003	9000 (min.)	11000	9000 (min.)	10700
21	Flexural Strength	Mpa	EN ISO 178:2003	80 (min.)	100	80 (min.)	100
22	Tensile Strength	Mpa	EN ISO 527-2:1996	No requirement in the latest specification			
23	Light Fastness (Xenon Arc), Grey Scale	Rating	EN 438-2 - 27	4 to 5	Complies	4 to 5	Complies
24	Density	g/cm3	EN ISO 1183 -1 :2004	1.35	1.38	1.35	1.38
25	Resistance to fixing (Screw pull out strength) - 8.0mm thick board	N	ISO 13894 -1; 9	3000 (min.)	>3000	3000 (min.)	≥3000
	- 10.0mm thick board & above			4000 (min.)	>4000	4000 (min.)	>4000
26	Thermal Conductivity/ Resistance	W/m <sup>2</sup> K	EN-12524:2000, EN-12664:2001		0.24		0.24
27	Formaldehyde Release, Greenguard Gold standards		UL-2818:2013		7.3 ppb		7.3 ppb
28	Reaction to Fire (Tested according to EN 13823:2010 & EN 11925 - 2 :2010)*	Euro class	EN 438-7 & EN 13501-1: 2007+ A1:2009	D-s2,d0 or better	C-S2, d0 Superior, better	B-s2,d0	B-S1, d0, Superior, better

BIO-CHEMICAL PROPERTY	STANDARD	UNIT	REQUIREMENT	TEST RESULT
Antiviral Efficacy & Activity	ISO 21702-2019	% Reduction in 10 minutes	No Requirement	90.0% (Min.)
		% Reduction in 30 minutes	No Requirement	99.0% (Min.)
Virus tested		SARS CoV-2		
Antibacterial Efficacy & Activity	ISO 21702-2019	% Reduction in 2 hours	No Requirement	90% (Min.)
		% Reduction in 24 hours	95.0 (Min.)	99.9% (Min.)
		Activity after 24 hours	2.0 (Min.)	Exceeds
Virus tested		MS2 Bacteriophage		
Antibacterial Efficacy & Activity	JIS 2801-2012	% Reduction in 24 hours	95.0 minimum	99.99
		Activity after 24 hours	2.0 (Min.)	Exceeds
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		
Antifungal Efficacy	ASTM G-21-2015	Growth after 28 days	Rating 1	Rating 0 (No Growth)
Fungus tested		1. Aspergillus niger, 2. Penicillium funicolosum, 3. Gliocladium virens, 4. Chaetobium globosum, 5. Aurobasidium pullulans		

AIROLAM Lab Guardian's surface is best suitable for stains caused by:

General purpose chemicals	Biomedical reagents	Biological spills and wastes	Petrochemical products	Food items and edible oils	All beverages	Dairy products
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## AIROLAM LabGuardian Chemical Spot Test - Test Protocol: SEFA PL 2010-Clause 8.1

S. No.	CHEMICAL	TEST METHOD	RATINGS	TYPICAL VALUES-LABGUARDIAN
1	Acetate, Amyl	A	0-1	0
2	Acetate, Ethyl	A	0-2	0
3	Acetic Acid 98%	B	0-3	0
4	Acetone	A	0-1	0
5	Acid Dichromate 5%	B	0-1	0
6	Alcohol, Butyl	A	0-1	0
7	Alcohol, Ethyl	A	0	0
8	Alcohol, Methyl	A	0-1	0
9	Ammonium Hydroxide 28%	B	0	0
10	Benzene	A	0-2	0
11	Carbon Tetrachloride	A	0-1	0
12	Chloroform	A	0-2	0
13	Chromic Acid 60%	B	0-2	0
14	Cresol	A	0-2	0
15	Dichloroacetic Acid	A	0-3	0
16	Dimethylformamide	A	0-2	0
17	Dioxane	A	0-2	0
18	Ethyl Ether	A	0-1	0
19	Formaldehyde 37%	A	0-1	0
20	Formic Acid 90%	B	0-3	0
21	Furfural	A	0-3	0
22	Gasoline	A	0	0
23	Hydrofluoric Acid 37%	B	0-2	0
24	Hydrofluoric Acid 48%	B	0-3	0
25	Hydrogen Peroxide 30%	B	0-1	0
26	Iodine, Tincture of	B	0-2	2
27	Methyl Ethyl Ketone	A	0-2	0
28	Methylene Chloride	A	0-2	0
29	Monochlorobenzene	A	0-2	0
30	Naphthalene	A	0-1	0
31	Nitric Acid 20%	B	0-1	0
32	Nitric Acid 30%	B	0-1	0
33	Nitric Acid 70%	B	0-3	0
34	Phenol 90%	A	0-2	0
35	Phosphoric Acid 85%	B	0-1	0
36	Silver Nitrate, Saturated	B	0	0
37	Sodium Hydroxide 10%	B	0	0
38	Sodium Hydroxide 20%	B	0	0
39	Sodium Hydroxide 40%	B	0-1	0
40	Sodium Hydroxide, Flake	B	0	0
41	Sodium Sulfide, Saturated	B	0	0
42	Sulfuric Acid 33%	B	0	0
43	Sulfuric Acid 77%	B	0	0
44	Sulfuric Acid 96%	B	02-03	2
45	Sulfuric Acid 77%, and Nitric Acid 70%, equal parts	B	02-03	1
46	Toluene	A	0-1	0
47	Trichloroethylene	A	0-1	0
48	Xylene	A	0-1	0
49	Zinc Chloride, Saturated	B	0	0

TECHNICAL DATASHEET FOR AIROLAM UNICORE HPL - 1.0MM

S.NO.	PROPERTIES	UNITS	TEST METHOD AS PER EN 438 PART 2 & 3 : 2016	SPECIFICATION	TYPICAL RESULTS AIROLAM
Classification			BTS as per BS EN 438 Part 9: 2016		
1	Product Category		Greenlam Unicore HPL		
2	Thickness	mm	EN 438-2 – 5	1.0mm± 0.15	Complies
3	Resistance to Dry Heat at 160° C	Rating	EN 438-2 -16	4 (min.)	5
4	Length & Width	mm	EN 438-2 – 6	+10.0mm/-0.0mm	Complies
5	Resistance to Surface Wear	Rev.	EN 438-2 -10	Initial Point ≥ 150	Complies
6	Resistance to Immersion in Boiling Water (2 hours)		EN 438-2 -12		
	Appearance	Rating		Other Finishes- 4 (min.)	5
				Gloss Finishes-3 (min.)	4
7	Dimensional Stability at Elevated Temperature		EN 438-2 -17		
	Longitudinal Direction	%		0.80 (max.)	0.43
	Transverse Direction	%		1.40 (max.)	0.68
8	Resistance to Scratching	N	EN 438-2 -25	3.0 (min.)	> 3.0
9	Flatness (on Full Sheet)	mm/M	EN 438-2 -9	≤ 100	Complies
10	Resistance to Water Vapour	Rating	EN 438-2 -14	4 (min.)	5
11	Resistance to Staining	Appearance Rating	EN 438-2 -26		
	Group 1 & 2			5 (min.)	5
	Group 3			4 (min.)	4
12	Density	g/cm³	EN ISO 1183-1:2004	1.40 (min.)	150±0.4
13	Light Fastness (Xenon-Arc)	Contrast	EN 438-2 -27	Grey Scale Rating 4 (min.)	Complies

BIO-CHEMICAL PROPERTY	STANDARD	UNIT	REQUIREMENT	TEST RESULT
Antiviral Efficacy & Activity	ISO 21702-2019	% Reduction in10 minutes	No Requirement	90.0% (Min.)
		% Reduction in 30 minutes	No Requirement	99.0% (Min.)
Virus tested		SARS CoV-2		
Antibacterial Efficacy & Activity	ISO 21702-2019	% Reduction in 2 hours	No Requirement	90% (Min.)
		% Reduction in 24 hours	95.0 (Min.)	99.9% (Min.)
		Activity after 24 hours	2.0 (Min .)	Exceeds
Virus tested		MS2 Bacteriophage		
Antibacterial Efficacy & Activity	JIS 2801-2012	% Reduction in 24 hours	95.0 minimum	99.99
		Activity after 24 hours	2.0(Min)	Exceeds
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		
Antifungal Efficacy	ASTM G-21-2015	Growth after 28 days	Rating 1	Rating O (No Growth)
Fungus tested		1. Aspergillus niger, 2. Penicillium funicolosum, 3. Gliocladium virens, 4. Chaetobium globosum, 5. Aurobasidium pullulans		

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## TECHNICAL SPECIFICATIONS

S. NO.	PERFORMANCE CHARACTERISTIC	UNIT	REQUIREMENT AS PER IS 2046:1995, VGS	AIROLAM VALUES
1	Appearance & Surface Defects	Surface free from spots, dirt, hair & edge defects		
2	Dimensional Properties:			
	Length	mm	2440 +10, -Nil	Conforms
	Width	mm	1220 +10, -Nil	Conforms
	Thickness	mm	Max. variation $\pm 0.10$	Conforms
	Flatness	Warp, mm	120 (max.)	60 (max.)
	Straightness of Edges	mm/meter straight edge	1.5 mm (max.)	Conforms
	Squareness	mm/meter straight edge	1.5 mm (max.)	Conforms
3	Resistance of Surface Wear	Rev.	150 (min.)	Conforms
4	Resistance to Immersion in Boiling Water	% Increase by Thickness	14.0 (max.)	7.0 – 8.2
		% Increase by Weight	12.0 (max.)	6.0 – 7.1
		Appearance	Not worse than Grade-4	Conforms
5	Resistance to Staining	Groups 1 & 2	Not worse than Grade-5	Conforms
		Groups 3 & 4	Not worse than Grade-4	Conforms
6	Resistance to Dry Heat @ 180°C	Appearance, Piano Gloss	Not worse than Grade-3	Conforms
		Appearance, Others	Not worse than Grade-4	Conforms
7	Resistance to Colour Change in Xenon Arc Light	Grade	Not worse than 6	Conforms
8	Dimensional Stability at Deviated Temperatures:			
	Machine Direction	%	0.65 (max.)	Conforms
	Cross Machine Direction	%	1.12 (max.)	Conforms
9	Resistance to Scratching	N	1.75 (min.)	2.0 (min.)
10	Resistance to Steam	Grade	Not worse than Grade-4	Conforms
11	Resistance to Cracking	Grade	Not worse than Grade-4	Conforms
12	Resistance to Impact by Small Ball	N	20 (min.)	Conforms

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Properties		Test Result as per IS: 2046	Test Result as per IS: 2046	Test Result of AIROLAM
Length & Width Tolerance		5.4.6	+10 mm - 0 mm	+10 mm - 0 mm
Thickness Tolerance		5.3	±0.10	±0.05
Resistance to Surface wear (Revolution Minimum)		C	≥350	>1000
Resistance to immersion in Boiling water	Increase in Thickness	D	≤ 12%	<6.25 %
	Increase in Mass		≤ 10%	<5.75 %
Resistance to Dry Heat at 180°C Appearance (Grade not worse Than)	Gloss	E	3	4
	Others		4	4
Dimensional Stability at elevated temp. (Max. %)	Machine Direction	F	≤ 0.55%	<0.35
	Cross Direction		≤ 1.05%	<0.55
Resistance to Impact by Small – Diameter Ball (Spring Force)		H	≥20N	22
Resistance to Scratching N (min)		L	≥2	>2
Resistance to Staining (Grade not Worse than)	Group 1 & 2	M	5	5
	Group 3 & 4		4	4
Resistance to Color change In Xenon arc Light (min)		N	6 (Wool Standard)	6 (Wool Standard)
Resistance to Cigarette Burns Appearance (Grade not Worse than)		P	3	3
Resistance to Steam Appearance (Grade not Worse than)		T	4	4



Properties		Test Method as Per EN 438-2	Standard Result as Per EN 438-3	Test Result of Airolam
Design No./ Finish				14667/Synchro
Thickness Tolerance		Clause No.5	±0.10	0.03
Length & Width Tolerance		Clause No.6	+ 10mm	+05mm
			-0mm	-0mm
Resistance to Surface wear (Revolution Minimum)		Clause No.10	IP≥150	325
			FP	750
			Wear Value ≥350	537.5
Resistance to immersion in Boiling water Appearance (Grade not worse Than)	Gloss	Clause No.12	≥Rating-3	Rating-5
	Others		≥ Rating-4	
Resistance to Water Vapour Appearance (Grade not Worse than)	Gloss	Clause No.14	≥ Rating-3	Rating-5
	Others		≥ Rating-4	
Resistance to Dry Heat at 180 oC Appearance (Grade not worse Than)	Gloss	Clause No.16	≥ Rating -3	Rating-5
	Others		≥ Rating-4	
Dimensional Stability at elevated temp. (Max. %)	Machine Direction	Clause No.17	≤ 0.55%	0.41
	Cross Direction		≤ 1.05%	0.65
Resistance to Impact by Small –Diameter Ball		Clause No.20	≥ 20 N	40
Resistance to Cracking		Clause No.23	≥ Rating-4	Rating-5
Resistance to Scratching N (min)		Clause No.25	≥ Rating -3	Rating -3
Resistance to Staining (Grade not Worse than)	Group 1 & 2	Clause No.26	≥Rating-5	Rating-5
	Group 3		≥ Rating-4	Rating-4
Resistance to Cigarette Burns Appearance (Grade not Worse than)		Clause No.30	≥ Rating-3	Rating-4

Properties	Test Method as per EN 438-2	Parameter or Attribute	Unit (Max. or Min.)	Standard as per EN 438-2	Airolam Values
Thickness Tolerance	Clause No.5			±0.10 mm	±0.04
Length & Width Tolerance	Clause No.6		mm mm	+ 10mm -0 mm	+05mm -0mm
Resistance to Surface wear	Clause No.10	Wear resistance	Revolution (min)	IP≥150 FP≥350	275 525
Resistance to immersion in Boiling water Appearance	Clause No.12	Gloss	Grade (min)	≥Rating-3 ≥ Rating-4	Rating-5
Resistance to Water Vapour	Clause No.14	Appearance Gloss Others	Grade (min)	≥ Rating-3 ≥ Rating-4	Rating-5
Resistance to Dry Heat at 180 °C	Clause No.16	Gloss Others	Grade (min)	≥ Rating -3 ≥ Rating-4	Rating-5
Dimensional Stability at elevated temp.	Clause No.17	MD CD	(max. %)	≤ 0.55% ≤ 1.05%	0.39 0.63
Resistance to Impact by Small –Diameter Ball	Clause No.20	Spring force	N	≥ 20 N	25N
Resistance to Cracking	Clause No.23	Appearance		≥ Rating-4	Rating-5
Resistance to Scratching	Clause No.25	Force	N (min)	≥ Rating -3	Rating -3
Resistance to Staining	Clause No.26	Group 1 & 2 Group 3	Grade (min)	Rating-5 ≥ Rating-4	Rating-5 Rating-5
Resistance to Cigarette Burns	Clause No.30	Appearance	Grade (min)	≥ Rating-3	Rating-5
Formability	Clause No.31 & 32	Appearance		≤ R-10	R-5
Resistance to Blistering	Clause No.33 &34	Appearance		≥ 10	17

**Note:** All our products comply to applicable standards, but results may differ based on the application and handling of the product.  
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Technical Specification of Post Laminated Particle Board

Thickness: 18mm PB +0.7mm Laminate + 0.70mm Balancer

Size: 2440 x 1220

Type - P2 - E - 1 Grade European Method (Interior Use Dry Condition) - 312:210

Properties	Specification no.	Parameter or Attribute	Unit (Max. or Min.)	Standard Value	Airolam Values
Thickness Tolerance	EN-324-1		mm	0.30mm	19.5 to 20.0
Tolerance on Nominal Dimension	EN-324-1		mm	(+/-)5mm	(+)3mm
Edge Straightness Tolerance	EN-324-2		mm/mtr	1.5 mm/mtr	0.6 mm/mtr
Squareness Tolerance	EN-324-2		mm/mtr	2.0 mm/mtr	0.8 mm/mtr
Bending Strength	EN 310	Stress	N/mm <sup>2</sup>	11.0 N/mm2	17.64
Modulus of Elasticity	EN 310	Stress	N/mm <sup>2</sup>	1600 N/mm2	1765
Internal Bonding	EN 319	Stress	N/mm <sup>2</sup>	0.35 N/mm2	0.41
Tolerance of the mean density within a board	EN 323			(+/-)10%	<8%
Moisture Content	EN 322			5-13 %	6.49
Formaldehyde Emission Class E1	EN 120			E1< 8mg /100g dry oven gas	< 8mg /100g dry oven gas
Screw with drawl strength				Face ≥ 1250 N Edge ≥ 750 N	1340 820
Surface abrasion resistance				≥ 80Cycle	125
Resistance to steam		Appearance		Pass	Pass
Resistance to crack		Appearance		Pass	Pass
Resistance to cigarette burn		Appearance		Pass	Pass
Resistance to stain		Appearance		Pass	Pass

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Properties	Test Method as per EN - 438-2 CLAUSE NO.	Property or Attribute	Unit (Max. or Min.)	Value as per EN - 438-2	Airolam Values
<b>Thickness Maximum Variation</b>	5		mm	±0.10mm	±0.10mm
<b>Length &amp; Width</b>	6		mm	+10mm -0.0mm	+10mm -0.0mm
<b>Density</b>	EN ISO 1183	Density	g/cm <sup>3</sup>	≥1.35	>1.35
<b>Resistance to Surface wear</b>	10	Wear Resistance	Revolution (min)	≥350	>400
<b>Resistance to Impact by Small diameter Ball</b>	20	Spring Force	N(min)	≥20	>20
<b>Resistance to Scratching</b>	25	Force	Rating (see annex a)	3	≥3
<b>Dimensional stability at elevated temperature</b>	17	Cumulative dimensional change	% long	≤ 0.55	<0.45
			% Cross	≤ 1.05	< 0.90
<b>Resistance to immersion in boiling water</b>	12	Appearance	Grade (min) Gloss Finish	3	>3
			Other finishes	4	>4
<b>Resistance to dry Heat at 180°C</b>	16	Appearance	Grade (min) Gloss Finish	3	>3
			Other finishes	4	>4
<b>Resistance to Staining</b>	26	Appearance	Rating Group-1&2	≥5	5
			Group-3	≥4	≥4
<b>Resistance to water vapor</b>	14	Appearance	Grade (min) Gloss Finish	3	>3
			Other finishes	4	>4
<b>Light Fastness ( Xenon arc)</b>	27	Contrast	Gray Scale Rating	4 to 5	>4
<b>Resistance to cigarette burn</b>	30	Appearance	Grade (min)	3	>3
<b>Resistance to Cracking under stress</b>	23	Appearance	Grade (min)	4	>4

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## Test Values Airolam ESD Grade Laminates as per (EN438-3) Thickness : 1.00mm

Properties	Test Method as per EN - 438-2 CLAUSE NO.	Property or Attribute	Unit (Max. or Min.)	Value as per EN - 438-2	Airolam Values
<b>Thickness</b> <i>Maximum Variation</i>	5		mm	±0.10mm	< 0.10mm
<b>Length &amp; Width</b>	6		mm	+10mm -0.0mm	+10mm -0.0mm
<b>Density</b>	EN ISO 1183	Density	g/cm <sup>3</sup>	≥1.35	>1.35
<b>Resistance to Surface wear</b>	10	Wear Resistance	Revolution (min)	≥350	>400
<b>Resistance to Impact by Small diameter Ball</b>	20	Spring Force	N(min)	≥20	>20
<b>Resistance to Scratching</b>	25	Force	Rating (see annex a)	3	≥3
<b>Dimensional stability at elevated temperature</b>	17	Cumulative dimensional change	% long	≤ 0.55	<0.45
			% Cross	≤ 1.05	< 0.90
<b>Resistance to immersion in boiling water</b>	12	Appearance	Grade (min)	3	>3
			Gloss Finish Other finish	4	>4
<b>Resistance to dry Heat at 180°C</b>	16	Appearance	Grade (min)	3	>3
			Gloss Finish Other finish	4	>4
<b>Resistance to Staining</b>	26	Appearance	Rating		
			Group-1&2 Group-3	≥5 ≥4	5 ≥4
<b>Resistance to water vapour</b>	14	Appearance	Grade (min)	3	>3
			Gloss Finish Other finish	4	>4
<b>Resistance to cigarette burn</b>	30	Appearance	Grade (min)	3	>3
<b>Light Fastness ( Xenon arc)</b>	27	Contrast	Gray Scale Rating	4 to 5	>4
<b>Resistance to Cracking under stress (optional)</b>	23	Appearance	Grade (min)	4	>4
<b>ESD Properties At 50 % RH</b>	IEC61340& ESD S-4.1	Surface Resistance	Max ohm	<1.0x10 <sup>9</sup> ohm	<1.0x10 <sup>8</sup> ohm
		Surface to Ground Resistance		<1.0x10 <sup>9</sup> ohm	<1.0x10 <sup>8</sup> ohm

**Note:** All our products comply to applicable standards, but results may differ based on the application and handling of the product.

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