Dedal Attestation & Certification

EGY STONE
corian-HPL compact-kitchens

Notified body No. 1922
Bulgaria, 8230 Nesebar
Mladost #50

CERTIFICATE

of constancy of performance

1922 - CPR - 0751

In compliance with Regulation (EU) 305/2011 of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulation or CPR), this certificate applies to the construction product

Exterior Grade Compact Laminate with flame retardant (thickness - more than 2.0 mm), Interior Grade Compact Laminate with flame retardant (thickness - more than 2.0 mm), Composite high pressure laminate (HPL) with flame retardant (thickness - less than 2.0 mm)

(List of tested characteristics described in Annex I, that is an integral part of this certificate)

placed on the market under the name or trade mark of

M/s GREENLAM INDUSTRIES LIMITED
1501-1505, NARAIN MANZIL, 23-BARAKHAMBA ROAD, NEW DELHI, PIN CODE-110001, INDIA

and produced in the manufacturing plant

M/S GREENLAM INDUSTRIES LIMITED
VILL PATERH BHONKU, PO- PANJEHRA, TEHSIL-NALAGARH, DISTRICT-SOLAN, HIMACHAL PRADESH, PIN CODE-174101, INDIA

This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in Annex ZA of the standard

EN 438-7:2005

under system 1 for the performance set out in this certificate are applied and that the factory production control conducted by the manufacturer is assessed to ensure the constancy of performance of the construction product.

This certificate was first issued on 09.09.2016 and will remain valid until 09.09.2019 as long as neither the harmonised standard, the construction product, the AVCP methods nor the manufacturing conditions in the plant are modified significantly, unless suspended or withdrawn by the notified product certification body. The certificate is supported through annual surveillance audit and is reissued after each surveillance audit. The validity of the certificate may be confirmed in the CE register at the web address www.dedal-bg.net.

CE

Issued:
Burgas, 05 September 2018

Embossed stamp of "Dedal - A&C" Ltd.

Manager:

Dedal Attestation & Certification

arch. Galina Vasileva

Dedal Attestation & Certification

Notified body No. 1922
Bulgaria, 8230 Nesebar
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ANNEX I TO CERTIFICATE OF CONSTANCY OF PERFORMANCE 1922 - CPR - 0751/05.09.2018

List of controlled characteristics:

Characteristics, dimension	Clause	Method	Results			
			COMPACT BRANDS			HPL BRANDS
			Greenlam Exterior Clads™, EDF/EDS	Greenlam Safeguard Plus (CGF)	Greenlam Labguardian Chemical Resistance Laminate	GREENLAM, NEWMIKA, GREENTOUCH, NEW POINT EIGHT,SPLENDOR,UNI CORE, HD- GLOSS & POSTFORMING LAMINATE
Thickness			6.0 mm	12.0 mm	13.0 mm	0.8 mm
Substarte			NA	NA	NA	(Particle board) -44.0 mm
Reaction to fire	4.2.2	EN 13823	B-s1, d0	B-s1, d0	C-s1, d2	C-s1, d0
		EN 13501-1				
Fire resistance	4.3.2	EN 13501-2	NPD	NPD	NPD	NPD
Water vapour permeability	4.4	EN ISO 12572	NPD	NPD	NPD	NPD
Resistance to fixings	4,5	ISO 13894-1	≥ 2000	≥4000	≥ 4000	No Requirement
Direct airborne sound insulation	4,6	EN ISO 140-3	NPD	NPD	NPD	NPD
		EN ISO 717-1				
Bonding strength N/mm2	4,7	EN ISO 13894-1	1,49	1,42	1,42	NPD
Flexural strength N/mm2	4,8	EN ISO 178	≥ 80	≥ 80	≥ 80	NPD
Flexural Modulus N/mm2		EN ISO 178	≥ 9000	≥ 9000	≥ 9000	
Tensile Strength N/mm2		ISO -527-2-1996	84,3	77,1	77,1	
Thermalresistance/ Conductivity W/mo K	4,9	EN-12524, EN-12664	0,24	0,24	0,24	1,8
Content of pentachlorophenol	4.10.1	EN 323	NPD	NPD	NPD	NPD
Release of formaldehyde (µg/m³)	4.11.1	EN 717-1, UL-2818	NPD	9 (7.3 ppb)	9 (7.3 ppb)	HPL – 9 (7.3 ppb), SUBSTRATE EN13986 – E1
Sound absorption	4.11.2	EN ISO 354 & EN ISO 11654	NPD	NPD	NPD	NPD
Thermal shock resistance	4.12.1	EN 438-2	pass	pass	pass	NPD
Durability	4.13	ISO 13894-1	Resistance to wet conditions pass	Immersion in boiling water pass	Immersion in boiling water pass	NPD
		EN ISO 1183-1, Density-g/cm3	≥ 1.350	≥ 1.400	≥ 1.400	Particle board - 0.620, HPL - 1.380, Composite Panel - 0.654
		EN 438-2	Rating - 5, Mass Increase Max 2.5 %	NPD	NPD	NPD

Embossed stamp of "Dedal - A&C" Ltd.

Dedal Attestation & Certification

Issued:
Burgas, 05 September 2018

Manager:

arch. Galina Vasileva

Greenlam | COMPACT LAMINATE

Technical Data sheet

Greenlam Compact Laminate

Greenlam Industries Limited ,An ISO 9001 ,14001 & 18001 Certified Company

Technical specifications FOR TYPE CGS STANDARD DECORATIVE COMPACT LAMINATES

HPL/EN438-4/CGS

S. NO.	PROPERTIES	UNIT	TEST METHOD AS PER DIN EN 438 Part 2&3: 2005	4.0 MM		6.0 MM		9.0 MM		12.0 MM		18.0 MM	
				Specified value as per BSEN 438-4: 2005	GREENLAM VALUES	Specified value as per BSEN 438-4: 2005	GREENLAM VALUES	Specified value as per BSEN 438-4: 2005	GREENLAM VALUES	Specified value as per BSEN 438-4: 2005	GREENLAM VALUES	Specified value as per BSEN 438-4: 2005	GREENLAM VALUES
	CLASSIFICATION		EN 438-4	CGS		CGS		CGS		CGS		CGS	
1a	Length	mm	EN 438-2 -6	+10/-00 mm	Complies	+10/-00 mm	Complies	+10/-00 mm	Complies	+10/-00 mm	Complies	+10/-00 mm	Complies
1b	Width	mm		+10/-00 mm	Complies	+10/-00 mm	Complies	+10/-00 mm	Complies	+10/-00 mm	Complies	+10/-00 mm	Complies
2	Thickness	mm	EN 438-2 - 5	4.0 mm : ± 0.3 mm	4.0 ± 0.20	6.0 mm : ± 0.4 mm	6.0 ± 0.30	9.0 mm : ± 0.5 mm	9.0 ± 0.40	12.0 mm : ± 0.6 mm	12.0 ± 0.40	18.0 mm : ± 0.7 mm	18.0 ± 0.45
3	Resistance to Surface Wear	Rev.	EN 438-2 -10	350 (min.)	400	350 (min.)	400	350 (min.)	400	350 (min.)	400	350 (min.)	400
4	Resistance to Scratching	N	EN 438-2 - 25	2.0 (min.)	2.5	2.0 (min.)	2.5	2.0 (min.)	2.5	2.0 (min.)	2.5	2.0 (min.)	2.5
5	Resistance to Impact by Large Diameter Ball												
	a) Drop Height	cm	EN 438-2 - 21	1400	1600	1800	1900	1800	2000	1800	2100	1800	2200
	b) Diameter of Indentation	mm		10 (max)	4	10 (max)	4	10 (max)	4	10 (max)	4	10 (max)	4
6	Resistance to Crazing	Rating	EN 438-2 - 24	Not worse than 4	5	Not worse than 4	5	Not worse than 4	5	Not worse than 4	5	Not worse than 4	5
7	Resistance to Dry Heat at 180° C	Rating	EN 438-2 -16	Not worse than 4	5	Not worse than 4	5	Not worse than 4	5	Not worse than 4	5	Not worse than 4	5
8	Resistance to Water vapour	Rating	EN 438-2 - 14	Not worse than 4	4	Not worse than 4	4	Not worse than 4	4	Not worse than 4	4	Not worse than 4	4
9	Resistance to Immersion in Boiling Water												
	a) Mass Increase	%	EN 438-2 - 12	5.0 (max.)	0.6	2.0 (max.)	0.55	2.0 (max.)	0.48	2.0 (max.)	0.44	2.0 (max.)	0.26
	b) Thickness	%	EN 438-2 - 12	6.0 (max.)	0.8	2.0 (max.)	0.72	2.0 (max.)	0.67	2.0 (max.)	0.61	2.0 (max.)	0.58
	c) Appearance	Rating	EN 438-2 - 12	Not worse than 4	5	Not worse than 4	5	Not worse than 4	5	Not worse than 4	5	Not worse than 4	5
10	Resistance to Cigarette Burns	Rating	EN 438-2 - 30	Not worse than 3	4	Not worse than 3	4	Not worse than 3	4	Not worse than 3	4	Not worse than 3	4
11	Resistance to staining Group 1 & 2	Rating	EN 438-2 - 26	5	5	5	5	5	5	5	5	5	5
	Group 3	Rating	EN 438-2 - 26	4	4	4	4	4	4	4	4	4	4
12	Flatness of panel		EN 438-2 - 9	8 mm/M	8 mm/ M	5 mm/M	5 mm/ M	5 mm/M	5 mm/ M	3 mm/M	3 mm/ M	3 mm/M	3 mm/ M
13	Resistance to Colour Change												
	In Xerox Arc Light (Contrast Grey scale)	Rating	EN 438-2 - 27	4 to 5	5	4 to 5	5	4 to 5	5	4 to 5	5	4 to 5	5
14	Dimensional Stability at Elevated Temperature												
	a) Longitudinal	%	EN 438-2 - 17	0.40 (max.)	0.18	0.30 (max.)	0.09	0.30 (max.)	0.08	0.30 (max.)	0.07	0.30 (max.)	0.08
	b) Transverse	%	EN 438-2 - 17	0.80 (max)	0.22	0.60 (max)	0.15	0.60 (max)	0.12	0.60 (max)	0.13	0.60 (max)	0.14
15	Tensile Strength	Mpa	EN ISO 527-2:1996	60 (min.)	80 - 90	60 (min.)	80 - 90	60 (min.)	80 - 90	60 (min.)	80 - 90	60 (min.)	80 - 90
16	Flexural Strength	Mpa	EN ISO 178:2003	80 (min.)	100 - 120	80 (min.)	100 - 120	80 (min.)	100 - 120	80 (min.)	100 - 120	80 (min.)	100 - 120
17	Flexural Modulus	Mpa	EN ISO 178:2003	9000 (min.)	1000 - 11000	9000 (min.)	11000 - 12000	9000 (min.)	11000 - 12000	9000 (min.)	11000 - 12000	9000 (min.)	11000 - 12000
18	Density	g/cm^3	EN ISO 1183 -1:2004	1.35	1.4 ± 0.05	1.35	1.4 ± 0.05	1.35	1.4 ± 0.05	1.35	1.4 ± 0.05	1.35	1.4 ± 0.05

Note :Please refer to Index on range offering in above mentioned dimensions .

** Other thickness & sizes are also available as per requirement.Please contact your local representative for more Information & complete range offerings

* Please contact your local representative for more Information & complete range offerings.

	(HPL)Decorative laminates Dimensions (Feet)	Dimensions in (mm)
1	3x7 *	914 X 2135
2	4x8	1220 X 2440
3	4.25x10*	1300 X 3050
4	5x12*	1525 X 3660

	(CGS) Compact Decorative laminates Dimensions (Feet)	Dimensions in (mm)
1	4x8	1220 x2440
2	4.25 x 10**	1300 x 3050
3	5x6**	1525 x 1830
4	5x12**	1525 x 3660
5	6x6**	1830 x 1830
6	6x12**	1830 x 3660

Technical Specifications

Greenlam High Pressure Laminates (1mm)

Properties	Unit	Specified Values As Per IS:2046 Type HGS	Greenlam Conforms
1.) Resistance to surface wear	Revolutions	350 (Min.)	√
2.) Resistance to Immersion in boiling water			
a) Mass increase	%	10.0 (Max.)	√
b) Thickness increase	%	11.8 (Max.)	√
c) Appearance	Grade	Not worse than 4	√
3.) Dimensional stability at deviated temperature			
Longitudinal	%	0.55 (Max.)	√
Transverse	%	1.025 (Max.)	√
4) Dimensional stability at 20 Ċ temperature			
Longitudinal	%	0.375 (Max.)	√
Transverse	%	0.60 (Max.)	√
5.) Resistance to impact by small diameter ball	N	20.0 (Min)	√
6.) Resistance to cracking	Grade	Not worse than 4	√
7.) Resistance to scratching	N	2.0 (Min.)	√
8.) Resistance to staining			
a) Group 1& 2	Grade	Not worse than 5	√
b) Group 3 & 4	Grade	Not worse than 4	√
9.) Resistance to colour change			
a) In xenon Arc light	Grade	Not worse than 6	√
b) In enclosed Carbon Arc light	Grade	Not worse than 5	√
10.) Resistance to Cigarette burn	Grade	Not worse than 3	√
11.) Resistance to steam	Grade	Not worse than 4	√

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Technical Specifications

Greenlam COMPACT LAMINATE

S. No.	Properties	Unit	Test method as per EN 438 Part 2 & 4 :2016	Specified values	Typical Results Greenlam	Specified values	Typical Results Greenlam	Specified values	Typical Results Greenlam	Specified values	Typical Results Greenlam	Specified values	Typical Results Greenlam	Specified values	Typical Results Greenlam
	Nominal Thickness	mm		12.0		10.0		9.0		8.0		6.0		4.0	
1	Classification		EN 438-4- 4	Compact General purpose standard, CGS											
2	Thickness	mm	EN 438-2 – 5	12.0 ± 0.50	complies	10.0 ± 0.50	complies	9.0 ± 0.50	complies	8.0 ± 0.50	complies	6.0 ± 0.40	complies	4.0 ± 0.30	complies
3	Resistance to Dry Heat at 160° C	Rating	EN 438-2 -16	Not worse than 4	5	Not worse than 4	5	Not worse than 4	5	Not worse than 4	5	Not worse than 4	5	Not worse than 4	5
4	Length & Width	mm	EN 438-2 – 6	+10mm/ - Nil	complies	+10mm/ - Nil	complies	+10mm/ - Nil	complies	+10mm/ - Nil	complies	+10mm/ - Nil	complies	+10mm/ - Nil	complies
5	Resistance to Surface Wear	Rev.	EN 438-2 -10	350 (min.)	complies	350 (min.)	complies	350 (min.)	complies	350 (min.)	complies	350 (min.)	complies	350 (min.)	complies
6	Resistance to Immersion in Boiling Water (2 hours)		EN 438-2 -12												
	Mass Increase	%		2.0 (max.)	0.24	2.0 (max.)	0.29	2.0 (max.)	0.31	2.0 (max.)	0.39	2.0 (max.)	0.64	2.0 (max.)	0.94
	Thickness Increase			2.0 (max.)	0.68	2.0 (max.)	0.78	2.0 (max.)	0.84	2.0 (max.)	0.95	2.0 (max.)	1.12	2.0 (max.)	1.48
	Appearance	Rating		Not worse than 4	5	Not worse than 4	5	Not worse than 4	5	Not worse than 4	5	Not worse than 4	5	Not worse than 4	5
7	Dimensional Stability at Elevated Temperature		EN 438-2 -17												
	Longitudinal Direction	%		0.30 (max.)	0.08	0.30 (max.)	0.10	0.30 (max.)	0.11	0.30 (max.)	0.12	0.30 (max.)	0.16	0.40 (max.)	0.28
	Transverse Direction	%		0.60 (max.)	0.15	0.60 (max.)	0.19	0.60 (max.)	0.21	0.60 (max.)	0.25	0.60 (max.)	0.29	0.80 (max.)	0.38
8	Resistance to Impact by Large Diameter Ball		EN 438-2 -21												
	Drop Height	mm		1800	1900	1800	1900	1800	1900	1800	1900	1800	1900	1400	1500
	Diameter of Indentation	mm		10 (max)	7	10 (max)	8	10 (max)	8	10 (max)	8	10 (max)	8	10 (max)	7
9	Resistance to Scratching	N	EN 438-2 -25	2.0 (min.)	2.5	2.0 (min.)	2.5	2.0 (min.)	2.5	2.0 (min.)	2.5	2.0 (min.)	2.5	2.0 (min.)	2.5
10	Resistance to Staining	Rating	EN 438-2 -26												
	Group 1 & 2			5	5	5	5	5	5	5	5	5	5	5	5
	Group 3			4	≥ 4	4	≥ 4	4	≥ 4	4	≥ 4	4	≥ 4	4	≥ 4
11	Resistance to Wet heat @100˚C	Rating	EN 438-2 -16	Not worse than 4	5	Not worse than 4	5	Not worse than 4	5	Not worse than 4	5	Not worse than 4	5	Not worse than 4	5
12	Light fastness (Xenon Arc Lamp)- Grey Scale Contrast	Rating	EN 438-2 -27	4 to 5	Complies	4 to 5	Complies	4 to 5	Complies	4 to 5	Complies	4 to 5	Complies	4 to 5	Complies
13	Resistance to Crazing	Rating	EN 438-2 -24	Not worse than 4	5	Not worse than 4	5	Not worse than 4	5	Not worse than 4	5	Not worse than 4	5	Not worse than 4	5
14	Flexural Modulus	Mpa	EN ISO 178:2003	9000(min)	Complies	9000(min)	Complies	9000(min)	Complies	9000(min)	Complies	9000(min)	Complies	9000(min)	Complies
15	Flexural Strength	Mpa		80 (min.)	Complies	80 (min.)	Complies	80 (min.)	Complies	80 (min.)	Complies	80 (min.)	Complies	80 (min.)	Complies
16	Density	g/cm3	EN ISO 1183 -1:2004	1.35	1.38	1.35	1.38	1.35	1.38	1.35	1.39	1.35	1.39	1.35	1.39

Note: Whereas Greenlam products are manufactured thoroughly to standards, the nature of the application procedure is beyond our control. The values given above are to the best of knowledge but without liability/warranty, expressed or implied.

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Greenlam | LAB GUARDIAN™ CHEMICAL RESISTANT LAMINATE

Technical Data sheet

Greenlam Lab Guardian

S.NO.	PROPERTIES	UNIT	TEST METHOD AS PER DIN EN 438 Part 2&3:2005	SPECIFIED VALUES	Greenlam Conforms
1	Classification		EN 438-4-4	COMPACT GENERAL PURPOSE STANDARD, CGS	
2	Thickness	mm	EN 438-2-5	12.0 ± 0.60	12.0 ± 0.35
3	Resistance to dry heat at 180°C	Rating	EN 438-2-16	Not worse than 4	5
4	Resistance to surface wear	Rev.	EN 438-2-10	350 (min.)	400
5	Resistance to Immersion in boiling water(2 hours)		EN 438-2-12		
	a) Mass increase	%		2.0 (max.)	0.2
	b) Thickness increase	%		2.0 (max.)	0.7
	c) Appearance	Rating		Not worse than 4	5
6	Dimensional stability at elevated temperatures		EN 438-2-17		
	Longitudinal	%		0.30(max.)	0.07
	Transverse	%		0.60 (max)	0.14
7	Resistance to impact by large diameter ball				
	a) Drop Height	cm	EN 438-2-21	1800	2200
	b) Diameter of Indentation	mm		10 (max)	7
8	Resistance to scratching	N	EN 438-2-25	2.0 (min.)	4
9	Resistance to staining				5
	Group 1& 2	Rating		5	
	Group 3	Rating	EN 438-2-26	4	≥ 4
10	Resistance to cigarette burn	Rating	EN 438-2-30	Not worse than 3	4
11	Resistance to Water Soack at 65° C for 48 Hours	Rating	IS 2046:1995 Annexure Y	Not worse than 4	5
12	Resistance to Crashing	Rating	EN 438-2-24	Not worse than 4	5
13	Flexural Modules	Mpa	EN ISO 178:203	9000 (min.)	10000
14	Flexural Strength	Mpa	EN ISO 178:203	80 (min.)	100
15	Tensile Strength	Mpa	EN ISO 527-2:1996	60 (min.)	80
16	Density	g/cm^3	EN ISO 1183-1:2004	1.35	1.40
17	chemical & Stain Resistance	Conforms to SEFA 8.1-PL-2010; Chemical Spot Test* (Test Report made avialible)			

SIZE AVAILABLE: 1525MM X 3660MM; THICKNESSES AVAILABLE: 12.0MM, 13.0MM, 16.0MM & 18.0M

ECYSTONE

Greenlam | POSTFORMING LAMINATE

Technical Data sheet

Greenlam Post Forming Laminates (0.7 MM)

S.NO.	PROPERTIES	UNITS	SPECIFIED VALUES AS PER IS 2046:1995, TYPE VGP	GREENLAM CONFORMS
1	Classification	mm	0.6 ± 0.1	√
2	Resistance to surface wear	Rev.	150 (Min.)	√
3	Resistance to Immersion in boiling water			
	a) Mass increase	%	21.0 (Max.)	√
	b) Thickness increase	%	23.0 (Max.)	√
	c) Appearance	Grade	Not worse than 3	√
4	Dimensional stability at deviated temperature			
	Longitudinal	%	0.70 (Max.)	√
	Transverse	%	1.20 (Max.)	√
5	Resistance to impact by small diameter ball	N	15.0 (Min)	√
6	Resistance to cracking	Grade	Not worse than 4	√
7	Resistance to scratching	N	1.75	√
8	Resistance to staining			
	a) Group 1& 2	Grade	Not worse than 5	√
	b) Group 3 & 4	Grade	Not worse than 3	√
9	Resistance to colour change			
	a) In xenon Arc light	Grade	Not worse than 6	√
	b) In enclosed Carbon Arc light	Grade	Not worse than 5	√
10	Resistance to steam	Grade	Not worse than 3	√
11	Formability (Radius)	mm	10 (max)	√
12	Resistance to Blistering	Sec.	10 (min)	√

NOTE: -It is recommemded to post-form the laminate within Six month of the Mfg. Date.

-Temperture to post form the laminate is 163 Deg. Centigrade.
-Store the material at cool and dry place in horizontal position above 6"inches from the floor.

EGY STONE