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MateriaLab

Client Ref. : --
Report No. : 174732ST171137(12)

SUMMARY REPORT

EGY STONE
corian-HPL compact-kitchens

Information Supplied by Client

Client : GREENLAM ASIA PACIFIC PTE LTD.
Project : Testing of Laminate
Sample Description : Laminate

Laboratory Information

Lab. Sample I.D. : ST171137/1-33, 34a-34e
Sample Received : 21 November 2017, 22 November 2017, 07 December 2017
Date Test Started : 07 December 2017
Date Test Completed : 16 December 2017

Test Report No.	Test Item	Test Method	Result
174732ST171137	Determination of thickness	BS EN 438-2 : 2016 Clause 5 and BS EN 438-3 : 2016	Average Thickness : 1.03 mm
174732ST171137(1)	Resistance to surface wear	BS EN 438-2 : 2016 Clause 10 and BS EN 438-3 : 2016	Revolution : 500
174732ST171137(2)	Resistance to immersion in boiling water	BS EN 438-2 : 2016 Clause 12 and BS EN 438-3 : 2016	a) Mass increase: 6.26% b) Thickness increase: 10.09% c) Change in appearance : Rating : No visible change
174732ST171137(3)	Substrate protection against water vapour	BS EN 438-2 : 2016 Clause 13	Difference in thickness: Average : 0.035 mm
174732ST171137(4)	Resistance to water vapour	BS EN 438-2 : 2016 Clause 14 and BS EN 438-3 : 2016	Rating 5 : No visible change
174732ST171137(5)	Resistance to dry heat	BS EN 438-2 : 2016 Clause 16 and BS EN 438-3 : 2016	Rating 5 : No change
174732ST171137(6)	Determination of dimensional stability at elevated temperature	BS EN 438-2 : 2016 Clause 17 and BS EN 438-3 : 2016	a) High-Humidity Test : 0.22% (parallel direction) 0.16% (right angle direction) b) Dry-Heat Test -0.27% (parallel direction) -0.32% (right angle direction)
174732ST171137(7)	Resistance to impact by small-diameter ball	BS EN 438-2 : 2016 Clause 20 and BS EN 438-3 : 2016	No visible damage at 90N
174732ST171137(8)	Resistance to impact by large-diameter ball	BS EN 438-2 : 2016 Clause 21 and BS EN 438-3 : 2016	No cracking at 2000 mm
174732ST171137(9)	Resistance to cracking under stress (Laminates <=2mm Thick)	BS EN 438-2 : 2016 Clause 23 and BS EN 438-3 : 2016	No evidence of cracking, Rating 5
174732ST171137(10)	Resistance to scratching	BS EN 438-2 : 2016 Clause 25 and BS EN 438-3 : 2016	Scratch resistance (rating scale) : 3
174732ST171137(11)	Resistance to staining	BS EN 438-2 : 2016 Clause 26 and BS EN 438-3 : 2016	a) Acetone : Rating 5 : No change b) Coffee : Rating 5 : No change c) Shoes Polish : Rating 5 : No change d) Sodium Hydroxide (25% solution) Rating 5 : No change e) Hydrogen Peroxide (30% solution) : Rating 5 : No change

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Manager (Product Testing Laboratory)

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MateriaLab

Client Ref. : --
Report No. : 174732ST171137

REPORT ON DETERMINATION OF THICKNESS OF LAMINATE

Information Supplied by Client

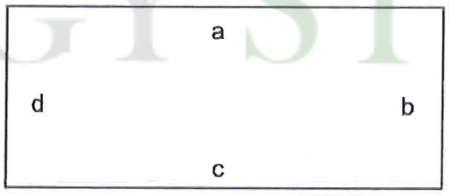
Client : GREENLAM ASIA PACIFIC PTE LTD.
Project : Testing of Laminate
Sample Description : Laminate

Laboratory Information

Lab. Sample I.D. : ST171137/1
Date Received : 22 November 2017
Date Tested : 07 December 2017
Test Method : BS EN 438-2 : 2016 clause 5 and BS EN 438-3 : 2016

Test Results

Lab Sample I.D.	Measurement of Thickness (mm)				Average Thickness (mm)	Max. Variation (mm)	Requirement of Variation (mm)
	a	b	c	d			
ST171137/1	1.01	1.05	1.03	1.02	1.03	0.04	±0.15



Remarks : 1.) The test results relate only to the samples tested.
2.) The test results comply with the requirement of BS EN 438-3 : 2016, table 4.

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MateriaLab

Client Ref. : --
Report No. : 174732ST171137(1)

REPORT ON RESISTANCE TO SURFACE WEAR OF LAMINATE

Information Supplied by Client

Client : GREENLAM ASIA PACIFIC PTE LTD.
Project : Testing of Laminate
Sample Description : Laminate

Laboratory Information

Lab. Sample I.D. : ST171137/2-4
Date Received : 22 November 2017
Date Tested : 07 December 2017
Test Method : BS EN 438-2 : 2016 Clause 10 and BS EN 438-3 : 2016

Test Results

Lab. Sample I.D.	Test Loads (N)	Revolutions	Observation	Result	Requirement
ST171137/2	5.4	500	No recognisable wear-through of the plain colour was found and no sub-layer was exposed	Satisfactory	Laminate grade (HGS) Revolution, min. 150
ST171137/3	5.4	500		Satisfactory	
ST171137/4	5.4	500		Satisfactory	

Remarks:
1.) The test results relate only to the samples tested.
2.) The samples after test are shown in the photograph on page 2 of this report.
3.) The test results comply with the requirement of BS EN 438-3 : 2016, table 5.

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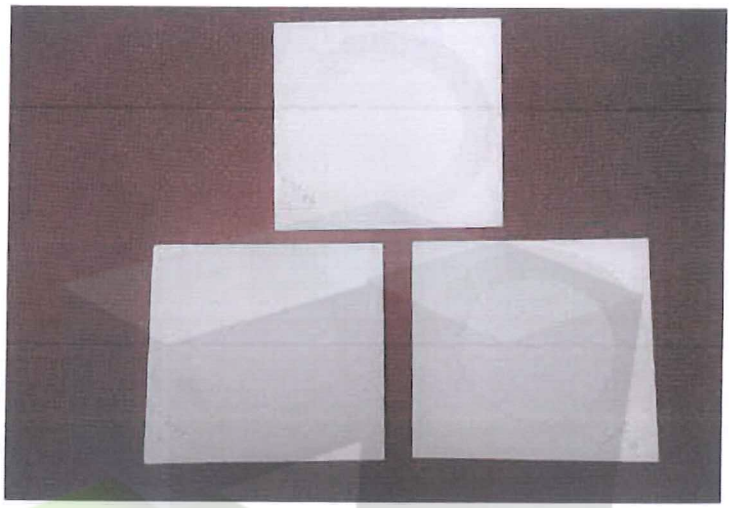
Client Ref. : --
Report No. : 174732ST171137(1)



Sample After Test
Sample I.D.: ST171137/2-4

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Client Ref. : --
Report No. : 174732ST171137(2)

REPORT ON RESISTANCE TO IMMERSION IN BOILING WATER OF LAMINATE

Information Supplied by Client

Client : GREENLAM ASIA PACIFIC PTE LTD.
Project : Testing of Laminate
Sample Description : Laminate

Laboratory Information

Lab. Sample I.D. : ST171137/5-8
Date Received : 22 November 2017
Date Tested : 11 December 2017
Test Method : BS EN 438-2 : 2016 Clause 12 and BS EN 438-3 : 2016

Test Results

Lab Sample I.D.	Weight Before Immersion (g)	Weight After Immersion (g)	Increase In Mass (%)	Result (Rating)		Requirement
				Surface	Edge	
ST171137/5	4.026	4.271	6.09	5	5	Laminate grade (HGS) Rating, min. 4
ST171137/6	4.057	4.316	6.38	5	5	
ST171137/7	4.008	4.266	6.44	5	5	
ST171137/8	4.024	4.271	6.14	5	5	
		Average	6.26			

Lab Sample I.D.	Thickness of specimen (mm)								Increase in thickness (%)			
	Before immersion				After immerison							
	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
ST171137/5	1.02	1.02	1.02	1.02	1.11	1.10	1.11	1.12	8.82	7.84	8.82	9.80
ST171137/6	1.00	1.02	1.02	1.01	1.12	1.15	1.14	1.13	12.00	12.75	11.76	11.88
ST171137/7	1.02	1.03	1.01	1.02	1.12	1.11	1.11	1.12	9.80	7.77	9.90	9.80
ST171137/8	1.07	1.01	1.02	1.02	1.12	1.11	1.12	1.12	10.89	9.90	9.80	9.80
						Average			10.09			

Surface rating
Rating 5 : No visible change

Edge rating
Rating 5 : No visible change

Remarks : 1.) The test results relate only to the samples tested.
2.) The test results comply with the requirement of BS EN 438-3 : 2016, table 5.

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Client Ref. : --
Report No. : 174732ST171137(3)

REPORT ON SUBSTRATE PROTECTION AGAINST WATER VAPOUR OF LAMINATE

Information Supplied by Client

Client : GREENLAM ASIA PACIFIC PTE LTD.
Project : Testing of Laminate
Sample Description : Laminate

Laboratory Information

Lab. Sample I.D. : ST171137/9-10
Date Received : 21 November 2017
Date Tested : 15 December 2017
Test Method : BS EN 438-2 : 2016 Clause 13

Test Results

Lab.Sample I.D.	Thickness of circular groove before test (t1) mm	Thickness of circular groove after test (t2) mm	Difference in thickness (mm)
ST171137/9	0.79	0.83	0.04
ST171137/10	0.78	0.81	0.03
		Average	0.035

Remarks : 1.) The test results relate only to the samples tested.
2.) The samples after test are shown in the photograph on page 2 of this report.

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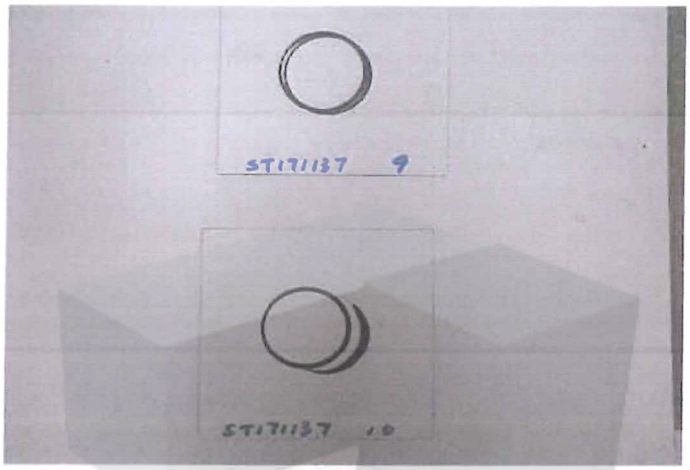
Report No. : 174732ST171137(3)



Sample After Test
Sample I.D.: ST171137/9-10

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Client Ref. : --
Report No. : 174732ST171137(4)

REPORT ON RESISTANCE TO WATER VAPOUR OF LAMINATE

Information Supplied by Client

Client : GREENLAM ASIA PACIFIC PTE LTD.
Project : Testing of Laminate
Sample Description : Laminate

Laboratory Information

Lab. Sample I.D. : ST171137/11
Date Received : 07 December 2017
Date Tested : 11 December 2017
Test Method : BS EN 438-2 : 2016 Clause 14 and BS EN 438-3 : 2016

Test Results

Lab.Sample I.D.	Observation	Results (Rating)	Requirement
ST171137/11	No visible change	5	Laminate grade (HGS) Rating, min.4

Rating 5 : No visible change

Remarks :
1.) The test results relate only to the samples tested.
2.) The test configuration and the test samples are shown in the photographs on page 2 of this report.
3.) The test results comply with the requirement of BS EN 438-3 : 2016, table 5.

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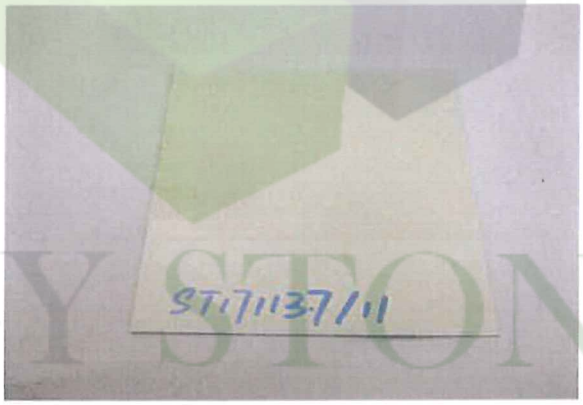
Report No. : 174732ST171137(4)

Test Configuration
Sample I.D.: ST171137/11



Test Sample
Sample I.D.: ST171137/11

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Client Ref. : --
Report No. : 174732ST171137(5)

REPORT ON RESISTANCE TO DRY HEAT OF LAMINATE

Information Supplied by Client

Client : GREENLAM ASIA PACIFIC PTE LTD.
Project : Testing of Laminate
Sample Description : Laminate

Laboratory Information

Lab. Sample I.D. : ST171137/12
Date Received : 07 December 2017
Date Tested : 11 December 2017
Test Method : BS EN 438-2 : 2016 Clause 16 and BS EN 438-3 : 2016

Test Results

Lab.Sample I.D.	Observation	Results (Rating)	Requirement
ST171137/12	No change	5	Laminate grade (HGS) Rating, min.4

Rating 5 : No change

Remarks:
1.) The test results relate only to the samples tested.
2.) The test configuration and the sample after test are shown in the photographs on page 2 of this report.
3.) The test results comply with the requirement of BS EN 438-3 : 2016, table 5.

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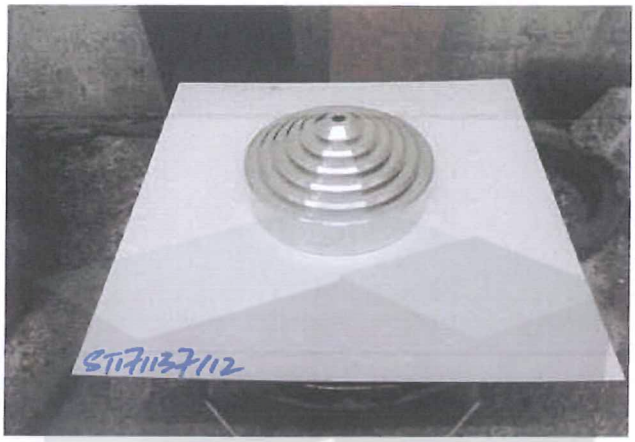

Test Configuration
Sample I.D.: ST171137/12

Sample After Test
Sample I.D.: ST171137/12

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Client Ref. : --
Report No. : 174732ST171137(6)

REPORT ON DETERMINATION OF DIMENSIONAL STABILITY AT ELEVATED TEMPERATURE OF LAMINATE

Information Supplied by Client

Client : GREENLAM ASIA PACIFIC PTE LTD.
Project : Testing of Laminate
Sample Description : Laminate

Laboratory Information

Lab. Sample I.D. : ST171137/13-20
Date Received : 22 November 2017
Date Test Started : 12 December 2017
Date Test Completed : 16 December 2017
Test Method : BS EN 438-2 : 2016 Clause 17 and BS EN 438-3 : 2016

Test Results

High-Humidity Test (40+/-2°C and 90% R.H. for 96 hours)

Lab Sample I.D.	Direction	Thickness (mm)	Measured Length (mm)		Change of measured length (%)	The Cumulative Dimensional Change (%)		Requirement
			Before condition	After condition		Parallel Direction	Right Angle Direction	
ST171137/13	Parallel	0.97	202.15	202.66	0.25	0.49	0.48	Laminate grade (HGS) Parallel, 0.55% max. Right Angle, 1.05% max.
ST171137/14		0.97	202.88	203.24	0.18			
			Average		0.22			
ST171137/15	Right angle	0.98	201.63	201.94	0.15			
ST171137/16		0.97	201.79	202.12	0.16			
			Average		0.16			

Dry-Heat Test (70+/-2°C oven dry for 24 hours)

Lab Sample I.D.	Direction	Thickness (mm)	Measured Length (mm)		Change of measured length (%)
			Before condition	After condition	
ST171137/17	Parallel	0.96	202.06	201.50	-0.28
ST171137/18		0.97	202.02	201.52	-0.25
			Average		-0.27
ST171137/19	Right angle	0.98	202.10	201.41	-0.34
ST171137/20		1	202.11	201.51	-0.30
			Average		-0.32

Remarks:
1.) The test results relate only to the samples tested.
2.) The test samples are shown in the photographs on page 2 of this report.
3.) The test results comply with the requirement of BS EN 438-3 : 2016, table 5.

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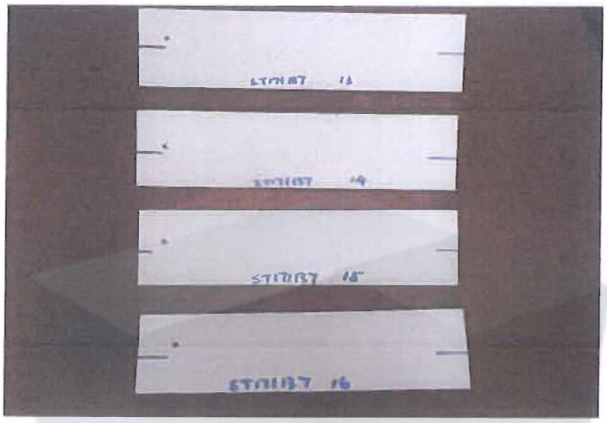
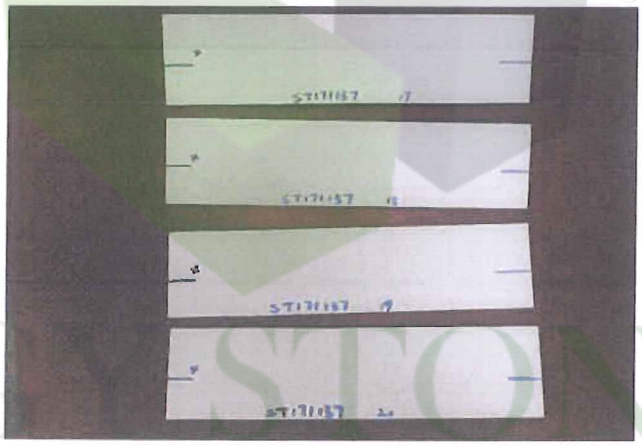


Test Sample
Sample I.D.: ST171137/13-16



Test Sample
Sample I.D.: ST171137/17-20

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MateriaLab

Client Ref. : --
Report No. : 174732ST171137(7)

REPORT ON RESISTANCE TO IMPACT BY SMALL- DIAMETER BALL OF LAMINATE

Information Supplied by Client

Client : GREENLAM ASIA PACIFIC PTE LTD.
Project : Testing of Laminate
Sample Description : Laminate

Laboratory Information

Lab. Sample I.D. : ST171137/21-23
Date Received : 22 November 2017
Date Tested : 15 December 2017
Test Method : BS EN 438-2 : 2016 Clause 20 and BS EN 438-3 : 2016

Test Results

Lab.Sample I.D.	Impact Resistance (N)	Observation	Requirement
ST171137/21	90	No visible damage	Laminate grade (HGS) min. 20N
ST171137/22	90	No visible damage	
ST171137/23	90	No visible damage	

Remarks : 1.) The test results relate only to the samples tested.
2.) The samples after test are shown in the photographs on page 2 of this report.
3.) The test results comply with the requirement of BS EN 438-3 : 2016, table 5.

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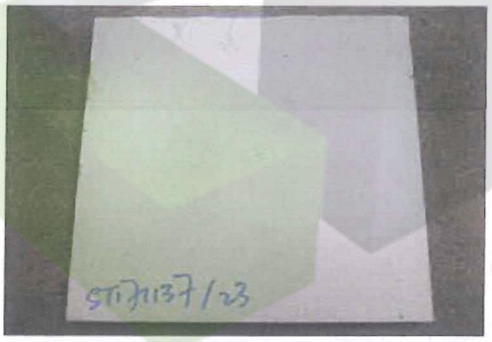
Client Ref. : --
Report No. : 174732ST171137(7)

Sample After Test
Sample I.D.: ST171137/21-22



Sample After Test
Sample I.D.: ST171137/23

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MateriaLab

Client Ref. : --
Report No. : 174732ST171137(8)

REPORT ON RESISTANCE TO IMPACT BY LARGE- DIAMETER BALL OF LAMINATE

Information Supplied by Client

Client : GREENLAM ASIA PACIFIC PTE LTD.
Project : Testing of Laminate
Sample Description : Laminate

Laboratory Information

Lab. Sample I.D. : ST171137/24-28
Date Received : 22 November 2017
Date Tested : 15 December 2017
Test Method : BS EN 438-2 : 2016 Clause 21 and BS EN 438-3 : 2016

Test Results

Lab.Sample I.D.	Observation	Impact Resistance (mm)	Requirement
ST171137/24	No cracking	2000	Laminate grade (HGS) min. 800 mm
ST171137/25	No cracking	2000	
ST171137/26	No cracking	2000	
ST171137/27	No cracking	2000	
ST171137/28	No cracking	2000	
	Average	2000	

Remarks : 1.) The test results relate only to the samples tested.
2.) The test configuration and the samples after test shown in the photographs on page 2 of this report.
3.) The test results comply with the requirement of BS EN 438-3 : 2016, table 5.

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Client Ref. : --
Report No. : 174732ST171137(8)

Test Configuration
Sample I.D.: ST171137/24-28

Sample After Test
Sample I.D.: ST171137/24

Sample After Test
Sample I.D.: ST171137/25

Sample After Test
Sample I.D.: ST171137/26

Sample After Test
Sample I.D.: ST171137/27

Sample After Test
Sample I.D.: ST171137/28

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MateriaLab

Client Ref. : --
Report No. : 174732ST171137(9)

REPORT ON RESISTANCE TO CRACKING UNDER STRESS (LAMINATES <=2MM THICK) OF LAMINATE

Information Supplied by Client

Client : GREENLAM ASIA PACIFIC PTE LTD.
Project : Testing of Laminate
Sample Description : Laminate

Laboratory Information

Lab. Sample I.D. : ST171137/29-32
Date Received : 22 November 2017
Date Test Started : 12 December 2017
Date Test Completed : 15 December 2017
Test Method : BS EN 438-2 : 2016 Clause 23 and BS EN 438-3 : 2016

Test Results

Lab.Sample I.D.	Test hours	Observation	Rating	Requirement
ST171137/29	6	No evidence of cracking	Rating 5	Laminate grade (HGS) Rating, min. 4
ST171137/30	6	No evidence of cracking	Rating 5	
ST171137/31	6	No evidence of cracking	Rating 5	
ST171137/32	6	No evidence of cracking	Rating 5	

Rating 5 : No evidence of cracking

Remarks:
1.) The test results relate only to the samples tested.
2.) The test configuration, the test samples and the samples after test are shown in the photographs on page 2 of this report.
3.) The test results comply with the requirement of BS EN 438-3 : 2016, table 5.

Checked by : _____ Date : 02 JAN 2019 Certified by : _____ Date : 02 JAN 2019
Chan Chun Wai Ivan
Manager (Product Testing Laboratory)

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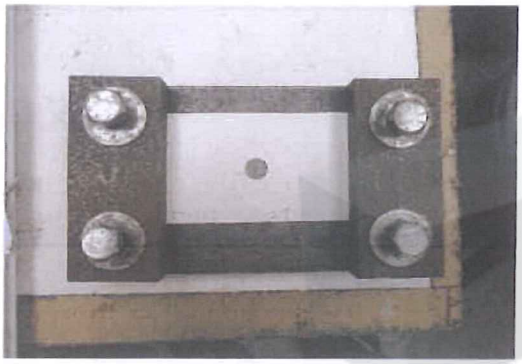
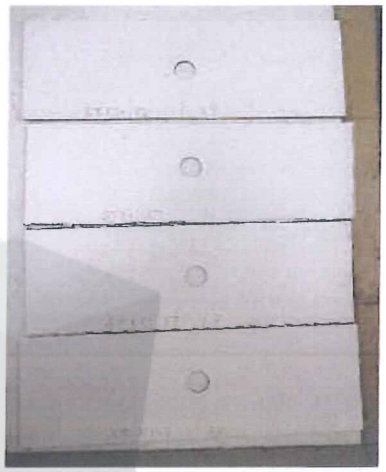
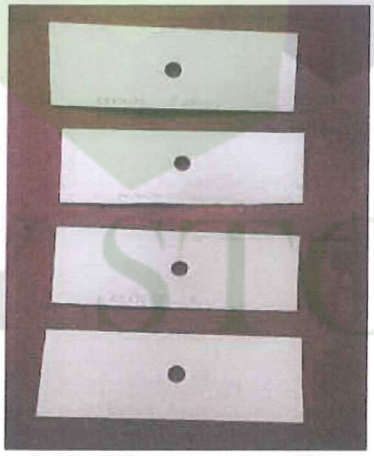
Client Ref. : --
Report No. : 174732ST171137(9)



Test Configuration
Sample I.D.: ST171137/29-32



Test Sample
Sample I.D.: ST171137/29-32



Sample After Test
Sample I.D.: ST171137/29-32

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End of Report

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MateriaLab

Client Ref. : --
Report No. : 174732ST171137(11)

REPORT ON RESISTANCE TO STAINING OF LAMINATE

Information Supplied by Client

Client : GREENLAM ASIA PACIFIC PTE LTD.
Project : Testing of Laminate
Sample Description : Laminate

Laboratory Information

Lab. Sample I.D. : ST171137/34a-34e
Date Received : 22 November 2017
Date Tested : 15 December 2017
Test Method : BS EN 438-2 : 2016 Clause 26 and BS EN 438-3 : 2016

Test Results

Lab Sample I.D.	Test Material	Observation	Result (Rating)	Requirement (Laminate grade, HGS)
ST171137/34a	Acetone	No change	5	Rating, min. 5
ST171137/34b	Coffee	No change	5	
ST171137/34c	Shoe Polish	No change	5	Rating, min. 4
ST171137/34d	Sodium Hydroxide (25% solution)	No change	5	
ST171137/34e	Hydrogen Peroxide (30% solution)	No change	5	

Rating 5 : No change

Remarks:
1.) The test results relate only to the samples tested.
2.) The test configuration and the samples after test are shown in the photographs on page 2 of this report.
3.) The test results comply with the requirement of BS EN 438-3 : 2016, table 5.

Checked by : _____ Date : 02 JAN 2019 Certified by : _____ Date : 02 JAN 2019

Chan Chun Wai Ivan
Manager (Product Testing Laboratory)

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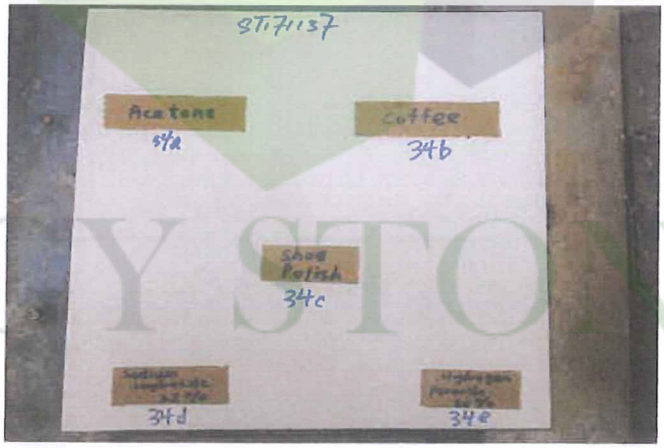
Client Ref. : --
Report No. : 174732ST171137(11)

Test Configuration
Sample I.D.: ST171137/34a-34e



Sample After Test
Sample I.D.: ST171137/34a-34e

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MateriaLab

Client Ref. : --
Report No. : 174732ST171137(10)

REPORT ON RESISTANCE TO SCRATCHING OF LAMINATE

Information Supplied by Client

Client : GREENLAM ASIA PACIFIC PTE LTD.
Project : Testing of Laminate
Sample Description : Laminate

Laboratory Information

Lab. Sample I.D. : ST171137/33
Date Received : 22 November 2017
Date Tested : 15 December 2017
Test Method : BS EN 438-2 : 2016 Clause 25 and BS EN 438-3 : 2016

Test Results

Lab.Sample I.D.	Scratch Resistance (Rating Scale)	Requirement
ST171137/33	3	Laminate grade (HGS) Rating, min. 3

Remarks:
1.) The test results relate only to the samples tested.
2.) The sample after test is shown in the photograph on page 2 of this report.
3.) The test results comply with the requirement of BS EN 438-3 : 2016, table 5.

Checked by: _____ Date : 02 JAN 2019 Certified by : _____ Date : 02 JAN 2019
Chan Chun Wai Ivan
Manager (Product Testing Laboratory)

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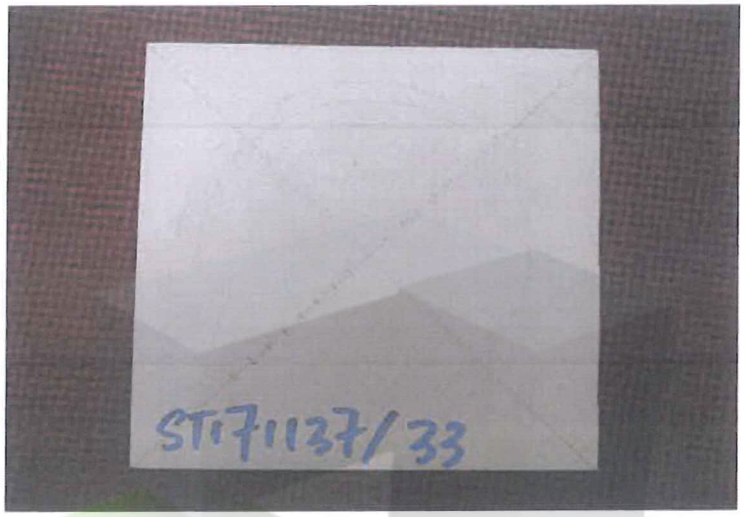
Client Ref. : --
Report No. : 174732ST171137(10)



Sample After Test
Sample I.D.: ST171137/33

EGY STONE

End of Report

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