



TEST REPORT

No. : GZIN160200187CCM

Date : May. 10, 2016

Page: 1 of 10

CLIENT NAME: RELANG INTERNATIONAL LLC.

ADDRESS: 10440 LITTLE PATUXENT PKWY, SUITE 343 COLUMBIA, MD 21044

The following sample(s) was/ were submitted and identified on behalf of the client as:

Sample Name : Durasein
Material : PURE ACRYLIC SOLID SURFACE SHEET
SGS Ref. No. : GZIN160200187CCM
Test Performed : Selected test(s) as requested by applicant
Date of Receipt : Feb. 03, 2016
Test Period : Feb. 03, 2016 to Apr. 25, 2016

Test result(s) : Please refer to the following page(s)

*****To be continued*****

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co.,Ltd
Guangzhou Branch

Jay Xue
Authorized signatory

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Guangzhou Branch Testing Service Construction Material Laboratory

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Summary of test results

NO.	Test items	Test methods	Test results	Conclusion
1	Density	ASTM D792-13 Method A	1.74g/cm ³	---
2	Flexural strength	ASTM D790-15 ^{ε2}	64.9MPa	---
	Flexural modulus	Procedure A	11975MPa	---
3	Impact resistance	ASTM D5420-10	Mean failure height: 872mm Mean failure energy: 7.70J	---
4	Boiling water surface resistance	With reference to NEMA LD-3:2005 Section 3.5 and client's requirement	No effect	---
5	High temperature resistance-Hot wax method	With reference to NEMA LD-3:2005 Section 3.6 and client's requirement	No effect	---
6	Stain resistance test	ANSI Z124.3-2005 Section 5.2	Total rating: 41 The maximum stain depth: 0.111mm	Pass
7	Cigarette test	ANSI Z124.3-2005 Section 5.4	No ignition or progressive glow of the surface during or after contact with the lighted cigarettes	Pass
8	Chemical resistance test	ANSI Z124.3-2005 Section 5.5	See table 2	Pass
9	Tensile Modulus	ASTM D638-14	9840MPa	---
10	Tensile Test	ASTM D638-14	Tensile Strength	45.6MPa
			Elongation at Break	0.66 %
11	Water absorption	ASTM D570-98(2010) ^{ε1} - Long Term Immersion	0.27%	---
12	Colour Fastness To Light	ISO 105-B02:2014	Grade (Blue wool standard) Better Than 6	---
13	Barcol Hardness	ASTM D2583-13a	68	---

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Test Information:

Sample description: See photo

Test item 1: Density

Test method: ASTM D792-13 Method A

Test condition:

Specimen: 50×50×11.9mm

Condition: Deionized water, 23±0.5℃

Test result: 1.74g/cm³

Test item 2: Flexural strength and Flexural modulus

Test method: ASTM D790-15^{ε2} Procedure A

Test condition:

Specimen: 245×19.2×12.0mm

Testing speed: 5.0mm/min

Span: 190mm

Test result:

Flexural strength: 64.9MPa

Flexural modulus: 11975MPa

Test item 3: Impact resistance

Test method: ASTM D5420-10

Test condition:

Specimen thickness: 11.9mm

Geometry: GC

Striker weight: 0.9kg

Test result: Mean failure height: 872mm

Mean failure energy: 7.70J



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Test item 4: Boiling water surface resistance

Test method: With reference to NEMA LD-3:2005 Section 3.5 and client's requirement

Test condition:

Specimen: 200×200×11.9mm

Test condition: boiling water

Contact time: 20min

Recover time: 24h

Test result: No effect

Test item 5: High temperature resistance-Hot wax method

Test method: With reference to NEMA LD-3:2005 Section 3.6 and client's requirement

Test condition:

Specimen: 200×200×11.9mm

Test condition: Hot wax

Contact time: 20min

Recover time: 24h

Test result: No effect

Test item 6: Stain resistance test

Test method: ANSI Z124.3-2005 Section 5.2

Test condition:

Specimen: 100×100×11.9mm

Test reagents: (See table 1)

Contact time: 16h

Test result: See table 1

ANSI Z124.3-2005 requirement:

Maximum stain resistance rating: 50

Maximum allowable thickness of material removed to eliminate the stain: 0.127mm

Conclusion: Pass



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Table 1:

Test reagent	Contact time	Rating	
		Covered	Uncovered
Black crayon	16h	1	1
Black liquid shoe polish		1	1
Blue washable ink		5(stain depth:0.031mm)	5(stain depth:0.030mm)
Gentian Violet solution		5(stain depth:0.070mm)	5(stain depth:0.111mm)
Iodine solution (1% alcohol solution)		2	3
Lipstick (contrasting color)		1	1
Hair dye (contrasting color)		5(stain depth:0.021mm)	5(stain depth:0.101mm)
Sum of stain rating	41	Maximum stain depth	0.111mm

Test item 7: Cigarette test

Test method: ANSI Z124.3-2005 Section 5.4

Test condition:

Specimen: 200×200×11.9mm

Condition: Place the cigarette on the specimens with lighted end 25.4mm in from the edge, Allow the cigarettes to burn for 2 minutes±2 seconds.

Test result: No ignition or progressive glow of the surface during or after contact with the lighted cigarettes.

ANSI Z124.3-2005 requirement:

There shall be no ignition or progressive glow of the surface during or after contact with the lighted cigarettes. Any resulting damage shall not impair the serviceability of the unit, and shall be easily repairable by using abrasive and polishing compounds to approximate the original finish.

Conclusion: Pass



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Test item 8: Chemical resistance test

Test method: ANSI Z124.3-2005 Section 5.5

Test condition:

Specimen: 100×100×11.9mm

Test reagents: (See table 2)

Test result: See table 2

ANSI Z124.3-2005 requirement:

The surface finish shall be unaffected by the reagents except for superficial surface changes which are removable by sanding with 600 grit wet or dry sandpaper and water. Any resulting damage shall not impair the serviceability of the unit, and shall be easily repairable by using abrasive and polishing compounds to approximate the original finish.

Conclusion: Pass

Table 2:

Test reagent	Contact time	Result	
		Covered	Uncovered
Naphtha	16h	Unaffected	Unaffected
Ethyl alcohol		Unaffected	Unaffected
Amyl acetate		Superficial surface changes	Superficial surface changes
Household ammonia solution, 10%(v/v)		Unaffected	Unaffected
Citric acid, 10%(m/m)		Unaffected	Unaffected
Urea, 6.0%(m/m)		Unaffected	Unaffected
Hydrogen peroxide solution, 3%		Unaffected	Unaffected
Concentrated sodium hypochlorite solution		Unaffected	Unaffected

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Table 2:

Test reagent	Contact time	Result	
		Covered	Uncovered
Toluene	16h	Superficial surface changes	Superficial surface changes
Ethyl acetate		Superficial surface changes	Superficial surface changes
Lye solution, (1% to 2%)		Unaffected	Unaffected
Acetone		Unaffected	Unaffected

Test item 9: Tensile Modulus

Test method: ASTM D638-14

Test condition:

Specimen: Type III

Specimen thickness: 12.13 mm

Testing speed: 5 mm/min

Gauge length: 50 mm

Distance between grips: 115 mm

Test result: 9840 MPa

Test item 10: Tensile Test

Test method: ASTM D638-14

Test condition:

Specimen: Type III

Specimen thickness: 12.13 mm

Testing speed: 5 mm/min

Gauge length: 50 mm

Distance between grips: 115 mm

Test result:

Tensile Strength: 45.6MPa

Elongation at Break: 0.66%



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Test item 11: Water absorption

Test method: ASTM D570-98(2010)^{ε1}-Long Term Immersion

Test condition:

Specimen: 50.0×50.0×11.9mm

Drying condition: 50℃, 24h

Immersion condition: Distilled water, 23±1℃, 49days

Test result: 0.27%

Test item 12: Colour Fastness To Light

Test method: ISO 105-B02:2014; use Xenon arc lamp, exposure cycle A1, no flip-flop mode was used

Test result:

Grade (Blue wool standard) :Better Than 6

Test Item 13: Barcol Hardness

Test Method: ASTM D2583-13a

Test Condition:

Specimen thickness: 12.07 mm

Lab Environmental Condition: 23 ± 2 °C, 50 ± 5 %RH

Test Result: 68

Note: The above test was carried out by a SGS internal laboratory.



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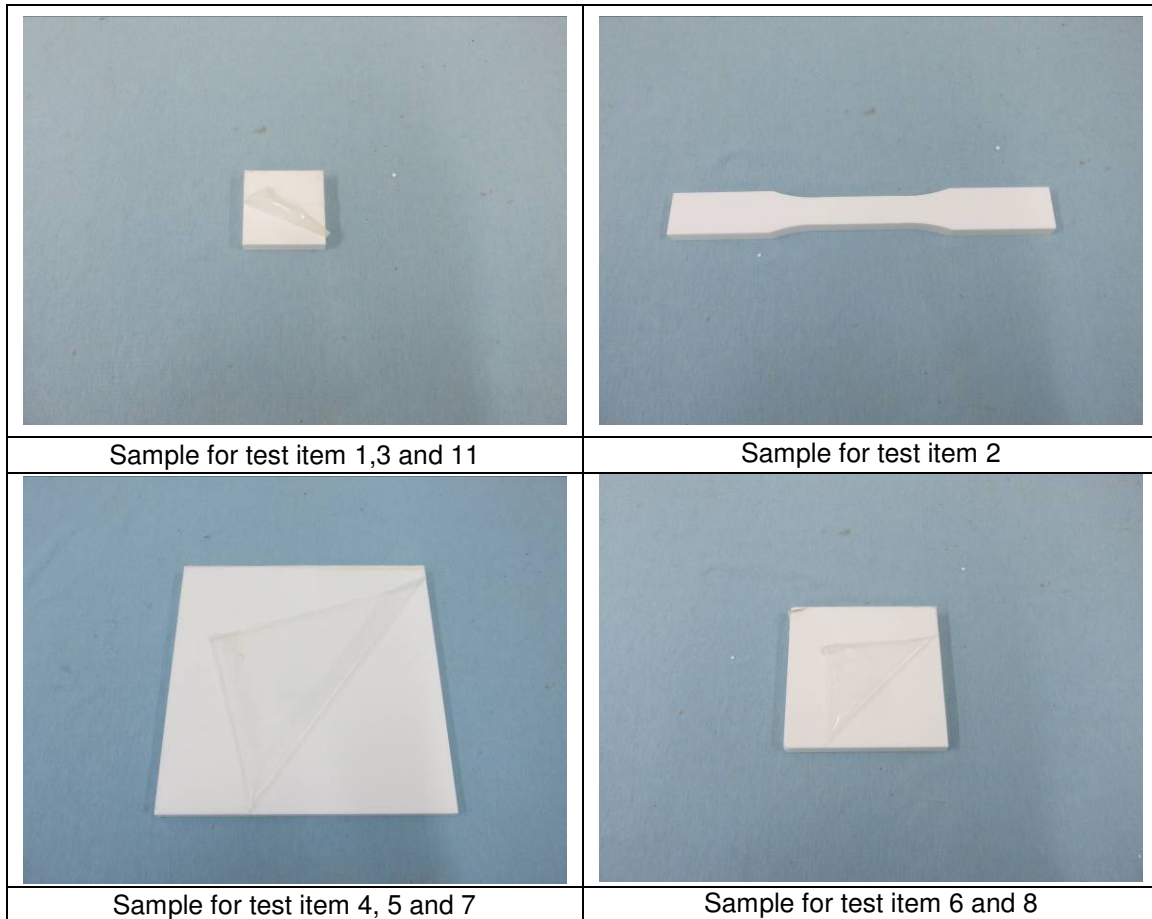
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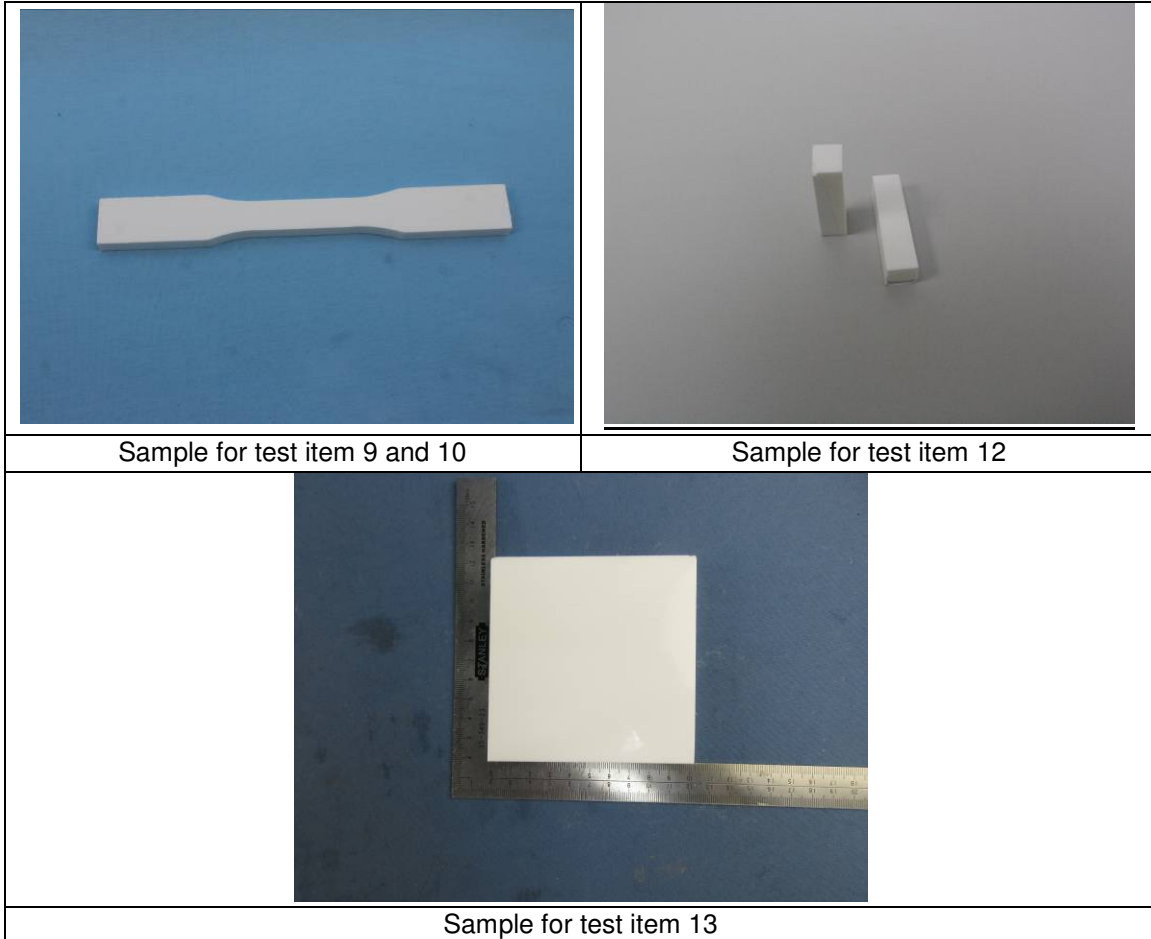


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*****End of report*****