

TEST REPORT

No. : GZIN1711052764PS

Date : Nov 17, 2017

Page: 1 of 19

CUSTOMER NAME: GUANGDONG GONG LI BUILDONG MATERIALS CO.,LTD
ADDRESS: WEST OF THE JIA HE NORTH ROAD, LUBAO TOWN, SANSHUI
FOSHAN CITY, GUANGDONG, CHINA

Sample Name : ASA SYNTHETIC RESIN ROOF TILE (SPANISH STYLE ROOF TILE)

Above information and sample(s) was/were submitted and confirmed by the client. SGS, however, assumes no responsibility to verify the accuracy, adequacy and completeness of the sample information provided by client.

SGS Ref. No. : GZIN1711052728PC, GZIN1711053056MR
Date of Receipt : Nov 03, 2017
Testing Start Date : Nov 03, 2017
Testing End Date : Nov 17, 2017
Test result(s) : For further details, please refer to the following page(s)
(Unless otherwise stated the results shown in this test report refer only to the sample(s) tested)

Signed for
SGS-CSTC Standards Technical
Services Co., Ltd. GZ Branch Testing
Center



Eleain Fan
Authorized signatory



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center Materials Laboratory

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TEST REPORT

No. : GZIN1711052764PS

Date : Nov 17, 2017

Page: 2 of 19

Summary of Results:

No.	Test Item	Test Method	Result		Conclusion
1	Charpy Notched Impact Strength	ASTM D6110-10	56J/m C(Complete break)		/
2	Chemical Resistance	With reference to ASTM D543-14 and client's requirement	Fading		/
3	Dimensional Stability	ASTM D1204-14	X direction	0.6%	/
			Y direction	0.04%	
4	Flexural Test	ASTM D790-17 Procedure A	Flexural Strength	56.4MPa	/
			Flexural Modulus	3370MPa	
5	Oxygen Index	ASTM D2863-13	30.2%		/
6	Striker Impacted by a Falling Weight	ASTM D4226-16 Procedure A	Mean failure energy: 5.0J		/
7	Tensile Test	ASTM D638-14	Tensile Strength	25.9MPa	/
			Elongation at Break	44%	
8	Vertical Burning	UL 94-2013 Rev.7-2017 Section 8	V-0		/
9	Vicat Softening Temperature	ASTM D1525-09	83.0°C		/
10	Bearing Strength	ASTM D953-10 Procedure A	60.9MPa		/

Note: Pass : Meet the requirements;
 Fail : Does not meet the requirements;
 / : Not Apply to the judgment.



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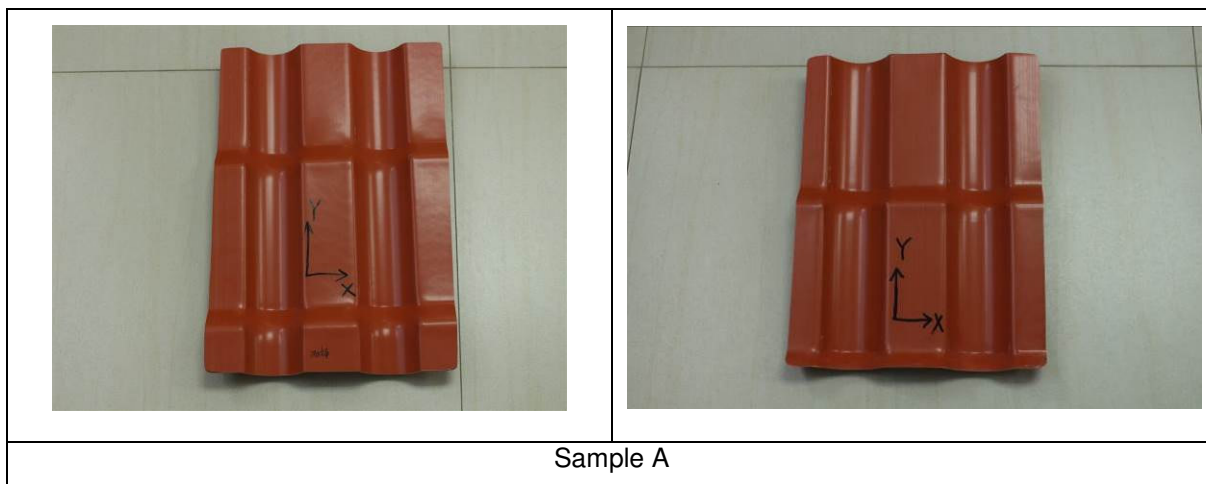
TEST REPORT

No. : GZIN1711052764PS

Date : Nov 17, 2017

Page: 3 of 19

Original Sample Photo:



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TEST REPORT

No. : GZIN1711052764PS

Date : Nov 17, 2017

Page: 4 of 19

1. Test Item: Charpy Notched Impact Strength

Sample Description: Plastic part

Test Method: ASTM D6110-10

Test Condition:

Specimen width: 3.35mm (Notch preparation: machining)

The capacity of pendulum: 2J

Impact speed: 3.46m/s

Span: 101.6mm

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

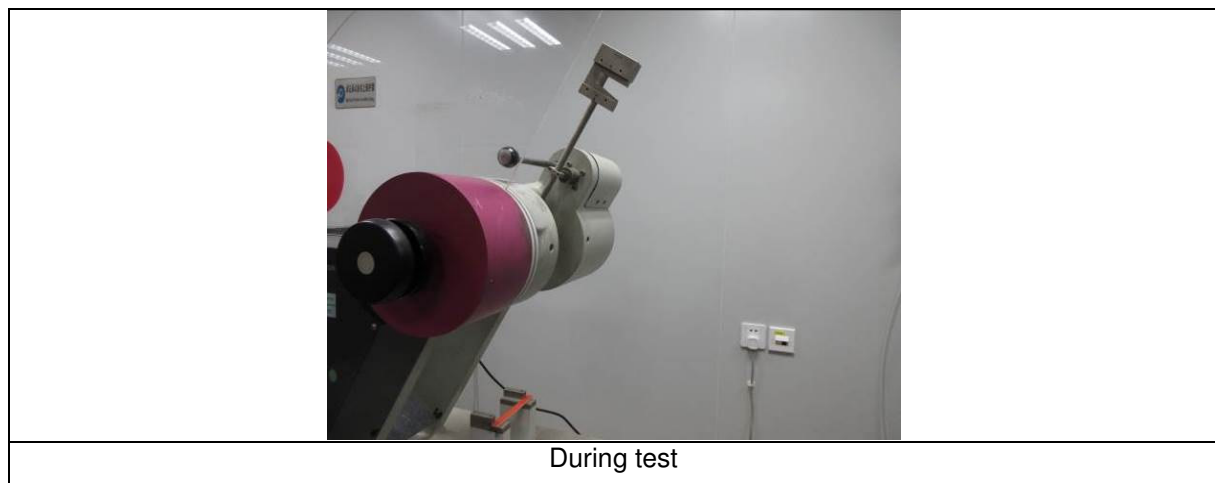
Test Result:

Test Item	Test Result
Charpy Notched Impact Strength	56J/m C(Complete break)

Note:

1. The smooth surface was faced to the impactor.
2. Test specimens were cut from the sample.

Test Photo:

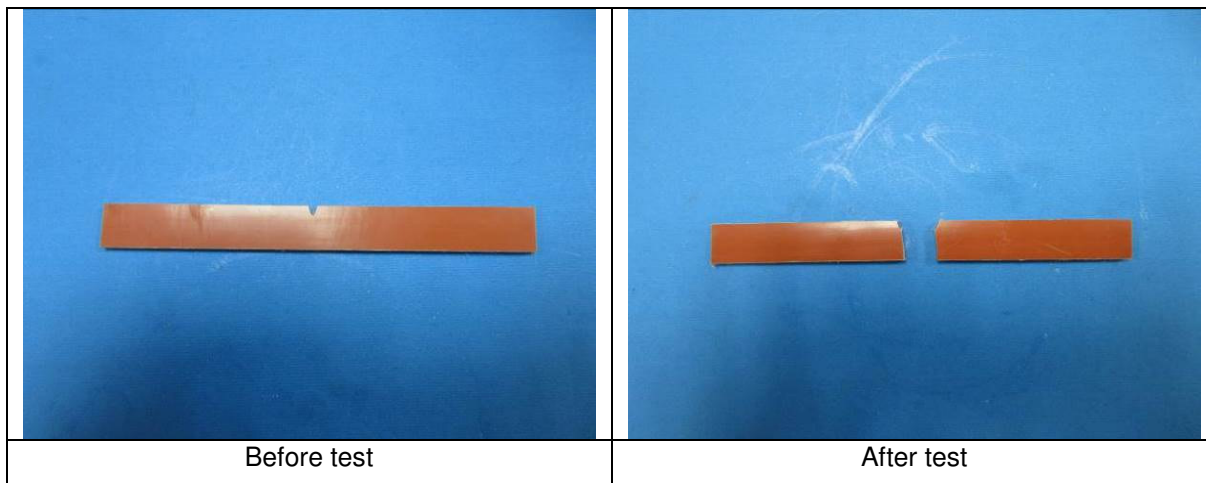


TEST REPORT

No. : GZIN1711052764PS

Date : Nov 17, 2017

Page: 5 of 19



Equipment Information:

Equipment	Model	Equipment No.	Calibration date	Next Calibration date
Impact Tester	6967	GZMR-PL-E008	2017-10-10	2018-10-09

2.Test Item: Chemical Resistance

Sample Description: Plastic part

Test Method: With reference to ASTM D543-14 Practice A and client's requirement

Test Condition:

Condition: Immersed in 35%(m/m)HCl(AR), 23°C, 48h

Lab Environment Condition: (23±2)°C , (50±5)%RH

Test Result:

Test Item	Appearance
Chemical Resistance	Fading

Note: Test specimens were cut from the sample.



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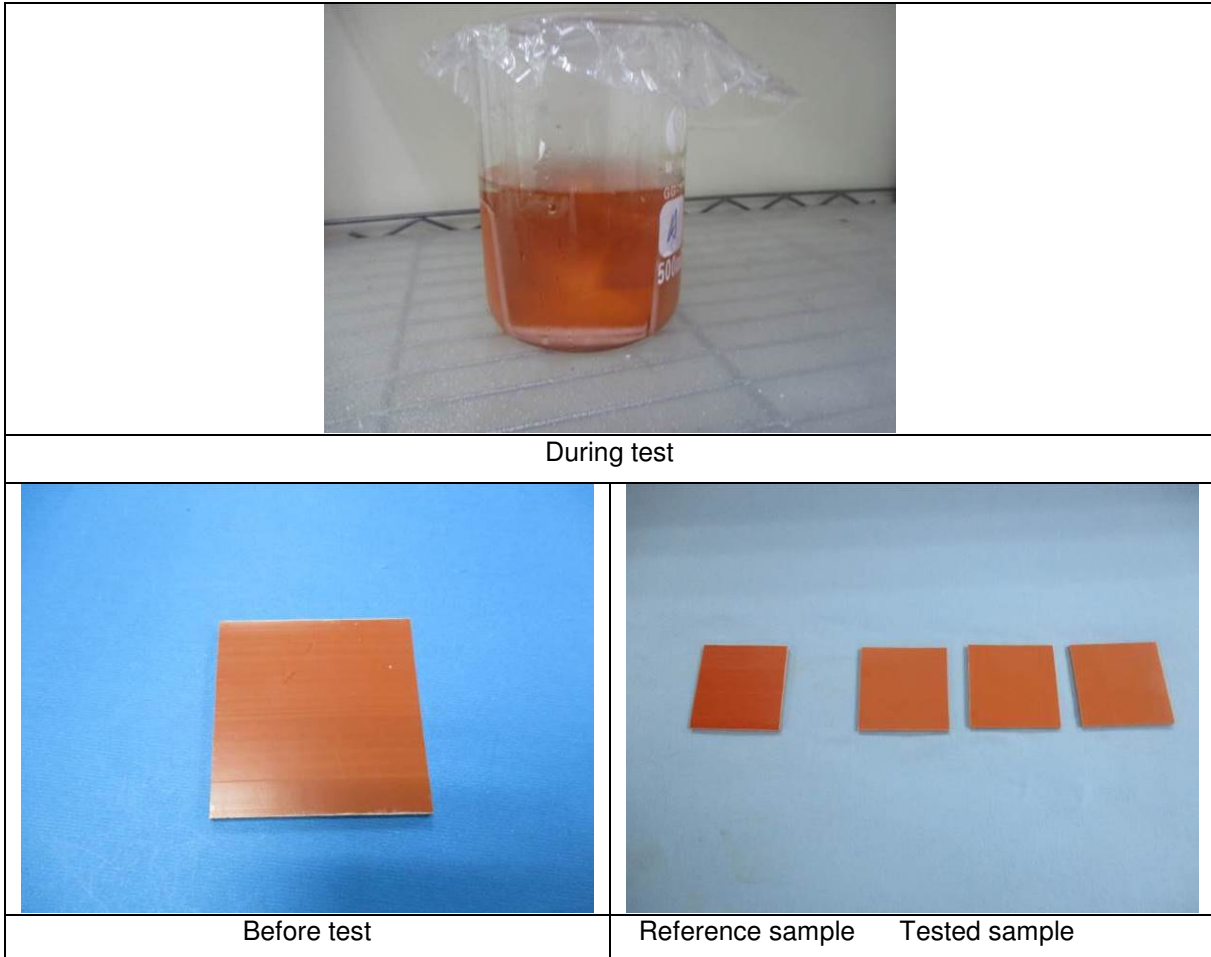
TEST REPORT

No. : GZIN1711052764PS

Date : Nov 17, 2017

Page: 6 of 19

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TEST REPORT

No. : GZIN1711052764PS

Date : Nov 17, 2017

Page: 7 of 19

3.Test Item: Dimensional Stability

Sample Description: Plastic part

Test Method: ASTM D1204-14

Test Condition:

Specimen: 25cm × 25cm

Test condition: 60 °C, 24h→(23±2) °C , (50±5)%RH, 1h

Medium: Talc powder

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

Test Result:

Test Item	Test Result	
Dimensional Stability	X direction	0.6%
	Y direction	0.04%

Note:

1. Dimensional Stability, %=(Dimension after test-Dimension before test)/Dimension before test×100
2. Test specimens were cut from the sample.

Test Photo:



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TEST REPORT

No. : GZIN1711052764PS

Date : Nov 17, 2017

Page: 8 of 19

Equipment Information:

Equipment	Model	Equipment No.	Calibration date	Next Calibration date
Oven	FD115	GZMR-AG-E077	2017-06-12	2018-06-11
Digital Vernier Caliper	0~200mm/0.01mm	GZMR-PL-E041-13	2016-12-19	2017-12-18

4. Test Item: Flexural Test

Sample Description: Plastic part

Test Method: ASTM D790-17 Procedure A

Test Condition:

Specimen: 127mm×13.08mm×3.49mm

Testing speed: 1.4mm/min

Span: 52mm

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

Test Result:

Test Item	Test Result
Flexural Strength	56.4MPa
Flexural Modulus	3370MPa

Note:

1. The smooth surface was faced to the loading.
2. Test specimens were cut from the sample.



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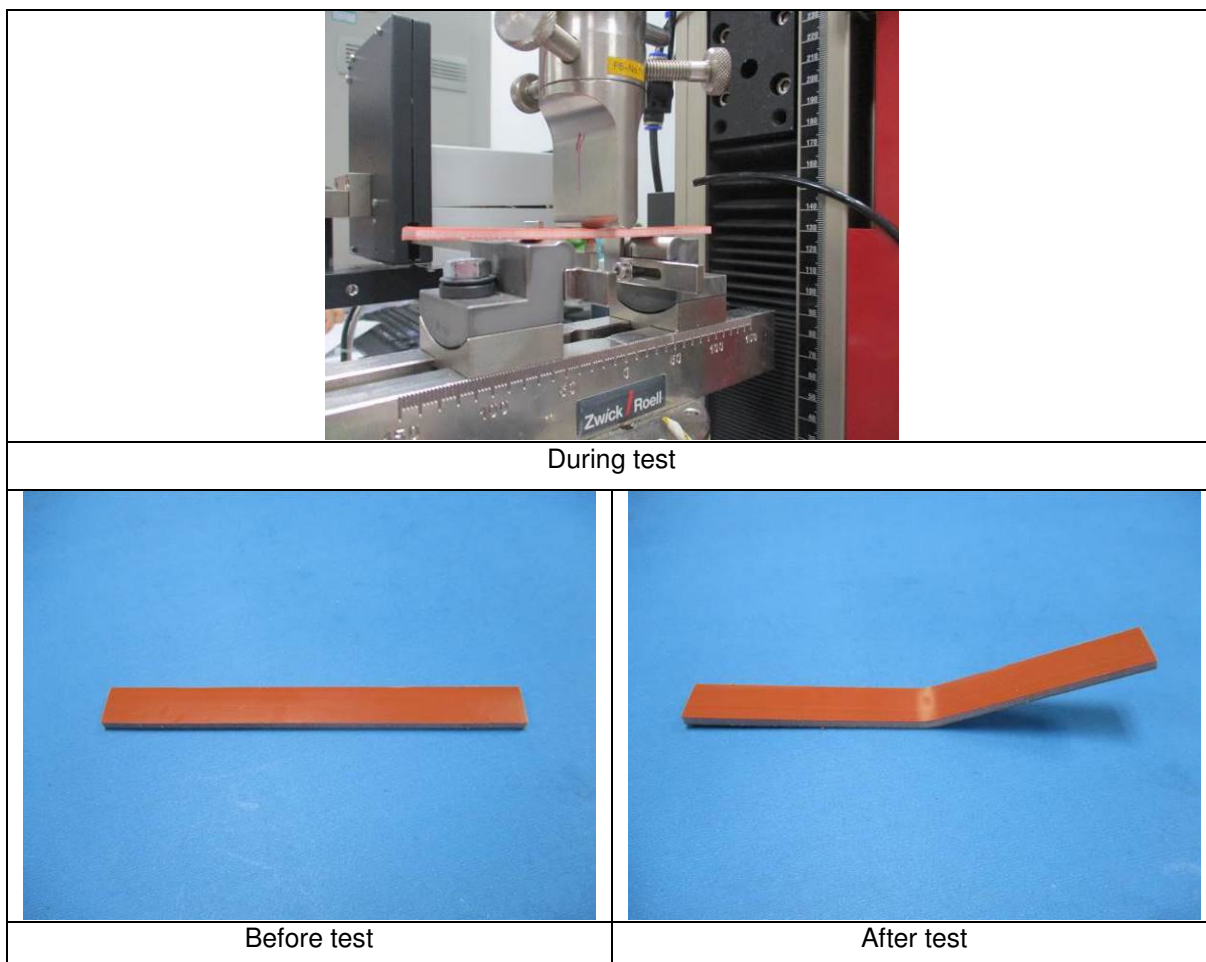
TEST REPORT

No. : GZIN1711052764PS

Date : Nov 17, 2017

Page: 9 of 19

Test Photo:



Equipment Information:

Equipment	Model	Equipment No.	Calibration date	Next Calibration date
Universal Testing Machine	Z1.0	GZMR-PL-E168	2017-10-10	2018-10-09



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TEST REPORT

No. : GZIN1711052764PS

Date : Nov 17, 2017

Page: 10 of 19

5. Test Item: Oxygen Index

Sample Description: Plastic part

Test Method: ASTM D2863-13

Test Condition:

Specimen: Type III

Specimen thickness: 3.3mm

Ignition procedure: Procedure A

Lab Environment Condition: (23±2)°C, (50±5)%RH

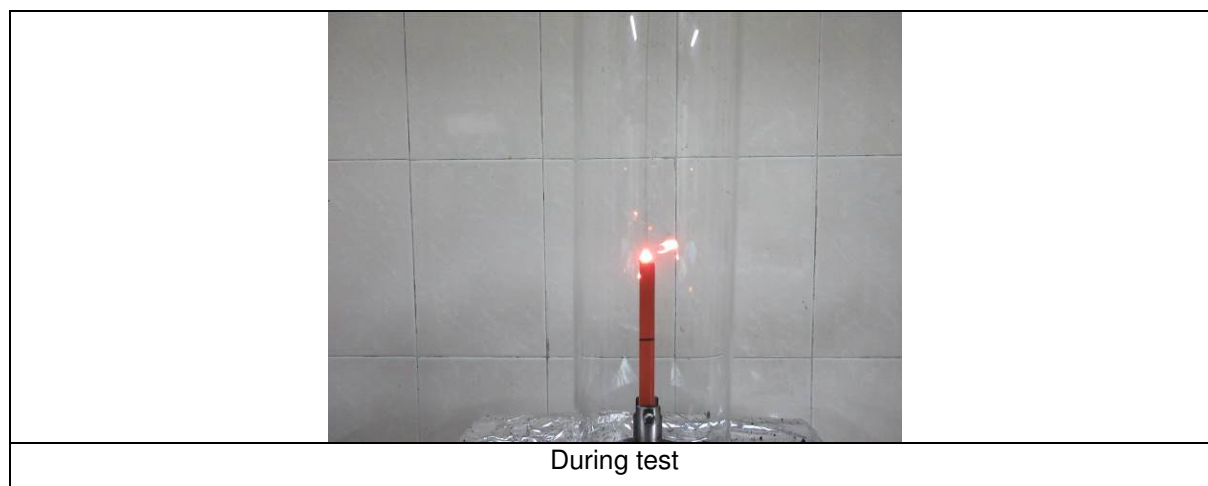
Test Result:

Test Item	Test Result
Oxygen Index	30.2%

Note:

1. Burning behavior: erratic burning.
2. Test specimens were cut from the sample.

Test Photo:



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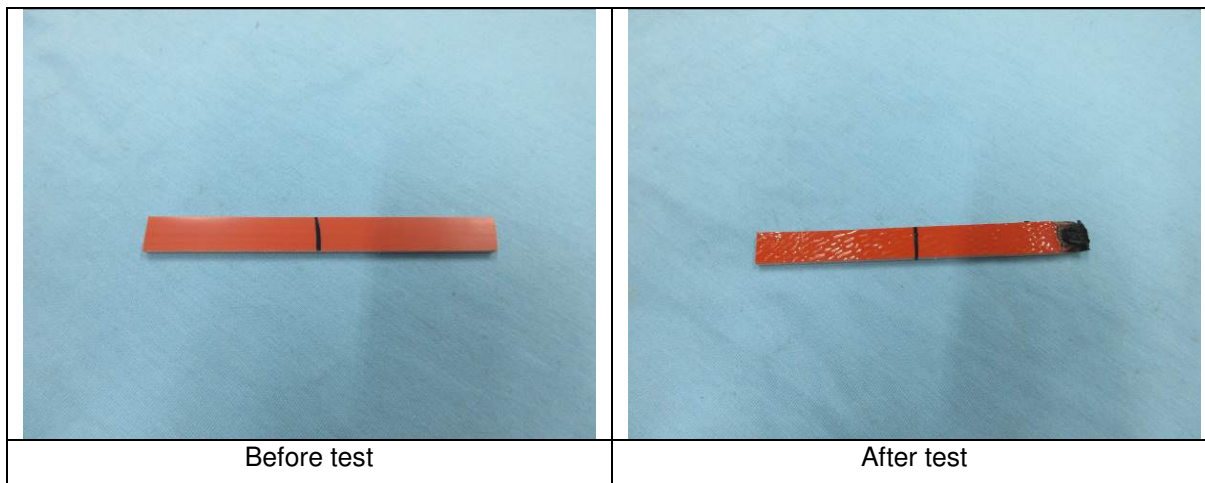
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TEST REPORT

No. : GZIN1711052764PS

Date : Nov 17, 2017

Page: 11 of 19



Equipment Information:

Equipment	Model	Equipment No.	Calibration date	Next Calibration date
Oxygen Index Tester	Oxygen Index	GZMR-PL-E108	2017-09-13	2018-03-12

6. Test Item: Striker Impacted by a Falling Weight

Sample Description: Plastic part

Test Method: ASTM D4226-16 Procedure A

Test Condition:

Specimen thickness: 3.35mm

Geometry: H.25

Strike weight: 3.6kg

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

Test Result:

Test Item	Test Result
Striker Impacted by a Falling Weight	Mean failure energy: 5.0J

Note:

1. The smooth surface was faced to the striker.
2. Test specimens were cut from the sample.



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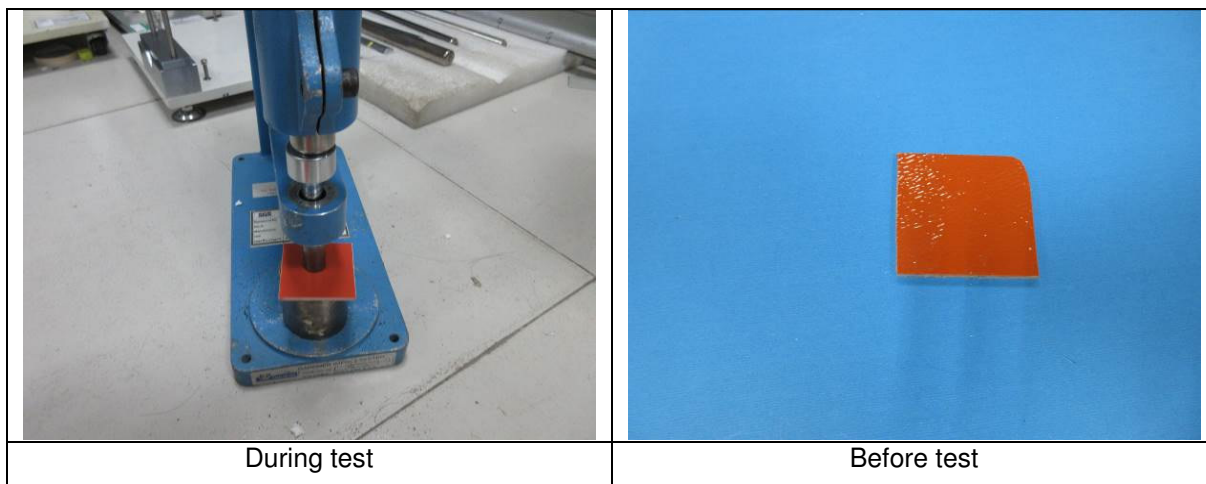
TEST REPORT

No. : GZIN1711052764PS

Date : Nov 17, 2017

Page: 12 of 19

Test Photo:



Equipment Information:

Equipment	Model	Equipment No.	Calibration date	Next Calibration date
Impact Tester	IG-1121	GZMR-AG-E004	2017-06-12	2018-06-11

7. Test Item: Tensile Test

Sample Description: Plastic part

Test Method: ASTM D638-14

Test Condition:

Specimen: Type I

Specimen thickness: 3.26mm

Testing speed: 5mm/min

Gauge length: 50mm

Distance between grips: 115mm

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



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中国·广州·经济技术开发区科学城科珠路199号 邮编: 510663 t (86-20) 82155661 f (86-20) 82075080 e sgs.china@sgs.com

TEST REPORT

No. : GZIN1711052764PS

Date : Nov 17, 2017

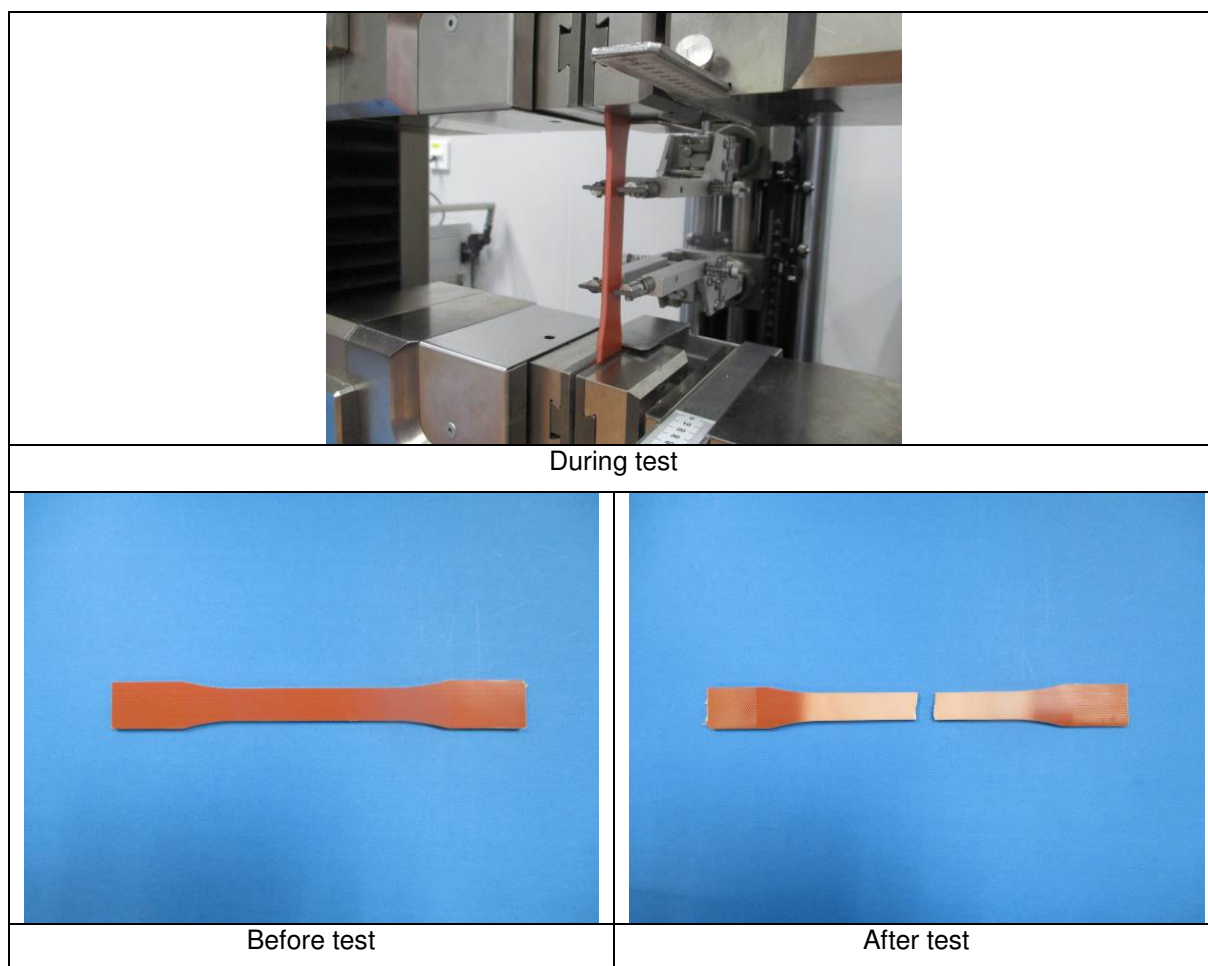
Page: 13 of 19

Test Result:

Test Item	Test Result
Tensile Strength	25.9MPa
Elongation at Break	44%

Note: Test specimens were cut from the sample.

Test Photo:



Equipment Information:

Equipment	Model	Equipment No.	Calibration date	Next Calibration date
Universal Testing Machine	Z030	GZMR-PL-E140	2017-10-10	2018-10-09



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TEST REPORT

No. : GZIN1711052764PS

Date : Nov 17, 2017

Page: 14 of 19

8.Test Item: Vertical Burning

Sample Description: Plastic part

Test Method: UL 94-2013 Rev.7-2017 Section 8

Test Condition:

Specimen: 128mm×13.4mm×3.3mm

Test Result:

Conditioning	As received :(23±2)°C , (50±5)%RH, 48h					Ageing: (70±2)°C , 168h→ Desiccator, (23±2)°C , 4h				
	1	2	3	4	5	1	2	3	4	5
Afterflame time after the first flame application (s), t ₁	0	0	0	0	0	0	0	0	0	0
Afterflame time after the second flame application (s), t ₂	0	0	0	0	0	0	0	0	0	0
Afterglow time after the second application (s), t ₃	0	0	0	0	0	0	0	0	0	0
Total afterflame time for any condition set (s), t ₁ +t ₂	0					0				
Afterflame time plus afterglow time after the second flame application (s), t ₂ +t ₃	0	0	0	0	0	0	0	0	0	0
Whether or not specimen burn up to the holding clamp	No	No	No	No	No	No	No	No	No	No
Whether or not the cotton was ignited by flaming particles or drops	No	No	No	No	No	No	No	No	No	No

Classification: V-0 (See table 1)



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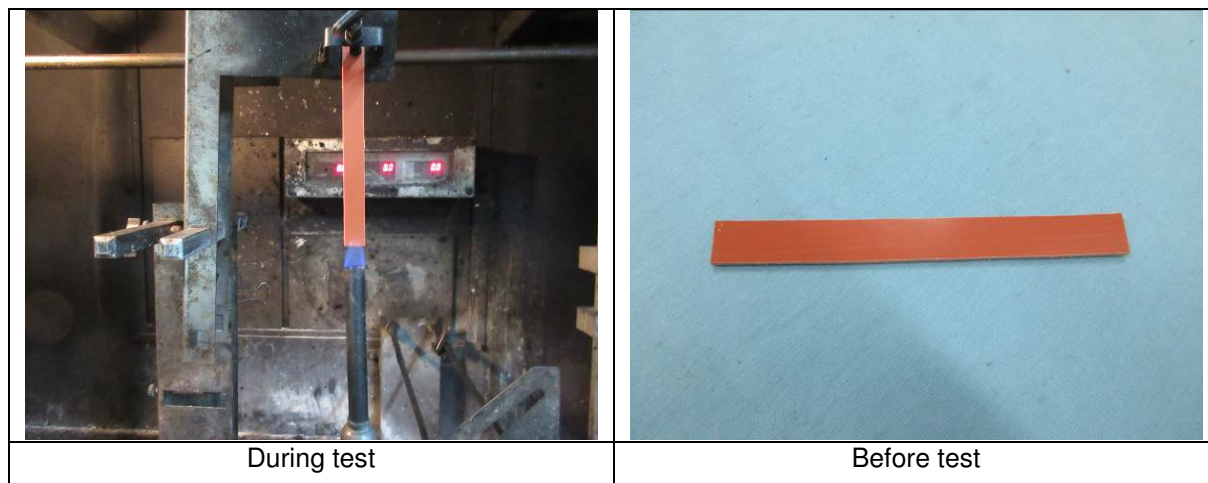
Page: 15 of 19

Table 1

Criteria conditions	V-0	V-1	V-2
Afterflame time for each individual specimen t_1 or t_2	$\leq 10s$	$\leq 30s$	$\leq 30s$
Total afterflame time for any condition set (t_1 plus t_2 for the 5 specimens)	$\leq 50s$	$\leq 250s$	$\leq 250s$
Afterflame plus afterglow time for each individual specimen after the second flame application (t_2+t_3)	$\leq 30s$	$\leq 60s$	$\leq 60s$
Afterflame or afterglow of any specimen up to the holding clamp	No	No	No
Cotton indicator ignited by flaming particles or drops	No	No	Yes

Note: Test specimens were cut from the sample.

Test Photo:



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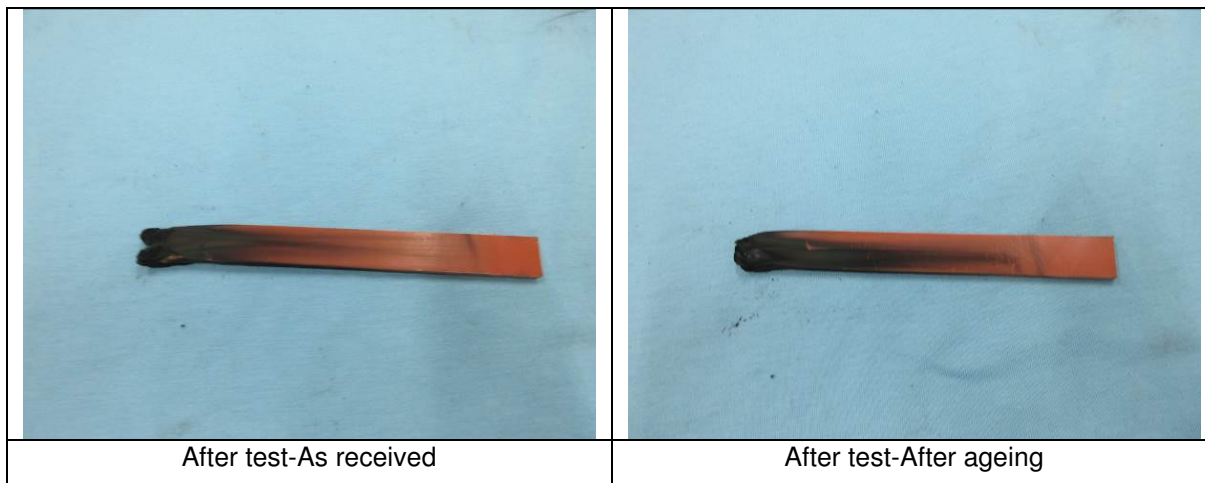
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TEST REPORT

No. : GZIN1711052764PS

Date : Nov 17, 2017

Page: 16 of 19



Equipment Information:

Equipment	Model	Equipment No.	Calibration date	Next Calibration date
Hot Air Aging Oven	LR05A	GZMR-AG-E073	2017-10-16	2018-10-15
Horizontal/Vertical Flame Chamber	HVUL2	GZMR-PL-E032	2017-07-10	2018-07-09

9. Test Item: Vicat Softening Temperature

Sample Description: Plastic part

Test Method: ASTM D1525-09

Test Condition:

Specimen thickness: 3.29mm

Heat-transfer media: Silicone oil

Rate of temperature: 50°C/h

Load: 50N

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



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Page: 17 of 19

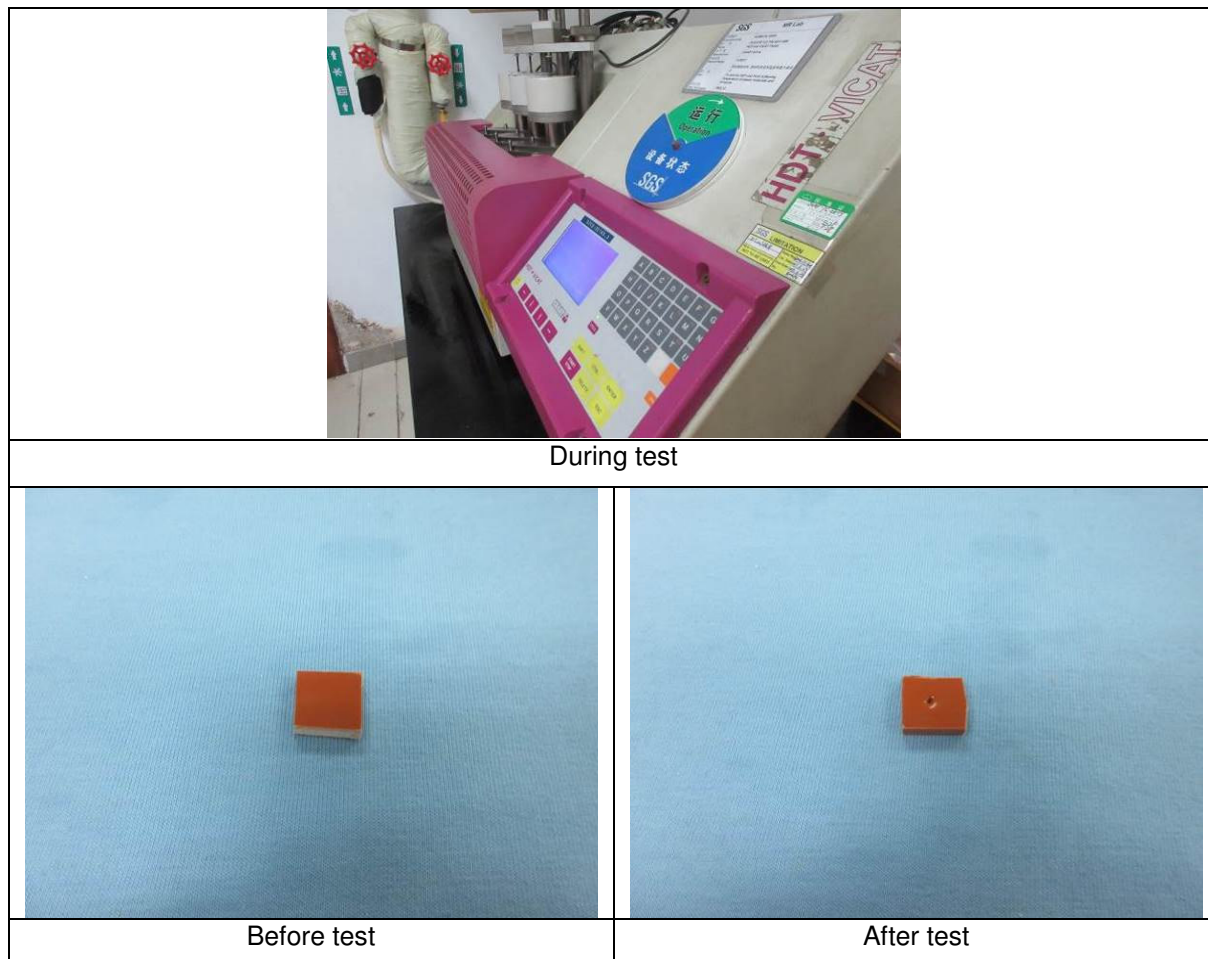
Test Result:

Test Item	Test Result
Vicat Softening Temperature	83.0°C

Note:

1. The smooth surface was faced to the loading.
2. Test specimens were cut from the sample.

Test Photo:



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TEST REPORT

No. : GZIN1711052764PS

Date : Nov 17, 2017

Page: 18 of 19

Equipment Information:

Equipment	Model	Equipment No.	Calibration date	Next Calibration date
HDT and VICAT Tester	P/N 6911.000	GZMR-PL-E009	2017-08-29	2018-08-28

10.Test Item: Bearing Strength

Sample Description: Plastic part

Test Method: ASTM D953-10 Procedure A

Test Condition:

Specimen: Type I

Specimen thickness: 3.27mm

Bearing hole diameter: 3.12mm

Testing speed: 1.3mm/min

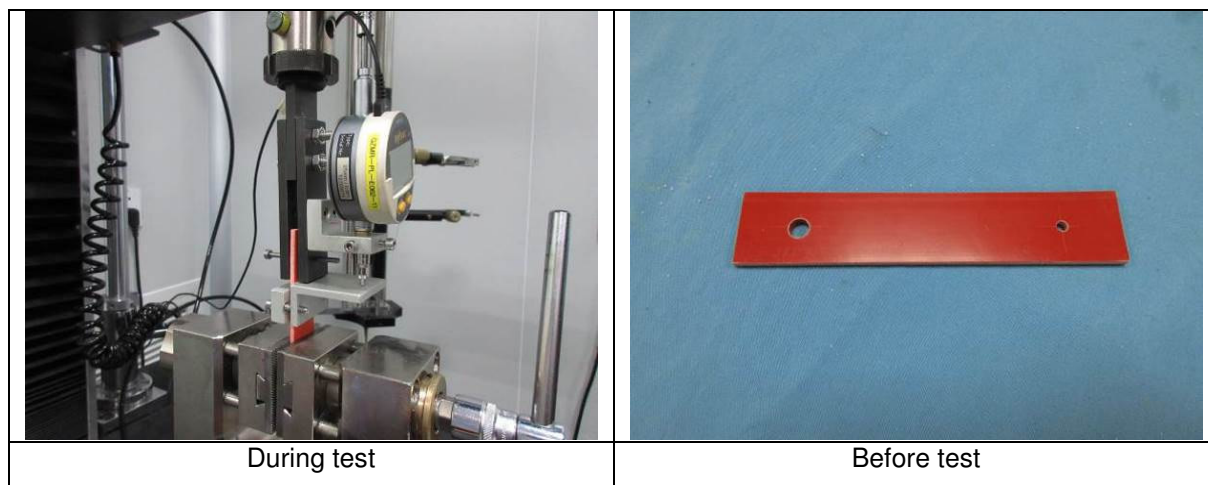
Lab Environmental Condition: (23±2)°C, (50±5)%RH

Test Result:

Test Item	Test Result
Bearing Strength	60.9MPa

Note: Test specimens were cut from the sample.

Test Photo:



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TEST REPORT

No. : GZIN1711052764PS

Date : Nov 17, 2017

Page: 19 of 19

Equipment Information:

Equipment	Model	Equipment No.	Calibration date	Next Calibration date
Universal Testing Machine	CMT4304	GZMR-PL-E062	2017-10-10	2018-10-09

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



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