



中国认可  
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检测  
TESTING  
CNAS L9334



微谱  
WEIPU

# Test Report

Report No.: SHA03-22101369-JC-01R1En

Sample Origin: Customer Sample Delivery  
Zhejiang Aoci Decoration

Client: Materials Co., Ltd  
No. 2618, Rd. Haifeng, Binhai  
Industrial Zone, Taizhou,

Address: Zhejiang, China

Shanghai WEIPU Testing Technology Group Co., LTD.



# Test Report

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

Sample Name: POLYCARBONATE HOLLOW SHEET

Sample Description: /

Specification: /

Type/ Batch number: /

Other Information: /

**Testing information:**

Date of Sample Received: 2022-10-17

Testing Period: 2022-10-17~ 2022-10-31

Test Item(s): Selected test (s) as requested by client.

Test Criterion: Please refer to next page(s).

Test Result: Please refer to next page(s).

**Complied by:**

*Jessica.*

**Approved by:**

*Catna Min Mei-tuo Lu*

**Issued Date:**

2023-08-16

**1. Test Item:** TENSILE PROPERTY

Test Method: GB/T 1040.2-2006

Detection equipment:

Universal material testing machine, model: 34TM-30

Digital micrometer, model: 0~25 mm

Test conditions:

Clamping distance: 150 mm

gauge length: 75 mm

speed: 500 mm/min

Elastic modulus velocity: 1mm/min

Test result:

Sample No	Sample description	Serial Number	tensile yield strength (MPa)	Elastic modulus (MPa)	Nominal strain at fracture (%)
2210001756-1	/	1	65.30	2648	117.99
		2	65.03	2413	114.7
		3	64.62	2896	112.0
		4	64.75	2557	111.3
		5	63.10	2713	119.75
		average value	64.56	2645	115.15
		Result representation	64.6	2.64×10 <sup>3</sup>	115
		ask	≥60	≥2200	≥60
		conclusion	Comply	Comply	Comply

Note: (1) The 'requirement' comes from JG347T-2012

(2) The Test Method for tensile performance items in this report is not within the recognized scope of our company's CNAS.

**2. Test Item:** Charpy impact strength

Test Method: GB/T 1043.1-2008

Detection equipment:

Pendulum impact testing machine, model: GT-7045-MDH

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Digital micrometer, model: 0-25 mm

Knife tip micrometer, model: 0-25 mm

Test conditions:

Sample specifications: (80×10×4) mm

Span: 62 mm

Notch: Machined

Gap type: Type A

Pendulum energy: 2 J

Impact speed: 2.9 m/s

Test result:

Sample No	Sample description	Test Item	Serial Number	Test result	
				Impact Strength (kJ/m <sup>2</sup> )	Damage type
2210001756-1	/	Charpy impact strength	1	12.0	C
			2	11.0	C
			3	11.3	C
			4	11.2	C
			5	10.6	C
			6	11.0	C
			7	11.0	C
			8	10.9	C
			9	11.9	C
			10	11.7	C
			average value	11.3	C
			Result representation	11 kJ/m <sup>2</sup> , C	
			ask	≥6	
			conclusion	Comply	

Note: "Requirement" comes from JG347T-2012, and the type of specimen failure is as follows: C-complete failure; H - hinge failure; P - Partial damage; N/NB - Non destructive.

**3. Test Item:** transmittance

Test Method: GB/T 2410-2008

Detection equipment:

Mist meter, model: WGT-S

Desktop percentage thickness gauge, model: CH-20

Test conditions:

Sample size: thick 3.9mm

Test method: Method A haze meter method

Light source type: C-type

Test result:

Sample No	Sample description	Test Item	Serial Number	Test result
2210001756-1	/	transmittance	1	90.0 %
			2	90.0 %
			3	90.2%
			4	89.9 %
			5	90.2 %
			average value	90.06%
			Result representation	90.1 %
			ask	≥82%
			conclusion	Comply

Note: "Requirement" originates from JG347T-2012

\*\*\*End of the Page\*\*\*

**4. Test Item:** Heat distortion temperature

Test Method: GB/T 1634.1-2019 & GB/T 1634.2-2019 Method A

Detection equipment:

Thermal deformation and Vicat softening temperature tester, model: HDT/V-3216

Test conditions:

Heating rate: 120 °C/h

Load: 1.80 MPa

Span: 64 mm

Heat transfer medium: dimethyl silicone oil

Starting temperature: 22.5 °C

Sample placement: flat

Test result:

Sample No	Sample description	Test Item	Serial Number	Test result (°C)
2210001756-1	/	Heat distortion temperature	1	142.7
			2	142.4
			average value	142.55
			Result representation	143
			ask	≥125
			conclusion	Comply

Note: "Requirement" originates from JG347T-2012

**5. Test Item:** Plastics - Determination of combustion performance

**Test result:**

**1. Plastics - Determination of combustion performance**

1.1 Test basis: GB/T 2408-2008, Test Method A - Horizontal Combustion Test

Sample No: 221001756-1

Sample size: 125mm \* 13mm \* 3.8mm

Humidification of the sample: At least 48 hours in an environment with a temperature of 23.0 °C and a relative humidity of 50%

Test environment: temperature: 23.2 °C, relative humidity: 58%

	sample 1	sample 2	sample 3
Does the front end of the flame pass through a 25mm mark	NO	NO	NO
Does the front end of the flame pass through a 100mm mark	NO	NO	NO
When the front end of the flame passes through a 25mm mark and passes through 100mm, the combustion time t (s)	0	0	0
When the front end of the flame passes through a 25mm mark and passes through a 100mm mark, the damage length L (mm)	0	0	0
When the front end of the flame passes through a 25mm mark and passes through 100mm, the average combustion rate v (mm/min)	0		
When the front end of the flame reaches or exceeds the 100mm mark, the average combustion rate v (mm/min)	0		
Is the sample prone to falling particles or droplets	NO	NO	NO

Remarks: 1.  $v=60 * L/t$

2.If only one of the first set of three samples does not meet the criteria, another set of three samples should be taken, and all samples in the second set should meet the criteria of the relevant level

**classification**

**HB grade materials should meet one of the following criteria:**

- a) After removing the ignition source, there is no visible flame burning of the material;
- b) After the ignition source is removed, the sample exhibits continuous flame combustion, but the front end of the flame does not exceed the 100mm mark;
- c) If the front end of the flame exceeds the 100mm mark, but the thickness is 3.0mm~13.0mm, its linear combustion rate does not exceed 40mm/min, or does not exceed 75mm/min when the thickness is less than 3.0mm;
- d) If the linear burning rate of a test specimen with a thickness of  $3.0\text{mm} \pm 0.2\text{mm}$  does not exceed 40mm/min, it should automatically be accepted as this level when it drops to the minimum thickness of 1.5mm

**HB40 grade materials should meet one of the following criteria:**

- a) After removing the ignition source, there is no visible flame burning of the material;
- b) After the ignition source is removed, the sample exhibits continuous flame combustion, but the front end of the flame does not exceed the 100mm mark;
- c) If the front end of the flame exceeds the 100mm mark, the linear combustion rate shall not exceed 40mm/min

**For HB75 grade materials**, if the flame front end exceeds the 100mm mark, the linear combustion rate should not exceed 75mm/min.

**Level determination: HB level**

Note: The testing location for this project is the Songjiang (Flame retardant) Laboratory of Shanghai Microspectral Testing Technology Group Co., Ltd., Building C, No. 763 Jiuting Town, Songjiang District, Shanghai.

**6. Test Item:** High speed puncture performance

Testing standards: ISO 6603-2-2000

Detection equipment:

Instron 9250HV multi axis impact testing machine (calibration validity period: September 18, 2023)

Upper working 0-150mm digital caliper (calibration validity period: November 7th, 2022)

State adjustment: (23±2) °C & (50±5) %RH, 48h

Detection environment: 23.1 °C

Test conditions:

Speed: 4.4m/s

Strike head diameter: 20mm

Inner diameter of fixture: 40mm

Drop weight: 26.23kg

Test height: 0.987m

Test energy: 255.2J

Is the striking head lubricated: Yes

Test results						
<u>Test Item</u>	<u>thickn</u> <u>ess</u>	<u>maximum</u> <u>force</u>	<u>Deformation at</u> <u>maximum force</u>	<u>Energy at</u> <u>maximum force</u>	<u>Piercing</u> <u>energy</u>	<u>failure</u> <u>mode</u>
<u>unit</u>	<u>mm</u>	<u>kN</u>	<u>mm</u>	<u>J</u>	<u>J</u>	<u>/</u>
#1	4.12	10.32	21.52	137.90	146.24	YD
#2	4.04	10.32	21.61	138.78	150.48	YD
#3	3.79	10.00	21.82	133.87	142.45	YD
#4	3.83	10.23	21.30	134.03	148.20	YD
#5	4.09	9.90	21.19	128.20	135.14	YD
<b>average value</b>	/	<b>10.15</b>	<b>21.49</b>	<b>134.56</b>	<b>144.50</b>	/
<b>TECHNICAL INDEX (JG/T 347-2012)</b>	/	≥600N	/	≥5	/	/
<b>determine</b>	/	<b>Pass</b>	/	<b>Pass</b>	/	/

Note: 1-Failure form YD: Deep tensile cracking after yielding (zero slope at maximum force value); 2- Test result is only responsible for the customer's sample and is not responsible for the authenticity of the sample. It does not assume responsibility for verifying the accuracy, appropriateness, and completeness of the information provided by the customer; The results presented in this report are for scientific research, teaching, internal quality control, product development, and other purposes only, and are not used as social justice data.

Test spectrum:

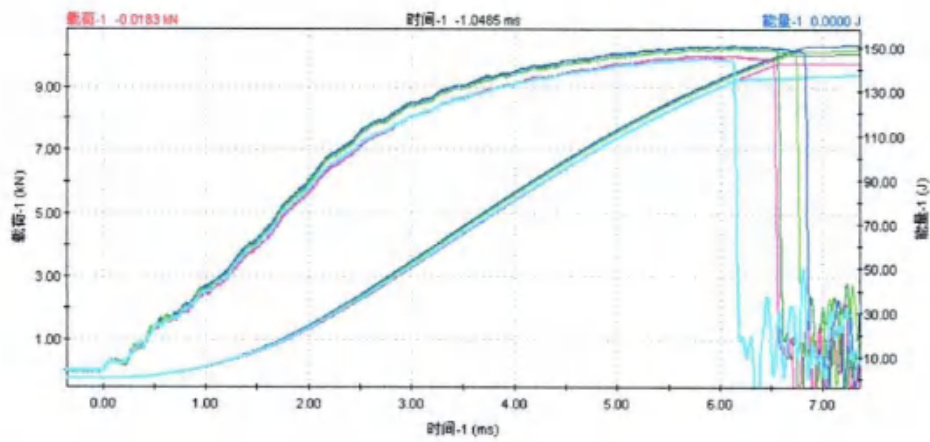
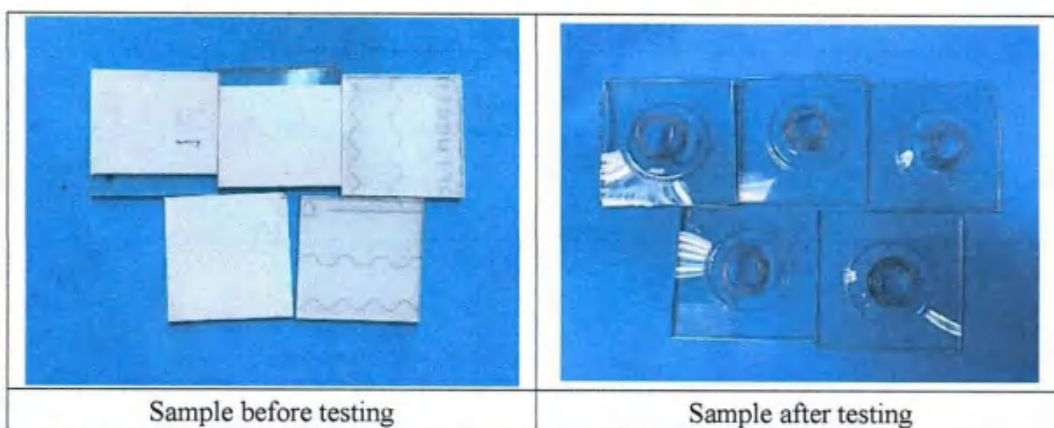


Photo during inspection:



Note: With the consent of the commissioning party, the high-speed puncture performance project in this report is not within the scope of our company's CNAS accreditation and will be carried out by an external laboratory. The Test Method is not within its CNAS accreditation scope.

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**7. Test Item:** linear expansion coefficient

Test Method: GB/T 1036-2008

Detection equipment: TMA Q400

Detection environment: temperature (25 ± 5) °C; Humidity (30-70)% RH

Test result:

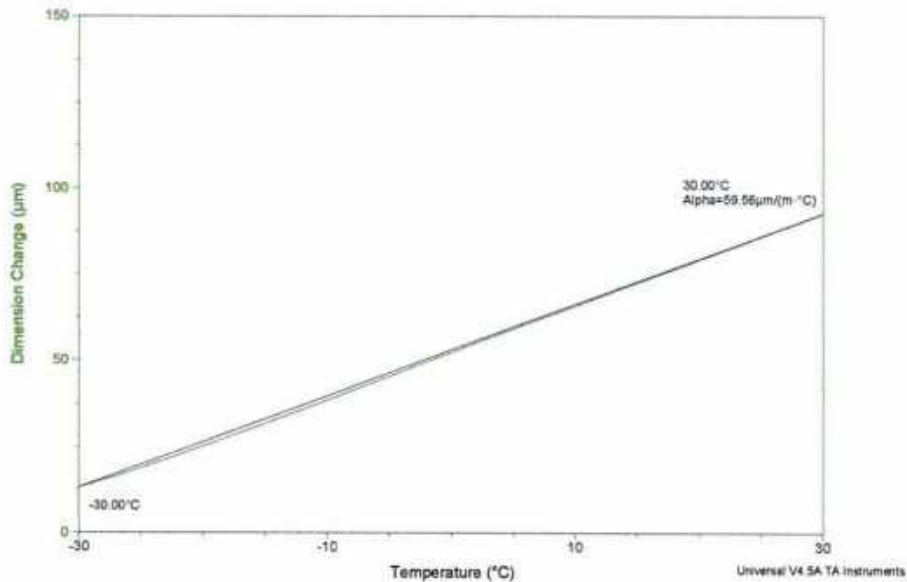
Sample No	Testing direction	temperature range (°C)	linear expansion coefficient (μm/(m°C))
2210001756-1	Length direction	-30-30	59.56

Representative attachments:

Sample: SULIAG  
Size: 22.3181 mm

TMA

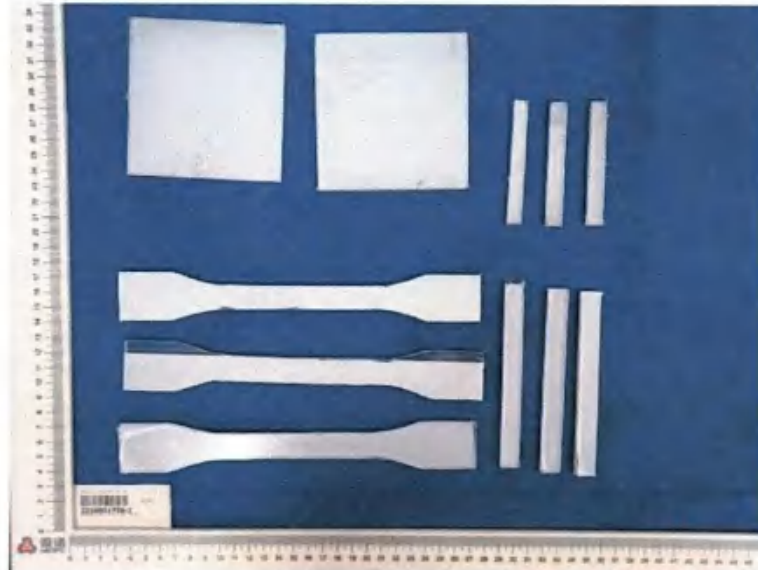
Instrument: TMA Q400 V22.5 Build 31



Note: With the consent of the commissioning party, the expansion coefficient project in the middle line of this report is not within the scope of our company's CNAS accreditation, and is carried out by an external laboratory. The Test Method is not within its CNAS accreditation scope.

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Sample picture(s):



2210001756-1

\*\*\*End of the Report\*\*\*

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