

TEST REPORT

No. : GZMR231103534301
Date : Dec 14, 2023
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CUSTOMER NAME: Dongguan Dongquan Mould Material Co., Ltd.
ADDRESS: No.10 Yihuan Road,Chiling Industrial,Dongguan City,Guangdong Province,China

Sample Name : Polyurethane Tooling Board DQ1200
Part No : DQ1200
Material and Mark : DQ1200
Manufacturer : Dongguan Dongquan Mould Material Co., Ltd.
Manufacturer Address : Room105, No.10 Yihuan Road,Chiling Industrial,Dongguan City,Guangdong Province,China
Sample Source : Sent by client
Other Information : Supplier: Dongguan Dongquan Mould Material Co., Ltd.

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. : GZAT2311016717NM
Date of Receipt : Nov 29, 2023
Testing Start Date : Nov 29, 2023
Testing End Date : Dec 14, 2023
Test Result(s) : For further details, please refer to the following page(s)

Signed for
SGS-CSTC Standards Technical
Services Co., Ltd. Guangzhou Branch

Kelly Lee
Authorized signatory



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Report Declaration:

In the territory of the People's Republic of China, the test report without CMA logo expresses the test report shall only be used for client scientific research, teaching, internal quality control, product research and development, etc., and just for client internal reference.

Manufacture Declaration or Comment:

None

Summary of Result(s):

No.	Test Item	Test Method	Test Result	Conclusion	
1.	Apparent Density	ISO 845:2006 and client's requirement	1354.2kg/m ³	N/A	
2.	Shore Hardness	ISO 868:2003	D/15:79	N/A	
3.	Mean Coefficient of Linear Thermal Expansion	ISO 11359-2:2021 Method A	52×10 ⁻⁶ K ⁻¹	N/A	
4.	Deflection Temperature under Load	ISO 75-2:2013 Method B	75°C	N/A	
5.	Flexural Test	ISO 178:2019 Method A	Flexural Strength	69.1MPa	N/A
			Flexural Modulus	4150MPa	
6.	Compressive Strength	ISO 604:2002	112MPa	N/A	
7.	Charpy Unnotched Impact Strength	ISO 179-1:2023	11.8kJ/m ² C (complete break)	N/A	
8.	Abrasion Resistance	Provided by client	Loss of volume:0.09 cm ³	N/A	
			Percent of loss of volume:0.09%		

Note: Pass: Meet the requirements;
Fail: Does not meet the requirements;
N/A: Not apply to the judgment or Not applicable



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1. Test Item: Apparent Density

Sample Description: Plastic part

Test Method: ISO 845:2006 and client's requirement

Test Condition:

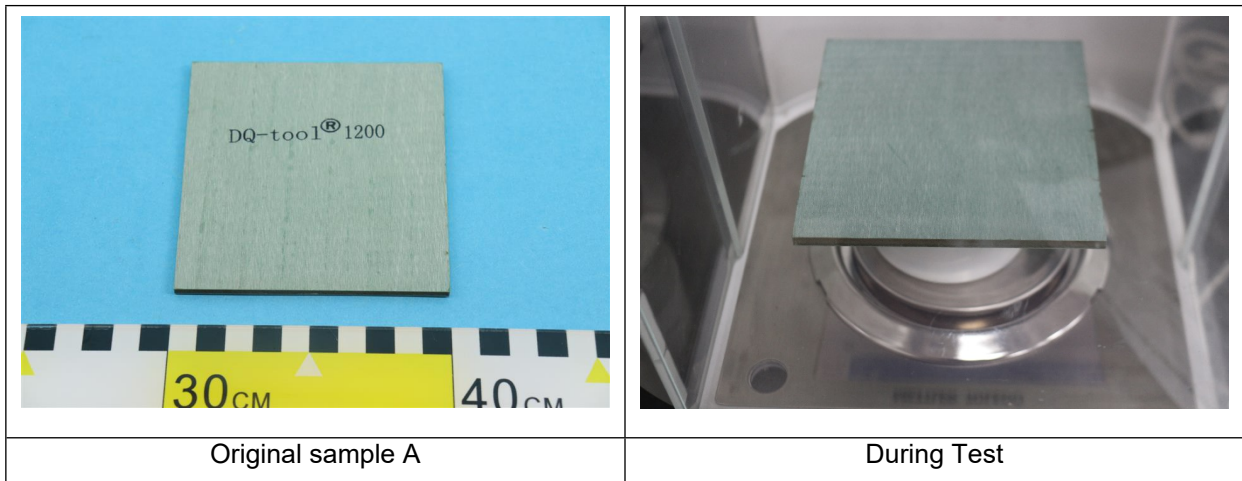
Specimen: 100mm×100mm×4.09mm

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

Test Result:

Test Item	Test Result
Apparent Density	1354.2kg/m ³

Test Photo:



Equipment Information:

Equipment	Model	Equipment No.	Calibration date	Next Calibration date
Electron Balance	XPE404S	GZMR-PL-E004-07	2023-08-11	2024-08-10
Digital Vernier Caliper	CD-20AX	GZMR-PL-E041-17	2023-01-17	2024-01-16



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2. Test Item: Shore Hardness

Sample Description: Plastic part

Test Method: ISO 868:2003

Test Condition:

Specimen thickness: 4.11mm

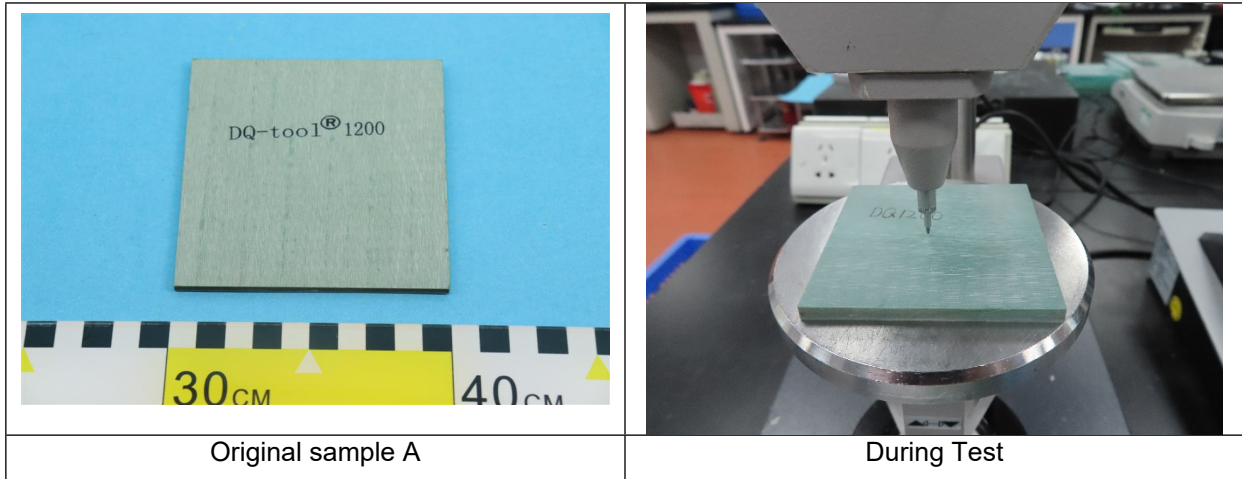
Lab Environmental Condition: (23±2)°C, (50±5)%RH

Test Result:

Test Item	Test Result
Shore Hardness	D/15:79

Note: D/15:X Indicates that D is the type of durometer; 15 s is the reading time; X is the hardness value.

Test Photo:



Equipment Information:

Equipment	Model	Equipment No.	Calibration date	Next Calibration date
Multifunction Hardness Tester	Digitest II	GZMR-PL-E156	2023-05-05	2024-05-04



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3. Test Item: Mean Coefficient of Linear Thermal Expansion

Sample Description: Plastic part

Test Method: ISO 11359-2:2021 Method A

Test Condition:

Specimen: 10.69mm×6.72mm×4.17mm

Rate of temperature: 5 °C/min

Load: 50mN

Flow rate(N₂): 50 ml/min

Test temperature: 0°C~50°C

Test mode: Compression

Test direction: Length

Number of specimens tested: 3

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

Test Result:

Test Item	Test Result
Mean Coefficient of Linear Thermal Expansion	52×10 ⁻⁶ K ⁻¹



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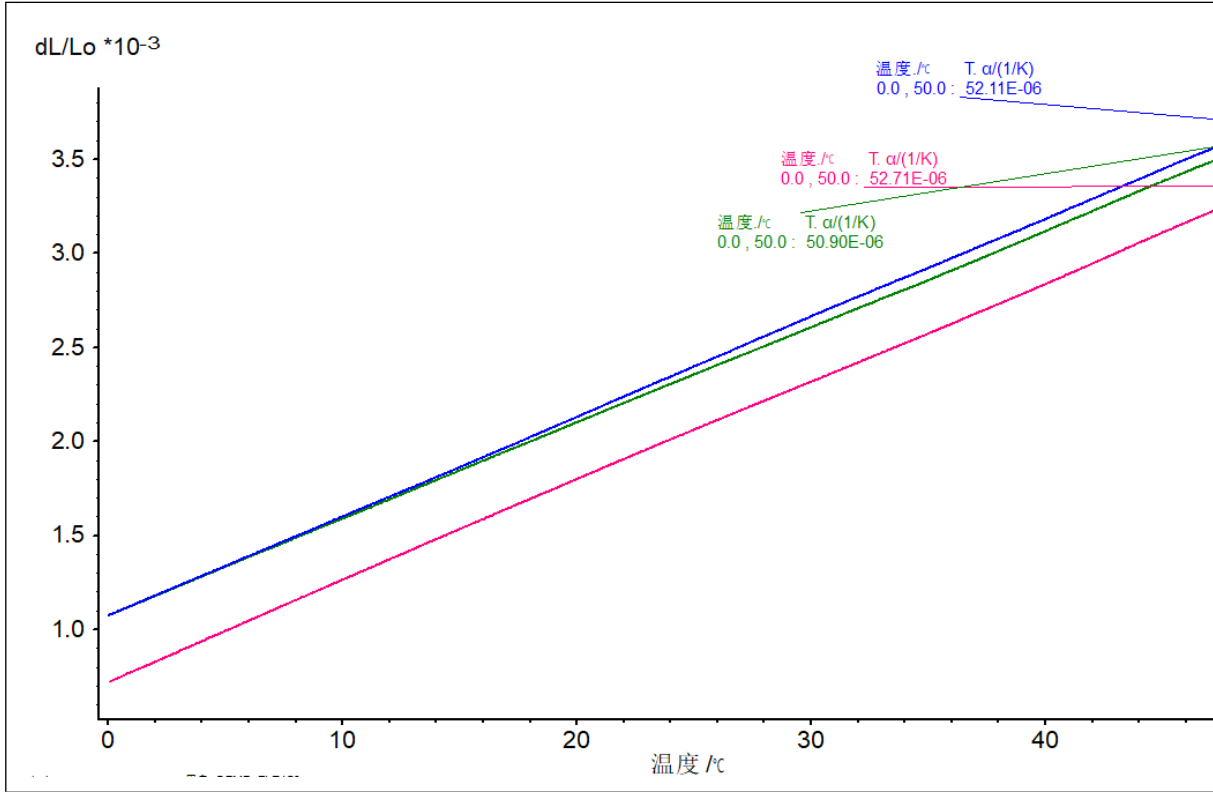
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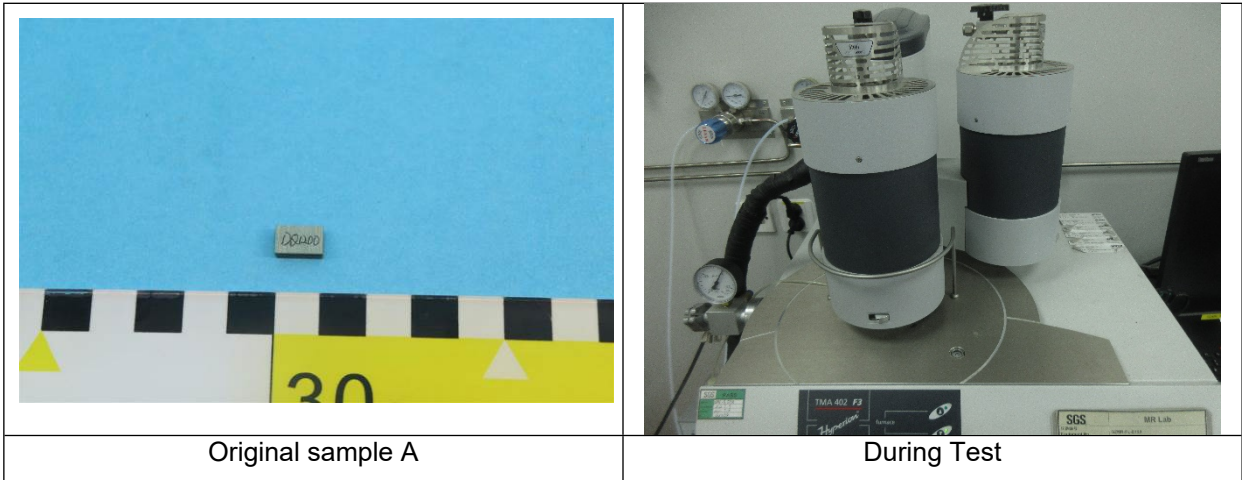
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Curve :



Test Photo:



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Equipment Information:

Equipment	Model	Equipment No.	Calibration date	Next Calibration date
Thermo Mechanical Analyzer	TMA402F3	GZMR-PL-E158	2023-07-06	2024-07-05

4. Test Item: Deflection Temperature under Load

Sample Description : Plastic part

Test Method: ISO 75-2:2013 Method B

Test Condition:

Specimen: 80mm×10.36mm×4.14mm

Heat-transfer media: Silicone oil

T₀0.45

Rate of temperature: 120 °C/h

Span: 64mm

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

Test Result:

Test Item	Test Result
Deflection Temperature under Load	75 °C

Test Photo:



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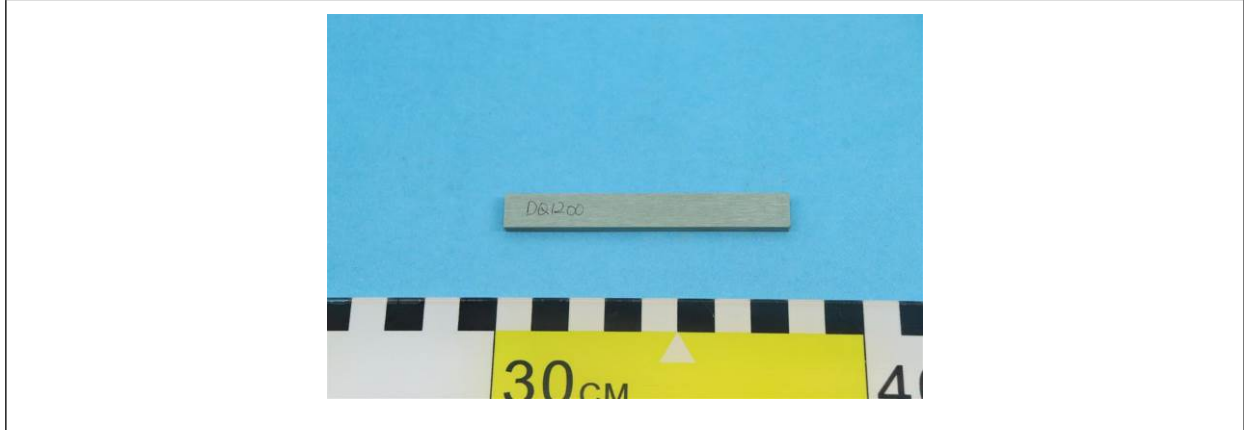
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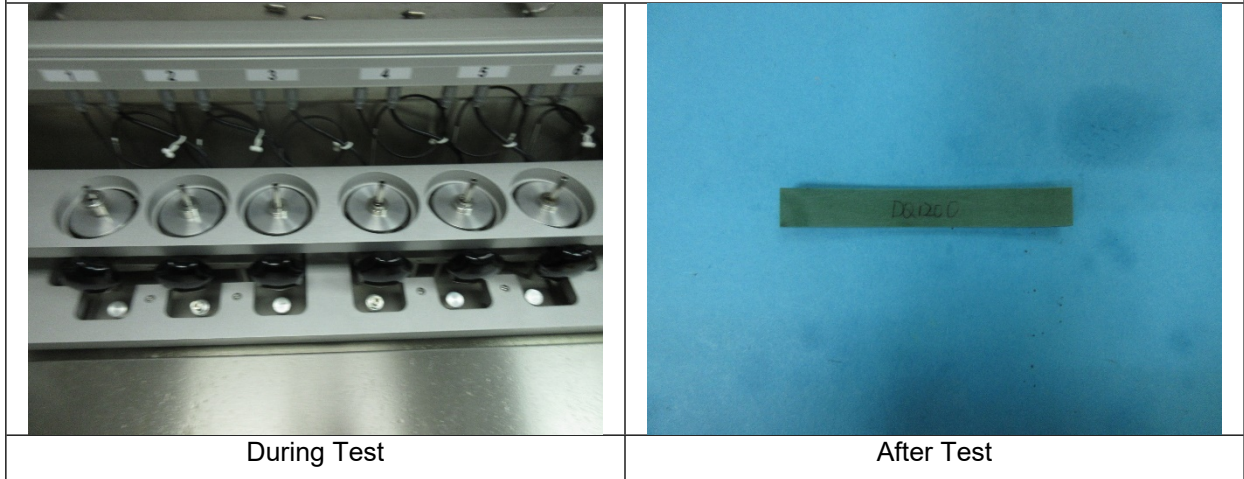
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Original sample A



Equipment Information:

Equipment	Model	Equipment No.	Calibration date	Next Calibration date
HDT and VICAT Tester	IC 6	GZMR-PL-E348	2023-06-21	2024-06-20



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5. Test Item: Flexural Test

Sample Description: Plastic part

Test Method: ISO 178:2019 Method A

Test Condition:

Specimen: 80mm×10.46mm×4.15mm

Testing speed: 2mm/min

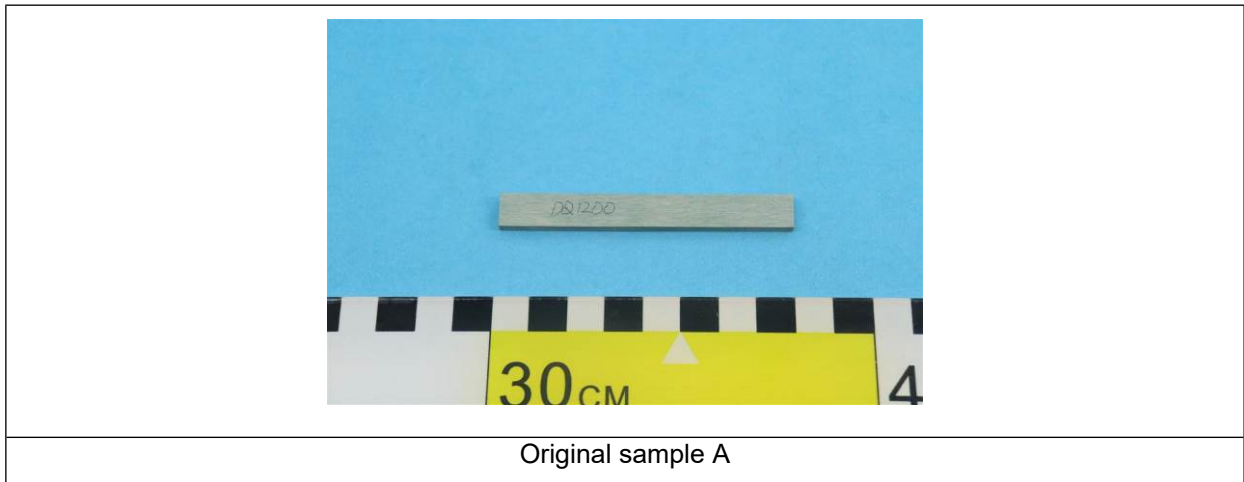
Span: 64mm

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

Test Result:

Test Item	Test Result
Flexural Strength	69.1MPa
Flexural Modulus	4150MPa

Test Photo:



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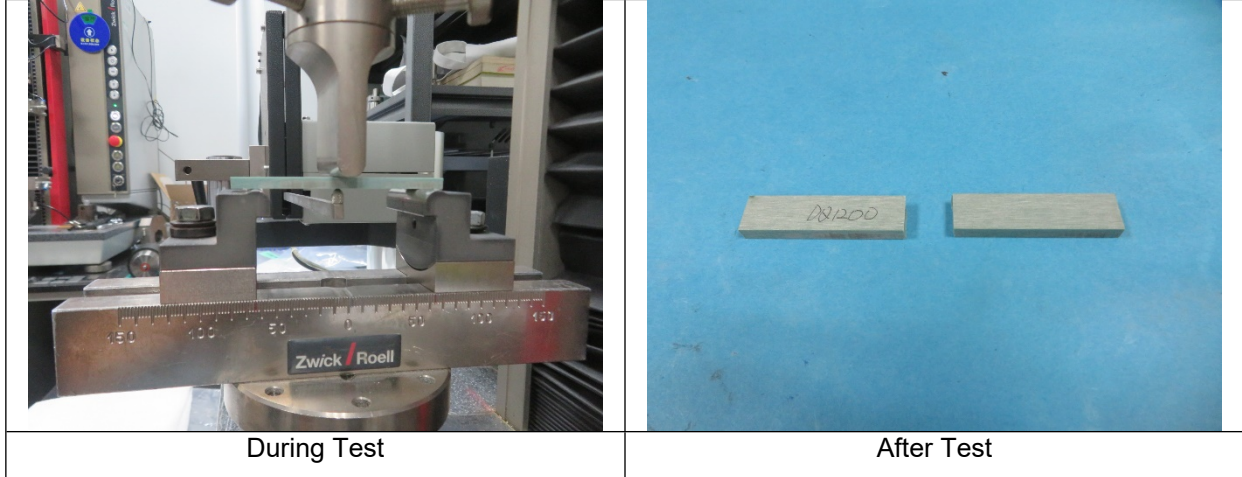
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Equipment Information:

Equipment	Model	Equipment No.	Calibration date	Next Calibration date
Universal Testing Machine	Z1.0	GZMR-PL-E252	2023-11-01	2024-10-31

6. Test Item: Compressive Strength

Sample Description: Plastic part

Test Method: ISO 604:2002

Test Condition:

Specimen: Type B

Specimen thickness: 4.18mm

Testing speed: 5 mm/min

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

Test Result:

Test Item	Test Result
Compressive Strength	112MPa



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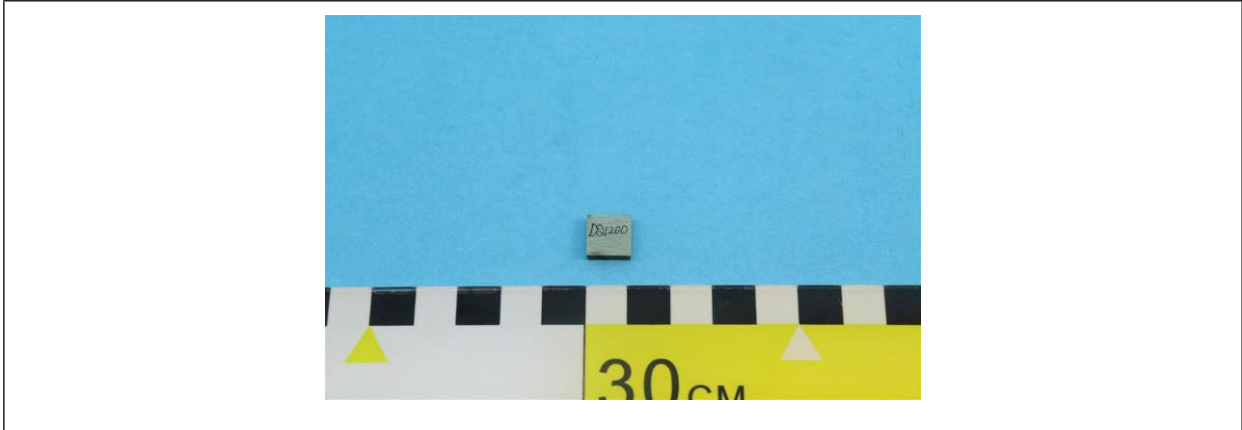
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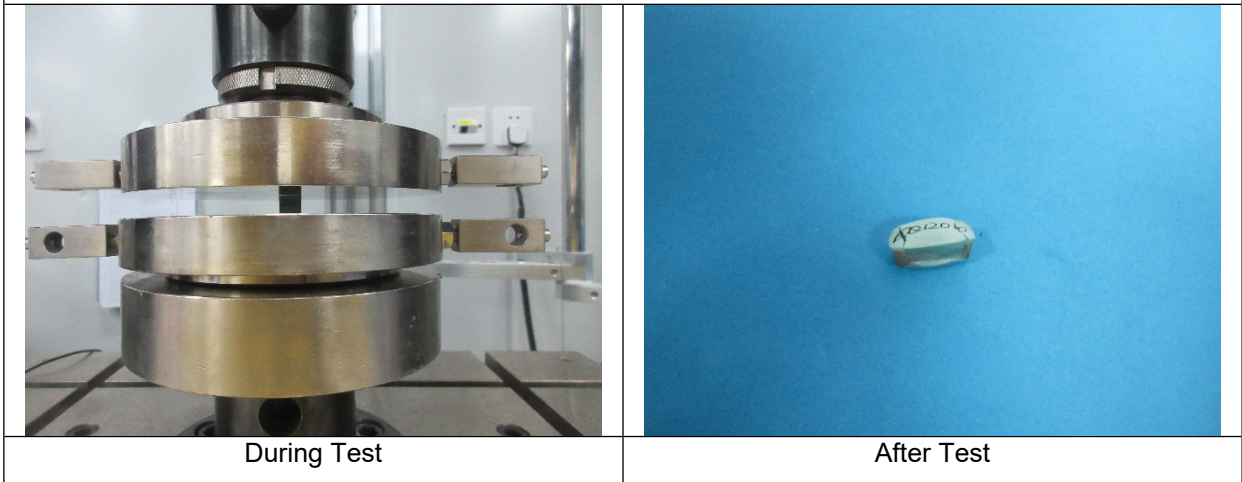
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Test Photo:



Original sample A



Equipment Information:

Equipment	Model	Equipment No.	Calibration date	Next Calibration date
Universal testing machine	E45.105	GZMR-PL-E307	2023-03-01	2024-02-29



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7. Test Item: Charpy Unnotched Impact Strength

Sample Description: Plastic part

Test Method: ISO 179-1:2023

Test Condition:

Specimen: ISO 179-1/1eU

Specimen thickness: 4.12mm

The capacity of the pendulum: 4J

Impact speed: 2.9m/s

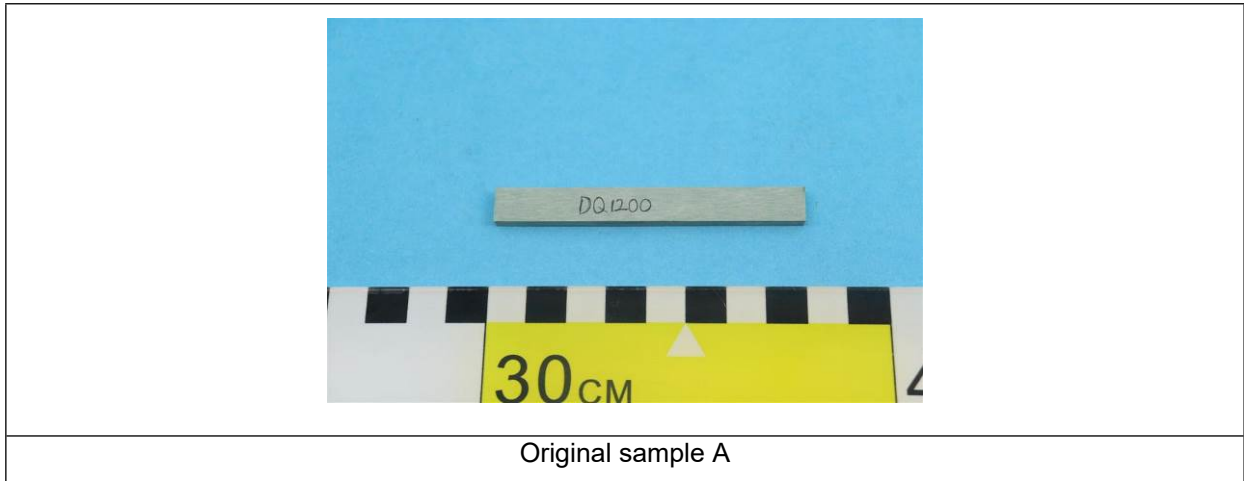
Span: 62mm

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

Test Result:

Test Item	Test Result
Charpy Unnotched Impact Strength	11.8kJ/m ² C (complete break)

Test Photo:



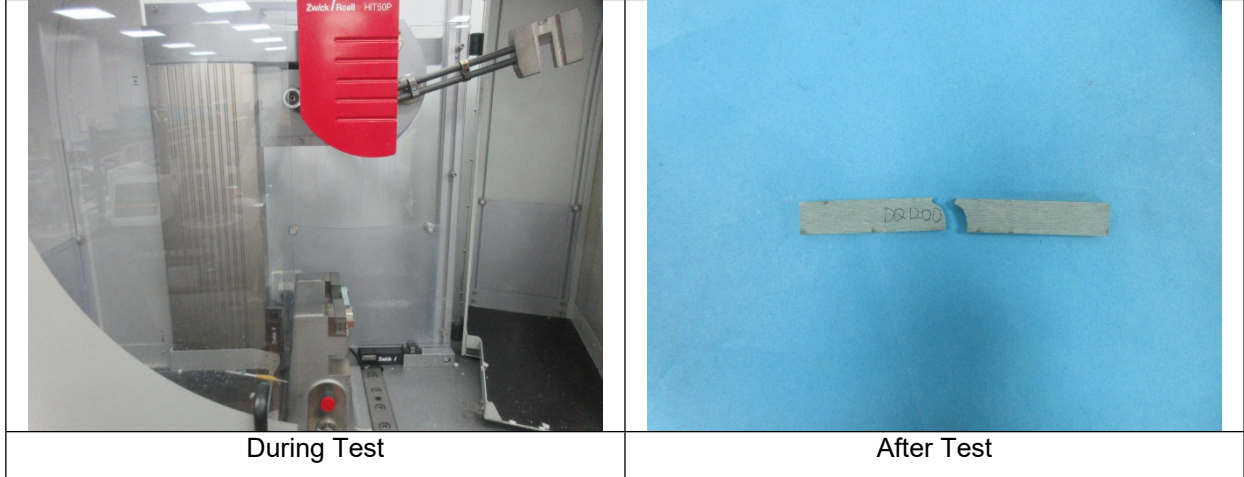
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Equipment Information:

Equipment	Model	Equipment No.	Calibration date	Next Calibration date
Impact Tester	HIT50P	GZMR-PL-E283	2023-06-26	2024-06-25



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8. Test Item: Abrasion Resistance

Sample Description: Plastic part

Test Method: Provided by client

Test Condition:

Load: 500g/wheel (total 1000g)

Wheel: H-18

Speed: 60r/min

Cycles: 600

Test Result:

Test Item	#1	#2	#3	Average
Sample size(L×W×H),mm	100×100×10	100×100×10	100×100×10	/
Weight before test, g (after opening)	136.3736	134.4304	135.3843	/
Volume before test, cm ³ (after opening)	100.70	99.27	99.97	/
Weight after test, g	136.2404	134.3113	135.2731	/
Loss of weight, g	0.1322	0.1191	0.1112	/
Loss of volume, cm ³	0.10	0.09	0.08	0.09
Percent of loss of volume (after test)	0.10%	0.09%	0.08%	0.09%

Note:

- 1.Loss of volume=Loss of mass/Density of sample.
- 2.Percent of loss of volume=Loss of volume/volume before test× 100%, the results for reference only.
- 3.Density of sample was extracted from test item 1.



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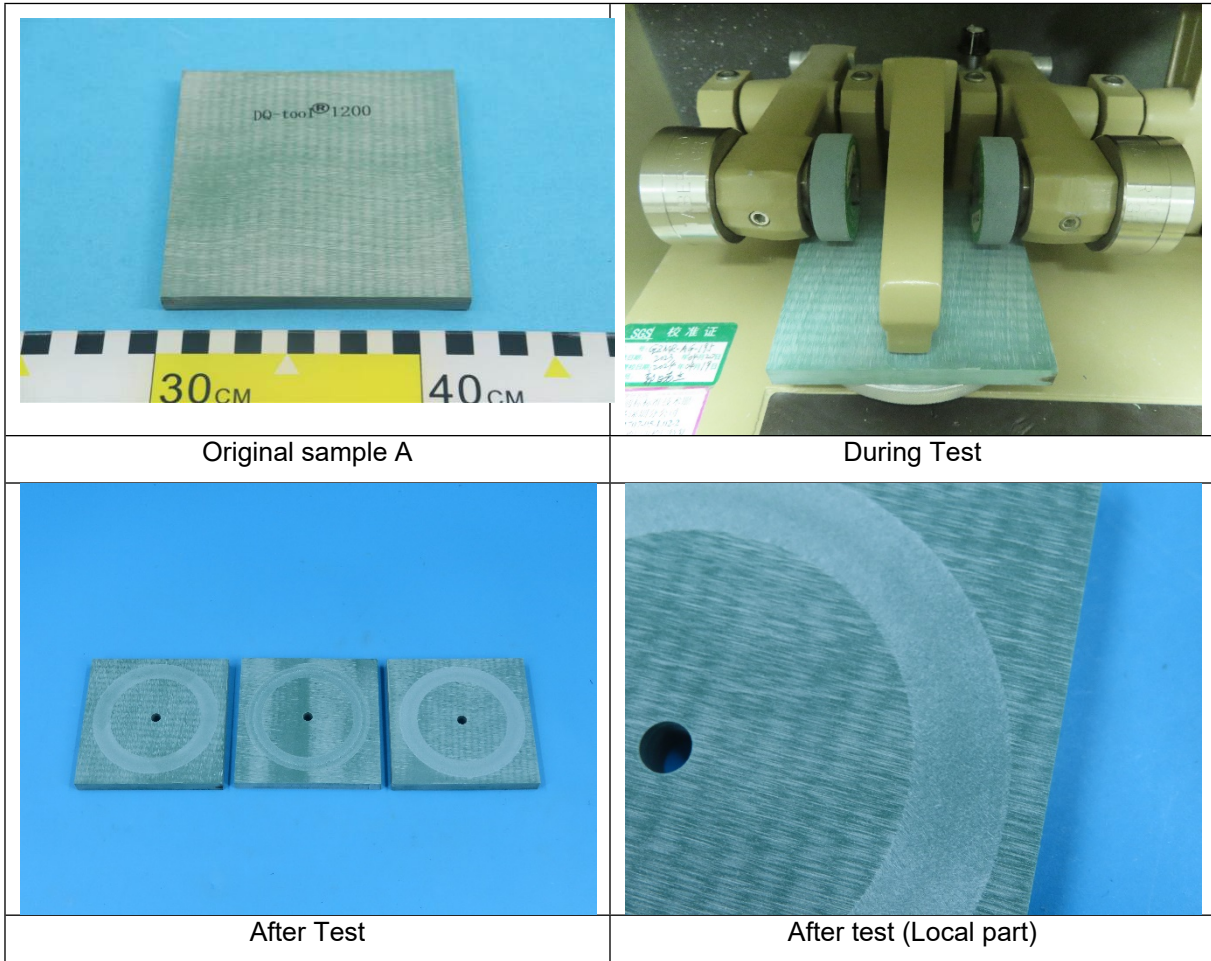
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Test Photo:



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Equipment Information:

Equipment	Model	Equipment No.	Calibration date	Next Calibration date
Taber Abrasion Tester	5155	GZMR-AG-E195	2023-04-20	2024-04-19
Electronic balance	XPR504S/ AC	GZMR-AG-E295	2023-09-13	2024-09-12
Digital Vernier Caliper	CD-20AX	GZMR-AG-E128-02	2023-06-07	2024-06-06

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



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