

No. : GZMR230802364401-2 Date : Dec 22, 2023 Page: 1 of 14



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 DQ460
Part No	:	DQ460
Material and Mark	:	DQ460
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.	:	GZAT2308011875NM-01
Date of Receipt	:	Aug 16, 2023
Testing Start Date	:	Aug 16, 2023
Testing End Date	:	Aug 23, 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

Cathy Peng 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.	Compressive Strength	ISO 604:2002	49.3	3MPa	N/A
2.	Deflection Temperature under Load	ISO 75-1:2020 & ISO 75-2:2013 Method A	8	0℃	N/A
3.	Density	ISO 1183-1:2019 Method A	0.75	3g/cm <sup>3</sup>	N/A
4.	Flexural Test	ISO 178:2019 Method A	Flexural Strength Flexural Modulus	40.2MPa 2250MPa	N/A
5.	Shore Hardness	ISO 868:2003	D/1	5:73	N/A
6.	Mean Coefficient of Linear Thermal Expansion	ISO 11359-1:2023 & ISO 11359-2:2021 Method A	43×1	10 <sup>-6</sup> K <sup>-1</sup>	N/A
7.	Charpy Unnotched Impact Strength	ISO 179-1:2023		kJ/m² lete break)	N/A

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: Compressive Strength

Sample Description: Plastic part

Test Method: ISO 604:2002

Test Condition:

Specimen: 10.0mm×8.76mm×4.06mm

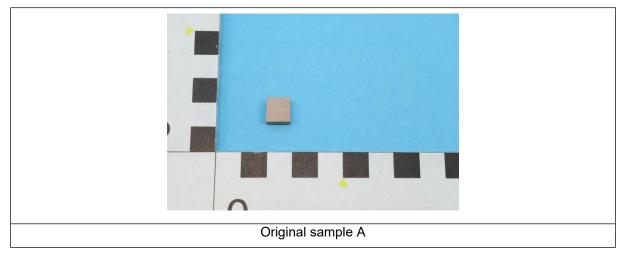
Testing speed: 5mm/min

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

Test Result:

Test Item	Test Result
Compressive Strength	49.3MPa

Test Photo:



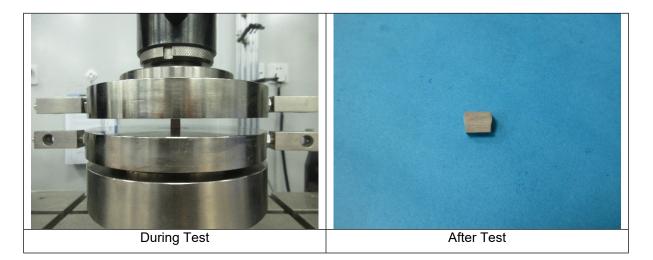


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Equipment Information:

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

2.Test Item: Deflection Temperature under Load

Sample Description: Bar

Test Method: ISO 75-1:2020 & ISO 75-2:2013 Method A

Test Condition:

Specimen: 80mm×9.59mm×4.15mm

Heat-transfer media: Silicone oil

T<sub>f</sub>1.8

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	<b>80</b> ℃

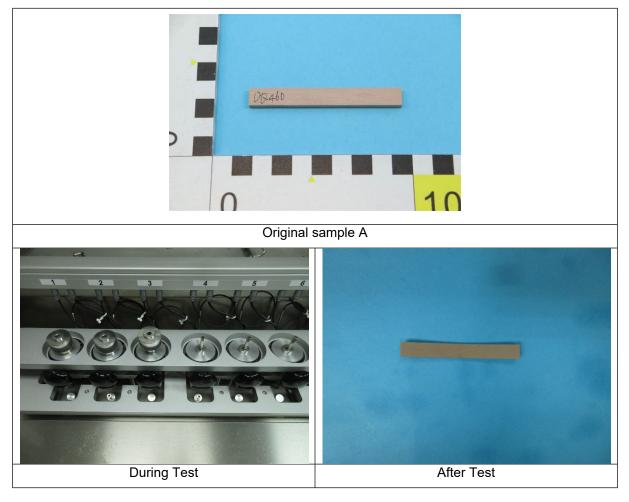




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### Test Photo:



### 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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3.Test Item: Density

Sample Description: Sheet

Test Method: ISO 1183-1:2019 Method A

Test Condition:

Absolute alcohol, 23 ± 0.5  $^\circ C$ 

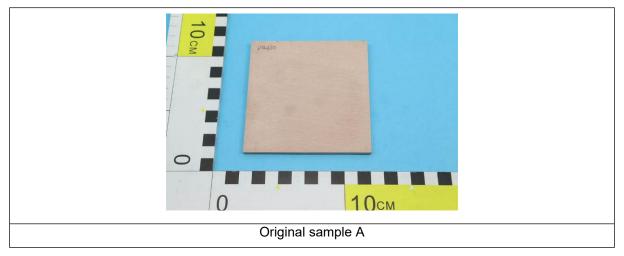
Lab Environmental Condition: 23 ± 2  $^\circ\!\mathrm{C}$  , 50 ± 5  $^{\circ}\!\mathrm{RH}$ 

Test Result:

Test Item	Test Result
Density	0.753g/cm <sup>3</sup>

Note: Test specimens were cut from the sample.

### Test Photo:



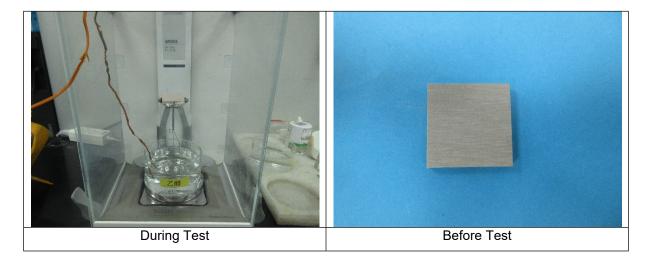


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Equipment Information:

Equipment	Model	Equipment No.	Calibration date	Next Calibration date
Electron Balance	XPE204	GZMR-PL-E004- 06	2023-05-15	2024-05-14

4.Test Item: Flexural Test

Sample Description: Bar

Test Method: ISO 178:2019 Method A

Test Condition:

Specimen: 80mm×9.69mm×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	40.2MPa
Flexural Modulus	2250MPa



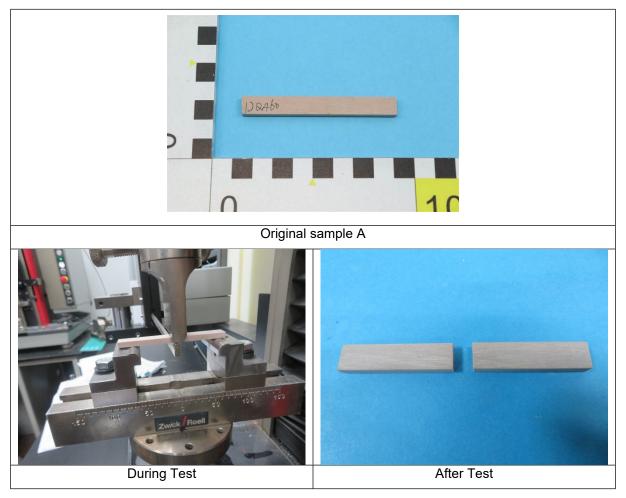
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Test Photo:



### Equipment Information:

Equipment	Model	Equipment No.	Calibration date	Next Calibration date
Universal Testing Machine	Z1.0	GZMR-PL-E252	2022-11-15	2023-11-14



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5.Test Item: Shore Hardness

Sample Description: Sheet

Test Method: ISO 868:2003

Test Condition:

Specimen thickness: 4.13mm

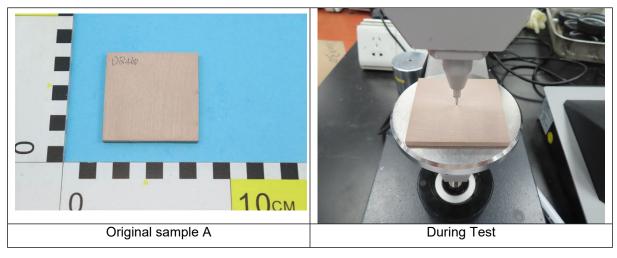
Lab Environmental Condition: (23±2)°C, (50±5)%RH

Test Result:

Test Item	Test Result
Shore Hardness	D/15:73

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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6.Test Item: Mean Coefficient of Linear Thermal Expansion

Sample Description: Bar

Test Method: ISO 11359-1:2023 & ISO 11359-2:2021 Method A

Test Condition:

Specimen: 9.67mm×4.51mm×4.19mm

Rate of temperature: 5 °C/min

Load: 50mN

Flow rate(N<sub>2</sub>): 50 ml/min

Test temperature: 0 ℃~50 ℃

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	43×10 <sup>-6</sup> K <sup>-1</sup>

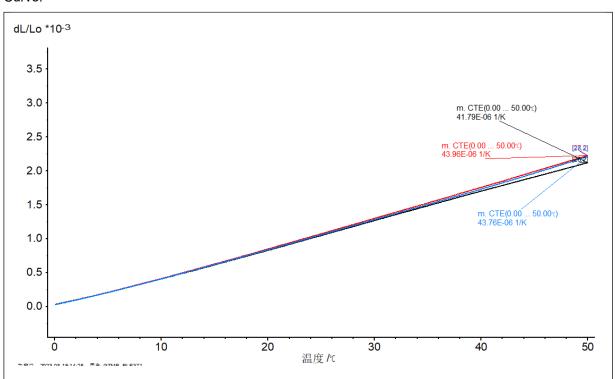


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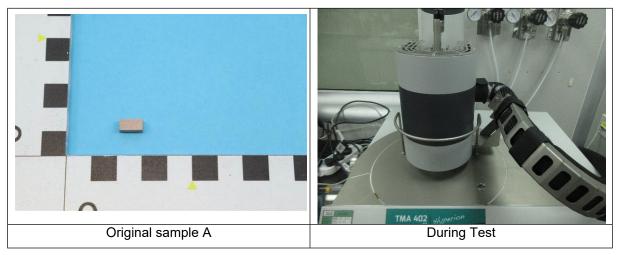
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Test Photo:



### Equipment Information:

Equipment	Model	Equipment No.	Calibration date	Next Calibration date
Thermo Mechanical Analyzer	TMA402F3	GZMR-PL-E371	2023-06-06	2024-06-05



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7. Test Item: Charpy Unnotched Impact Strength

Sample Description: Bar

Test Method: ISO 179-1:2023

Test Condition:

Specimen: ISO 179-1/1eU

Specimen thickness: 4.14mm

The capacity of the pendulum: 1J

Impact speed: 2.9m/s

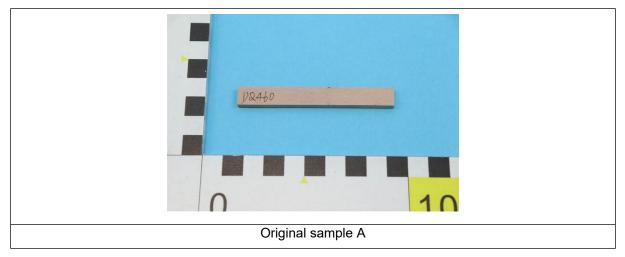
Span: 62mm

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

### Test Result:

Test Item	Test Result	
Charpy Notched Impact Strength	6.4kJ/m <sup>2</sup>	
	C (complete break)	

### Test Photo:



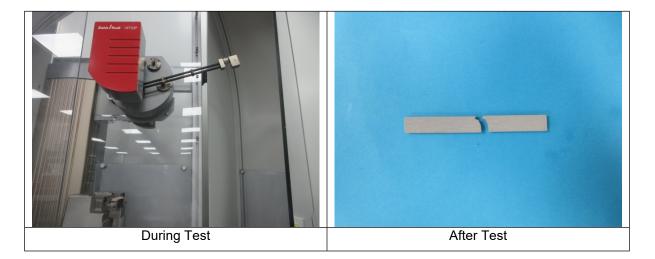


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Equipment Information:

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

Appendix information:

- 1. This test report supersedes test report No. GZMR230802364401 and GZMR230802364401-1, the original test report is void.
- 2. This report updates material and mark and SGS REF. NO..
- 3. This report updates summary of result.

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



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