

No.: GZMR230802364401-1

Date: Aug 25, 2023

Page: 1 of 14



CUSTOMER NAME: Dongguan Dongguan 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 Dongguan 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





No.: GZMR230802364401-1

Date: Aug 25, 2023

Page: 2 of 14

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	Conclusion
1.	Compressive Strength	ISO 604:2002	N/A
2.	Deflection Temperature under	ISO 75-1:2020 & ISO 75-	N/A
	Load	2:2013 Method A	N1/A
3.	Density	ISO 1183-1:2019 Method A	N/A
4.	Flexural Test	ISO 178:2019 Method A	N/A
5.	Shore Hardness	ISO 868:2003	N/A
6.	Mean Coefficient of Linear	ISO 11359-1:2023 & ISO	N/A
	Thermal Expansion	11359-2:2021 Method A	
7.	Charpy Unnotched Impact Strength	ISO 179-1:2023	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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No.: GZMR230802364401-1

Date: Aug 25, 2023

Page: 3 of 14

1.Test Item: Compressive Strength Sample Description: Plastic part Test Method: ISO 604:2002

Test Condition:

Specimen: $10.0 \text{mm} \times 8.76 \text{mm} \times 4.06 \text{mm}$

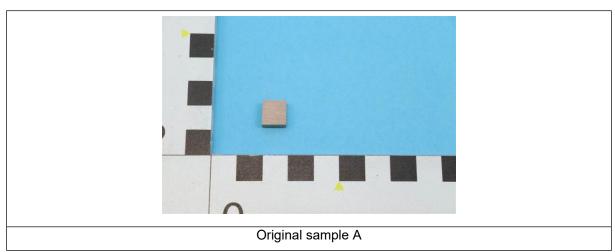
Testing speed: 5mm/min

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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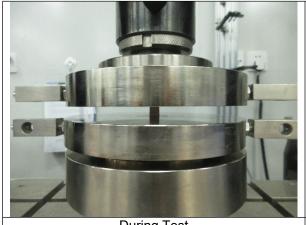
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No.: GZMR230802364401-1

Date: Aug 25, 2023

Page: 4 of 14





During Test

After Test

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

 $T_f 1.8$

Rate of temperature:120°C/h

Span: 64mm

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

Test Result:

Test Item	Test Result
Deflection Temperature under Load	80℃



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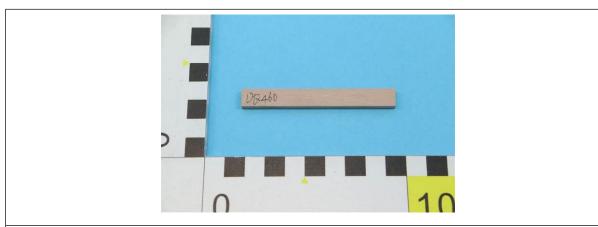


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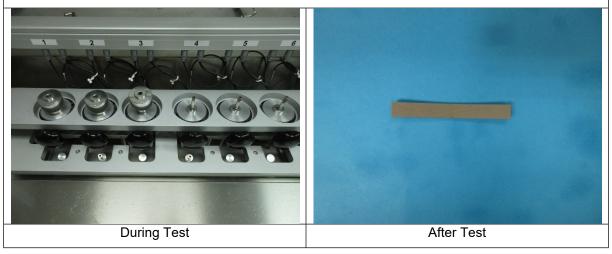
Date: Aug 25, 2023

Page: 5 of 14

Test Photo:



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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No.: GZMR230802364401-1

Date: Aug 25, 2023

Page: 6 of 14

3.Test Item: Density

Sample Description: Sheet

Test Method: ISO 1183-1:2019 Method A

Test Condition:

Absolute alcohol, 23 ± 0.5 ℃

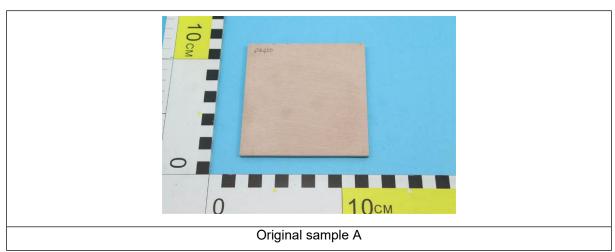
Lab Environmental Condition: 23 ± 2 $^{\circ}$ C, 50 ± 5 $^{\circ}$ RH

Test Result:

Test Item	Test Result
Density	0.753g/cm ³

Note: Test specimens were cut from the sample.

Test Photo:





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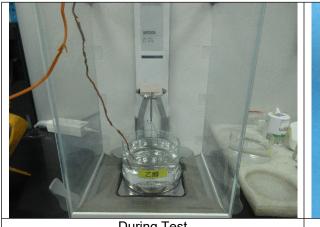
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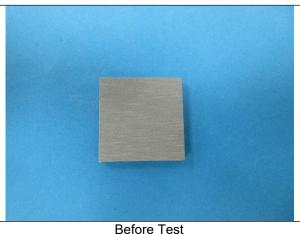


No.: GZMR230802364401-1

Date: Aug 25, 2023

Page: 7 of 14





During Test

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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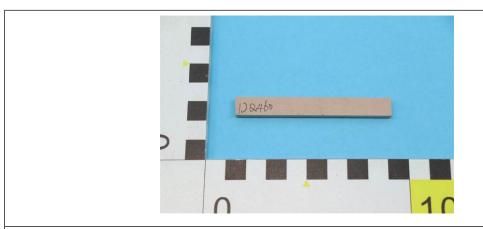


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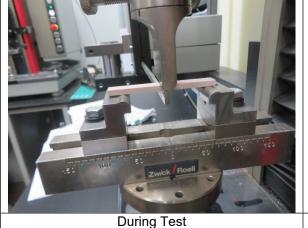
Date: Aug 25, 2023

Page: 8 of 14

Test Photo:



Original sample A





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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No.: GZMR230802364401-1

Date: Aug 25, 2023

Page: 9 of 14

5.Test Item: Shore Hardness Sample Description: Sheet Test Method: ISO 868:2003

Test Condition:

Specimen thickness: 4.13mm

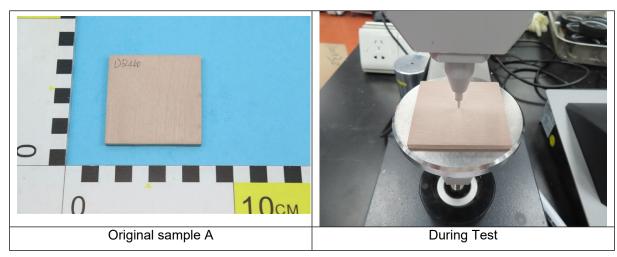
Lab Environmental Condition: (23±2)℃, (50±5)%RH

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
				uale
Multifunction	Digita et II	07MD DL E450	2002 05 05	0004.05.04
Hardness Tester	Digitest II	GZMR-PL-E156	2023-05-05	2024-05-04



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No.: GZMR230802364401-1

Date: Aug 25, 2023

Page: 10 of 14

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(N₂): 50 ml/min

Test temperature: 0 ℃~50 ℃

Test mode: Compression
Test direction: Length

Number of specimens tested: 3

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

Test Result:

Test Item	Test Result
Mean Coefficient of Linear Thermal Expansion	43×10 ⁻⁶ K ⁻¹



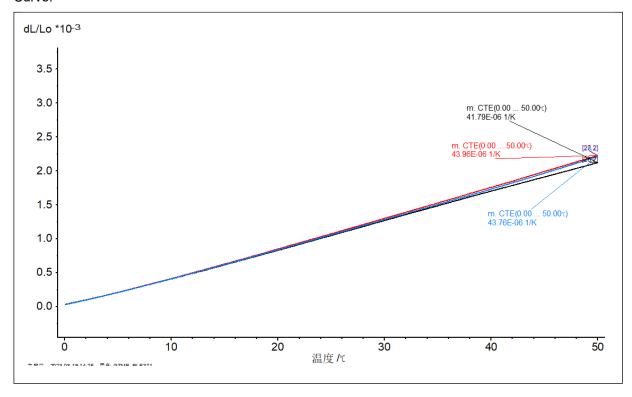


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Date: Aug 25, 2023

Page: 11 of 14

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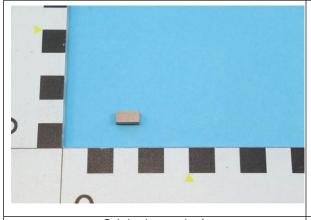


No.: GZMR230802364401-1

Date: Aug 25, 2023

Page: 12 of 14

Test Photo:





Original sample A

During Test

Equipment Information:

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





No.: GZMR230802364401-1

Date: Aug 25, 2023

Page: 13 of 14

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

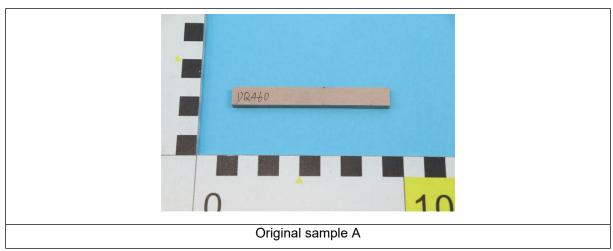
Span: 62mm

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

Test Result:

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

Test Photo:





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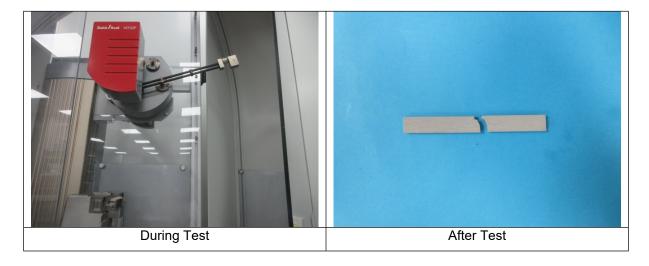
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No.: GZMR230802364401-1

Date: Aug 25, 2023

Page: 14 of 14



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:

- This test report supersedes test report No. GZMR230802364401, the original test report is void.
- This report updates material and mark and SGS REF. NO..

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



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