

GZMR231103534601

Date: Dec 15, 2023

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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 DQ5100

DQ5100 **Part No** DQ5100 **Material and Mark**

Manufacturer Dongguan Dongguan 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. : GZAT2311016719NM

Date of Receipt Nov 29, 2023 **Testing Start Date** Nov 29, 2023 **Testing End Date** Dec 15, 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	1035	.9kg/m³	N/A
2.	Shore Hardness	ISO 868:2003	D/1	15:78	N/A
3.	Mean Coefficient of Linear Thermal Expansion	ISO 11359-2:2021 Method A	38×1	10 ⁻⁶ K ⁻¹	N/A
4.	Deflection Temperature under Load	ISO 75-2:2013 Method B	77℃		N/A
5.	Flexural Test	ISO 178:2019 Method A	Flexural Strength Flexural Modulus	41.6MPa 3520MPa	N/A
6.	Compressive Strength	ISO 604:2002	85.6MPa		N/A
7.	Charpy Unnotched Impact Strength	ISO 179-1:2023		kJ/m² llete 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: Apparent Density Sample Description: Plastic part

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

Test Condition:

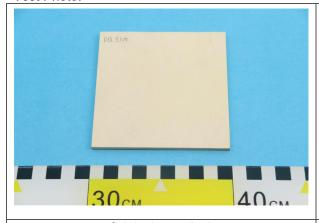
Specimen: 99mm×99mm×4.44mm

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

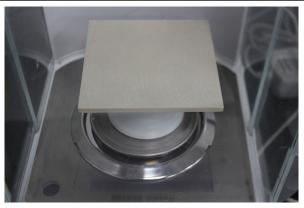
Test Result:

Test Item	Test Result
Apparent Density	1035.9kg/m ³

Test Photo:







During Test

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: 4.41mm

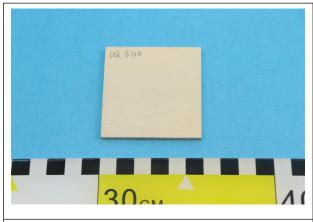
Lab Environmental Condition: (23±2)°C, (50±5)%RH

Test Result:

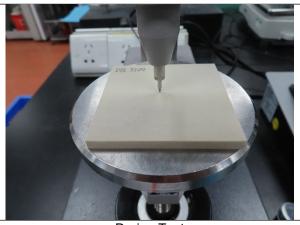
Test Item	Test Result
Shore Hardness	D/15:78

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:







During Test

Equipment Information:

Fauinment	Model	Equipment No.	Calibration data	Next Calibration
Equipment			Calibration date	date
Multifunction	Digitest II	GZMR-PL-E156	2023-05-05	2024-05-04
Hardness Tester	Digitest II	GZIVIN-FL-E130	2023-03-03	2024-03-04



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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: 9.53mm×4.41mm×4.56mm

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	38×10 ⁻⁶ K ⁻¹



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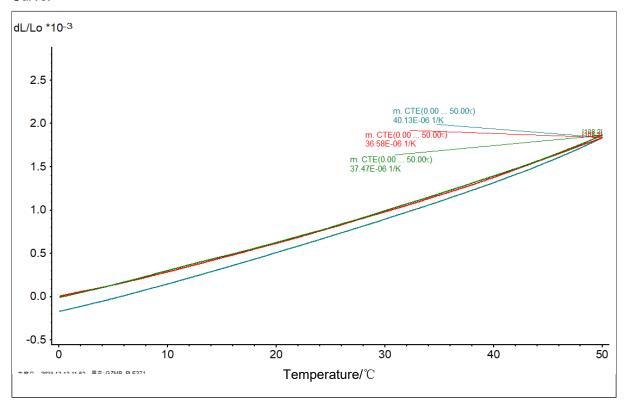


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Test Photo:





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



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4.Test Item: Deflection Temperature under Load

Sample Description: Plastic part

Test Method: ISO 75-2:2013 Method B

Test Condition:

Specimen: 80mm×9.53mm×4.42mm Heat-transfer media: Silicone oil

 $T_f 0.45$

Rate of temperature:120°C/h

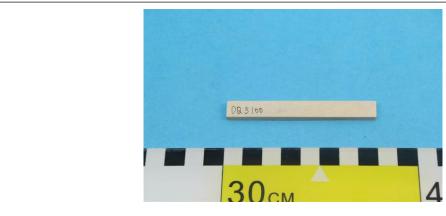
Span: 64mm

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

Test Result:

Test Item	Test Result
Deflection Temperature under Load	77 ℃

Test Photo:



Original sample A



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During Test

After Test

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×9.52mm×4.42mm

Testing speed: 2mm/min

Span: 71mm

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

Test Result:

Test Item	Test Result
Flexural Strength	41.6MPa
Flexural Modulus	3520MPa

Test Photo:



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Original sample A



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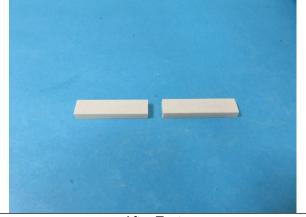


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During Test

After Test

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: 4.39mm Testing speed: 5mm/min

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

Test Result:

Test Item	Test Result
Compressive Strength	85.6MPa



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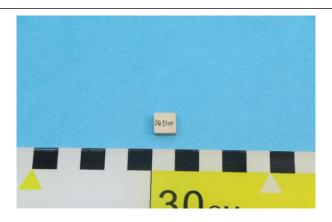


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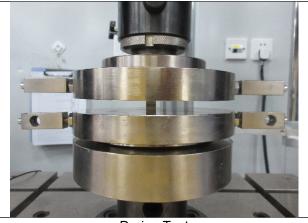
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Test Photo:



Original sample A





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



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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: 4.40mm 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 Unnotched Impact Strength	5.01kJ/m ²	
Charpy Officialed Impact Strength	C (complete break)	

Test Photo:



Original sample A



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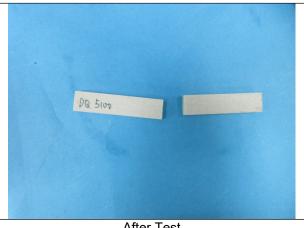


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During Test

After Test

Equipment Information:

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

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



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