

No.: GZMR231103530301-1

Date: Dec 27, 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 DQ473

Part No : DQ473

Material and Mark : DQ473

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. : GZAT2311016715NM

Date of Receipt : Nov 29, 2023

Testing Start Date : Nov 29, 2023

Testing End Date : Dec 27, 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

Doris Yin

Authorized signatory





No.: GZMR231103530301-1

Date: Dec 27, 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	Test	Result	Conclusion
1.	Apparent Density	ISO 845:2006 and client's requirement	835.	4kg/m³	N/A
2.	Shore Hardness	ISO 868:2003	D/	15:74	N/A
3.	Mean Coefficient of Linear Thermal Expansion	ISO 11359-2:2021 Method A	44×	10 ⁻⁶ K ⁻¹	N/A
4.	Deflection Temperature under Load	ISO 75-2:2013 Method B	80°C		N/A
5.	Flexural Test	ISO 178:2019 Method A	Flexural Strength Flexural	39.7MPa	N/A
		Wictiod A	Modulus	2620MPa	
6.	Compressive Stress at Yield	ISO 604:2002	47.9MPa		N/A
7.	Charpy Unnotched Impact Strength	ISO 179-1:2023		5kJ/m² olete break)	N/A

Note: Pass: Meet the requirements;

Fail: Does not meet the requirements;

N/A: Not apply to the judgment or Not applicable





No.: GZMR231103530301-1

Date: Dec 27, 2023

Page: 3 of 14

1.Test Item: Apparent Density
Sample Description: Plastic part

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

Test Condition:

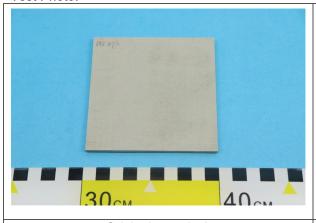
Specimen: 99mm×99mm×4.05mm

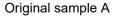
Lab Environmental Condition: (23±2)℃, (50±5)%RH

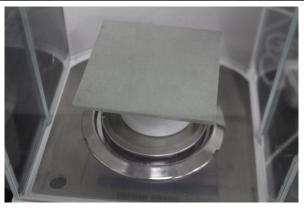
Test Result:

Test Item	Test Result
Apparent Density	835.4kg/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



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-and-Cond

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: (SN_Doccheck@ags_com | □ No.(% N_Doccheck@ags_com | N_Doccheck@ags_com | □ No.(% N_Doccheck@ags_com | □ No.(% N_Doccheck@ags_com | □ No.(% N_Doccheck@ags_com | □ No.(% N_Doccheck@ags_com | □ N_Docc



No.: GZMR231103530301-1

Date: Dec 27, 2023

Page: 4 of 14

2.Test Item: Shore Hardness Sample Description: Plastic part Test Method: ISO 868:2003

Test Condition:

Specimen thickness: 4.18mm

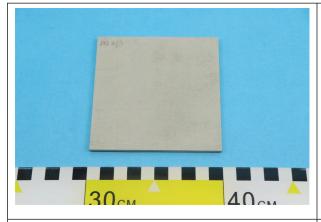
Lab Environmental Condition: (23±2)℃, (50±5)%RH

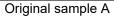
Test Result:

Test Item	Test Result
Shore Hardness	D/15:74

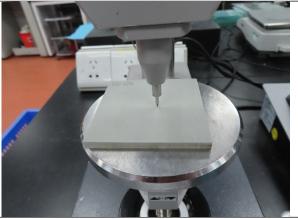
Note: D/15:X Indicates that D is the type of durometer; 15 s is the reading time; X is the hardness value.

Test Photo:





中国・广东・广州高新技术产业开发区科学城科珠路198号



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



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic focuments, aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@as.com

ment.Area, Guangzhou, Guangdong, China 🗆 Room 101, Building S, No. 1501, Kaichuang Avenue, Huangpu Dishict, Guangzhou, China 🛮 t (86-20) 8215555 www.sgsgroup.com.cn 中国·广东·广州市黄埔区开创大道1501号3株101房 t(86-20)8215555 sgs.china@sgs.com



No.: GZMR231103530301-1

Date: Dec 27, 2023

Page: 5 of 14

3.Test Item: Mean Coefficient of Linear Thermal Expansion

Sample Description: Plastic part

Test Method: ISO 11359-2:2021 Method A

Test Condition:

Specimen: 9.83mm×6.48mm×4.14mm

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	44×10 ⁻⁶ K ⁻¹



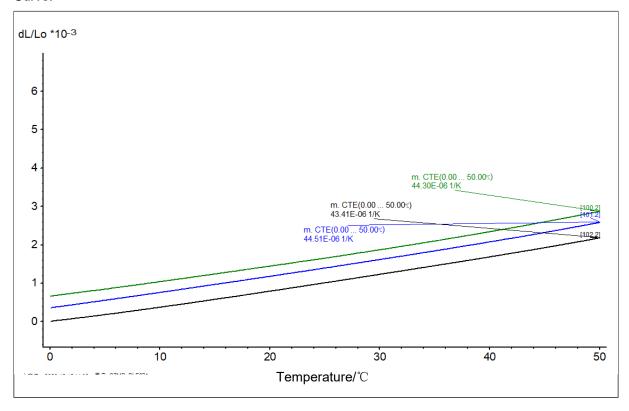


No.: GZMR231103530301-1

Date: Dec 27, 2023

Page: 6 of 14

Curve:





Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-en-Document.aspx. Attention is dorawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@ass.com

To Milk Michael New Michael

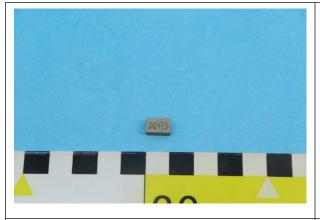


No.: GZMR231103530301-1

Date: Dec 27, 2023

Page: 7 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



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-en-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any, The Company's sole responsibility is to its Client and this colument only and within the limits of transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@ass.com

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CNLDoccheck@sgs.com

□ lk likk, ketu Road, Science (R, Economic & Technolog) Development Ace, Quargetou, Gungtou, Gungtou, Clinia □ Roam (M, Baidrag, Na Lifak, Katu Road, Science (R, Economic & Technolog) Development Ace, Quargetou, Gungtou, Clinia □ Roam (M, Baidrag, Na Lifak, Katu Road, Science (R, Economic & Technolog) Development Ace, Quargetou, Gungtou, Clinia □ Roam (M, Baidrag, Na Lifak, Katu Road, Science (R, Economic & Technology) Responsible (Reference on the Control of the C



No.: GZMR231103530301-1

Date: Dec 27, 2023

Page: 8 of 14

4.Test Item: Deflection Temperature under Load

Sample Description: Plastic part

Test Method: ISO 75-2:2013 Method B

Test Condition:

Specimen: 80mm×10.52mm×4.11mm

Heat-transfer media: Silicone oil

 $T_f 0.45$

Rate of temperature:120°C/h

Span: 64mm

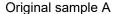
Lab Environmental Condition: (23±2)℃, (50±5)%RH

Test Result:

Test Item	Test Result
Deflection Temperature under Load	80℃

Test Photo:







Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic focuments, subject to Terms and Conditions for Electronic Documents at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-en-Conditio

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN_Doccheck@sgs.com

□ lb.(%, febulhout, Sparse Ou, Economic I Rednoing Development Alea, Gaunghou, Garier Like Company, China (166-20) 8215555 www.sgsgroup.com.cn
中国・广东・广州市黄埔区开创大道1501号3株101房 (166-20) 8215555 sgs.china@sgs.com

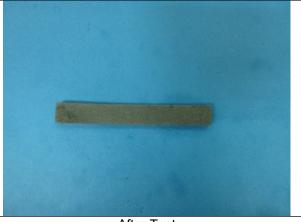


No.: GZMR231103530301-1

Date: Dec 27, 2023

Page: 9 of 14





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





No.: GZMR231103530301-1

Date: Dec 27, 2023

Page: 10 of 14

5.Test Item: Flexural Test

Sample Description: Plastic part

Test Method: ISO 178:2019 Method A

Test Condition:

Specimen: 80mm×10.12mm×4.07mm

Testing speed: 2mm/min

Span: 64mm

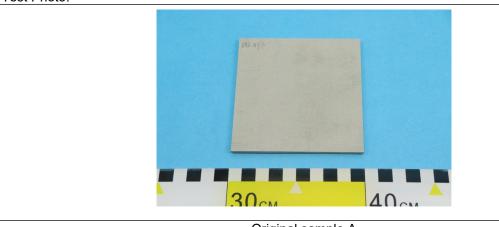
Lab Environmental Condition: (23±2)°C, (50±5)%RH

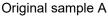
Test Result:

Test Item	Test Result
Flexural Strength	39.7MPa
Flexural Modulus	2620MPa

Note: Test specimens were cut from the sample.

Test Photo:







Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic focuments, subject to Terms and Conditions for Electronic Documents at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-en-Conditio

merikas, Garaptau, Garaptau, Chita ロ Rom 101, Baifang 3, Na.1501, Kaithurap, Menue, Hangsu Üsteid, Garaptau, Chira t(86-20) 8215555 www.sgsgroup.com.cn 学域科珠路198号 中国・广东・广州市黄埔区开创大道1501号3株101房 ((86-20) 8215555 sgs.china@sgs.com 中国・广东・广州高新技术产业开发区科学城科珠路198号

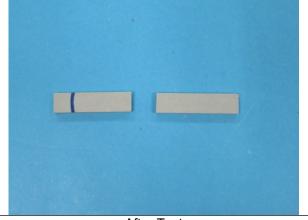


No.: GZMR231103530301-1

Date: Dec 27, 2023

Page: 11 of 14





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 Stress at Yield

Sample Description: Plastic part Test Method: ISO 604:2002

Test Condition:

Specimen: Type B

Specimen thickness: 4.08mm

Testing speed: 5mm/min

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

Test Result:

Test Item	Test Result
Compressive Stress at Yield	47.9MPa

Note: Test specimens were cut from the sample.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-en-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's antityrity in the company's side responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sas.com

ment.Area, Guangzhou, Guangdong, China 🗆 Room 101, Building 3, No. 1501, Kaichuang Avenue, Huangpu Dishict, Guangzhou, China 🛮 t (86-20) 8215555 www.sgsgroup.com.cn 中国·广东·广州市黄埔区开创大道1501号3株101房 t(86-20)8215555 sgs.china@sgs.com 中国・广东・广州高新技术产业开发区科学城科珠路198号

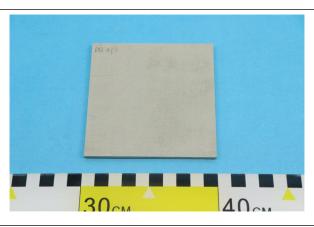


No.: GZMR231103530301-1

Date: Dec 27, 2023

Page: 12 of 14

Test Photo:



Original sample A





During Test

After Test

Equipment Information:

Equipment	Model	Equipment No.	Calibration date	Next Calibration
				date
Universal testing	E45.105	GZMR-PL-E307	2023-03-01	2024-02-29
machine	L43.103	OZIVIK-I E-E307	2023-03-01	2024-02-29



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-en-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sqs.com

□ Nc.Ng. (darknesk) Sairas (Dp. Caromatic Refording (Designating Headings) (Leg Caromatic Refording Headings) (Leg 中国・广东・广州高新技术产业开发区科学城科珠路198号



No.: GZMR231103530301-1

Date: Dec 27, 2023

Page: 13 of 14

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: 4.11mm The capacity of the pendulum: 1J

Impact speed: 2.9m/s

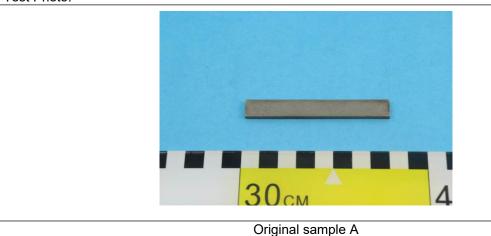
Span: 62mm

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

Test Result:

Test Item	Test Result	
Charpy Unnotched Impact Strength	6.25kJ/m² C (complete break)	

Test Photo:





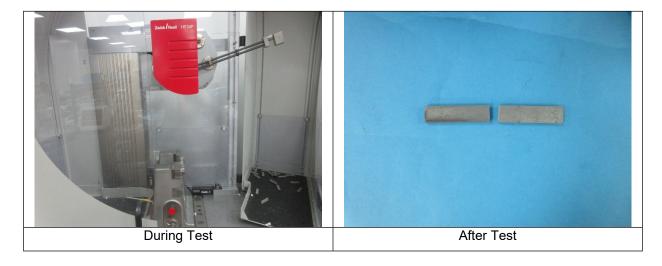
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic focuments, subject to Terms and Conditions for Electronic Documents at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-en-Conditio



No.: GZMR231103530301-1

Date: Dec 27, 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:

- 1. This test report supersedes test report No. GZMR231103530301, the original test report is void.
- 2. This report updates testing end date.
- 3. This report updates test result, test photo of test item 5 & 6.

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



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-and-Cond

or email: CN.Doccheck@sgs.com
□ Na.1%, Kabu Rout, Sainot Di, Exonnic I, Fedrodog Dealprinet Area, Gasgotou, Gasgotou, Gina ロ Roun Nil, Building 3, Na.15N, Kabusay Avene, Huangu Distrit, Gasgotou, Gina は(86-20) 8215555 www.sgsgroup.com.cn
中国・广东・广州高新技术产业开发区科学域科珠路198号 中国・广东・广州市黄埔区开创大道1501号3株101房 t(86-20) 8215555 sgs.china@sgs.com