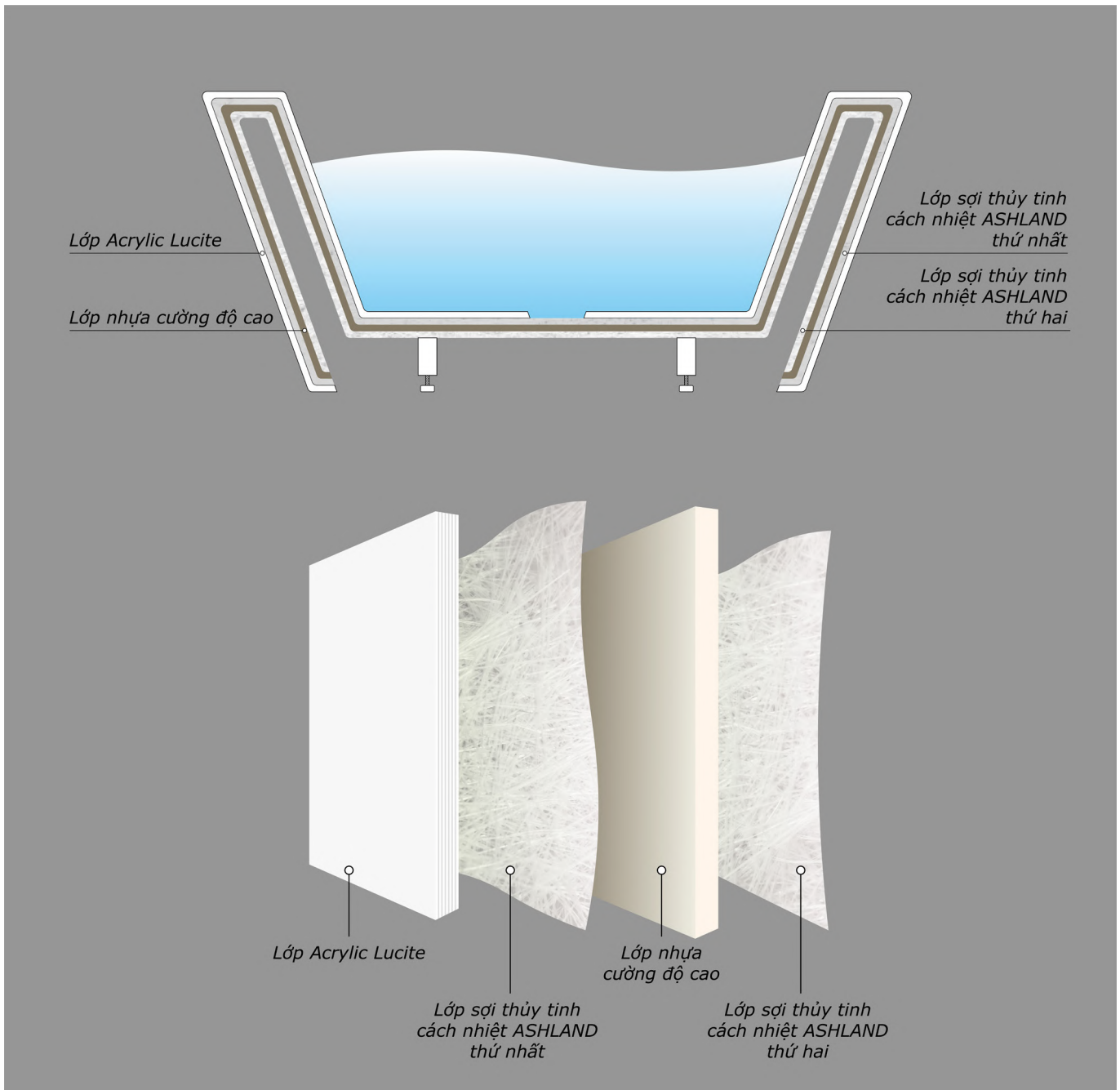


## ACRYLIC LUCITE + SỢI THỦY TINH CÁCH NHIỆT ASHLAND



**Bồn tắm Mowöen được làm từ 100% Acrylic LUCITE trắng có độ trắng bóng cao và được gia cố bằng nhựa cường độ cao & sợi thủy tinh ASHLAND.**

1. Lớp giữ nhiệt được cấu tạo hoàn toàn từ sợi thủy tinh lớp ASHLAND, giúp tăng khả năng cách nhiệt và giữ nhiệt độ nước vượt trội, giúp người dùng trải nghiệm lâu hơn với bồn tắm.
2. Bề mặt sử dụng Acrylic Lucite có độ trắng bóng cao, đáp ứng các tiêu chuẩn khắt khe nhất từ các tổ chức hàng đầu thế giới.

## Vật liệu Acrylic Lucite đã được cải tiến vượt trội hơn so với vật liệu Acrylic thông thường.

Với những ưu điểm đặc biệt như sở hữu trọng lượng nhẹ có độ bền cao, chịu lực, chịu nhiệt và chống trơn trượt tốt, vượt qua những bài test nghiêm ngặt về độ bền chất liệu như:

1. Độ bền chống xước bề mặt đạt chuẩn EN 263:2008	Khách hàng có yên tâm sử dụng mà không sợ hư hại sản phẩm với những tác vụ hàng ngày thông thường.
2. Bề mặt phủ Nano có tính kháng tia UV đạt chuẩn ISO 16474 - 3:2023 Cycle 4	Vượt qua bài test 4 giờ liên tục dưới tia UV 0.71W/(m <sup>2</sup> *nm).
3. Độ bền màu đạt chuẩn EN 263:2008 Section 3.6.1 & EN ISO 4892-2:2013 Cycle 1	Vượt qua bài test 102 phút liên tục dưới ánh đèn cường độ 533.5W/ m <sup>2</sup> .
4. Độ bền nhiệt đạt chuẩn là EN 263:2008 Section 4.2	Giúp tuổi thọ sản phẩm tăng cao khi gặp thời tiết hoặc điều kiện khí hậu khắc nghiệt. Với khí hậu nhiệt đới tại Việt Nam, bồn tắm Mowoen hoàn toàn có thể đáp ứng tiêu chuẩn liên quan đến độ bền, giúp người dùng có thể an tâm sử dụng.
5. Độ bền kết cấu (nứt vỡ) đạt chuẩn EN 263:2008 Section 4.1 & EN ISO 527-1:2012 & EN ISO 527-2:2012	Chịu lực tối đa với áp suất lên đến 68.5 MPa.
6. Chống thấm nước đạt chuẩn EN 263:2008 Section 4.7	Giúp thời gian ngâm nước, khả năng chịu lực và tải trọng của bồn tắm Mowoen được nâng cao một cách vượt trội.
7. Khối lượng chịu lực của bồn tắm cao	Tổng khối lượng chịu lực của bồn tắm Mowoen là 350 - 400kg (gấp 2 lần các mẫu bồn tắm Acrylic thông thường với khả năng chịu lực chỉ ở khoảng 200kg).
8. Độ bền cắt	Acrylic Lucite không bị biến dạng và thay đổi tính chất khi cắt gọt trong quá trình sản xuất. Tiêu chuẩn trên giúp người dùng hoặc nhân viên kỹ thuật trong quá trình sử dụng hoặc lắp đặt có thể tinh chỉnh (Cắt gọt các vị trí nhỏ trên diện tích tấm Acrylic Lucite) mà không sợ ảnh hưởng đến kết cấu chung cũng như độ bền của sản phẩm.



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Istituto Servizi Europei Tecnologici  
EN 14516: 2015



Tất cả phép đo có thể được tính sai số +/-0,5%



Bề mặt acrylic được bảo hành chống phồng rộp, chống ổ, nứt và sứt mẻ do lỗi của vật liệu acrylic trong thời gian 3 năm kể từ ngày mua hàng. CÁC LỖI PHÁT SINH DO NGOẠI LỰC TÁC ĐỘNG SẼ KHÔNG ĐƯỢC BẢO HÀNH TỰ CHÚNG TÔI.



MOWOEN bảo hành vỏ bồn tắm của mình trong trường hợp nếu nước thấm thông qua lớp sợi thủy tinh của thân bồn tắm do sai sót về vật liệu và tay nghề trong thời hạn (5) năm kể từ khi mua bán và lắp đặt xong sản phẩm của chúng tôi.



MOWOEN đảm bảo bề mặt không bị ố vàng trong vòng 10 năm sử dụng (nếu sử dụng đúng cách).

# CÁC TIÊU CHUẨN CỦA VẬT LIỆ ACRYLIC LUCITE

**SGS**

**TEST REPORT**  
No.: SHN2010068719K  
Date: Nov 13, 2020  
Page: 1 of 4

**CUSTOMER NAME:** ZHEJIANG AOPAI ELECTRONIC/MATERIAL TECHNOLOGY CO., LTD  
**ADDRESS:** NO.318 SHANGHAI AVENUE, BINHAI INDUSTRIAL ZONE, JIANGSANG DISTRICT, TAIZHOU CITY, ZHEJIANG PROVINCE, CHINA

**Sample Name:** ACRYLIC PLATE  
**Product Specification:** 160\*75\*3.0MM

Below information and sample 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.:** SHN2010068719K  
**Date of Receipt:** Oct 20, 2020  
**Testing Start Date:** Oct 20, 2020  
**Testing End Date:** Jan 18, 2021  
**Test Result(s):** For further details, please refer to the following page(s).  
(Where otherwise stated, the results shown in this test report refer only to the sample(s) tested.)

Signed for  
SGS-CTC Standards Technical Service Co., Ltd. Taizhou Branch  
*Yang Zhang*  
Taozi Zhang  
Authorized signatory



**SGS**

**TEST REPORT**  
No.: SHN2010068719K  
Date: Jun 04, 2021  
Page: 2 of 4

**Summary of Results:**

No.	Test Item	Test Method	Result	Conclusion
1	Light Aging Test/UV Exposure	ISO 16474-3:2013 Cycle 4	See result	Pass

Note: Pass: Meet the requirements.  
Fail: Does not meet the requirements.  
/ Not Apply to the judgment.

**Test Result:**

Test Item	SV1	SV2	Client's Requirement	Conclusion
Light Aging Test/UV Exposure	<14.3	<14.1	ATV5.0	Pass

1. Test Item: Light Aging Test/UV Exposure  
Sample Description: White sample  
Test Method: ISO 16474-3:2013 Cycle 4  
Test Condition:  
Exposure cycle: ISO 16474-3:2013 Cycle 4  
Lamp type: UVB-313  
40 UV at 0.010311 997, 3.730 W/m² @ 330mm  
48 condensation at 0.010311 997  
Exposure duration: 24h

Test Result:

Test Item	SV1	SV2	Client's Requirement	Conclusion
Light Aging Test/UV Exposure	<14.3	<14.1	ATV5.0	Pass

Note:  
1. According to ASTM E3131-20, YI values were measured by 69 sphere spectrophotometer. Use D50 standard light source with 1° observer, 2mm aperture. SCE exclude specular reflection condition. SCE include specular reflection condition.  
2. SV1-YI value after test-YI value before test.  
3. The results were carried out within 1 hour after above specified duration for the intermediate inspection as well as at the end of the exposure.



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Date: Jun 04, 2021  
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**Test Photo:**

**Equipment Information:**

Equipment	Model	Equipment No.	Calibration date	Next Calibration date
Integrating sphere spectrophotometer	SPM	60288-043	2020-01-16	2021-01-15
UV Fluorescence Weathering Tester	QUV-SE	60288-143	2020-01-14	2021-01-12

Note:  
1. The test report was prepared by SGS-CTC Standards Technical Service Co., Ltd. Taizhou Branch.  
2. Provided the test methods are not in CMAA certified scope, 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.  
End of report

**SGS**

**TEST REPORT**  
No.: SHN2010068719K  
Date: Jun 04, 2021  
Page: 4 of 4

**Test Photo:**

**Equipment Information:**

Equipment	Model	Equipment No.	Calibration date	Next Calibration date
Integrating sphere spectrophotometer	SPM	60288-043	2020-01-16	2021-01-15
UV Fluorescence Weathering Tester	QUV-SE	60288-143	2020-01-14	2021-01-12

Note:  
1. The test report was prepared by SGS-CTC Standards Technical Service Co., Ltd. Taizhou Branch.  
2. Provided the test methods are not in CMAA certified scope, 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.  
End of report

**SGS**

**TEST REPORT**  
No.: SHN2010068719K  
Date: Nov 13, 2020  
Page: 1 of 11

**CUSTOMER NAME:** ZHEJIANG AOPAI ELECTRONIC/MATERIAL TECHNOLOGY CO., LTD  
**ADDRESS:** NO.318 SHANGHAI AVENUE, BINHAI INDUSTRIAL ZONE, JIANGSANG DISTRICT, TAIZHOU CITY, ZHEJIANG PROVINCE, CHINA

**Sample Name:** ACRYLIC PLATE  
**Product Specification:** 220\*160\*2.0

Below information and sample 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.:** SHN2010068719K  
**Date of Receipt:** Oct 20, 2020  
**Testing Start Date:** Oct 20, 2020  
**Testing End Date:** Nov 13, 2020  
**Test result(s):** For further details, please refer to the following page(s).  
(Where otherwise stated, the results shown in this test report refer only to the sample(s) tested.)

Signed for  
SGS-CTC Standards Technical Service (Shanghai) Co., Ltd.  
*Yang Zhang*  
Taozi Zhang  
Authorized signatory



**SGS**

**TEST REPORT**  
No.: SHN2010068719K  
Date: Nov 13, 2020  
Page: 2 of 11

**Summary of Results:**

No.	Test Item	Test Method	Result	Conclusion
1	Verification of colorfastness	EN 203:2008 Section 4.6	See result	Pass
2	Colour Fastness	EN 203:2008 Section 3.1 & EN ISO 4802:2013 Cycle 1	Grey scale 4-5	Pass
3	Tensile Strength	EN 203:2008 Section 4.1 & EN ISO 527-1:2012 & EN ISO 527-2:2012	68.5 MPa	Pass
4	Thermal Stability	EN 203:2008 Section 4.2	Acrylic plate deformed but no bubble	Pass
5	Thickness	EN 203:2008 Section 3.2	2.0 mm	Pass
6	Visual Surface Point	EN 203:2008 Table 1 & EN ISO 24610:2010 Method B90	100 L	Pass
7	Determination of Water Absorption	EN 203:2008 Section 4.7	21.4 mg	Pass

Note: Pass: Meet the requirements.  
Fail: Does not meet the requirements.  
/ Not Apply to the judgment.

**Test Result:**

Test Item	Test Result	Client's Requirement	Conclusion
Verification of colorfastness	The sample did not discolor and adhere, but deformed due to expansion.	No discoloration or adhesion should occur.	Pass

**Test Photo:**



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1. Test Item: Verification of colorfastness  
Sample Description: White panel  
Test Method: EN 203:2008 Section 4.6  
Test Condition:  
Specimen: 20 mm x 20 mm x 2.0 mm  
Place the sample in a sealed glass container with 100 ml water. Leave for 2 h at 23±0.1 °C.  
After immersion check if the sample is discolored or sticks to the walls of the container.  
Test Result:  
The sample did not discolor and adhere, but deformed due to expansion.

**Test Result:**

Test Item	Test Result	Client's Requirement	Conclusion
Verification of colorfastness	The sample did not discolor and adhere, but deformed due to expansion.	No discoloration or adhesion should occur.	Pass

**Test Photo:**



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2. Test Item: Colour Fastness  
Sample Description: White panel  
Test Method: EN 203:2008 Section 3.1 & EN ISO 4802:2013 Cycle 1  
Test Condition:  
Exposure cycle: Irradiance: 0.32 W/m² @ 350-800nm  
102 nm light at 0.010311 997, 0.010311 CT, 0.010311 997  
18 nm light and water spray  
Filter: Shortwave  
Test Result:  
Test Result exposure: 0.50/20

**Test Result:**

Sample	Grey scale (See note 1)	Client's requirement	Conclusion
1	4.5	Grey scale 3	Pass

Note:  
1. According to BS EN 20145:2005, the grey scale was determined under the D50 standard light with observer from the front and angle 1° in the normal.  
2. The results were carried out within 1 hour after above specified duration for the intermediate inspection as well as at the end of the exposure.  
3. Test sample were cut from sample.



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**Test Photo:**

3. Test Item: Tensile Strength  
Sample Description: White panel  
Test Method: EN 203:2008 Section 4.1 & EN ISO 527-1:2012 & EN ISO 527-2:2012  
Test Condition:  
Specimen: Type 1B  
Specimen width at narrow portion: 10.072 mm  
Specimen thickness: 2.00 mm  
Testing speed: 5 mm/min  
Gage length: 50 mm  
Initial distance between grips: 115 mm  
Lab Environmental Condition: 23±2 °C, 50±5% RH

**Test Result:**

Test Item	Test Result	Client's requirement	Conclusion
Tensile Strength	68.5 MPa	≥60 MPa	Pass

Note: Test specimen were cut from sample.

**Sample Photo:**



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4. Test Item: Thermal Stability  
Sample Description: White panel  
Test Method: EN 203:2008 Section 4.2  
Test Condition:  
Specimen: 300 mm x 300 mm  
Heating Condition: 200 ± 1 °C  
Lab Environmental Condition: 23±2 °C, 50±5% RH

**Test Result:**

Specimen No.	Test Result	Client's Requirement	Conclusion
1	Acrylic plate deformed but no bubble	Acrylic plate should not have bubble	Pass
2	Acrylic plate deformed but no bubble	Acrylic plate should not have bubble	Pass

**Test Photo:**



**SGS**

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5. Test Item: Thickness  
Sample Description: White panel  
Test Method: EN 203:2008 Section 3.2  
Test Condition:  
Insulation: Manufacturer  
Nominal thickness: 3.0 mm (Provided by client)  
Lab Environmental Condition: 23±2 °C, 50±5% RH

**Test Result:**

Test Item	Test Result	Client's Requirement	Conclusion
Thickness	3.05 mm	±0.2 mm	Pass
Tolerance	<±0.05 mm	±0.4 mm	Pass

Note: The tolerance is the difference between the average and the control thickness.

**Sample Photo:**



**SGS**

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6. Test Item: Visual Surface Point  
Sample Description: White panel  
Test Method: EN 203:2008 Table 1 & EN ISO 24610:2010 Method B90  
Test Condition:  
Specimen thickness: 1.70 mm (2 layers glued up)  
Manufacture media: Silicone oil  
Rate of temperature: 50 °C/h  
Load: 20 N  
Lab Environmental Condition: 23±2 °C, 50±5% RH

**Test Result:**

Test Item	Test Result	Client's Requirement	Conclusion
Visual Surface Point	100 L	≤105 L	Pass

Note: Test specimens were cut from the sample.

**Sample Photo:**



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7. Test Item: Determination of Water Absorption  
Sample Description: White panel  
Test Method: EN 203:2008 Section 4.7  
Test Condition:  
Specimen: 30 mm x 30 mm x 2.0 mm  
Drying condition: 50±2 °C, 24 h  
Immersion condition: 23±1 °C, 24 h  
Lab Environmental Condition: 23±2 °C, 50±5% RH

**Test Result:**

Test Item	Test Result	Client's Requirement	Conclusion
Determination of Water Absorption	21.4 mg	≤40 mg	Pass

Note: Determination of Water Absorption: try "Water" after immersion. Make after drying and before immersion.

**Sample Photo:**



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8. Test Item: Water Absorption  
Sample Description: White panel  
Test Method: EN 203:2008 Section 4.7  
Test Condition:  
Specimen: 30 mm x 30 mm x 2.0 mm  
Drying condition: 50±2 °C, 24 h  
Immersion condition: 23±1 °C, 24 h  
Lab Environmental Condition: 23±2 °C, 50±5% RH

**Test Result:**

Test Item	Test Result	Client's Requirement	Conclusion
Determination of Water Absorption	21.4 mg	≤40 mg	Pass

Note: Determination of Water Absorption: try "Water" after immersion. Make after drying and before immersion.

**Sample Photo:**



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In the territory of the People's Republic of China, the test report without CMAA 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.

