



TEST REPORT

No. : SP130704222

Date : July 22,2013

Page: 1 of 10

WENZHOU JIXIANG COMPOSITE PANEL CO., LTD
BAITAWANG INDUSTRIAL ZONE, BEIBAIXIANG TOWN, YUEQING, WENZHOU CITY, ZHEJIANG
PROVINCE, CHINA.

The following sample(s) was/ were submitted and identified on behalf of the client as:

Sample Name : ALUMINUM COMPOSITE PANEL
Sample No. : SP130704222
SGS Ref. No. : AJD201304224
Type/style : 1220*2440MM*2/3/4/5MM*0.21/0.30/0.40/0.50MM
Thickness : 2MM,3MM,4MM,5MM
Composition : ALUMINUM COIL & PLASTIC
End use application : OUTDOOR & INDOOR DECORATION, SIGNAGE & PRINTING PANEL
Manufacturer : WENZHOU JIXIANG COMPOSITE PANEL CO., LTD
Country of Origin : CHINA
Date of Receipt : July 10,2013
Test Period : July 10,2013 to July 18,2013

Test result(s) : For further details, please refer to the following page(s)

***** To be continued*****

Signed for SGS-CSTC Standards
Technical Services (Shanghai) Co., Ltd

Ivy Zhu

Ivy Zhu
Authorized signatory

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SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.
Testing Center - Huashan Laboratory

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TEST REPORT

No. : SP130704222

Date : July 22, 2013

Page: 2 of 10

1. Test Item: Pencil Hardness

Sample Description: Yellow painted panel

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

Test Method: ASTM D3363-05(2011)^{ε2}

Test Condition:

Scratch hardness

Test Pencil: Mitsubishi®

Test Result:

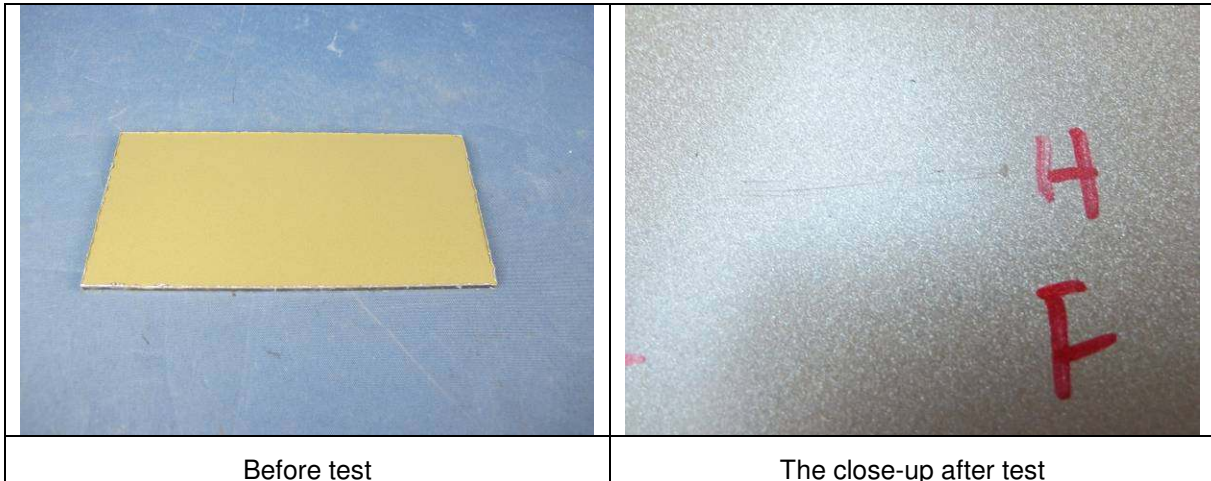
Pencil Hardness: F (See note)

Note: According to ASTM D3363-05(2011)^{ε2}, 6H is the hardest and the grade 6B is the softness.

6B—5B—4B—3B—2B—B—HB—F—H—2H—3H—4H—5H—6H

Softer←-----→Harder

Test Photo:



***** To be continued*****

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TEST REPORT

No. : SP130704222

Date : July 22,2013

Page: 3 of 10

2. Test Item: Tensile Test

Sample Description: Yellow painted sample

Test Method: ASTM D638-10

Test Condition:

Specimen width: 14.66mm

Specimen thickness: 3.96mm

Testing speed: 5mm/min

Gauge length: 50mm

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

Test Result:

Test Item	Test Result
Tensile Strength	34.9MPa
Tensile Stress at Yield	34.9MPa
Elongation at Break	8.24%

Sample Photo:



***** To be continued*****

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TEST REPORT

No. : SP130704222

Date : July 22,2013

Page: 4 of 10

3. Test Item: Shear Strength

Sample Description: Yellow painted sample

Test Method: ASTM D732-10

Test Condition:

Specimen thickness: 3.99mm

Punch diameter: 25mm

Testing speed: 1.3mm/min

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

Test Result:

Test Item	Test Result
Shear Strength	23.3MPa

Sample Photo:



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TEST REPORT

No. : SP130704222

Date : July 22,2013

Page: 5 of 10

4. Test Item: Flexural Test

Sample Description: Yellow painted sample

Test Method: ASTM D790-10 Method A

Test Condition:

Specimen: 125mm×15.39mm×3.99mm

Testing speed: 1.7mm/min

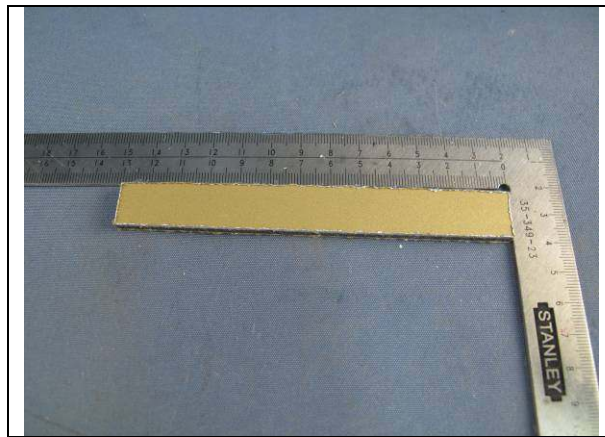
Span: 64mm

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

Test Result:

Test Item	Test Result
Flexural Strength	76.0MPa
Flexural Modulus	11300MPa

Sample Photo:



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TEST REPORT

No. : SP130704222

Date : July 22, 2013

Page: 6 of 10

5. Test Item: Specific Gravity

Sample Description: Yellow painted sample

Test Method: ASTM D792-08 Method B

Test Condition:

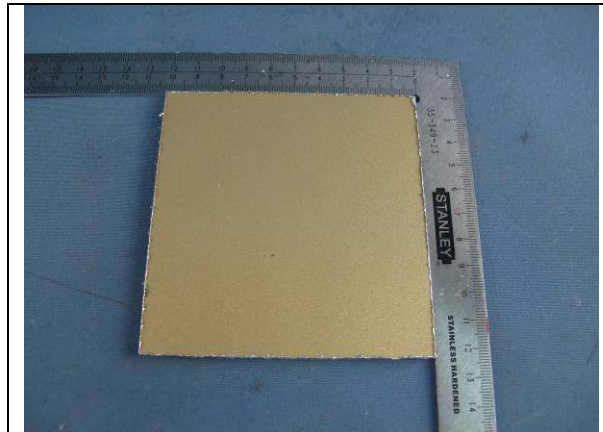
Absolute alcohol, 23±0.5°C

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

Test Result:

Test Item	Test Result
Specific Gravity	1.280

Sample Photo:



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TEST REPORT

No. : SP130704222

Date : July 22,2013

Page: 7 of 10

6. Test Item: Heat Deflection Temperature

Sample Description: Yellow painted sample

Test Method: ASTM D648-07 Method B and client's requirement

Test Condition:

Specimen: 125mm×15.23mm×4.04mm

Rate of temperature: 120°C/h

Load: 1.80MPa

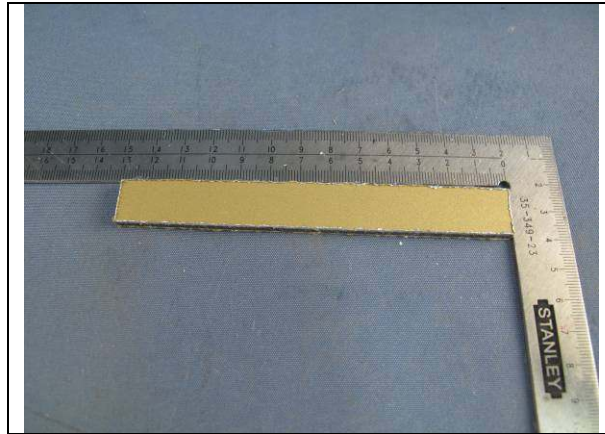
Span: 100mm

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

Test Result:

Test Item	Test Result
Heat Deflection Temperature	107.3°C

Sample Photo:



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TEST REPORT

No. : SP130704222

Date : July 22,2013

Page: 8 of 10

7. Test Item: Thermal Conductivity

Test Method: ASTM C518-10

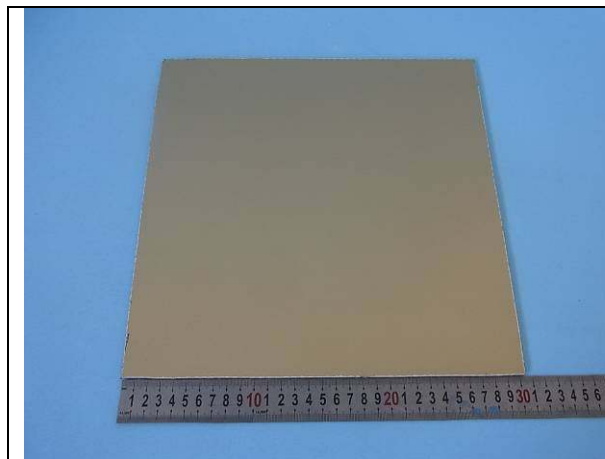
I. Sample Description

Sample Description	Sample Dimension
See sample photo	302mm×303mm×4.0mm

II. Test Result

Test Method	Test Condition		Test Result
	Mean temperature (°C)	Temperature difference (°C)	Thermal Conductivity [W/(m·K)]
ASTM C518-10	30.41	9.24	0.109
Remark	The test result can not be compared with other results obtained from different test conditions, and should not be cited to the use condition directly.		

Sample photo:



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TEST REPORT

No. : SP130704222

Date : July 22, 2013

Page: 9 of 10

8. Test Item: Mean Linear Thermal Expansion Coefficient Test (TMA)

Test Method: ASTM E831-2006

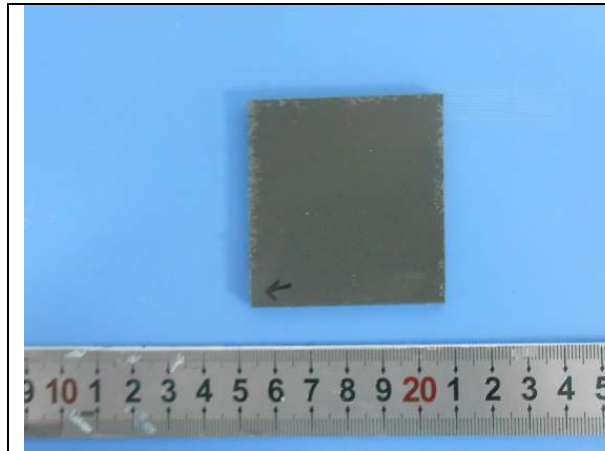
After 4 hours annealing at 80°C oven, the samples were conditioned for a minimum of 2 hours at 23 ± 2°C, 50 ± 5% R.H. The specimens of two directions were cut from the samples, CLTE tests were performed from -30°C to 70°C at 5°C /min heating rate in a nitrogen environment. The flow of N₂ is 100mL/min.

Test Condition: -20°C ~60°C

Test Result:

Test Item	Test Result
Coefficient of Liner Thermal Expansion	1.537E-4 mm·mm ⁻¹ ·°C ⁻¹

Sample Photo:



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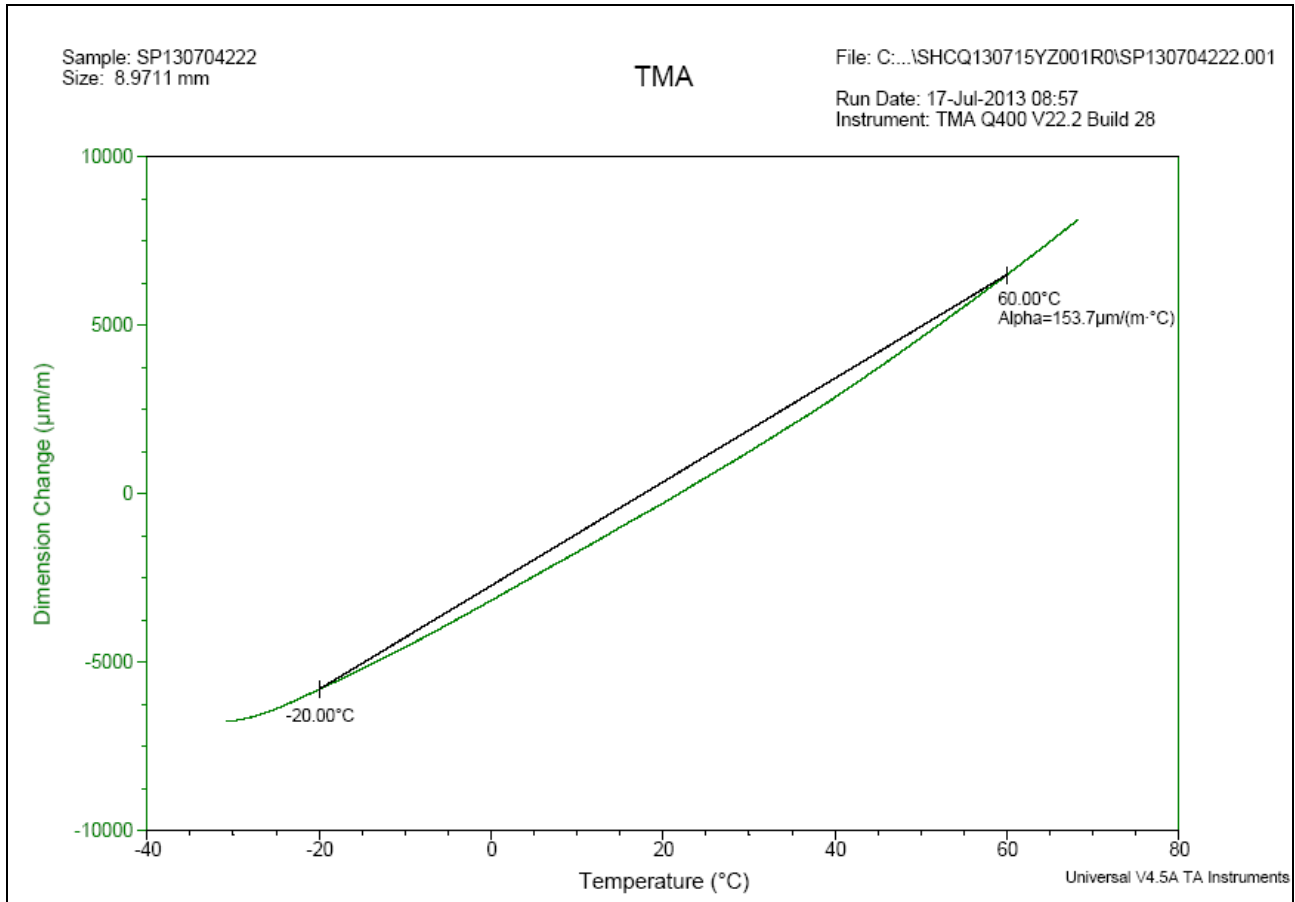
TEST REPORT

No. : SP130704222

Date : July 22, 2013

Page: 10 of 10

TMA:



- The test item 8 was performed by SGS certificated external laboratory.

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