

## TEST REPORT

No. : SHIN180300826CCM

Date : Jun. 06, 2018

Page: 1 of 15

CUSTOMER NAME: JIANGSU CANLON BUILDING MATERIALS CO., LTD.  
ADDRESS: NO.8 HENGTONG RD., QIDU TOWN, WUJIANG DIST., SUZHOU CITY,  
215234, CHINA

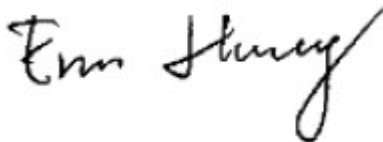
Sample Name : MBP-P WATERPROOFING MEMBRANE  
Product specification : 1.2mm\*1m\*20m  
Manufacturer : Jiangsu Canlon Building Materials Co., Ltd.

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.

\*\*\*\*\*

Test Required : Please see the next page(s)  
Test Method : Please see the next page(s)  
Date of Receipt : Mar. 19, 2018  
Testing Start Date : Mar. 19, 2018  
Testing End Date : Apr. 18, 2018  
Test result(s) : For further details, please refer to the following page(s)  
(Unless otherwise stated the results shown in this test report refer only to the sample(s) tested)

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



Erin Huang  
Authorized signatory



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## Summary of Results:

No.	Test Item	Test Method	Result	Conclusion	
1	Overall Thickness	GB/T 328.5-2007	See result	/	
2	Puncture Resistance	ASTM E154/E154M-08a(2013) <sup>e1</sup> Section 10	1210N	/	
3	Tensile Test	ASTM D412-16 Method A	See results	/	
4	Water Vapor Transmission Rate	ASTM E96/E96M-16 Procedure A	<0.1g/(m <sup>2</sup> ·h)	/	
5	Heat Aging Test	GB/T 23457-2009 Section 5.13 & GB/T 328.11-2007 Method B and client's requirement	No slide, flow, dripping or blisters	/	
6	Heat Aging Test	GB/T 23457-2009 Section 5.13 & ASTM D412-16 Method A	See result	/	
7	Major Composition Qualitative Analysis	ASTM E1252-98(2013) <sup>e1</sup>	Polyethylene (PE)	/	
8	Shear Strength	EN 12317-2:2010	687N	/	
9	Tear Strength	EN 12310-1:2000	Direction 1	515 N	/
			Direction 2	612 N	
10	Density	ASTM D1505-10	0.9456 g/cm <sup>3</sup>	/	

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



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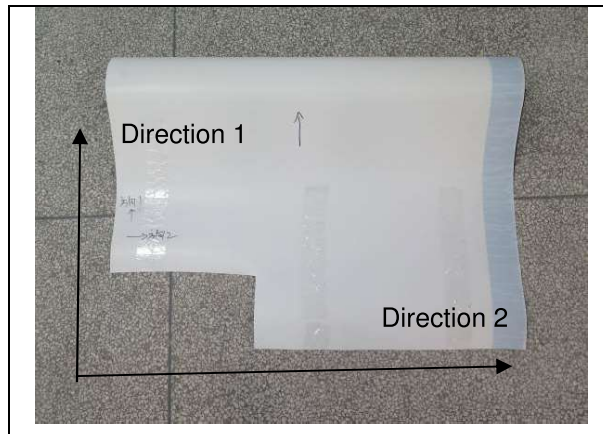
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Original Sample Photo:



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1. Test Item: Thickness

Sample Description: See photo

Test Method: GB/T 328.5-2007

Test Condition:

Pressure: 20 kPa

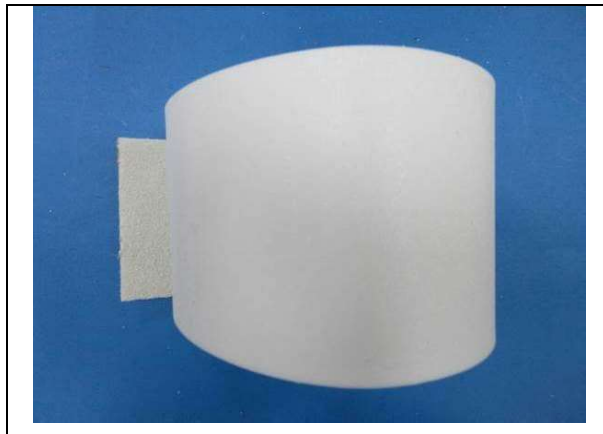
Lab Environmental Condition: (23±2)°C, (50±5)%RH

Test Result:

Test Item	Test Result	
Thickness	Total thickness	1.81 mm
	Effective thickness	1.02 mm

Note: Test specimens were cut from the sample.

Test Photo:



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2. Test Item: Puncture Resistance

Sample Description: See photo

Test Method: ASTM E154/E154M-08a(2013)<sup>e1</sup> Section 10

Test Condition:

Testing speed: 6mm/min

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

Test Result:

Test Item	Test Result
Puncture Resistance	1210N

Note:

- 1) The smooth surface was tested.
- 2) Test specimens were cut from the sample.



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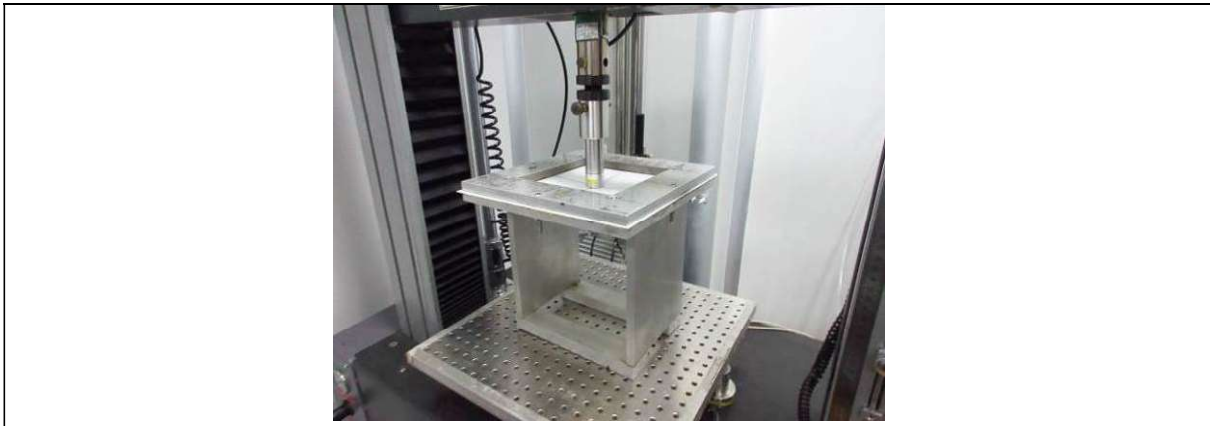
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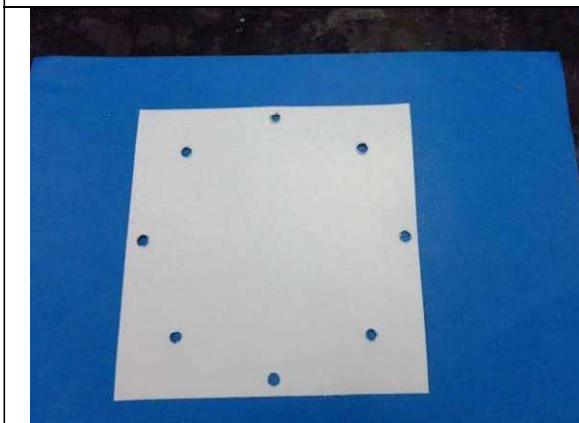
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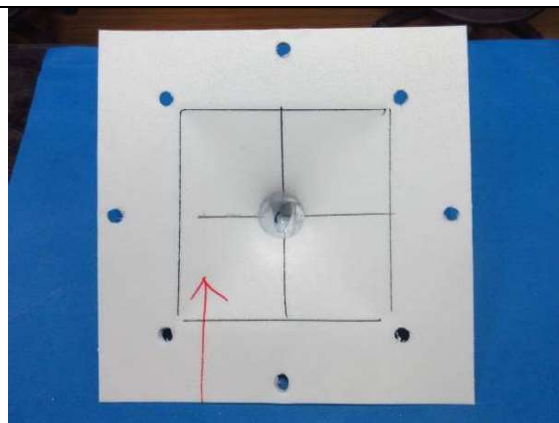
Test Photos:



During test



Before test



After test



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### 3. Test Item: Tensile Test

Sample Description: See photo

Test Method: ASTM D412-16 Method A

Test Condition:

Specimen: Die C

Total thickness: 1.80 mm

Test pieces thickness:

Direction 1: 0.959 mm

Direction 2: 1.071 mm

Testing speed: 500 mm/min

Gauge length: 25 mm

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

Test Result:

Test Item	Test Result	
Tensile Strength	Direction 1	32.2 MPa
	Direction 2	31.4 MPa
Tensile Stress at 100% Strain	Direction 1	15.7 MPa
	Direction 2	15.6 MPa
Elongation at Break	Direction 1	555 %
	Direction 2	611 %

Note:

1) Tensile Strength, MPa =  $F_{max} / (\text{Width, mm} \times \text{Test pieces thickness, mm})$

2) Test specimens were cut from the sample.



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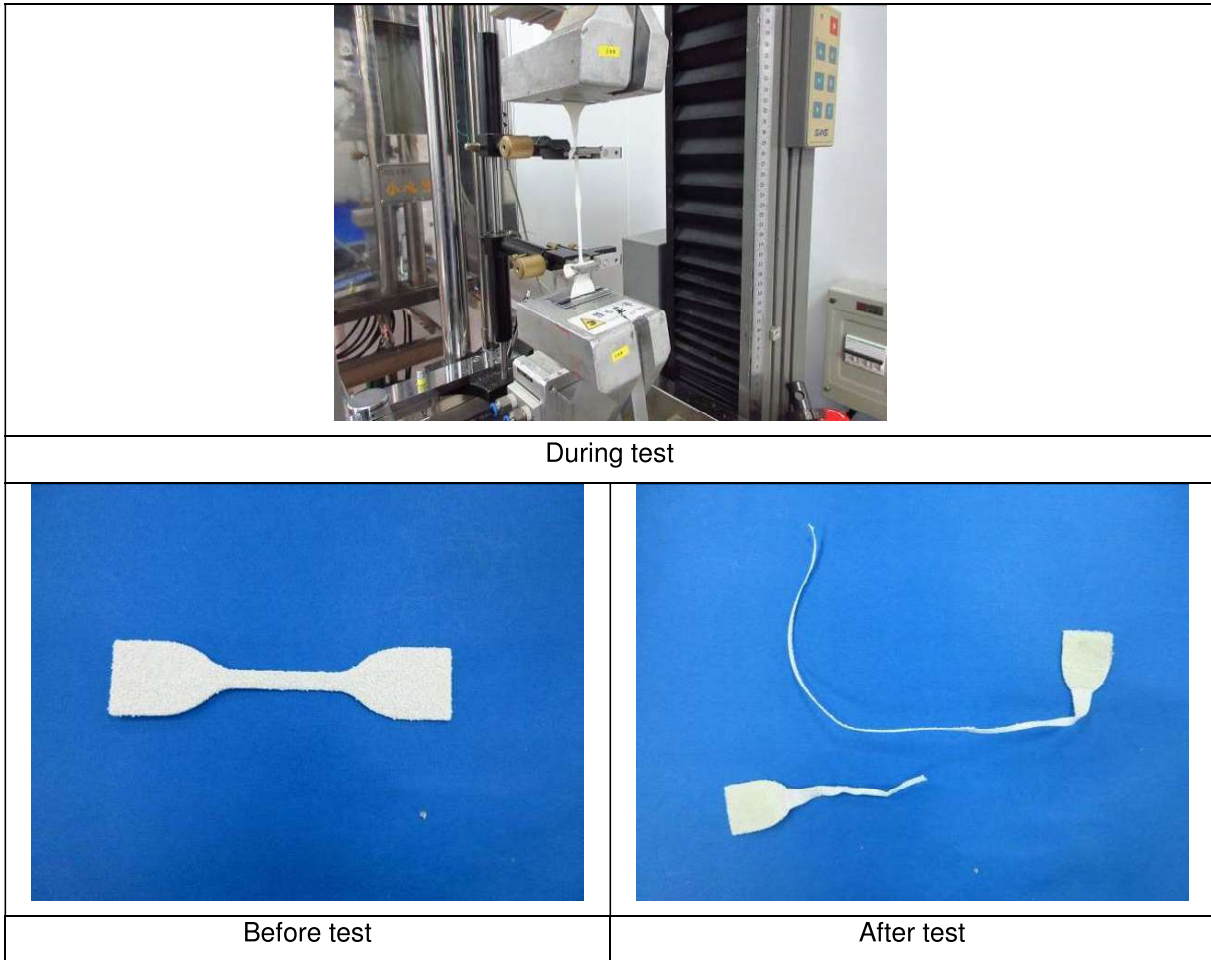
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Test Photos:



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### 4. Test Item: Water Vapor Transmission Rate

Sample Description: See photo

Test Method: ASTM E96/E96M-16 Procedure A

Test Condition:

Specimen thickness: 1.80mm

Transmission area: 0.003317m<sup>2</sup>

Test condition: 23±2°C, 50±2%RH

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

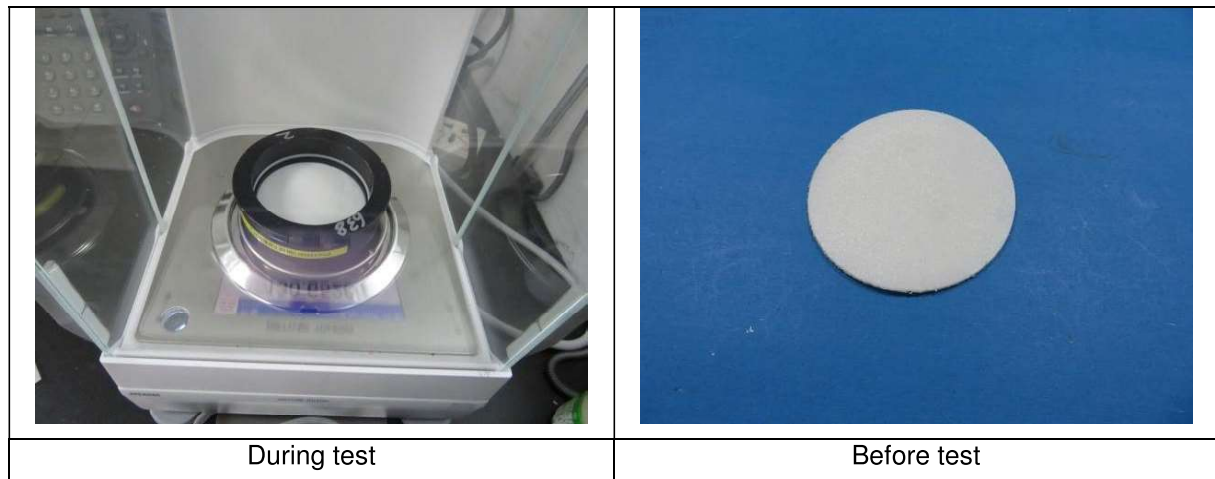
Test Result:

Test Item	Test Result
Water Vapor Transmission Rate	<0.1g/(m <sup>2</sup> ·h) (See note 1)

Note:

1. The result was below the lower limit of the test method.
2. The smooth surface was faced to the cavity with high vapor pressure.
3. Test specimens were cut from the sample.

Test Photos:



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5. Test Item: Heat Aging Test

Sample Description: See photo

Test Method: With reference to GB/T 23457-2009 Section 5.13 & GB/T 328.11-2007 Method B and client's requirement

Test Condition:

Heat ageing condition: 70°C, 168h


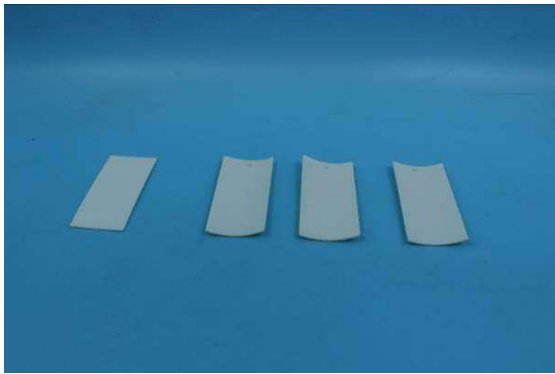
Lab Environmental Condition: 23±2°C, 50±5%RH

Test Result:

Test Item	Test Result
Heat Aging Test	No slide, flow, dripping or blisters

Note: Test specimens were cut from the sample.

Test Photos:

	
During test	Reference sample      Tested sample



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6. Test Item: Heat Aging Test

Sample Description: See photo

Test Method: GB/T 23457-2009 Section 5.13 & ASTM D412-16 Method A

Test Condition:

Heat ageing condition: 70°C, 168h

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

Test Result:

Test Item	Direction	Test Condition	Test Result	
Elongation at Break	1	Test Method: ASTM D412-16 Method A Specimen: Die C Total thickness: 1.870 mm Test pieces thickness: 1.051 mm Testing speed: 500 mm/min Gauge length: 25 mm	As received	555 %
			After heat ageing	625 %
			Change rate	+12.6 %
	2	Test Method: ASTM D412-16 Method A Specimen: Die C Total thickness: 1.863 mm Test pieces thickness: 1.049 mm Testing speed: 500 mm/min Gauge length: 25 mm	As received	611 %
			After heat ageing	587 %
			Change rate	-3.9 %

Note:

1. Change rate, % = (Value after heat ageing - Value as received) / Value as received × 100
2. Test specimens were cut from the sample.



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7. Test Item: Major Composition Qualitative Analysis

Sample Description: See photo

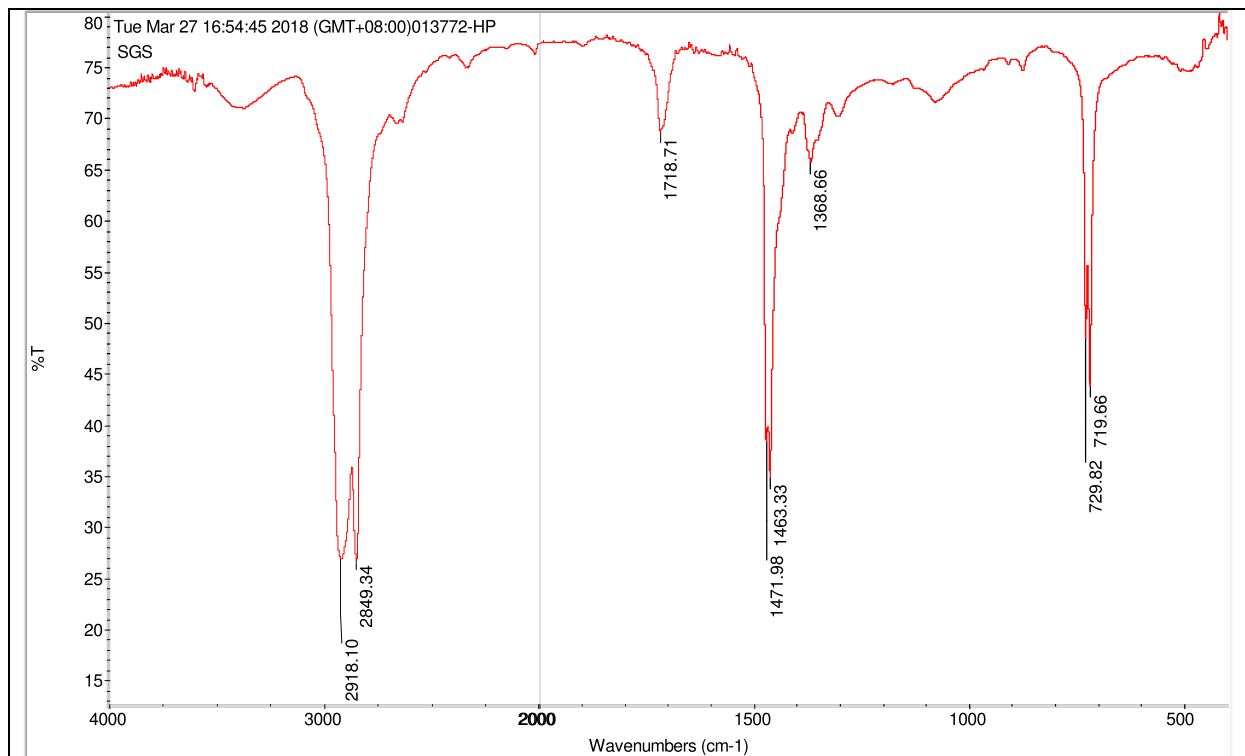
Test Method: ASTM E1252-98(2013)<sup>e1</sup>, analysis was performed by FTIR.

Sample Technique: Hot-pressed film

Test Result:

Sample	Major composition
1	Polyethylene (PE) (FTIR spectrum see Fig.1)

Fig.1



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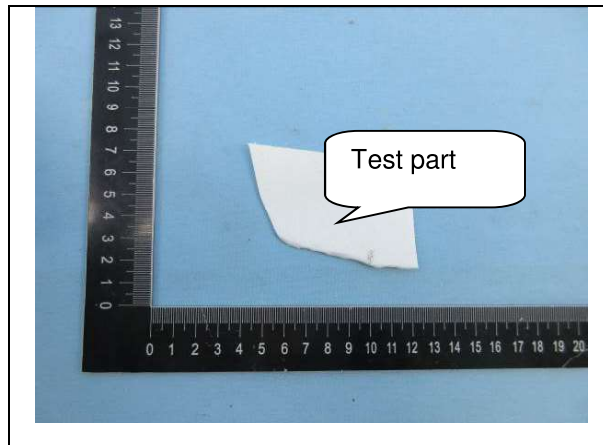
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Test Photo:



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8. Test Item: Shear Strength

Sample Description: See photo

Test Method: EN 12317-2:2010

Test Condition:

Shear area: 74.4×49.6mm<sup>2</sup>

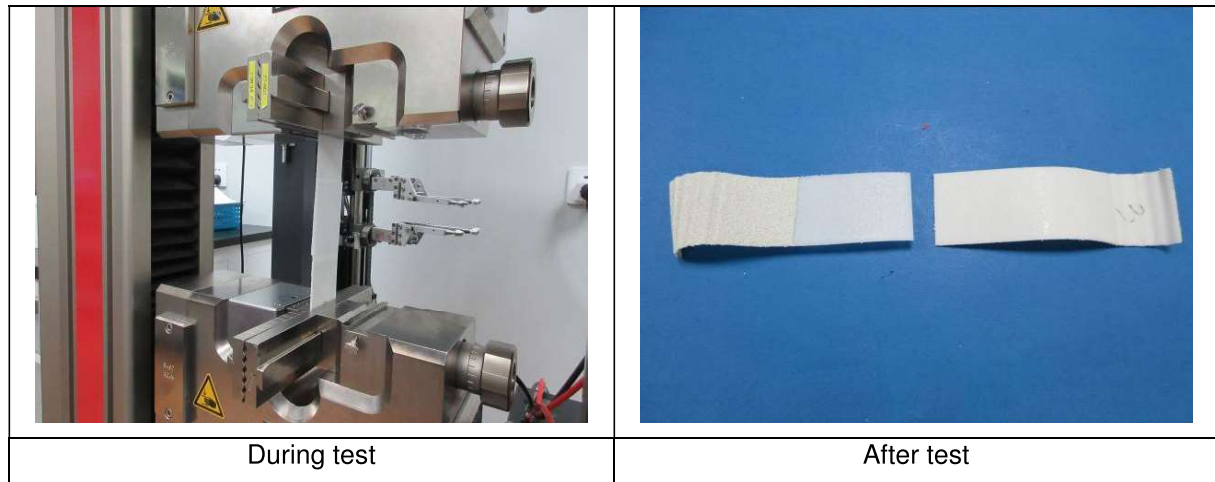
Testing speed: 100mm/min

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

Test Result:

Test Item	Test Result
Shear Strength	687N

Test Photos:



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9. Test Item: Tear Strength

Sample Description: See photo

Test Method: EN 12310-1:2000

Test Condition:

Specimen thickness: 1.77 mm

Testing speed: 100 mm/min

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

Test Result:

Test Item	Result	
Tear Strength	Direction 1	515 N
	Direction 2	612 N

Note: Test specimens were cut from the sample.

10. Test item: Density

Sample description: White solid

Test method: ASTM D1505-10

Test result:

Test Item	Test Result
Density	0.9456 g/cm <sup>3</sup>

Note: Test items 1~2, 4~5,7~8 were performed by SGS other internal laboratory. Test item 9 were carried out by external laboratory assessed as competent.

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



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