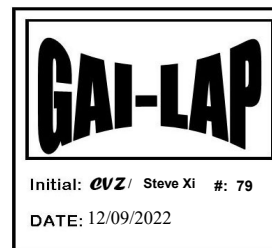


Dec 9<sup>th</sup>, 2022

Mr. Qiu  
**JINSEED GEOSYNTHETICS SOLUTION PTE. LTD**  
181 Tanjong Rhu Road  
Singapore

**Re: FINAL LABORATORY TEST REPORT**



Dear Mr. Qiu:

Thank you for consulting TRI Suzhou for your material testing needs.

Enclosed is the **final** laboratory report for the **Conformance** testing of **one (1) Nonwoven Geotextile sample**.

**PROJECT NAME:** Geotextile Testing

**DATE REPORTED:** Dec 9<sup>th</sup>, 2022

**REFERENCE TRI JOB NO.:** SCH22214

**DATE RECEIVED:** Nov 30<sup>th</sup>, 2022

**SAMPLE(S) SENT BY:** Guangdong Jinsui Environmental Protection Technology Co., Ltd.

**SAMPLE IDENTIFICATIONS:**

**SAMPLE ID**

PET NON-WOVEN 400g/m2

**TRI CONTROL NUMBER**

10774

**TESTS REQUIRED / PERFORMED:**

**TEST METHOD**

1. ASTM D5261
2. ASTM D5199
3. ASTM D4632
4. ASTM D4533
5. ASTM D4833
6. ASTM D6241
7. ASTM D4595
8. ASTM D4491
9. ASTM D4751

**DESCRIPTION**

- Mass per Unit Area
- Thickness
- Grab Tensile
- Trapezoidal Tear Resistance
- Puncture Resistance
- CBR Puncture
- Wide Width Tensile
- Permittivity
- Apparent Opening Size

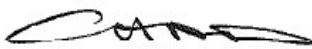
**TEST RESULTS:** The test results are summarized in the attached Table(s) 1.

Respectfully,

**TRI Geosynthetic Testing and Services (Suzhou) Co., Ltd.**



Steve Xi  
Quality Assurance



Chad Blackwell  
General Manager

*Signatures are on file*

It shall be noted that the **sample/s** tested **is/are** believed to be true representatives of the material produced under the designation herein stated. In addition, the attached laboratory tests results are considered indicative only of the quality of samples/specimens that were actually tested. The appropriate test methods hereby employed are based on the current and accepted industry practices. TRI neither accepts responsibility for nor makes claims to the intended final use and purpose of the material. The test data and all associated project information shall be held confidential and not to be reproduced and/or disclosed to other parties except in full and with prior written approval from the client or any pertinent entity duly authorized by the respective client. It is our policy to keep physical records of each job for five (5) years commencing from the date of receipt of the samples and keep its corresponding electronic file for seven (7) years. **Retained conformance samples are disposed of after one (1) month.** On the other hand, should you need us to keep them at a longer period, please advise us in writing.

**4 Pages Total (including this sheet)**



# TESTING, RESEARCH, CONSULTING AND FIELD SERVICES

Austin, TX - USA | Anaheim, CA - USA | Anderson, SC - USA | Gold Coast - Australia | Suzhou - China

**TABLE 1.**  
**MATERIAL PROPERTIES**  
CLIENT: JINSEED GEOSYNTHETICS SOLUTION PTE. LTD  
PROJECT: Geotextile Testing

Date Received: **2022.11.30**  
Date Reported: **2022.12.09**  
Client Sample ID: **PET NON-WOVEN 400g/m<sup>2</sup>**  
Material Description: **White Nonwoven Geotextile**

QC'd By: Steve/张一凡  
TRI Job No.: **SCH22214**  
TRI Control No.: **10774**

SPECIMENS											Avg.	Std. Dev.	Min	Max
	1	2	3	4	5	6	7	8	9	10				
<b>METHOD</b>	<b>DESCRIPTION</b>													
ASTM D5199	Thickness (mm) <i>Apparatus: Dead weight dial micrometer with 56.4mm (2.22in) dia presser foot and a pressure of 2kPA (0.29psi) provided by a 509gm weight. Loading time: 5sec Specimen Size: 4" x 4"</i>													
	2.88	2.93	3.12	3.06	3.15	3.19	3.08	3.24	3.06	3.08	3.08	0.1	2.9	3.2
ASTM D5261	Mass per Unit Area (gm/ m <sup>2</sup> ) <i>Test Specimen Size : 4" x 8"</i>													
	421.7	409.6	407.6	411.0	403.8						410.7	6.7	403.8	421.7
ASTM D4632	Grab Tensile <i>Test was performed as directed in D4632, dry condition. CRE Type Tensile Testing Machine (YT010 P) with hydraulic action grips and 1 " x 2 " (25.4mmX 50.8mm) rubber faces was used. set for 12" (300 mm)/min constant rate of extension, with initial gauge length (distance between grips) of 3 "(76mm). Specimen size: 4" X 8 "(100 mmX200mm). Maximum load used for testing: 1000 lbs( 5000N)</i>													
	Grab Breaking Load (N)													
MD	2062	2057	1943	2083	2007	2324	1984	1941	2108	2012	2052	111	1941	2324
TD	1988	2075	2098	2130	2070	2051	1924	2194	2097	2060	2069	74	1924	2194
	Apparent Breaking Elongation(percent)													
MD	75	74	73	70	78	78	75	75	77	75	75	3	70	78
TD	76	75	71	73	76	75	71	75	75	74	74	2	71	76

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(Sheet 1 of 3)



# TESTING, RESEARCH, CONSULTING AND FIELD SERVICES

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Material Description: **White Nonwoven Geotextile**

QC'd By: *Steve/...*  
TRI Job No.: **SCH22214**  
TRI Control No.: **10774**

SPECIMENS											Avg.	Std. Dev.	Min	Max
	1	2	3	4	5	6	7	8	9	10				
<b>METHOD</b>	<b>DESCRIPTION</b>													
ASTM D4595	Wide-Width Strip Tensile <i>Test was performed as directed in ASTM D4595, dry condition. CRE Type Tensile Testing Machine (YT010P) equipped with 2" x 8" (50mmX 200mm) Grips was used. set for 0.4" (10 mm/min) constant rate of extension, with initial gauge length (distance between grips) of 4"(100mm) Specimen Size: 8" X 8" (200mm X200mm). Full scale force range used for testing: 18000lbs (80000N)</i>													
	Tensile Strength (kN/m)													
MD	24	25	28	28	28	27					27	2	24	28
TD	25	27	27	26	24	25					26	1	24	27
	Elongation at Break (percent)													
MD	67	70	74	79	66	70					71	5	66	79
TD	74	74	75	74	77	76					75	2	74	77
ASTM D4833	Puncture Resistance (N) <i>Specimens were tested as directed in Test Method D4833. They were clamped without tension between circular plates of a ring clamp attachment secured in the tensile machine. Test specimens extended to or beyond the outer edges of the clamping plates.</i>													
	705	682	709	745	685	714	692	708	676	694	696	20	665	745
	674	665	684	692	708									
ASTM D4533	Trapezoid Tear Strength (N) <i>Specimens were tested as directed in Test Method D4533, dry condition. CRE Type Tensile Testing Machine (YT010P) equipped with 2" x 8" (50mmX 200mm) Grips was used. set for 12" ( 300 mm/min) constant rate of extension, with initial gauge length (distance between grips) of 1 " (25.4mm) Specimen Size: 3 " X 8" (76mmX200mm). Full scale force range used for testing: 1000lbs(5000 N)</i>													
MD	671	621	584	608	621	594	613	608	592	602	611	24	584	671
TD	677	698	645	603	682	624	608	644	632	602	642	34	602	698

(Continued on next page)

(Sheet 2 of 3)



# TESTING, RESEARCH, CONSULTING AND FIELD SERVICES

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QC'd By: Steve/张  
TRI Job No.: **SCH22214**  
TRI Control No.: **10774**

SPECIMENS											Avg.	Std. Dev.	Min	Max
	1	2	3	4	5	6	7	8	9	10				
<b>METHOD</b>	<b>DESCRIPTION</b>													
ASTM D4491	Permittivity (sec. <sup>-1</sup> )													
Constant Head	Four specimens were tested by holding the head constant at 50 mm. The corresponding water volume passing through the specimen was collected at the discharge side and the amount and time recorded. Five readings were taken for each specimen. Four specimens were tested. The apparatus compliant to ASTM D4491 requirements was used.													
	0.75	0.79	0.80	0.77							0.78	0.02	0.75	0.80
	Permeability (cm./sec.)													
	0.28	0.25	0.25	0.27							0.26	0.02	0.25	0.28
	Flow Rate (l/sec/m <sup>2</sup> )													
	38	40	41	39							40	1	38	41
ASTM D4751	Apparent Opening Size (U.S. standard sieve size)													
	Specimens were tested as directed in Test Method D4751. Type of sieve shaker used was W.S. Tyler Rotap.													
	140-200	140-200	140-200	140-200	140-200						140-200	N/A		
ASTM D4751	Apparent Opening Size (mm)													
	Specimens were tested as directed in Test Method D4751. Type of sieve shaker used was W.S. Tyler Rotap.													
	0.090	0.087	0.089	0.091	0.090						0.090	0.002	0.09	0.09

End of Table 1

(Sheet 3 of 3)

By accepting the data and results presented on this report, the Client agrees to limit the liability of TRI SUZHOU from Client and all other related parties for any claims on issues, due to the use of this data, to the cost respective of the tests presented in this report; and the Client agrees to indemnify and hold harmless TRI SUZHOU from and against all liabilities in excess of the aforementioned limits.