



# CRT LABORATORIES, INC.

1680 North Main Street, Orange, CA 92867

Tel.: (714) 283-2032

www.crtlabs.com • e-mail: [crtlabs@crtlabs.com](mailto:crtlabs@crtlabs.com)

ASTM Physical & Mechanical • Chemical-Thermal Analysis • IAPMO Cell Class

Geosynthetic Materials • Plumbing & Faucet Assemblies • Resin & Finished Product Testing



Certification No. ISO-09-23-12-11019

## TEST REPORT

PAGE 1 OF 4

FOR: Shangong Blossam New Material Co.  
Shanwang Town, Linqu, Weifang  
Shandong Province, China  
Tel: (861) 3810-7533-348 / Fax: (861) N/A  
ATTN: Ms. Alice Dou

LWR NO.: 21390 DATE: Oct. 07, 2021

**BACKGROUND:** The client submitted one (1) sample of waterproof membrane lining for testing per ANSI A118.10. The sample arrived on 06/03/2021 via customer-supplied courier; visual inspection performed with no product defects noted. Testing in accordance with client signed CRT quote dated 05/28/2021. Testing was performed at CRT with exception to fungus resistance; performed at a CRT (ISO 17025 approved laboratory). The following additional information is provided:

**CRT order entry log date:** 06/03/2021 / **Report due date:** 10/08/2021

**PRODUCT ID:** Waterproof Sheet Coating Membrane Lining System  
**IAPMO File:** TBA **Testing:** Full compliance with ANSI A118.10-2020

**PREPARATION:** CRT methods and relating specifications

**TEST PROCEDURES:** **ANSI A118.10-2020: Load Bearing, Bonded, Water-proof Membranes for Thin-set Ceramic Tile & Dimension Stone Installation:**  
**Fungus and micro-organism resistance** – section 4.1  
**Seam strength** – section 4.2 in accordance with ASTM D751-19  
**Breaking strength** – section 4.3, in accordance with ASTM D751-19 procedure B  
**Dimensional stability** – section 4.4 in accordance with ASTM D1204-14  
**Waterproofness** – section 4.5 in accordance with ASTM D4068-17  
**Shear strength to ceramic tile and cement mortar** – section 5 in accordance with ASTM C482-20  
**Differential-scanning Calorimetry (DSC, N<sub>2</sub>)** – ASTM D3418-15  
**Fourier-transform Infrared Microspectroscopy (FT-IR)** – CRT methods

**TEST RESULTS:** The results of testing are reported in tables 1 through 3, attached.

**CONCLUSION:** The sample submitted complies with the minimum requirements prescribed by ANSI A118.10-2020. Therefore, the product is recommended for IAPMO listing...*Complies.*

Specimen Retain Bin: #6 (30-day retain only unless otherwise specified)

Signed on behalf of:

### CRT LABORATORIES, INC.

IAPMO R&T  ISO 9001:15 Certified – Registered / ISO/IEC 17025:17 Recognized Co.

Ken A. Le Jeune  
CEO / Laboratory Director

Raul Gonzalez  
Laboratory Technician



# CRT LABORATORIES, INC.

1680 North Main Street, Orange, CA 92867

Tel.: (714) 283-2032

www.crtlabs.com • e-mail: crtlabs@crtlabs.com

ASTM Physical & Mechanical • Chemical-Thermal Analysis • IAPMO Cell Class  
Geosynthetic Materials • Plumbing & Faucet Assemblies • Resin & Finished Product Testing



Certification No.  
ISO-09-23-12-11019

## TEST REPORT

PAGE 2 OF 4

FOR: Shangong Blossam New Material Co.  
Shanwang Town, Linqu, Weifang  
Shandong Province, China  
Tel: (861) 3810-7533-348 / Fax: (861) N/A  
ATTN: Ms. Alice Dou

LWR NO.: 21390 DATE: Oct. 07, 2021

### TABLE 1

**Material ID:** Waterproof Membrane Lining System  
**Scope:** Conformance testing to ANSI A118.10-2020

#### 4.1 Fungus & Micro-organism Resistance

The conditions for incubation were 28 - 30°C and a relative humidity of >90% for fourteen days. The test organism used was *Aspergillus niger*, ATCC 6275. Potato Dextrose agar was the medium used. An acrylic tile with a thin white coating on one side without the membrane attached was used as the control item. Triplicate specimens of the sample and a viability control were inoculated with *Aspergillus niger* spores. After the fourteen day incubation, the viability plate had light growth. The control item supported no growth. Triplicates of the sample tiles with membrane supported no growth. Therefore, this material meets the requirement for “no supported mold growth”...*Complies*

#### 4.2 Seam Strength

Seam strength was determined in accordance with ASTM D751. Specimens 50 by 200 mm (2 by 8 in.) were prepared and used with a 75 mm (3") overlap. Testing was performed using a United SFM 10 test machine at 5 mm/s (12"/min).

Specimen ID	Seam strength (ppi) Machine Direction	Seam strength (ppi) Transversal Direction
1	9.31	9.07
2	9.77	8.62
3	9.23	10.06
Average	9.44	9.25
<b>Requirements</b>	8 minimum	8 minimum

...*Complies*

#### 4.3 Breaking Strength

Breaking strength was determined in accordance with ASTM D751 procedure B-cut strip test method at ambient conditions (23°C x 45% R.H.). Testing was performed using a United SFM 10 test machine at 5 mm/s (12"/min). Tests were run in both the longitudinal (machine) and transverse directions using specimens 25 mm by 150 mm (1 by 6 in.).

Specimen ID	Breaking strength (psi) Machine Direction	Breaking strength (psi) Transversal Direction
1	636	450
2	426	471
3	462	399
4	419	412
5	420	441
Average	473	435
<b>Requirements</b>	170 minimum	170 minimum

...*Complies*



# CRT LABORATORIES, INC.

1680 North Main Street, Orange, CA 92867

Tel.: (714) 283-2032

www.crtlabs.com • e-mail: crtlabs@crtlabs.com

ASTM Physical & Mechanical • Chemical-Thermal Analysis • IAPMO Cell Class  
Geosynthetic Materials • Plumbing & Faucet Assemblies • Resin & Finished Product Testing



## TEST REPORT

PAGE 3 OF 4

FOR: Shangong Blosam New Material Co.  
Shanwang Town, Linqu, Weifang  
Shandong Province, China  
Tel: (861) 3810-7533-348 / Fax: (861) N/A  
ATTN: Ms. Alice Dou

LWR NO.: 21390 DATE: Oct. 07, 2021

### TABLE 2

**Material ID:** Waterproof Membrane Lining System

**Scope:** Conformance testing to ANSI A118.10-2020

#### 4.4 Dimensional Stability

Dimensional stability was determined in accordance with ASTM D1204. Specimens were cut 250mm by 250mm (10" x 10") and measure using a calibrated digital caliper. Specimens were exposed 18 h at a temperature of 70°C (158°F). After exposure they were conditioned one (1) h at 23°C and 50% R.H. and re-measured. The specimens were then exposed eighteen (18) h at -26°C (-15°F) for 18 h, conditioned for one (1) hour at 23°C and 50% R.H. and re-measured. Tests were performed in duplicate, as shown below:

Specimen	Dimensional change (%) subsequent to heating (158°F)	Dimensional change (%) subsequent to cooling (-15°F)
1	- 0.14	+ 0.04
2	- 0.13	+ 0.04
Average	- 0.14 / Pass	+ 0.04 / Pass
<b>Requirements</b>	± 0.7	± 0.7

...Complies

#### 4.5 Waterproofness

Waterproofness was determined in accordance with ASTM D4068. Specimens 75 by 75 mm (3 by 3 in) were used. Testing was performed using a CRT built apparatus for 48 h at 61 cm (2-feet) water pressure. Six specimens were tested; yielding the following results.

Specimen ID	Time for droplets to form
1	No wetness or droplets
2	No wetness or droplets
3	No wetness or droplets
4	No wetness or droplets
5	No wetness or droplets
6	No wetness or droplets
<b>Requirements</b>	No wetness or droplets on top of sample at 48 hours

...Complies



# CRT LABORATORIES, INC.

1680 North Main Street, Orange, CA 92867

Tel.: (714) 283-2032

www.crtlabs.com • e-mail: crtlabs@crtlabs.com

ASTM Physical & Mechanical • Chemical-Thermal Analysis • IAPMO Cell Class  
Geosynthetic Materials • Plumbing & Faucet Assemblies • Resin & Finished Product Testing



## TEST REPORT

PAGE 4 OF 4

FOR: Shangong Blossam New Material Co.  
Shanwang Town, Linqu, Weifang  
Shandong Province, China  
Tel: (861) 3810-7533-348 / Fax: (861) N/A  
ATTN: Ms. Alice Dou

LWR NO.: 21390 DATE: Oct. 07, 2021

### TABLE 3

**Material ID:** Waterproof Membrane Lining System  
**Scope:** Conformance testing to ANSI A118.10-2020

#### 5 Shear strength to ceramic tile and cement mortar

Shear strength was determined in accordance with ASTM C482 using standard mortar per section 9.1.1 except small amounts of water were added to the mortar for desired consistency. Twenty (20) mortar beds were prepared and cured twenty-five (25) days per section 5.1. Each mortar surface was screed with the sample membrane and placed on the mortar bed and the tile was placed after membrane was cured. The assemblies were allowed to cure 7 days at 21-25°C (70-77°F) and 45-55% R.H. The prepared beds were separated in to sets of 4 specimens each for 5 different exposures. Testing was performed on a United SFM 100kN testing machine using special fixturing at a load rate of 200 psi/min.

Specimen ID	(5.3) 7 Day shear strength Psi	(5.4) 7 Day water immersion shear strength Psi	(5.5) 4 week shear strength Psi	(5.6) 12 week shear strength Psi	(5.7) 100 Day water immersion shear strength Psi
1	106	93	89	99	83
2	105	91	87	103	84
3	92	89	89	97	82
4	90	88	91	112	87
Average	101	87	98	87	93
Requirements	50 minimum	50 minimum	50 minimum	50 minimum	50 minimum

*...Complies*

#### Differential-scanning Calorimetry (DSC)

Differential-scanning (DSC)	Polyethylene	Polypropylene
Peak °C	119.32	162.49
Contamination / Comments	The double-peak melting points at 119°C are indicative to Polyethylene (PE) and the primary peak melting point at 162°C is confirmed as Propylene (PP). No signs of contamination.	

#### Fourier-transform Infrared Microspectroscopy (FT-IR)

This material system is confirmed as a mixture of Polyethylene and Polypropylene... *Complies*