

CLIENT: **LATICRETE International, Inc.**
One LATICRETE Park North
Bethany, CT 06524-3423
United States

Test Report No: TJ2066-1-R1

Date: August 22, 2014

SAMPLE ID: HYDRO BAN® Sheet Membrane

SAMPLING DETAIL: Test samples were submitted to the laboratory directly by the client. No special sampling conditions or sample preparation were observed by QAI.

DATE OF RECEIPT: Samples were received at QAI on April 15, 2014.

TESTING PERIOD: April 21, – August 19, 2014

AUTHORIZATION: Signed QAI Proposal No: MB 2014-032404 by John Simmers, on April 1, 2014.

TEST PROCEDURE: ANSI A118.10-2008, *Standard Specifications for Load Bearing, Bonded, Waterproof Membranes for Thin-set Ceramic Tile and Dimension Stone Installation.*

TEST RESULTS: The samples meet the criteria of ANSI A118.10. Detailed test results are presented in the subsequent pages of this report.

Prepared By



Rocky Hale
Material Test Technician

**Signed for and on behalf of
QAI Laboratories, Inc.**



C. Ryan Worch
Project Manager/Field Inspector

Procedures and Results:

4.1 Fungus and Micro-Organism Resistance

Pass

Samples were prepared as required per section 4.1, which stipulates the following method: 39 grams of Agar were dissolved in 1 liter of heated water. The agar medium and two 1 inch square pieces of tile were autoclaved at 15psi for 15 minutes. A section of the sample was bonded to one tile, and then placed in a Petri dish. The other tile (control) was then placed in a Petri dish. The agar medium was then introduced to both petri dishes. The entire surfaces were then inoculated with Aspergillus Brasiliensis (formally known as Aspergillus Niger).

All samples were placed in a temperature and humidity controlled incubator for 14 days. During the 14 day period the temperature and humidity were monitored and maintained at 82.4 to 86°F and 85-96% relative humidity.

Following the 14 days, the samples were removed and evaluated for fungus and micro-organism growth. Table 1 is the ratings the samples may receive. Table 2 is the results after 14 days of incubation.

Table 1

Observation	Rating
No Traces of Growth	0
Traces of Growth (less than 10%)	1
Light Growth (10 to 30%)	2
Medium Growth (30 to 60%)	3
Heavy Growth (60% to complete coverage)	4

Any rating above 0 does not meet the requirement of ANSI A118.10-2008, Section 4.1 which specifies *“The membrane shall not support mold growth.”* Ratings 1 through 4 are considered for informational purposes to provide the client with a conclusion as to the pervasiveness of growth, should growth be evident during the evaluation.

Table 2-Results

Test Start Date:	4/22/14	Test End Date:	5/6/14
Total Incubation Period:	14 Days		
Specimen	Rating		
1	0		
Control	3		

4.2 Seam Strength (ASTM D 751-11)

Pass

The samples were prepared in test conditions specified in section 3.2.

Specimen	Max. Load, lbs.	Requirement
1	36	8lb/in. width Min.
2	37	
3	25	
Average	32.7	

4.3 Breaking Strength (ASTM D 751-11) Procedure B

Pass

The samples were prepared in test conditions specified in section 3.2

Test Direction	Specimen	Load at break, psi	Requirement
Transverse	1	1271.1	170psi, Min.
Transverse	2	1349.6	
Transverse	3	1321.5	
Transverse	4	1311.4	
Transverse	5	1235.9	
Average		1297.9	

The samples were prepared in test conditions specified in section 3.2

Test Direction	Specimen	Load at break, psi	Requirement
Longitudinal	1	1932.2	170psi, Min.
Longitudinal	2	1775.1	
Longitudinal	3	1888.0	
Longitudinal	4	1837.0	
Longitudinal	5	1902.6	
Average		1867.0	

4.4 Dimensional Stability (ASTM D 1204-08)

Pass

Re-conditioning: Specimens at 71°F and 50% Relative Humidity for 1 hour.

Sample	Test Temp, °F	Change, %	Requirement, Max. ±
1	+158	-0.11	0.7%
2	+158	-0.06	0.7%
3	-15	-0.01	0.7%
4	-15	0.00	0.7%

4.5 Waterproofness (ASTM D 4068-09)

Pass

Observation: No Leakage

5.3 7-Day Dry Shear Strength (ASTM C482-09)

Pass

The samples were prepared and cured for 7 days in accordance with ANSI A118.10 Section 5.2. At the end of the 7 day period the samples were tested for shear strength in accordance test method ASTM C482; section 9.8.

Specimen	Width in.	Length in.	Ultimate Load,lbs	Bond Strength,psi
1	4.0205	3.8050	2637	172.4
2	4.0265	3.8600	2781	178.9
3	4.0195	3.7605	2688	177.8
4	4.0235	3.7995	2639	172.6
Average (Psi)	-	-	-	175.4
Average(MPa)	-	-	-	1.21

Requirement: Average shear strength greater than 50 psi.

5.4 7-Day Water Immersion Shear Strength (ASTM C482-09)

Pass

The samples were prepared and cured for 7 days in accordance with ANSI A118.10 Section 5.2. At the end of the 7 day period the samples were placed in a water bath for an additional 7 days. After the additional 7 days the samples were removed from the water bath and tested for shear strength in accordance with section 5.3.

Specimen	Width in.	Length in.	Ultimate Load,lbs	Bond Strength,psi
1	4.0160	3.8065	1640	107.3
2	4.0110	3.7470	1530	101.8
3	4.0225	3.7000	1630	109.5
4	3.9830	3.7610	1681	112.2
Average (Psi)	-	-	-	107.7
Average(MPa)	-	-	-	0.74

Requirement: Average shear strength greater than 50 psi.

5.5 4-Week Shear Strength (ASTM C482-09)

Pass

The samples were prepared and cured for 4-weeks in accordance with ANSI A118.10 Section 5.2. At the end of the 4 week period the samples were tested for shear strength in accordance with section 5.3.

Specimen	Width in.	Length in.	Ultimate Load,lbs	Bond Strength,psi
1	4.0165	3.7105	1546	103.7
2	4.0335	3.8360	1590	102.8
3	3.9815	3.7710	1547	103.0
4	4.0105	3.7745	1563	103.3
Average (Psi)	-	-	-	103.2
Average(MPa)	-	-	-	0.71

Requirement: Average shear strength greater than 50 psi.

5.6 12-Week Shear Strength (ASTM C482-09)

Pass

The samples were prepared and cured for 12 weeks in accordance with ANSI A118.10 Section 5.2. At the end of the 12 week period the samples were tested for shear strength in accordance with section 5.3.

Specimen	Width in.	Length in.	Ultimate Load,lbs	Bond Strength,psi
1	3.9820	3.8105	1692	111.5
2	3.9890	3.8250	1458	95.6
3	3.9990	3.8110	1542	101.2
4	3.9895	3.7425	1664	111.4
Average (Psi)	-	-	-	104.9
Average(MPa)	-	-	-	0.72

Requirement: Average shear strength greater than 50 psi.

5.7 100-Day Water Immersion Shear Strength (ASTM C482-09)

Pass

The samples were prepared and cured for 7 days in accordance with ANSI A118.10 Section 5.2. At the end of the 7 day period the samples were placed in a water bath for an additional 100 days. After the additional 100 days the samples were removed from the water bath and tested for shear strength in accordance with section 5.3.

Specimen	Width in.	Length in.	Ultimate Load,lbs	Bond Strength,psi
1	4.0020	3.7705	1624	107.6
2	3.9615	3.7790	1594	106.5
3	4.0165	3.7780	1802	118.8
4	4.0150	3.7735	1785	117.8
Average (Psi)	-	-	-	112.7
Average(MPa)	-	-	-	0.78

Requirement: Average shear strength greater than 50 psi.

***** END OF TEST REPORT *****