

Technical Service Report



Revision# 4



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LAMA

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Project #:

JX18G4A

Quote #:

C23-1254

Date of Report:

Tuesday, December 2, 2025

PO#:
Abstract:

Analysis of one (1) product in accordance with ASTM D1970 Standard Specification for Self- Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection.

ID #	Description of Material	Receiving Date	Sample Condition	Sampled By
ACE-340397	MERCY® HydroLock HT 1200- Production Location: 01-333 Henry Street, Brantford, ON, N3S 0E4, Production Date: 12/16/2024	1/16/2025	Acceptable	Customer

Results and Conclusion

Test #: 1

Method D1970/1970M-15a Environmental Conditions 73.4±3.6°F, 50±5% RH

Test/Description: Thickness per ASTM D5147

Result: Average of 5: 1.1 mm (41.8 mils)
Std. Dev: 0.002

Requirement min. 1.0mm (40 mils)

Conclusion: Pass

Test #: 2

Method D1970/1970M-15a Environmental Conditions 73.4±3.6°F, 50±5% RH

Test/Description: Maximum Load @ 23°C - MD per ASTM D2523

Individual Results-
1: 9.1 kN/m (52.5 lbf/in)
2: 9.1 kN/m (52.2 lbf/in)
3: 11.8 kN/m (67.6 lbf/in)
4: 12.5 kN/m (71.5 lbf/in)
5: 8.8 kN/m (50.3 lbf/in)
Std. Dev: 9.9

Result: 10.3 kN/m (58.8 lbf/in)

Requirement min. 4.4 kN/m (25 lbf/in)

Conclusion: Pass

Results and Conclusion

Test #: 3

Method D1970/1970M-15a Environmental Conditions 73.4±3.6°F, 50±5% RH

Test/Description: Elongation at Break @ 23°C - MD per ASTM D2523 (of modified bitumen portion)-Visual Determination

Individual Results-(%)

1: 11.7

2: 12.7

3: 13.7

4: 11.4

5: 10.5

Std. Dev: 1.2

Result: 12.0%

Requirement min. 10%

Conclusion: Pass

Test #: 4

Method D1970/1970M-15a Environmental Conditions 73.4±3.6°F, 50±5% RH

Test/Description: Maximum Load @ 23°C - XMD per ASTM D2523

Individual Results-

1: 7.2 kN/m (41.4 lbf/in)

2: 8.4 kN/m (47.8 lbf/in)

3: 6.5 kN/m (37.4 lbf/in)

4: 6.7 kN/m (38.1 lbf/in)

5: 6.5 kN/m (37.0 lbf/in)

Std. Dev: 4.5

Result: 7.1 kN/m (40.3 lbf/in)

Requirement min. 4.4 kN/m (25 lbf/in)

Conclusion: Pass

Results and Conclusion

Test #: 5

Method D1970/1970M-15a Environmental Conditions 73.4±3.6°F, 50±5% RH

Test/Description: Elongation at Break @ 23°C - XMD per ASTM D2523 (of modified bitumen portion)-Visual Determination

Individual Results-(%)

1: 15.4

2: 10.4

3: 17.2

4: 11.9

5: 10.7

Std. Dev: 3.0

Result: 13.1%

Requirement min. 10%

Conclusion: Pass

Test #: 6

Method D1970/1970M-15a Environmental Conditions 40±5°F

Test/Description: Adhesion to Plywood @ 40°F per ASTM D903

Individual Measurements-

1: 7.7 kgf/30.5 cm (16.9 lbf/ft width)

2: 7.9 kgf/30.5 cm (17.4 lbf/ft width)

3: 4.9 kgf/30.5 cm (10.8 lbf/ft width)

4: 7.6 kgf/30.5 cm (16.7 lbf/ft width)

5: 8.9 kgf/30.5 cm (19.7 lbf/ft width)

Std. Dev: 3.0

Result: Average of 5 Specimens: 7.4 kgf/30.5 cm (16.3 lbf/ft width)

Requirement min. 0.92 kgf/30.5 cm (2.0 lbf/ft width)

Conclusion: Pass

Results and Conclusion

Test #: 7

Method D1970/1970M-15a Environmental Conditions 73.4±3.6°F, 50±5% RH

Test/Description: Adhesion to Plywood @ 75°F per ASTM D903

Individual Measurements
1: 5.2 kgf/30.5 cm (11.5 lbf/ft width)
2: 5.8 kgf/30.5 cm (12.8 lbf/ft width)
3: 6.3 kgf/30.5 cm (13.9 lbf/ft width)
4: 6.2 kgf/30.5 cm (13.6 lbf/ft width)
5: 5.7 kgf/30.5 cm (12.6 lbf/ft width)
Std. Dev: 0.8

Result: Average of 5 specimens: 5.8 lkgf/30.5 cm (12.8 lbf/ft width)

Requirement min. 5.44 kgf/30.5 cm 12.0 lbf/ft width

Conclusion: Pass

Test #: 8

Method D1970/1970M-15a Environmental Conditions 158±4°F

Test/Description: Thermal Stability per ASTM D1204

Result: All 5 measurements: 0.0 mm (0.0 in)

Std. Dev: 0.0

Requirement max. 3 mm (0.1 in)

Conclusion: Pass

Test #: 9

Method D1970/1970M-15a Environmental Conditions -20±3.6°F

Test/Description: Flexibility Temperature @ -29°C (-20°F) - MD

Result: Bitumen cracking with weathering side towards mandrel

Requirement All specimens must pass at the test temperature of -29°C [-20°F]. Report as a pass if no cracking is visible. If cracking is visible on any specimen, performance of the Head of Water Test at Flexibility Temperature is required.

Conclusion: N/A

Results and Conclusion

Test #: 10

Method D1970/1970M-15a Environmental Conditions $-20 \pm 3.6^{\circ}\text{F}$

Test/Description: Flexibility Temperature @ -29°C (-20°F) - XMD

Result: Bitumen cracking with weathering side towards mandrel

Requirement All specimens must pass at the test temperature of -29°C (-20°F). Report as a pass if no cracking is visible. If cracking is visible on any specimen, performance of the Head of Water Test at Flexibility Temperature is required.

Conclusion: N/A

Test #: 11

Method D1970/1970M-15a Environmental Conditions $40 \pm 5^{\circ}\text{F}$

Test/Description: Waterproof Integrity After Low Temperature Flexibility

Result: Pass

Requirement Pass

Conclusion: Pass

Test #: 12

Method D1970/1970M-15a Environmental Conditions $73.4 \pm 3.6^{\circ}\text{F}$, $50 \pm 5\%$ RH

Test/Description: Tear Resistance per ASTM D4073 - MD

Individual Results-
1: 336.7 N (75.7 lbf)
2: 305.1 N (68.6 lbf)
3: 259.3 N (58.3 lbf)
Std Dev: 7.1

Result: Average: 300.2 N (67.5 lbf)

Requirement min. 89 N (20 lbf)

Conclusion: Pass

Results and Conclusion

Test #: 13

Method D1970/1970M-15a Environmental Conditions 73.4±3.6°F, 50±5% RH

Test/Description: Tear Resistance per ASTM D4073 - XMD

Individual Results-
1: 139.7 N (31.4 lbf)
2: 139.7 N (31.4 lbf)
3: 133.9 N (30.1 lbf)
Std. Dev: 0.6

Result: 137.9 N (31.0 lbf)

Requirement min. 89 N (20 lbf)

Conclusion: Pass

Test #: 14

Method D1970/1970M-15a Environmental Conditions Chamber Conditions-Avg.Temp: 74.3°F, Avg. RH: 50.3

Test/Description: Moisture Vapor Permeance per ASTM E96.
Upright, water method, glass test dish, product adhesive used as sealant with the adhesive side facing the medium

Individual Results-
1: 2.32 ng/Pa.S.M.² (0.041 perms)
2: 2.39 ng/Pa.S.M.² (0.042 perms)
3: 2.49 ng/Pa.S.M.² (0.044 perms)

Result: Average: 2.40 ng/Pa.S.M.² (0.042 perms)

Requirement max. 5.7 ng/Pa.S.M.² (0.1 U.S. Perms)

Conclusion: Pass

Results and Conclusion

Test #: 15

Method D1970/1970M-15a Environmental Conditions 40±5°F

Test/Description: Capability to seal around nail per ASTM D7349

Result: Pass

Requirement Pass

Conclusion: Pass

Test #: 16

Method D1970/1970M-15a Environmental Conditions 40±5°F

Test/Description: Waterproof Integrity of Lap Seam

Result: No water found between the plywood and the unadhered upper piece

Requirement No water found between the plywood and the unadhered upper piece

Conclusion: Pass

Results and Conclusion

Conclusion:

The product meets the requirements of ASTM D1970/D1970M-15a.

Testing Dates

7/18/2024 - 4/25/2025

Tested By:



Jerry Spinelli

Special Testing Coordinator



Florida Professional Engineer

PE No. 67717

Verified By:



Rodney Armstrong

Engineering Manager

Revision Log

Revision #	Date	Revision
0	8/28/2024	Initial
1	1/21/2025	Retest for tensile and peel at 40°F
2	4/25/2025	Retest for peel at 40°F
3	9/29/2025	Product Log In Update
4	12/2/2025	Product Log In Update

Results and Conclusion

ACE Laboratories is an ANAB accredited ISO/IEC 17025 testing laboratory. The laboratory's certificate number is AT-2601 and all data here within is included within the that laboratory scope unless otherwise marked.

The following report contains data, graphs, and other pertinent information in relation to the testing that ACE Laboratories performed for the customer specified above. Unless otherwise noted, all testing was performed on-premise at the ACE facility. This report and all information contained within are governed by Terms & Conditions sheet provided to the customer prior to the start of testing.

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