CONSTRUCTION MATERIALS
TECHNOLOGIES

LABORATORY TEST RESULTS

Report for: Safeguard30 LLC
3400 SW 209th
Beaverton, OR 97007

Attention: Greg Oster

Product Designation(s): Hybrid Underlayment	**Manufacturer:** Safeguard30
PRI-CMT Project No.: BMX-003-02-01	**Source:** Safeguard30 LLC
Date Received: Sep. 6, 2011	**Dates Tested:** Nov. 14, 2011 – Nov. 21, 2011

Purpose:

Determine select physical property requirements for *Safeguard30's Hybrid Underlayment*. Properties evaluated include breaking strength, dimensional stability, loss on heating, pliability, tear strength, and unrolling; these properties were selected from ASTM D 226: *Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing* and ASTMD 4869: *Standard Specification for Asphalt-Saturated Organic Felt Used in Steep Slope Roofing*.

The product is characterized as a hybrid underlayment where a synthetic carrier, rather than organic felt, is saturated/coated with asphalt. Dimensions and Masses portions of asphalt-saturated organic felt specifications may not be applicable to this product.

Test Methods:

Testing was completed as outlined by Safeguard30 and as assigned in ASTM D 226-09 and -06: *Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing* and ASTMD 4869-05$^{\varepsilon 1}$: *Standard Specification for Asphalt-Saturated Organic Felt Used in Steep Slope*.

Breaking Strength results were determined in accordance with ASTM D 146: *Standard Test Methods for Sampling and Testing Bitumen-Saturated Felts and Woven Fabrics for Roofing and Waterproofing*. As assigned in ASTM D 226 and ASTM D 4869, the procedure for felts was utilized. Breaking Strength results have been reported in units of (lbf/in-width).

Dimensional Stability results were determined in accordance with ASTM F 1087: *Standard Test Method for Linear Dimensional Stability of a Gasket Material to Moisture*. AS assigned in ASTM D 4869, the procedure for dimensional stability to high humidity was utilized. Dimensional Stability results have been reported in units of (% dimension change).

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Loss on Heating results were determined in accordance with ASTM D 146: *Standard Test Methods for Sampling and Testing Bitumen-Saturated Felts and Woven Fabrics for Roofing and Waterproofing*. Loss on Heating results have been reported in units of (% weight loss).

Pliability results were determined in accordance with ASTM D 146: *Standard Test Methods for Sampling and Testing Bitumen-Saturated Felts and Woven Fabrics for Roofing and Waterproofing*. As assigned in ASTM D 226 and ASTM D 4869, the procedure for felts was utilized. Pliability results have been reported as *[Pass/Fail]*.

Tear Strength results were determined in accordance with ASTM D 1922: *Standard Test Method for Propagation Tear Resistance of Plastic Film and Thin Sheeting by Pendulum Method*. Tear Strength results have been reported in units of (lbf).

Unrolling results were determined as mentioned in ASTM D 226 and ASTM D 4869. Unrolling was evaluated at 50°F and 140°F. Unrolling results have been reported as *[Pass/Fail]*.

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Results of Testing:

Property	Test Method	Result	Requirement
Breaking Strength (lbf/in-width) 20 specimens; 1" x 6" x thickness; Cond. 2h @ 73.4±3.6°F & 50±5%RH; Test @ 73.4±3.6°F; Rate=2in/min	ASTM D 146		
Longitudinal (with fiber grain)		71.4	Report
Transverse (across fiber grain)		113.9	Report
Dimensional Stability low humidity to high humidity; max (%)	ASTM F 1087		
MD		0.33	Report
CMD		0.31	Report
Loss on Heating (weight %) 2 specimens; 12" x 6" x thickness; Test Cond. 221±5°F for 5h±3min	ASTM D 146	1	Report
Pliability *[Pass/Fail]* 10 specimens; 1" x 8" x thickness; Cond. 10-15min in water @ 77±1.8°F; Test 90° around ½" radius in 2s	ASTM D 146		
Longitudinal (with fiber grain)		Pass	No Failures
Transverse (across fiber grain)		Pass	No Failures
Tear Strength (lbf) @ 73 ± 4°F	ASTM D 1922		
MD		7.3	Report
CMD		5.0	Report
Unrolling @ 50°F and 140°F *[Pass/Fail]*	ASTM D 226 / ASTM D 4869	Pass	No Damage

Note(s): None

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Statement of Attestation: Physical properties testing of these materials were determined in accordance with ASTM Standard Test Methods. The laboratory test results presented in this report are representative of the material supplied.

Signed: _____ **Signed:** _____

Charlie Rumpeltin
Laboratory Technician

Brad Grzybowski
Managing Director

Date: December 2, 2011 **Date:** December 2, 2011

Report Issue History:

Issue #	Date	Pages	Revision Description (if applicable)
Original	12/02/2011	4	NA

END OF REPORT

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