



Thursday, April 27, 2023

Technical issues update



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Revisions to PIMA's QualityMark^{CM} program

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QualityMark™ Certification Program

Program Results

The QualityMark certification program publishes a quarterly report of the polyiso manufacturing locations that conform to the LTTR-value certification and R-value verification requirements. The conformance report with results for the R-value verification selection period occurring in the **second quarter of 2022 (April - June 2022)** is available at the link below. The conformance report is updated on a quarterly basis.

[DOWNLOAD CONFORMANCE REPORT](#)

Approved Laboratories

Third-party, accredited laboratories that have been approved for LTTR-value testing under the QualityMark certification program include:

- Element
- Intertek
- PRI
- QAI Laboratories
- R&D Services

PIMA requires each laboratory to submit an annual attestation of its LTTR-value testing accreditation.

[Link](#)

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PIMA
POLYISOCYANURATE INSULATION MANUFACTURERS ASSOCIATION

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QualityMark™ Program Quarterly Conformance Report
Reporting Period: Q2 2022 (April - June 2022)
Last revised on February 20, 2023

About:
The QualityMark Program is a voluntary program for manufacturers of polyisocyanurate roof insulation (ASTM C1289, Type II, Class I, Grade 2) in Canada and the United States. The program enables participants to obtain third-party certification of long-term thermal resistance (LTTR) values for insulation products independently selected from manufacturing locations. Additionally, the program provides third-party verification of thermal resistance values (R-values) tested in accordance with the ASTM C518 standard for full

PIMA QualityMark™

LTTR-value Certification for Products Selected from Manufacturing Locations:
Samples for LTTR-value certification are selected from manufacturing locations by independent third parties. The testing is performed by approved laboratories to obtain LTTR-values for 2.0", 3.0", and 4.0" product. Participating manufacturers are required to obtain an initial certification for each manufacturing location, which are then recertified every 3 years. The certification is used to validate the LTTR-values published by participating manufacturers.

R-value Verification for Products Selected from Distribution:
Samples for R-value verification (ASTM C518) are selected on a quarterly basis from distribution locations by an independent third party. A sample is selected for each participating manufacturing location. After selection, the samples are held at laboratory conditions and tested at full thickness 180-days after the date of manufacture. A manufacturing location is deemed to conform to the program requirements when the measured R-value at 180-days is equal to or greater than the published LTTR-value for the product at the same labeled thickness. Manufacturing locations that receive non-conforming R-value verification results in consecutive quarters (inclusive of the current reporting period) are not in compliance with the program requirements.

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QualityMark Program Quarterly Conformance Report ¹ Reporting Period: Q2 2022 (April – June 2022)		
Manufacturing Location		Manufacturer
City	State/Province	
High River*	Alberta	IKO Industries Ltd.
Phoenix	Arizona	Atlas Roofing Corporation
Vancouver	British Columbia	Atlas Roofing Corporation
Northglenn	Colorado	Atlas Roofing Corporation
Bristol	Connecticut	Holcim Building Envelope
Jacksonville	Florida	Holcim Building Envelope
Jacksonville*	Florida	Johns Manville
Lake City	Florida	Carlisle Construction Materials
LaGrange	Georgia	Atlas Roofing Corporation
Statesboro	Georgia	GAF
Florence	Kentucky	Holcim Building Envelope
East Moline	Illinois	Atlas Roofing Corporation
Franklin Park	Illinois	Carlisle Construction Materials
Bremen*	Indiana	Johns Manville
Fernley*	Nevada	Johns Manville
Montgomery	New York	Carlisle Construction Materials
Cornwall*	Ontario	Johns Manville
Toronto	Ontario	Atlas Roofing Corporation
Camp Hill	Pennsylvania	Atlas Roofing Corporation
Hazleton*	Pennsylvania	Johns Manville
Smithfield	Pennsylvania	Carlisle Construction Materials
Youngwood	Pennsylvania	Holcim Building Envelope
Drummondville	Quebec	SOPREMA
Corsicana	Texas	Holcim Building Envelope
Diboll	Texas	Atlas Roofing Corporation
Gainesville	Texas	GAF
Terrell	Texas	Carlisle Construction Materials
Cedar City	Utah	GAF
Tooele	Utah	Carlisle Construction Materials
Puyallup	Washington	Carlisle Construction Materials

Last revised on February 20, 2023. Current report available at www.polyiso.org/QUALITYMARK

*This manufacturing location has a pending result for its LTTR-value certification. The table above will be periodically updated as LTTR-value certifications are completed.

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Table Note 1:
The manufacturing locations listed below have recently been brought on-line. The time represented by the current reporting period was prior to the date the location either started commercial production or completed its initial LTTR-value certification. Results for these plants will be included in future reporting periods.

- Hagerstown, Maryland – IKO Industries Ltd.
- New Columbia, Pennsylvania – GAF
- Hillsboro, Texas – Johns Manville

Questions:
For questions regarding the QualityMark Program, please contact PIMA using the "Contact Us" form on the website www.polyiso.org.

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QualityMark Program Quarterly Conformance Report ¹ Reporting Period: Q3 2022 (July – September 2022)		
Manufacturing Location		Manufacturer
City	State/Province	
High River*	Alberta	IKO Industries Ltd.
Phoenix	Arizona	Atlas Roofing Corporation
Vancouver	British Columbia	Atlas Roofing Corporation
Northglenn	Colorado	Atlas Roofing Corporation
Bristol	Connecticut	Holcim Building Envelope
Jacksonville	Florida	Holcim Building Envelope
Lake City	Florida	Carlisle Construction Materials
LaGrange	Georgia	Atlas Roofing Corporation
Statesboro	Georgia	GAF
Florence	Kentucky	Holcim Building Envelope
East Moline	Illinois	Atlas Roofing Corporation
Franklin Park	Illinois	Carlisle Construction Materials
Bremen	Indiana	Johns Manville
Fernley	Nevada	Johns Manville
Montgomery	New York	Carlisle Construction Materials
Brampton*	Ontario	IKO Industries Ltd.
Cornwall	Ontario	Johns Manville
Toronto	Ontario	Atlas Roofing Corporation
Camp Hill	Pennsylvania	Atlas Roofing Corporation
Hazleton	Pennsylvania	Johns Manville
Smithfield	Pennsylvania	Carlisle Construction Materials
Youngwood	Pennsylvania	Holcim Building Envelope
Drummondville	Quebec	SOPREMA
Corsicana	Texas	Holcim Building Envelope
Diboll	Texas	Atlas Roofing Corporation
Gainesville	Texas	GAF
Terrell	Texas	Carlisle Construction Materials
Cedar City	Utah	GAF
Tooele	Utah	Carlisle Construction Materials
Puyallup	Washington	Carlisle Construction Materials

Last updated on April 26, 2023. Current report available at www.polyiso.org/QUALITYMARK.

*This manufacturing location has a pending result for its LTTR-value certification. The table above will be periodically updated as LTTR-value certifications are completed.

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Recommendations

- Watch for updates to PIMA’s Quarterly Conformance Report
- Consider asking polyiso. manufacturers to certify their current compliance
- Be careful to represent/sell insulation on its thickness, not by its R-value

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Moisture-related issues with concrete roof decks

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*NRCA recommends designers specify an adhered vapor retarder...
but isn't adhesion of the vapor retarder still a concern?*

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Vapor retarder adhesion testing

Moisture-related issues with concrete roof decks

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What we tested...

Vapor retarder adhesion testing

- 2-ply asphalt BUR membrane
- Manufacturer A-SA vapor retarder
- Manufacturer B-SA vapor retarder
- Manufacturer C-SA vapor retarder
- Manufacturer D-SA vapor retarder

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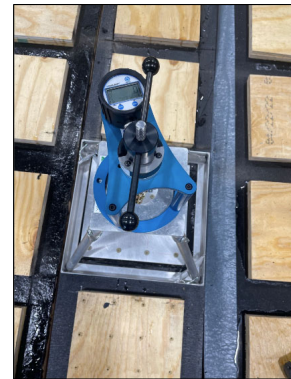
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Sample conditioning

After vapor retarder application; 28 days after concrete placement

- Conditioned for 60-days
- One set of each at standard laboratory conditions
- Other set of each at a 30 F temperature differential
 - The temperature differential creates an upward vapor pressure drive

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Test results

Vapor retarder adhesion

Sample	Tested pull resistance		Difference	
	Lab. conditions 60-day conditioning (Average of 5 specimens)	Vapor drive 60-day conditioning (Average of 5 specimens)	Differential	Percent differential
2-ply built-up membrane	1,421 psf	833 psf	-588 psf	-41%

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Conclusions

Vapor retarder adhesion

- Results vary
- For 4 of 5 samples, vapor drive conditioning resulted in lower values, but Manufacture 3-SA VR is higher
- All results greater than 90 psf (i.e., FM 1-90)

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Recommendations

Vapor retarder adhesion

- Designers should specify vapor retarders after considering vapor retarder adhesion both at the time of application and in-service.
- Manufacturers should incorporate some form of vapor drive conditioning assessment in their product development and assessment, and make that information available to specifiers.
- The vapor drive conditioning used in this testing is one possible assessment method.

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RESEARCH+TECH



Better understanding of adhesion
Recent research shows vapor retarder adhesion to new concrete roof decks varies
by Mark S. Graham

| "An evolution of knowledge." February 2023 issue. I discussed NRCIA's research examining roofing related problems with moisture in concrete roof decks. One area where NRCIA considered additional research to be necessary was addressing the adequacy of vapor retarder adhesion to newly placed concrete roof decks. NRCIA has since undertaken this research, which provides designers with some guidance for proper vapor retarder selection.

Adhesion research
 NRCIA contracted with SHI Consultants Inc., Wausau, Wis., to oversee test specimen preparation and conduct vapor retarder adhesion testing. Ten 6-inch-thick concrete roof deck specimen sets were poured using normal weight structural concrete. The top surface of the concrete specimens were flat finished. After 28 days of curing at standard laboratory conditions, a two-ply built-up membrane was applied to two of the concrete roof deck specimens and four different manufacturers' self-adhering vapor retarder products were applied to the remaining concrete roof deck specimens in two specimen sets. For each of the self-adhering vapor retarder types, the manufacturer's recommended primer was used, and installations

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Contractor-reported problems...

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