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DIMENSIONAL STABILITY OF TWO-PLY MEMBRANES

"***Dimensional stability***" is a requirement for many roofing membranes – generally what this ensures is that the membrane will not distort due to excessive changes in length and width, due to changes in roof temperature. If a membrane is not dimensionally stable, the roof membrane system may "stretch" or "shrink" after installation, possibly resulting in unsightly roof buckles, and in extreme cases the waterproof integrity of the membrane could be compromised. This requirement measures not only the stability/quality of the raw materials used, but also indirectly assesses the reliability of the membrane manufacturing process; if the process is not perfectly adjusted, the material may be stretched during manufacture, resulting in potential roof problems, especially for some un-reinforced polyester-based products.

During the test, a piece of membrane is accurately measured in length and width, and then heated in an oven for 24 hours at 80 C (the piece is allowed to move freely so if it wants to shrink or expand, it can). After this heating cycle, the exact same points on the specimen are measured again, and any lengthwise (machine direction) or width-wise (cross-machine direction) changes are calculated and expressed as a percentage. Industry specifications typically permit up to 1% change in either direction.

This property is usually measured and reported for individual membrane sheets (base sheets or cap sheets) - product specification requirements in Canada and the United States also base their limits on individual membrane product values. IKO routinely performs these tests in our laboratories, and conforms to all requirements. IKO selects only the best raw materials, and produces all membranes on modern, calibrated, computer-controlled equipment.

Some customers have asked for data on two-ply membranes; i.e. although our individual products exceed all standard requirements, what would the values be like if the cap sheet *and* base sheet were heat-fused (as they would be during installation) and then evaluated for dimensional stability. IKO recently performed such tests, and again the results were well within industry specifications. See the data table for exact values.

Membranes Types		**Dimensional Stability (%)**	
Cap sheet reinforcement (g)	Base sheet reinforcement (g)	Machine Direction	Cross-machine Direction
180 polyester	180 polyester	-0.07	0.54
250 polyester	180 polyester	-0.21	0.33
180 polyester	95 glass	-0.09	0.02
250 polyester	95 glass	-0.04	0.34

All data shows the exceptional dimensional stability of IKO's membranes. It should be noted that minor variations in test values are insignificant, and due simply to test variation, measurement accuracy, etc.

For additional information on any of IKO's products or application requirements, visit us on the web at www.iko.com (North America), or contact us in Canada/United States at 1-800-361-5836 (press "1" for English and then "2" for our Technical Support Department).

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