

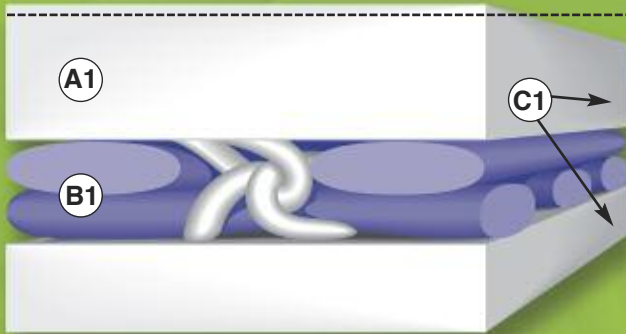


Single-Ply Roofing Membranes: Analyzing Performance and Thickness

Many single-ply roofing manufacturers promote the idea that when it comes to performance, “thicker” means “better.” However, the truth is roofing system performance is based on several factors, including product composition, reinforcement, and thickness.

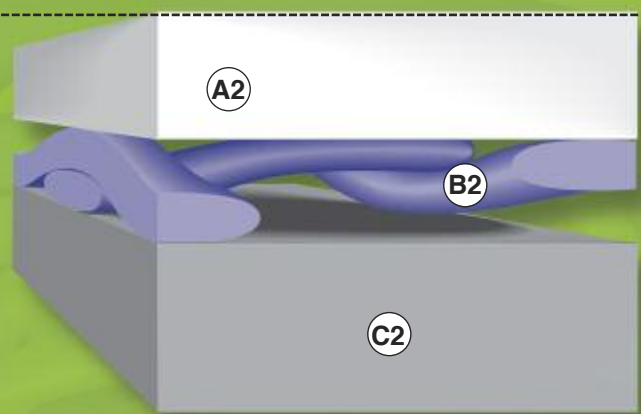
40-mil Duro-Last® Membrane

ASTM D4434 Type IV PVC Roof System



Typical 50-mil Competitive Membrane

ASTM D4434 Type III PVC Roof System



| | | | |
|-----------|---|-----------|--|
| A1 | Above scrim thickness: 17 mils (exceeds ASTM minimum of 16 mils for Type II, III, and IV PVC membranes) | A2 | Above scrim thickness: 16 mils (ASTM minimum for Type III PVC membranes) |
| B1 | Scrim: 14 x 18 threads/inch; weft-inserted | B2 | Scrim: 10 x 10 threads/inch; woven |
| | Membrane breaking strength: 368 x 430 lbf. (ASTM D751) | | Membrane breaking strength: 310 x 290 lbf. (ASTM D751) |
| C1 | Same PVC formulation above and below scrim | C2 | Filler material added below scrim to increase membrane thickness |
| | Duro-Last membrane is white from top to bottom, delivering superior energy efficiency | | Non-white bottom layer decreases energy efficiency |

Illustrations not to scale. Scrim layer shown in color to clarify illustration.

Strength Is In The Scrim

The Duro-Last 40-mil membrane has polymer thickness over scrim equal to or greater than other typical 50-mil thermoplastic roofing systems. Additionally, the Duro-Last 40-mil system outperforms these 50-mil products in strength performance characteristics.

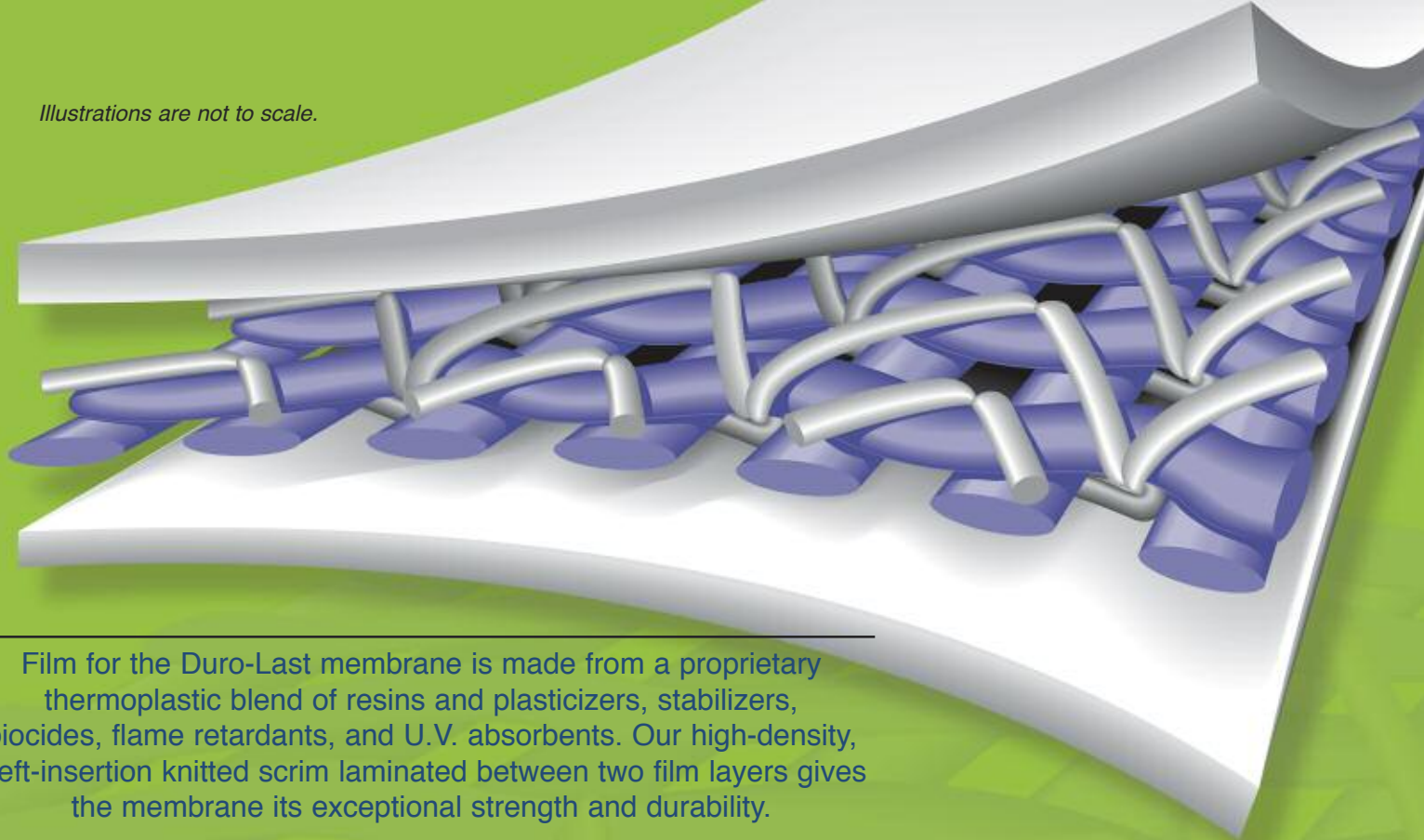
The difference: the reinforcement scrim. Ours is a weft-insertion scrim with a 14 x 18 threads-per-inch density – among the highest in the industry. In fact, although the Duro-Last 40-mil membrane is classified as a Type IV ASTM 4434 PVC roof system, the strength characteristics pass all the standards for

50-mil products, which are classified as ASTM 4434 Type III.

Duro-Last offers a variety of roofing products; however, our 40-mil system is by far the most requested. Our customers understand that performance is overwhelmingly due to reinforcement strength, not membrane thickness.

(Continued on other side)

Illustrations are not to scale.



Film for the Duro-Last membrane is made from a proprietary thermoplastic blend of resins and plasticizers, stabilizers, biocides, flame retardants, and U.V. absorbents. Our high-density, weft-insertion knitted scrim laminated between two film layers gives the membrane its exceptional strength and durability.

The Thickness Issue

To increase membrane thickness, some manufacturers add more material to the bottom film layer and little to the exposed layer. Increasing thickness does not directly increase membrane performance. Rather, performance is a balance between film formulation, membrane thickness, and reinforcement.

Here's how a single-ply roofing system protects buildings:

- **Film formulation** determines the flexibility of the membrane as well as its ability to resist crazing and cracking over time, and protect against ultraviolet (UV) radiation.
- **Membrane thickness** provides protection from water, snow, and ice elements.

- **Reinforcement** provided by the scrim layer is the source of the membrane's strength. The scrim protects against natural elements and from human activity that causes punctures and tears. Reinforcement also provides dimensional stability to the membrane and strength against building movement.

If you buy or specify single-ply roofing systems, your decision should be based on membrane performance, not thickness alone. With over 30 years of delivering leak-proof protection for buildings of all types across North America, the durable, precision-fabricated Duro-Last roofing system is the right choice for your roofing project.



Duro-Last: The Proven Performer®

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The Duro-Last® roofing system is proudly manufactured in the United States of America.

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