

**Sure-Flex™ PVC**  
Roofing Systems



**Proven-Performance PVC vs. Lower-Performance PVC**

# Proven-Performance PVC vs. Lower-Performance PVC

PVC is the oldest thermoplastic single-ply roofing membrane on the market today; since its inception in 1960s Europe, technological advances have improved the product's performance and service life. As a leading manufacturer of single-ply roofing membrane, Carlisle SynTec Systems is invested in educating construction professionals about the PVC membranes available in today's market, and how these membranes compare to each other as well as alternative systems.

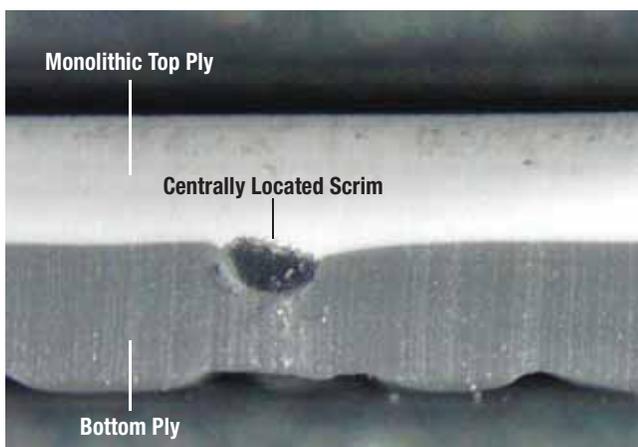
PVC roofing membranes have proven to be successful in low- and high-slope applications for more than 50 years; however, some manufacturers are now producing and promoting a lower-cost, lower-performance PVC membrane. These membranes are considered lower-performance products and may not provide the long-term performance and durability that has been traditionally attributed to PVC membranes.

## PROTECTION FROM THE ELEMENTS

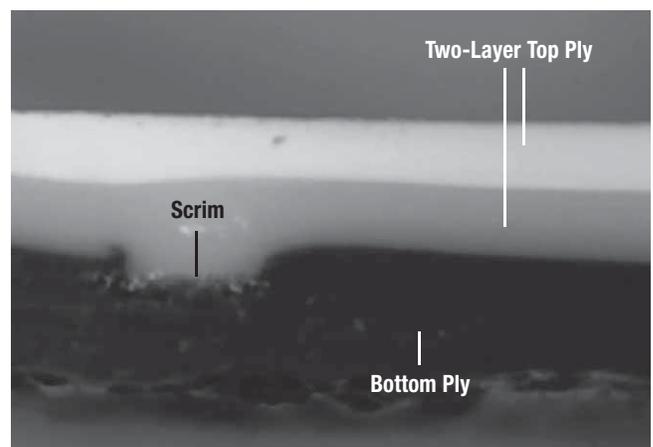
The weathering package in any membrane is predominately contained in the material above the scrim or fabric reinforcement. Thicker membranes usually carry longer warranties due to the increased amount of high-performance materials used in the membrane. Lessening this protection layer only results in reduced performance against the elements.

**Proven-Performance PVC:** Carlisle's PVC membranes have a monolithic formulation above the scrim that ensures long-term weatherability and achieves the maximum amount of protection against the elements. Having a monolithic formulation above the scrim has proven to be effective for more than 50 years.

**Lower-Performance PVC:** In order to reduce costs, some lower-performance PVC membranes use a two-layer top ply composition in which the full weathering package is only present in the first layer of the top ply. Consequently, the effective amount of weathering resistance is significantly reduced.



Carlisle Sure-Flex PVC



Lower-Performance PVC

**Protect Your Investment:** Ensure that the PVC membrane protecting your building has the most extensive heat and UV resistance in the industry throughout the entire top ply of the membrane. Specify a Carlisle membrane with a monolithic protection layer above the scrim.

## LONG-TERM PERFORMANCE

**Proven-Performance PVC:** Xenon-Arc and long-term heat aging tests show that Carlisle Sure-Flex PVC exceeds the highest industry standards. Carlisle's PVC membrane formulation uses only the highest-quality raw materials, including antioxidants, UV absorbers, light and heat stabilizers, and critical biocides, significantly enhancing long-term performance.

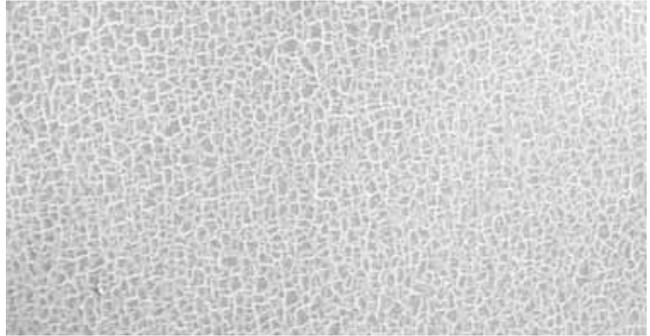
SIMULATED WEATHERING  
(EQUIVALENT TO 8 YEARS IN PHOENIX, AZ) 20X MAGNIFICATION



**Carlisle Sure-Flex PVC**

**Lower-Performance PVC:** One of the easiest ways to decrease the cost of a PVC membrane is to reduce the quality and quantity of its weathering and stabilization package. This lowers the material's cost, but also negatively affects the long-term performance of the roofing system.

SIMULATED WEATHERING  
(EQUIVALENT TO 8 YEARS IN PHOENIX, AZ) 20X MAGNIFICATION



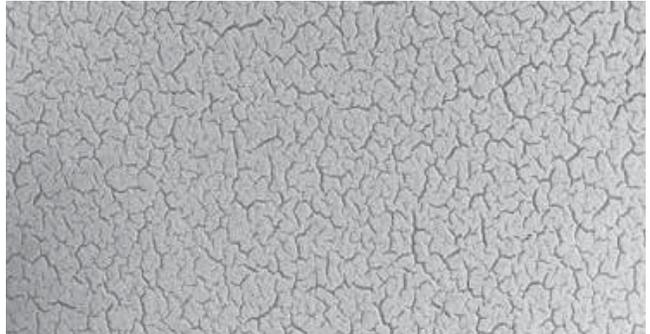
**Lower-Performance PVC**

SIMULATED WEATHERING  
(EQUIVALENT TO 14 YEARS IN PHOENIX, AZ) 20X MAGNIFICATION



**Carlisle Sure-Flex PVC**

SIMULATED WEATHERING  
(EQUIVALENT TO 14 YEARS IN PHOENIX, AZ) 20X MAGNIFICATION



**Lower-Performance PVC**

SIMULATED WEATHERING  
(EQUIVALENT TO 25 YEARS IN PHOENIX, AZ)  
NO MAGNIFICATION



**Carlisle Sure-Flex PVC**

SIMULATED WEATHERING  
(EQUIVALENT TO 25 YEARS IN PHOENIX, AZ)  
NO MAGNIFICATION



**Lower-Performance PVC**



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## MOLD, FUNGUS, AND ALGAE GROWTH

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One of the most important ways to protect the appearance and long-term performance of your PVC roofing system is to protect the surface of the PVC membrane from mold, algae, and fungal growth. All PVC membranes are susceptible to microbial growth, so it is important to formulate a PVC membrane that can fight off the unsightly, dangerous, and detrimental growth of microorganisms.

**Proven-Performance PVC:** Proven-performance PVC, like Carlisle's Sure-Flex PVC, contains the most advanced composition of antimicrobials and is designed to resist and eliminate the strongest microorganisms found in the harshest environments. While these antimicrobials can be expensive, they are essential to combating the buildup of mold, fungus, algae, and other microbials.

**Lower-Performance PVC:** Eliminating antimicrobials in the PVC formula is an easy way for manufacturers of lower-performance PVC to cut costs. These antimicrobials are often replaced with a very thin coating that can wear away in a few years, leaving the PVC membrane unprotected against microbial growth that stains and eats away at the membrane's surface.

**Protect Your Investment:** Ensure that the PVC membrane used on your project contains antimicrobials and not just a thin protective coating on the top surface. By having the antimicrobials within the PVC formulation, the membrane remains protected for the life of the roofing system.

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## WARRANTY COVERAGE

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**Proven-Performance PVC:** When you use Carlisle Sure-Flex PVC, you can rest assured that your building will have outstanding warranty protection. Carlisle's Total Roofing System, No Dollar Limit warranties reflect a commitment and ability to address any warranty issue for up to 30 years. Carlisle also offers warranties that protect against hail and accidental punctures. Manufacturers of proven-performance PVC membranes have tested and will offer enhanced wind speed warranties for up to 120 mph.

**Lower-Performance PVC:** Most lower-performance PVC manufacturers offer restricted warranties, typically lasting no longer than 20 years. No Dollar Limit warranties are rarely an option. These manufacturers limit their liability to the original installed cost of the roofing system over the life of the warranty, and most of these manufacturers do not offer warranty options for hail or accidental punctures. Manufacturers of lower-performance PVC membranes may also limit their liability to gale force (34 mph) wind warranties.

**Protect Your Investment:** Ensure that you purchase proven performance PVC from a company that provides a Total System, No Dollar Limit Warranty.

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## RETURN ON INVESTMENT

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Companies that produce lower-performance PVC membranes also manufacture proven-performance PVC which provides a wide variety of advantages to building owners. Oftentimes, lower-performance PVCs are selected because of their low cost, but when the initial installed costs are weighed against long-term performance and available warranty coverage, low-cost, lower-performance PVC can end up being more expensive than its price suggests. Because the membrane is actually only a small portion of the overall roof system's installed cost, the small up-front savings achieved by using lower-performance PVC often cost the building owner more money in the long run.

**Proven-Performance PVC:** Though its initial cost is slightly higher than that of lower-performance PVC, proven-performance PVC membrane provides a number of advantages which can actually make it less expensive than lower-performance PVC over the life of the roof system. Because of its high quality and exceptional durability, proven-performance PVC is eligible for warranties that last up to 30 years and include coverage against hail and accidental punctures. Most importantly, proven-performance PVC has been used in roof applications for more than 50 years, providing building owners with confidence in their roofing investment.

**Lower-Performance PVC:** Lower-performance PVC membrane is often selected for a project because of its low cost, but low initial cost is not always indicative of a good value. The warranties for lower-performance PVC tend to be much shorter in duration and offer less comprehensive coverage than the warranties available for proven-performance PVC. In addition, lower-performance PVC does not have the 50-plus years of real-world performance history in North America like high-quality PVC membranes do.

**Protect Your Investment:** Companies that produce lower-performance PVC subtly suggest that high-performance roofing products are only necessary on high-performance buildings. This could not be further from the truth. Because a building is not a short-term investment, it is never a good idea to select inferior products when better ones are available, particularly when it comes to something as important as a roofing system that protects your valuable assets.

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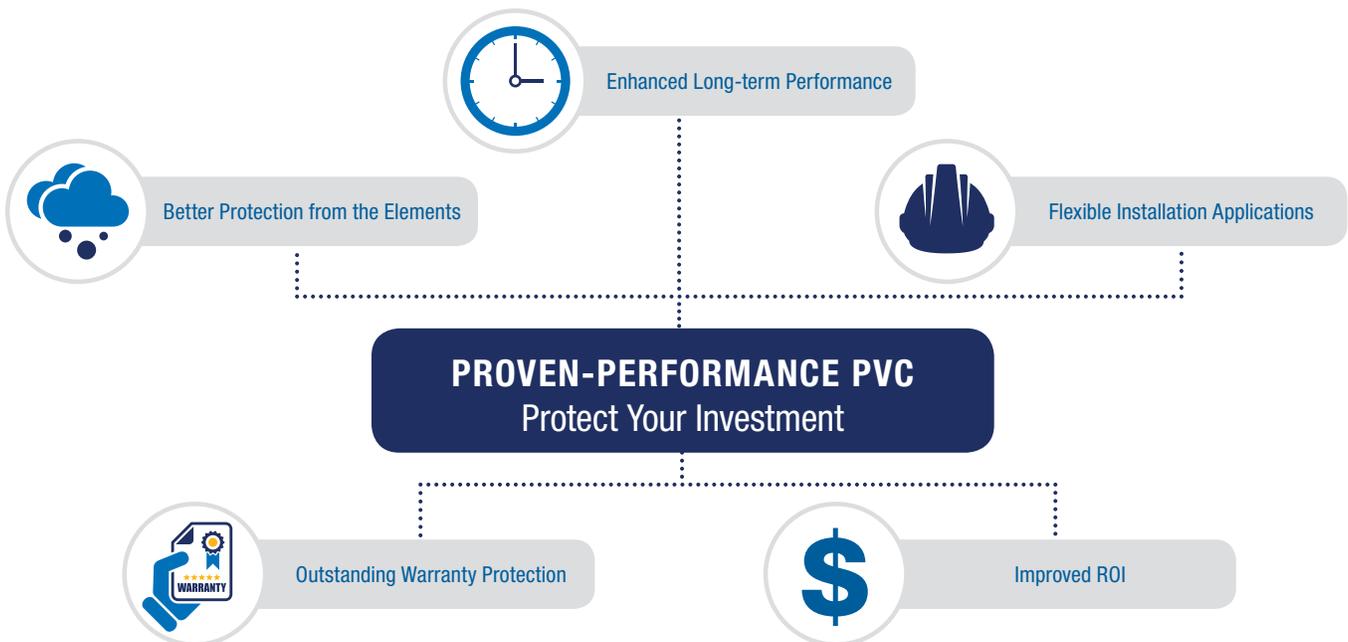
## INSTALLATION FLEXIBILITY

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**Proven-Performance PVC:** Carlisle's proven-performance PVC membranes can be used in a variety of assemblies, including plaza decks, roof gardens, and solar applications.

**Lower-Performance PVC:** Because lower-performance PVC membranes are not intended for harsh conditions and complicated applications, manufacturers often prohibit their use in plaza decks, vegetated roofs, and solar panel applications.

**Protect Your Investment:** Ensure that the company providing your PVC membrane approves its use in the harshest environments including plaza decks, roof gardens, and solar applications.

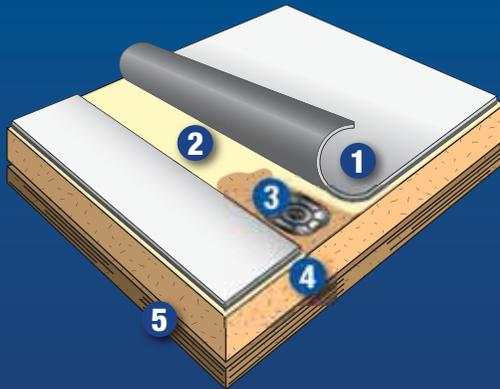


**EXPERIENCE THE CARLISLE DIFFERENCE**

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FULLY ADHERED PVC ROOFING SYSTEM

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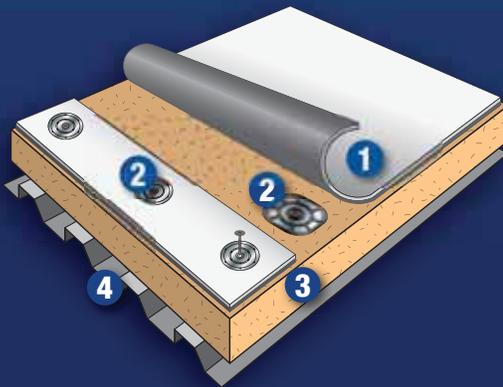


- 1. Carlisle Sure-Flex PVC 50-, 60-, 80-mil Reinforced Membrane
- 2. Bonding Adhesive
- 3. Fasteners and Plates
- 4. Carlisle Insulation
- 5. Approved Roof Deck

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MECHANICALLY FASTENED PVC ROOFING SYSTEM

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- 1. Carlisle Sure-Flex PVC Reinforced Membrane
- 2. Carlisle Fasteners and Plates
- 3. Acceptable Insulation
- 4. Approved Roof Deck



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