



Green and Sustainable Roofing and Waterproofing Products



Providing high performance solutions for green applications for over 35 years.



▲ Applied over ZIC Lightweight Insulating Concrete, more than 600 squares of Siplast Paradiene Roof Membrane provide an energy efficient cool roof solution for this Philadelphia school. Liquid-applied Parapro 123 Flashing was used on the project. The school's green roof area was completed with Teranap.

Innovation

Whether it's a green roof system featuring vegetation, a roof system with increased insulation and a reflective surfacing, a white liquid-applied roof membrane, or a sustainable roof deck, the roof can be part of the solution to today's environmental concerns. Issues such as the urban heat island effect, rising energy costs, poor air quality, stormwater runoff, and crowded landfills can all be positively impacted by roofing and waterproofing systems.

Many cities and states are now recognizing the environmental impact of a roof, and are implementing initiatives to maximize the opportunity. But while the initiatives may be new, the concept isn't. At least not to Siplast. We've been engineering products for green roof systems for decades.

Siplast's involvement with green and sustainable solutions began over 35 years ago with our original green product: Teranap. Since then, Siplast's continually growing number of green products has evolved into **siplastgreen** – a full range of environmentally responsible, high performance roofing and waterproofing solutions. **Siplastgreen** includes membranes and accessories for green roofs, cool roof options, sustainable roof insulation systems, and solvent-free adhesives. **Siplastgreen** products meet a variety of criteria established by the U.S. EPA Energy Star program, California Title 24 Part 6, and the United States Green Building Council LEED-NC (Version 2.2) program.

Quality

Siplast products are manufactured consistently to exacting standards. At all Siplast North American manufacturing facilities, stringent quality control tests are performed on every lot of material we produce to ensure Siplast products meet specified criteria. That's because although meeting current reflectivity, emissivity, and insulation standards is important, long term

performance is paramount. As the company that developed SBS-modified bitumens in the 1960s, Siplast is committed to the emphasis on quality, long-term solutions that has built our strong reputation as an industry leader and innovator. Additionally, we are committed to the continuous study of product design, product formulation, and application processes to improve performance and identify green opportunities.

Siplast RoofTag

To enhance and expand our innovative Certificate of Analysis program, Siplast is proud to offer **RoofTag: RF Technology for Roof Asset Identification**. By choosing Siplast roof membranes with RoofTag RF chips factory-embedded in the sheets, owners and the design professionals they may work with have a simple way to verify that the product quality specified matches that of the product installed. With RoofTag, access to Certificate of Analysis data, product information, and job information is possible by scanning the installed roof membrane. Once installed, building owners have a tool for roof asset management, with a unique opportunity to link the roof system in place with its history.

Application

Siplast Roofing, Waterproofing, and Insulation Systems are installed exclusively by Siplast Select Contractors. These independent professionals have met the qualifications of the toughest contractor certification program in the industry – ours. Their proven skill and dedication have demonstrated time and again that they regard themselves as members of a team dedicated to installing great systems for their building owner customers.

siplastgreen

Products

Siplastgreen represents a range of products – from waterproofing membranes for green roof applications to cool roof membranes – that can help meet environmental initiatives and goals.



Depolluting Roof Membranes

Siplast Eco-Activ®

For building owners interested in an effective and efficient way to be environmentally responsible with their roof, Siplast offers the innovative Eco-Activ® Depolluting Roof Membrane. Eco-Activ is the designation given to any Siplast Paradiene or Parafor cap sheet surfaced with Noxite® Depolluting Granules.

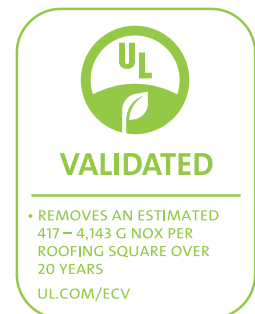
Noxite is a photocatalyst, and reacts in the presence of UV light. When sunlight hits an Eco-Activ roof, Noxite absorbs UV light and behaves like a photovoltaic cell, generating electrical charges that accelerate the transformation of harmful nitrogen oxide molecules into harmless molecules. By-products from the decomposition of NOx molecules are carried away by rainwater, and have no measurable impact on the quality of run-off water. Eco-Activ Roof Membranes require no maintenance beyond that of standard, responsible roof management, and Noxite's depolluting functionality continues to work throughout the life of the roof.

Yearly, 200 squares (20,000 square feet) of Eco-Activ membrane surfaced with Noxite Granules offset the nitrogen oxide pollution (NOx) produced by more than 50 passenger light vehicles.* Offset rates differ by location, due to variances in prevailing atmospheric conditions and UV levels.

Siplast has achieved a UL Environment claim validation for Eco-Activ Roof Membrane's ability to remove an estimated 417-4,143 G NO x per roofing square over 20 years. For more information on the technology behind Eco-Activ, contact Siplast.

* Based on studies using estimated conditions (sunlight, humidity, and NOx) for Los Angeles, and mileage of the average U.S. household vehicle (11,300 miles).

▲ To meet the high performance needs of the critical Alachua County 911 Center, the time-proven, two-ply Siplast SBS-modified bitumen Paradiene 20/30 Eco-Activ System was chosen. In addition, Siplast NVS Lightweight Insulating Concrete roof insulation was installed on the project, making it a truly sustainable solution.





▶
Siplast Paradiene 30 BW
 provides an energy efficient,
 bright white finish for this Texas
 hotel.



▲
Bright white, fluid-applied
Parapro PMMA Roof Membrane
 offers cool roof benefits with
 exceptional durability.

Cool Roof Options

Paradiene BW

Paradiene 30 BW and Paradiene 40 BW membranes are high performance SBS-modified bitumen finish plies surfaced with highly reflective, bright white mineral granules - not films or coatings. Both are available in FR and torch grade versions.

Paradiene BW finish plies are California Title 24 Part 6 compliant, are CRRC rated, and qualify for LEED certification points as defined by the United States Green Building Council.

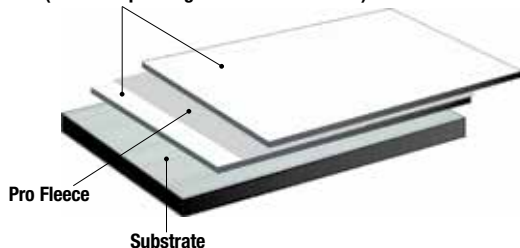
Parapro Roof Membrane

Jobs with difficult access, tight clearances, odd-shaped penetrations, and exposure to certain environmental contaminants can be a challenge for even the best traditional roofing plies. In such cases, a liquid-applied Parapro System is an excellent option.

The Parapro System is built on advanced poly-methyl methacrylate (PMMA) technology developed for demanding roofing and waterproofing applications. Parapro is VOC-compliant, solvent-free, isocyanate-free, and flame-free. It offers significant application advantages over polyester and polyurethane liquid-applied products, including dramatically faster cure times and broader application temperature ranges. The finished application is seamless and fully reinforced. PMMA's properties make Parapro a smart choice for roof areas requiring resistance to foot traffic, UV, environmental contaminants, vegetable oils, animal fats, and other substances. White Parapro Roof Membrane is California Title 24 Part 6 compliant and qualifies for LEED certification points as defined by the United States Green Building Council.

Parapro Roof Membrane

Waterproofing Layer
 (two waterproofing coats and Pro Fleece)





Veral Aluminum

A tough, lightweight, long-lasting membrane, the Veral System is composed of two sheet components, Irex and Veral. Irex is the base ply, consisting of a quality high-melt asphalt with fiberglass reinforcement. The finish ply, Veral, combines a glass scrim-reinforced SBS-modified asphalt base with a protective aluminum foil facing. Because metal and asphaltic materials expand at different rates, Siplast uses a patented embossing system to build small facing. A thin layer of low-melt asphalt is factory applied beneath these channels, allowing the metal to expand and contract independently of the modified asphalt base. The finished assembly provides a strong, flexible, glass-reinforced membrane, completely shielded from the elements.

Veral Aluminum meets the reflectance requirements of the U.S. Energy Star program and qualifies for LEED certification points as defined by the United States Green Building Council.

PC-227 Elastomeric Roof Coating

PC-227 Elastomeric Roof Coating is a 100% acrylic, white coating designed for use over Siplast roof systems. It reduces cooling energy and roof system life cycle costs by combining superior reflectivity with excellent durability, adhesion, and flexibility. Its asphalt bleed-blocking properties retard the leaching of asphalt, making it well suited for SBS-modified bitumen membrane systems. White PC-227 is California Title 24 Part 6 compliant, meets the U.S. Energy Star guidelines for energy efficiency, and qualifies for LEED certification points as defined by the United States Green Building Council.

▲ Over 3800 squares of aluminum Veral provide an energy efficient solution for this convention center in Florida.



▲ Siplast aluminum Veral, installed in 1998, protects the New Orleans Sports Arena.

New York's Jacob K. Javits Convention Center features a 5,000-square green roof assembly that includes Siplast NVS Lightweight Insulating Concrete, Paradiene 20 HV TG, Teranap, pavers, and Paraguard Coping.



Green Roof Systems

Teranap Extensive



Teranap Intensive



Teranap

Green roofs add a great deal of aesthetic appeal, utility, and environmental friendliness to a building project, but they also create significant waterproofing challenges. For over 30 years, Teranap has met the needs of these demanding applications.

Teranap green roof applications can be specified with many landscape options, including both extensive green and intensive green assemblies. Teranap Extensive Green Roofs are characterized by low weight, low capital cost, and minimal maintenance. The growing medium is typically composed of a mineral-based mix of sand, gravel, crushed brick, leica, and peat organic matter. In an extensive system, soil varies in depth from 2 to 6 inches, and weighs 13-18 lb/sq ft dry and 20-25 lb/sq ft saturated. Plant selections appropriate for extensive assemblies include sedum, grasses, wildflowers, and other low maintenance vegetation. Plants are watered and fertilized until they are established. At that point, minimal maintenance is required.

Teranap Intensive Green Systems are used to waterproof elaborately designed roofscapes that are intended for pedestrian access. In an intensive system, soil depth starts at 8 inches. Therefore, a more diverse plant selection, including trees and shrubs, is possible. The weight of intensive systems starts at approximately 50 lb/sq ft, so they must be engineered to conform to structural load requirements. Intensive green systems require regular maintenance and watering. Siplast offers all of the components required for green roof installations, including filter fabric, drainage mat, soil, Insulperm Geofoam Extruded Polystyrene, and vegetated growing systems.

Parapro

Parapro Roof Membrane Systems can be specified for green roofing applications. The built-in root resistant capabilities of Parapro make it an excellent option for both extensive and intensive green assemblies, as well as planter waterproofing.



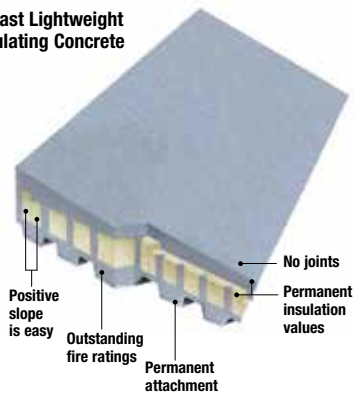
Siplast Teranap was installed on this automobile manufacturing facility in Michigan, creating the world's largest green roof.

Sustainable Insulation

Siplast Lightweight Insulating Concrete

Siplast Lightweight Insulating Concrete Systems combine the unique properties of lightweight insulating concrete and premium expanded polystyrene foam insulation board. The resulting sustainable roof insulation system has a smooth, monolithic surface ideal for roofing application. The system is very effective in moderating roof membrane temperatures, thereby extending the membrane's life. And unlike disposable rigid polyisocyanurate insulation, Siplast Lightweight Insulating Concrete can be reroofed indefinitely, which dramatically reduces both the environmental cost of filling landfills with discarded polyisocyanurate and the life-cycle cost of the roof. Siplast Lightweight Insulating Concrete Systems provide high performance solutions to industry concerns such as slope-to-drain, moisture resistance, high compressive strength, dimensional stability, and the ability to mechanically fasten the roofing membrane to the insulation. The systems offer solutions to regulatory concerns including fire and wind resistance, code approvals, stable R-values, and environmental safety. Finally, Siplast Lightweight Insulating Concrete Systems

Siplast Lightweight Insulating Concrete



provide solutions to building owners' requirements – they are economical, reroofable, fully guaranteed, and proven.

Siplast Lightweight Insulating Concrete is available in four mix designs: ZIC, NVS, Insulcel, and Zonocel. The four designs represent a range of compressive and tensile strengths, allowing a choice of system based on substrate and project circumstances. Each design encapsulates Insulperm Insulation Board in insulating concrete. This provides fire protection, prevents air infiltration, and bonds the system to the substrate.

Insulperm is a CFC-free expanded polystyrene insulation board of nominal 1 pcf density designed for use in Siplast Lightweight Insulating Concrete Systems. When installed in a stair-step configuration, it is the base for the system's slope-to-drain capability.

Solvent-Free Adhesives and Cements

Siplast SFT Adhesive

Siplast SFT Adhesive is a unique liquid adhesive designed for use with Siplast systems. SFT Adhesive is a single-component, solvent-free, moisture-cured, modified asphalt adhesive composed of a blend of proprietary polymers and asphalt. SFT Adhesive meets all roofing adhesive VOC regulations.

Siplast SFT Cement

Siplast SFT Cement is a high strength adhesive designed for use with Siplast SBS-modified bitumen flashing systems. SFT Cement is a single-component, solvent-free, moisture-cured adhesive composed of a blend of proprietary polymers and modifiers engineered to cure completely in a variety of ambient conditions over various substrates. Siplast SFT Cement meets all roofing adhesive VOC regulations.



▲ Siplast NVS Lightweight Insulating Concrete and Paradiene 20/30 were chosen for the dormitories on this university in New York. The dormitories are connected by a corridor that features a Teranap Green Roof System.



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Look for siplastgreen products for environmentally responsible roofing and waterproofing solutions.

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Back cover, top:

The second floor of the Skokie Library in Illinois features a green roof waterproofed with Teranap.

Back cover, bottom:

The roof assembly chosen for this critical Dallas data center included over 5,800 squares of the high performance Siplast Paradene system installed over Insulcel RT Lightweight Insulating Concrete. The project was finished with Proform Gravel Stop.

Front cover, top:

1,100 squares of Siplast's depolluting Eco-Activ Roof Membrane were installed to replace the PVC single ply roof on the signature dome of Maple Leaf Gardens in Toronto.

Front cover, bottom:

To reroof the Denton County Law Enforcement facility, a high performance two-ply SBS-modified bitumen Paradene system was installed over NVS Lightweight Insulating Concrete.



www.siplast.com www.siplastgreen.com

For information on Siplast Roofing and Waterproofing Systems, scan our QR codes.

