Engineered Roofing & Waterproofing Systems
The Siplast story of uncompromising quality and commitment to our customers begins over half a century ago with an innovation that would change the commercial roofing and waterproofing industry. In the late 1960s, Siplast Research and Development, working in conjunction with Shell Chemical of Europe, developed SBS (styrene-butadiene-styrene) modified bitumens. We found that by properly modifying asphalt with SBS, we could produce a highly durable elastomeric blend with exceptional elongation/recovery properties over a wide range of temperatures.

There are Siplast roofs applied in the early years of our SBS blend that are still in service today. Since then, Siplast Engineered Roof Systems have been applied over all types of deck constructions, in the extremely varied weather conditions of more than 40 countries. That performance history has helped us earn our reputation as a leader in the development and manufacture of the world’s most advanced roofing and waterproofing systems.

Siplast believes that no one product is appropriate for every use. Different conditions require different solutions. So, in addition to SBS-modified bitumen roofing materials, Siplast manufactures a line of polymethyl methacrylate (PMMA) liquid resin products for roofing and waterproofing applications. The products offer the application convenience of liquid-applied systems while meeting Siplast’s uncompromising performance standards.

Innovation and product performance are critical. But Siplast’s commitment to our building owners is equally important to those who can’t afford to have their facilities compromised by a substandard roof.

**Quality Application**

Siplast Roofing, Waterproofing, and Lightweight Insulating Concrete 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 roofs for their building owner customers.

**Complete Roofing and Waterproofing Solutions**
Siplast offers complete roofing and waterproofing solutions that include all of the accessory components necessary to build a great system. Whether it’s insulation, perimeter edge metal, roofing fasteners, adhesives, or sealant, you can be assured that Siplast accessories have been designed and manufactured to work with Siplast SBS-modified bitumen membranes.

Siplast is the only commercial manufacturer to offer a roof system package that combines SBS-modified bitumen membranes with the added benefits of lightweight insulating concrete. Siplast’s SBS-modified bitumen roof membranes have a long performance history over lightweight insulating concrete. Our experience has shown that the insulation’s encapsulated design provides a stable, monolithic surface for the roof membrane system. It has also demonstrated that the relatively high density of Siplast Lightweight Insulating Concrete can positively affect membrane life by impeding extreme temperature fluctuations and the resulting thermal stresses that can cause membrane fatigue.

Used together, Siplast SBS-modified bitumen roof membranes and Siplast Lightweight Insulating Concrete Systems result in a longer lasting roof. And, since Siplast Lightweight Insulating Concrete Systems are reroofable, significant cost savings over the life of the building can be realized.

**The Siplast Certificate of Analysis**
At the Siplast North American roofing manufacturing facilities, stringent quality control tests are performed on every lot of material we produce to ensure that they meet specific criteria important to the performance of roofing and waterproofing products. For our clients who choose roll roofing products shipped from our roofing manufacturing facility to the jobsite, Siplast provides the results of these tests upon request in a Certificate of Analysis. By offering test results for the specific lot of material delivered to their roof, Siplast provides building owners with an extra measure of assurance that they are getting the quality they paid for.

**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 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.

**Green Roofing & Waterproofing Products**
Siplast’s involvement with green solutions began in the 1970s with our original green product: Teranap. Since then, Siplast’s continually growing number of green products has evolved into a full range of environmentally responsible, high performance roofing and waterproofing solutions. Our range of environmentally-friendly products includes membranes and accessories for green roofs, cool roof options, and reusable roof insulation systems. These 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 program.

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, reusable Siplast NVS Lightweight Insulating Concrete roof insulation was installed on the project.
Every project is unique. That’s why Siplast offers three families of engineered SBS-modified bitumen roof membrane systems with varying combinations of blend thickness, carriers, and surfacings, as well as liquid-applied PMMA resin roofing systems. This wide variety enables you to select the Siplast Roof System that perfectly matches your requirements.

Following is a brief overview of Siplast Roof Membrane Products. For more detailed information, please ask your Siplast Representative for a copy of the Siplast Technical Guide or visit siplast.com, where Commercial Product Data Sheets for our products are available.

Multi-Ply, Granule-Surfaced SBS-Modified Bitumen: The Paradiene 20/30 System
Paradiene 20/30 is a proven, lightweight, multi-ply, highly flexible membrane designed to retain its elasticity through severe solar load, ultraviolet rays, thermal shocks, random ponding water, and extreme low temperature. Both Paradiene’s top and base plies consist of an elastomeric asphalt blend – a unique formulation of SBS and high quality proprietary asphalt – reinforced with a fiberglass mat. The workhorse Paradiene 20 base ply absorbs roof stresses while the granule surfaced top ply, Paradiene 30, shields the base from the elements and mechanical abuse. The granule surface means the system doesn’t require the application of gravel or coatings, giving it a light installed weight of approximately 200 pounds per square, and making inspection and repair easier.

The Paradiene 20/30 System can be installed with one of Siplast’s cold adhesive products, a torch, or approved mopping asphalt. Paradiene 20 SA and Paradiene 20 TS SA are available for applications requiring a self-adhesive base sheet. Siplast offers several solutions for cool roofing applications, including Paradiene BW membranes. Paradiene BW membranes are high performance SBS-modified bitumen finish plies surfaced with highly reflective, bright white mineral granules – not films or coatings. 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.

Siplast Eco-Activ® Depolluting Roof Membrane
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 NOx 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).
Multi-Ply, Foil-Faced SBS-Modified Bitumen: The Veral System

Veral combines the proven waterproofing characteristics of SBS-modified asphalt and the stability and strength of glass mat/glass scrim with the protection and dramatic appearance of metal foil. The Veral System is composed of two sheet components – a smooth-surfaced base ply (Paradiene 20 or Irex) and Veral. The finish ply, Veral, combines a glass mat/glass scrim-reinforced SBS-modified bitumen base with a protective aluminum foil facing. For applications requiring a white finish ply, Veral Spectra is available. Veral Spectra’s protective aluminum foil facing is factory coated with a high gloss white finish. Because metal and asphalitic materials expand at different rates, special features have been engineered into Veral’s design. Using a patented embossing system, small control channels are built into the metal 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 bitumen base.

The Veral System is preferably applied by torching, which utilizes the closely controlled modified bitumen in the sheets. The finished assembly provides a strong, flexible, glass-reinforced membrane, completely shielded from the elements. Energy efficient 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.

Granule-Surfaced Single Ply SBS-Modified Bitumen: Parafor 50 LT

Designed especially for sloped roofs, granule-surfaced Siplast Parafor 50 LT is a single-ply roof membrane comprised of a base material that is a blend of elastomers and high-quality asphalt with a polyester/fiberglass scrim reinforcement. The result is a tough, flexible sheet with the stability and strength of fiberglass and the puncture resistance of polyester that can be applied with a torch, approved mopping asphalt, or one of Siplast’s cold adhesive products. Parafor 50 LT and Parafor 50 TG can be used as alternatives to Veral for base flashing applications.

PMMA Liquid-Applied: Parapro Roof Membrane

When project circumstances, local regulations, or a tight construction schedule make the application of roofing sheets difficult, Siplast offers a proven high-performance option: liquid-applied Parapro Roof Membrane. Parapro Roof Membrane is a seamless, fully reinforced waterproofing system that is used in conjunction with Siplast Paradiene 20 P base ply as a stand-alone alternative to more traditional roofing plies. Because it is liquid-applied, completion of projects with difficult access and rooftop conditions such as excessive penetrations can be accomplished more efficiently with Parapro.

The Parapro Roof Membrane System is built on advanced polymethyl methacrylate (PMMA) technology developed for demanding waterproofing applications. The science of PMMA gives Parapro Roof Membrane numerous advantages over other flame-free systems, including dramatically faster cure times than liquid-applied polyester and polyurethane products and solvent-based cold adhesives. The Parapro waterproofing layer is rain proof in 30 minutes and is ready for foot traffic in two hours. Additionally, PMMA’s chemical resistance properties make Parapro a smart choice for roof areas requiring resistance to vegetable oils, animal fats, and other substances that can negatively affect more traditional roofing products.

The Parapro Roof Membrane System can be surfaced with skid-resistant aggregate, and is available in light gray and white. 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. Optional color finishes can be applied to the finished Parapro Roof Membrane, simplifying the application and maintenance of rooftop markings.
Siplast Roofing Accessories

The best roof membranes deserve the best roofing accessories, and Siplast offers a full line, including:

- Base sheets
- Polyisocyanurate roof insulation board
- Cover boards
- Protective walk pads
- Adhesives
- Primers
- Mastics and flashing cements
- Elastomeric sealant
- Roofing fasteners
- Elastomeric roof coating

Complete information on Siplast Roofing Accessories is available from your Siplast Representative.

Paraguard Roof Perimeter Systems

Specifically engineered for use with Siplast Roof Systems, multi-component Paraguard Roof Perimeter Systems are designed to be easy to install. The roof edge features a galvanized steel waterdam/cant that can be installed at the start of a Siplast membrane application, allowing phased construction of the roof system. The fascia component is installed after the roofing is completed, to ensure a continuous watertight installation. Paraguard Coping has a galvanized steel anchor cleat plate with pre-punched nailing holes and a specially designed guttered splice plate for smoother finish lines. Paraguard is available in 27 standard colors in both pre-finished aluminum and galvanized steel. Custom colors can be matched individually.

The Parapro 123 Flashing System

The liquid-applied Parapro 123 Flashing System is the optimum solution for situations where conventional flashing methods would be labor intensive and cost-prohibitive to install, or application would be difficult due to accessibility. The Parapro 123 Flashing System is a layered application that encapsulates a polyester fleece reinforcement within two layers of catalyzed polymethyl methacrylate (PMMA) resin, creating a finished application that is seamless, fully reinforced, resilient, and exceptionally durable. Parapro adheres to Siplast Roof Systems as well as conventional construction materials. Optionally, Parapro can be surfaced with mineral granules or a liquid-applied color finish to suit a wide range of aesthetic requirements.
Siplast Lightweight Insulating Concrete Systems

ZIC, NVS, Insulcel, and Zonocel
Siplast Lightweight Insulating Concrete systems combine the unique properties of lightweight insulating concrete and Insulperm premium expanded polystyrene foam insulation board. The 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 specific project circumstances. Each design encapsulates the insulation board in insulating concrete. This process provides fire protection, prevents air infiltration, and bonds the total insulation system to the substrate.

Insulperm Insulation Board can be installed in thicknesses necessary for high insulation values. The insulation board can also be installed in stairstep fashion to form a slope-to-drain contour. The finished surface of insulating concrete allows a nailed attachment for the roof membrane, providing superior wind resistance to the completed assembly.

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 provide solutions to building owners’ requirements – they are economical, reroofable, fully guaranteed, and proven by a successful performance history that dates to the first half of the last century.

On this reroofing project, a thin slurry coat of lightweight insulating concrete is poured in place, correcting substrate irregularities and bonding the Insulperm Insulation Board to the substrate.

Decreasing thicknesses of Insulperm Insulation Board form the slope-to-drain contour of the finished system.

The roof assembly chosen for this critical Dallas data center included over 5,800 squares of bright white Paradiene roof membrane installed over Insulcel RT Lightweight Insulating Concrete. The project was finished with Proform Gravel Stop.

A top layer of insulating concrete is placed over the Insulperm, filling the holes in the Insulperm and locking it into the system without the use of fasteners.

Siplast Lightweight Insulating Concrete is screeded to a smooth, durable, monolithic surface ideal for roofing application.
Siplast Waterproofing Products

Multi-Ply SBS-Modified Bitumen: Teranap Plaza Deck and Green Roofing Systems

Plaza decks and green roofs add a great deal of aesthetic appeal, utility, and environmental friendliness to a building project, but they also create significant waterproofing challenges. Siplast Teranap meets the needs of these demanding applications. The torch-applied, two-ply Teranap System is based on proven roof membrane design. The elastomeric base ply, Paradiene 20 TG, is engineered to retain its elasticity through the rigors of deck movement. The top ply, Teranap, consists of a nonwoven polyester mat impregnated and coated with SBS-modified bitumen. With enhanced flexibility, elasticity, and puncture resistance, the high performance Teranap Waterproofing System will stand up to the intense demands of plaza deck and green roofing applications for years.

The Teranap Waterproofing System can be specified with a wide variety of surfacings for plaza deck applications, including pedestals and pavers, poured concrete, mortar and pavers, and paving asphalt. Green roofing applications can be specified with many landscape options, including both extensive green and intensive green assemblies. Siplast offers all the components required for these applications, including pedestals and pavers, drainage mat, soil, and vegetated growing systems.

The building in Oklahoma includes a vegetated roof waterproofed with Teranap, and finished with all components (from Parablock Root Barrier to Paragrow Growing Medium and Paragreen Extensive Vegetated Mats) provided by Siplast. The roof areas are protected by Paradiene 20 TG / 30 FR TG installed over Paratherm Insulation.

A Siplast Teranap Vegetated Roof System was installed on this automobile manufacturing facility in Michigan, creating the world’s largest green roof.
PMMA Liquid-Applied: The Terapro Waterproofing and Surfacing System

As exposed structural elements, balconies, terraces, and walkways require protection from weathering, water ingress, and environmental damage to ensure long-term durability. Since these areas are highly visible, they have aesthetic requirements that must be considered in addition to performance requirements. The Terapro Waterproofing and Surfacing System was developed for these applications.

Terapro is a liquid-applied, layered application consisting of one coat of primer, one or more waterproofing layers, a wearing layer, a hardwearing surfacing aggregate, and a pigmented finish layer. Reinforced systems for use over occupied interior conditioned spaces include a polyester fleece fabric for additional protection. Each of the liquid-applied layers is comprised of a specially formulated, catalyzed polymethyl methacrylate (PMMA) resin. The completed high mil thickness Terapro application is resilient, monolithic, seamless, durable, and resistant to UV, foot traffic, mechanical abuse, and many environmental contaminants. The PMMA resins formulated for use in the Terapro System are efficient and safe to apply. Waterproofing applications benefit from the numerous advantages PMMA resins have over other liquid-applied waterproofing systems. But perhaps the most dramatic application advantage PMMA offers over other liquid-applied, layered systems comes simply from the nature of PMMA – application speed. A Terapro System can be applied and trafficked within an 8-hour day. By comparison, polyurethane and polyester liquid applied systems require a cure time of up to three days before they can withstand traffic without sustaining damage.

Both reinforced and unreinforced Terapro Systems can be finished with Pro Natural Quartz or Pro Texture Beads, and Pro Color Finish with or without Pro Accent Chips. These surfacing options offer skid resistance, enhanced wearing, and numerous color choices. For information on custom color options, contact your local Siplast Representative.

The PMMA liquid-applied Terapro System surfaced with Pro Accent Chips was chosen to waterproof the deck of the 1,200-seat John Anson Ford Amphitheatre in Hollywood as part of a historic renovation project.

Photo courtesy Mark Beamish Waterproofing, © Chris Robertson Photography.

With Pro Color Finish, a Terapro application can become a distinctive accent area.
The Terapro VTS System can meet the unique waterproofing challenges of the parking deck environment.

PMMA Liquid-ApPLIED: The Terapro VTS (Vehicular Traffic) System

A parking garage is a uniquely challenging structure. It must protect cars while withstanding damaging emissions from those same vehicles. It must endure cyclic weathering and mechanical damage. And it must be utilitarian and low maintenance, while providing a favorable first impression for customers. Siplast has a solution that meets this difficult set of performance criteria: Terapro VTS.

The Terapro VTS System is a liquid-applied, layered application consisting of one coat of primer, a filled waterproofing layer, a hard-wearing quartz surfacing, and a durable pigmented finish layer. Each liquid-applied layer is comprised of a catalyzed PMMA resin.

Like balconies, pedestrian walkways, and plaza decks treated with the Terapro Waterproofing and Surfacing System, parking deck applications benefit from the numerous advantages PMMA resins hold over other liquid-applied systems. The completed Terapro VTS application is monolithic, seamless, and more than twice the thickness of other products marketed for use in parking deck application. The properties of PMMA allow Terapro VTS to achieve both a bond to the substrate and an interlaminar bond that are superior. This tenacious adhesion results in improved resistance to disbonding under the loads imposed by heavy vehicular traffic. Terapro VTS bond strength, together with the tough crystal quartz surfacing, lends a level of durability to the system that is not found in parking deck coating.
Waterproofing for Civil Engineering: Teranap Geomembrane

Teranap Geomembrane has earned a successful performance record as the high performance waterproofing solution for irrigation canals, dams, wastewater storage, fountains, reservoirs, and ponds. Because Teranap Geomembrane has an NSF Potable Approval, it is also suitable for use in potable water storage and hatchery applications.

Teranap’s elastomeric modified bitumen blend allows it to remain flexible over time, to relax and quickly conform to substrate contours, and to withstand settlement changes in the subgrade.

The blend is reinforced by two layers of polyester, making Teranap less susceptible to punctures resulting from most common causes. Teranap’s thick, nonwoven polyester geotextile reinforcement layer protects against mechanical punctures and enhances the product’s flexibility. Teranap is lightly sanded on one side, and has a polyester film bottom layer that protects the geomembrane from subgrade effects.

Teranap can be installed quickly and economically. It can be placed using common equipment. Its flexibility allows it to tolerate irregularities in the substrate surface, which greatly reduces preparation time and costs. Seaming is accomplished through torch-welding, a simple technique that virtually eliminates seam leakage, simplifies repairs, and can be performed even in winter months.

Teranap is produced in two widths and a range of thicknesses, allowing a choice of material most suitable for a specific application. Teranap 331 is 120 mils thick, and Teranap 431 is 160 mils thick. Both are manufactured in 2-meter and 4-meter widths, and lengths from 20 to 100 meters. Custom lengths are available upon request.

Teranap Geomembrane has been chosen with confidence for extremely demanding applications like this aqueduct.
Teranap Geomembrane is simple to install and repair, making it an ideal choice for projects such as irrigation canals and the California Aqueduct pictured here.

Cover Photo:
For the newly constructed Swedish Issaquah Hospital in Washington, a variety of roofing and waterproofing assemblies were installed under a tight construction schedule, including: Paradiene 20/30 FR TG, Paradiene 20/20 and pavers, Teranap Waterproofing for a vegetated roof, and Parapro 123 Flashing.

www.siplast.com

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