

Siplast
Engineered Roof
Membrane Systems



Siplast - A World Leader in High Performance Roofing

For over thirty-five years, Siplast has been a leader in the development and manufacture of the world's most advanced waterproofing materials. Our dedication to a continuing research and development program has produced significant contributions for the commercial roofing industry. Siplast is a member of the Icopal Group, the largest commercial roofing manufacturer in the world, with production sites and sales offices across Europe, Asia, Africa, and the Americas.

A History of Innovation.

In the late 1960s, the Siplast R&D department in France, 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.

Cover: Seven hundred squares of Siplast's Paradiene 20/30 Engineered Roof System protect the United Nations General Assembly Building in New York.

In fact, Siplast roofs applied in the early years of our SBS blend are still in service today in some of the harshest weather conditions imaginable, from the searing heat of Africa to the bone-chilling cold of Alaska. Siplast engineered roof systems have been time-tested over all types of deck constructions in over forty countries. Siplast roofs have changed the least, been on the longest, and performed the best in more parts of the world than anybody else's.

A Commitment to Quality Products and Quality Application.

To consistently produce the same quality products that earned this outstanding performance history, a fully equipped quality control laboratory is maintained at the Siplast manufacturing plant in Arkadelphia, Arkansas. For more than twenty years, Siplast roofing products for North and South America have been produced at this state-of-the-art, full-line facility.

Below: A torch applied Paradiene 20 TG/30 FR TG system was chosen for this New York facility.





A Paradiene 20 TG/ 30 FR TG roof system was chosen for this high-rise bank in Milwaukee, Wisconsin.

Siplast Engineered Roof Membrane Systems are installed exclusively by a corps of independent professional roofing contractors who participate in the toughest, most selective contractor program in the industry – ours. Siplast Select Contractors are the best in the business, and regard themselves as members of a team dedicated to installing a great roof.

System Responsibility From a Single Manufacturer.

Siplast offers a complete roof system package by combining the proven quality of our engineered roof systems with the stability and thermal performance of Siplast Lightweight Insulating Concrete Systems. Siplast Lightweight Insulating Concretes are composite systems that combine the unique properties of lightweight insulating concrete and premium expanded polystyrene foam insulation board. Used together, Siplast Lightweight Insulating Concrete and Engineered Roof Membrane Systems create a high performance roof with system responsibility from a single manufacturer.

Siplast Engineered Roof Membrane Systems.

We realize that no one product is appropriate for all construction situations. Each project is unique, and its requirements must be considered individually. Properly blended SBS allows products to be built specifically according to end use requirements through varying combinations of blend thickness, carriers, and surfacings.

In keeping with this philosophy, Siplast provides a wide variety of engineered roof membrane systems. These systems are divided into three families: **Paradiene, Veral, and Parafor.**

PARADIENE 20/30

Proven Performance in a Multi-Ply Elastomeric Roof System.

When your project calls for a lightweight, highly flexible membrane with superior resistance to the elements, the optimum solution is Paradiene 20/30. Stresses imposed by contemporary roof designs require that roofs have exceptional elongation/ recovery properties. So, both Paradiene's top and base plies consist of an elastomeric asphalt blend – a unique formulation of SBS and high quality asphalt – reinforced with a fiberglass mat. Paradiene 20/30 retains its elasticity through severe ultraviolet rays, thermal shocks, random ponding water, and extreme low temperature.

The system's base ply, Paradiene 20, is adhered to the substrate and is lapped a minimum of 3 inches both side and end.

Paradiene 30, the granule-surfaced top ply, is adhered to the Paradiene 20 and is also lapped a minimum of 3 inches both side and end. The Paradiene 20/30 system doesn't require the application of gravel, giving it a light installed weight of approximately 200 pounds per square. Because of the granule surface, inspection and repair are easier. Paradiene's multi-ply design provides weather-tight double protection and allows the



A Paradiene 30 TG/ 30 FR TG system and energy efficient Polar White Veral Spectra protect the collection of this library on the campus of a Georgia university.



A Paradiene 20/30 system was applied in PA-311 Adhesive on this Ohio facility.

practical advantage of choosing the application method and adhesive best suited for each job – whether it's Siplast PA-311 Adhesive or Type IV asphalt.

The system can be used over most decks and roof insulations on slopes up to ½ inch per foot when applied with asphalt, and 2½ inches when applied with cold adhesive.

When a fire rating is required, Paradiene 20/30 FR products are substituted for Paradiene 20/30 materials. (In certain cold applied specifications, some restrictions may apply.)

The enhanced fire resistant characteristics of these products are the result of a special manufacturing process that has qualified the Paradiene 20/30 FR system for an Underwriters Laboratories cULUS Class A rating.

The Paradiene 20/30 TG Series and Paradiene 20 TS are Available for Torch Applications.

All the performance advantages of the Paradiene system are available in a torch grade version. Paradiene 20/30 TG membranes are created by adding an additional layer of high

quality, torch grade, modified asphalt and a melt-away plastic film to the standard Paradiene membranes.

Siplast's TG products have a patented grooved torching surface that allows more reliable torching than traditional flat-surfaced products. The grooves provide air channels beneath the film that make quicker, more complete plastic burn-off possible. And, because of the controlled asphalt thickness, the TG series may be used without fastening on slopes up to 1 inch per foot.

Paradiene 20 TS is a multi-functional, high performance, torch grade base sheet designed for use as the base ply in Siplast multi-ply applications over primed structural concrete decks and other Siplast approved substrates. Manufactured using patented production technology, Paradiene 20 TS consists of Siplast's Paradiene 20 SBS-modified bitumen base sheet with a series of factory applied, heat activated, modified asphalt, grooved adhesive stripes applied to the back side of the sheet.

Paradiene 20 TS is applied using conventional torch application procedures, although typically less heat is needed to activate the TS adhesive stripes than is required when installing conventional

torch grade products. The unique composition and design of the adhesive stripes provides an excellent bond to properly primed concrete, while also creating ventilating channels to disperse any vapor pressures generated by the latent moisture inherent in many concrete roof decks. This design enables Paradiene 20 TS to be applied directly to concrete decks, eliminating the costs of material and labor associated with a ventilating base sheet.

VERAL

The Stunning Metal Clad System Combining Design Flexibility and High Performance Protection.

Whether it's energy-efficient aluminum, chemical resistant stainless steel, rich copper, or bright Polar White Spectra with factory-applied Kynar 500TM finish, Veral's foil-faced surface lends a dramatic look to any project.

Veral utilizes the time-proven waterproofing characteristics of SBS-modified asphalt, the stability and strength of glass fiber, and the protective qualities of metal foil. This combination creates a membrane that is tough, lightweight, long lasting, and weather-tight. 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 foil facing.

Metal and asphaltic materials expand at different rates, so Siplast has engineered special features 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 asphalt base.

The Veral system is preferably applied by torching, which utilizes the closely controlled high melt asphalt in the sheets. The Irex is first applied to the substrate and is lapped a minimum of 3 inches both side and end. The Veral is then applied to the Irex with 3-inch side and end laps offset so as not to coincide with those of the Irex.

The finished assembly provides a strong, flexible, glass-reinforced membrane, completely shielded from the elements. Veral can be used over most roof decks and insulations and on all slopes with drainage.

¹ Kynar 500TM is a registered trademark of Elf Atochem



Over 700 squares of Paradiene were applied in PA-311 Adhesive on this office facility in Puerto Rico.

PARAFOR 50 LT

Engineered Excellence in a Single Ply System.

Parafor 50 LT is a single ply system designed for sloped roofs that combines a base material that is a blend of elastomers and high quality asphalt with a fiberglass-reinforced polyester mat. This creates a tough, flexible sheet combining the stability and strength of fiberglass and the puncture resistance of polyester.

Parafor 50 LT is surfaced with mineral granules and can be used on all slopes with drainage and over all standard roof decks and insulations. It can be applied in single ply fashion with minimum 4-inch side and 6-inch end laps using Siplast PA-311 Adhesive, a torch, or Type IV asphalt. This lends an uncommon versatility to this durable and elastic single ply product.

A torch grade Paradiene system was chosen for this hotel on the California coast.



SIPLAST TERANAP WATERPROOFING SYSTEMS

The High Performance Solution for Plaza Deck and Green Roofing Applications.

The Teranap Waterproofing System is a torch-applied SBS-modified bitumen system incorporating two membrane layers. The base ply, Terabase, is an elastomeric membrane 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. A root-resistant polyester film protects the surface of the sheet.

Rolls of Teranap are 2 meters wide and 20 meters long. This coverage means a significant reduction in the number of seams as compared to projects using conventional modified bitumen waterproofing products. With fewer seams, and 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.



Energy efficient, aluminum foil-faced Veral was used to create the reflective roof on this facility on the campus of a California college.

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 road asphalt. Green roofing applications can be specified with many landscape options, including both extensive green and intensive green assemblies.

ACCESSORY PRODUCTS

The Best Roof Membranes Deserve the Best Roofing Accessories.

Siplast offers a full line of top quality accessory products designed for use with Siplast roof membranes. These accessories include **base sheets, roof protection materials, adhesives, primer, asphalt, elastomeric sealant, roofing fasteners, polyisocyanurate roof insulation board, and an elastomeric roof coating.** Full information on accessories is available from your Siplast Representative.

PARAGUARD

The Industry's Premier Perimeter Edge and Coping System.

Paraguard, specifically engineered for use with Siplast roof systems, is the industry's premier metal roof edge and coping. The multi-component Paraguard system is designed for easy installation. The roof edge features a galvanized steel waterdam/cant that can be installed at the start of a Siplast membrane application, allowing phased construction between layers of the roof system. The fascia component is installed after the roofing is completed, facilitating 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.

Factory applied Paraguard finishes are available in 23 standard colors in post-finished extruded aluminum, pre-finished .050 aluminum, and 24-gauge galvanized steel. Some standard colors are also available in pre-finished .063 aluminum. Custom Paraguard colors can be matched individually.



The Teranap Waterproofing System was chosen for the plaza deck of Frank Lloyd Wright's Monona Terrace in Madison, Wisconsin.

THE SIPLAST CERTIFICATE OF ANALYSIS

An Innovative Statement of Quality.

The Siplast quality control/ quality assurance program has always been stringent. To assure building owners – in writing – that when they purchase Siplast roofing material, they get what they paid for, we developed the Siplast Certificate of Analysis (COA). The COA is a document generated by Siplast's manufacturing facility that reports the actual results obtained from a series of quality control tests designed to measure the criteria important to the performance of the roofing products.

To create a COA, production and laboratory data are entered into an integrated computer system for each production run. This system allows a COA to be generated as routinely as Siplast's regular, stringent quality control tests are performed.

These certificates are available upon request for material shipped from the Siplast manufacturing facility to the jobsite. Siplast will ensure that the data published on each COA is the data taken from the specific lot of material referenced on the certificate. We are willing to provide this data because we have great confidence in the absolute and consistent quality of the products we manufacture.

GUARANTEE

Siplast offers a written, ten-year labor and material guarantee against leaks on all approved projects when Siplast materials are applied by Siplast Select Contractors, provided all required pre- and post-job procedures have been followed. Siplast offers a ten-year single source warranty for Siplast Engineered Roof Systems applied directly to newly poured Siplast Lightweight Insulating Concrete Systems. Under certain circumstances, standard Siplast guarantees may be extended for a five- or ten-year period. Contact your Siplast Representative for a full explanation of Siplast guarantee options and requirements.

For complete Siplast product information, commercial product data sheets, MSDS, and CAD drawings, visit the Siplast Web site at www.siplast.com or call toll free 1-800-922-8800.



A member of the Icopal Group



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