



ROOFING

Sarnafil® - ROOFING AND WATERPROOFING SYSTEMS

**BUILDING TRUST
CONSTRUIRE LA CONFIANCE**



FOR HIGH QUALITY, LONG LASTING
ROOFING AND WATERPROOFING
SYSTEMS WITH A HISTORY OF
PROVEN PERFORMANCE, THE
CHOICE IS CLEAR—SARNAFIL.



SARNAFIL IS BORN

1962

From world-renowned museums to warehouses, Sarnafil-brand roofing and waterproofing systems from Sika have been providing reliable protection to facilities around the world for over fifty years, in every climate imaginable.

The roofing system plays an essential role in the protection of a building. Ultraviolet rays, ponding water and high winds all conspire to compromise the roof prematurely, leading to leaking, damage to the building, costly repairs and possibly an early tear-off and re-roof. Sarnafil roofing and waterproofing systems respond to these challenges with a variety of system configurations designed to meet the specific needs of almost any application, regardless of slope.



Sarnafil has solutions specifically developed for low and steep slope roofs, solar roofing and systems that mimic standing seam metal roofs. Sarnafil waterproofing membranes are the key component in vegetated green roofs and plaza decking found around the world.

Along with protection from the elements, Sarnafil's versatile single-ply membrane systems also boast sustainability features like unparalleled longevity, outstanding energy efficiency, recyclability and minimal maintenance. All which help building owners save money over the life of the roof and meet their sustainability goals.

Actual performance proven in the field over time is the only true test of a roofing system's quality. Billions of square feet of Sarnafil membrane have performed with distinction over the past 50 years in climates of every description. Many installations are still performing after 30 years of service.

Selecting a roofing system should be a decision based on choosing the best long-term value. Sarnafil roofing and waterproofing systems are widely recognized for exemplifying the highest standards of quality, reliability and watertight protection – a claim that has been proven through the test of time.

¹Carbotech AG, *Life Cycle Analysis of Low Slope Roof Systems*, November 2004



- C California State House – Sacramento, California
- 1 JFK Library & Museum – Boston, Massachusetts
- 2 Music City Center – Nashville, Tennessee
- 3 The Ascent Condominiums – Covington, Kentucky

SARNAFIL ROOFING SYSTEMS DEFY THE ELEMENTS YEAR AFTER YEAR.



1965

SARNAFIL UNVEILS C410 FIBERGLASS-REINFORCED MEMBRANE FOR ADHERED APPLICATIONS

1979



ENDURING SARNAFIL ROOFING SYSTEMS LASTING 30+ YEARS.

Sika documented the performance of four commercial roofing installations located in different climate regions. Each system delivered more than 30 years of reliable, watertight service.

1



COPPS COLISEUM
Hamilton, Ontario

30 Years of Service and counting

This facility is home to the American Hockey League's Hamilton Bulldogs and the venue for many other sporting events and concerts. Brad Calder, the facility's director of operations, says that when the time comes to replace the Sarnafil roof installed in 1984, he will "most certainly" replace it with another Sarnafil system.

2



PITMAN COMPANY
Woburn, Massachusetts

32 Years of Service

A Sarnafil roof was installed on this facility in 1978. The company and building changed hands in 2006 but the roof was still going strong. Finally in 2010, after 32 years, the company replaced the roof—with another Sarnafil roof, of course.

3



ROBBINS HALL, UC-DAVIS
Davis, California

33 Years of Service and counting

A Sarnafil roof was installed on Robbins Hall in 1981. Sean Snyder, UC-Davis project manager, says that "This roof has completely exceeded my expectations." After more than three decades of service, Snyder says the roof "is performing as well as some of the new roofs on campus."

4



BROOKSHIRE GROCERY
Tyler, Texas

32 Years of Service

Regarding the Sarnafil roof that was installed on his facility in 1980, Ken Reeves of Brookshire Grocery said, "There is no equal to this roofing system. If it were up to me, this is the only roofing system I would ever use." Brookshire Grocery replaced the warehouse roof in 2013 after 32 years of service with yet another Sarnafil system.

SARNAFIL MEANS EFFICIENCY.

Sarnafil roofing and waterproofing systems generate a positive Return On Investment for building owners while minimizing impact on the environment and protecting natural resources.



Certifiable

- Sarnafil S327 and G410 roofing membranes were the first products to achieve platinum certification to the NSF/ANSI 347 Sustainability Assessment for Single Ply Roofing Membranes.
- Sarnafil roofing and waterproofing systems help building owners achieve LEED and Green Globes certification.
- Sika roofing has been certified as compliant with strict management standards established by Responsible Care® and ISO 14001: 2004, two leading independent organizations developing standards relating to environment, health and safety, and security.
- Sika roofing has completed the Supplier Ethical Data Exchange Members Ethical Trade Audit that focuses on labor standards, health and safety, environment and business practice.



83%
**SOLAR REFLECTANCE
WITH OUR WHITE
ENERGYSMART ROOF®**
Available in four distinct colors



**SAY NO
TO LANDFILLS**

And hello to the first of its
kind roof recycling program

Sika reduces waste at every step in the Sarnafil product life cycle. It gathers both excess vinyl raw materials produced during manufacturing operations and trimmings contractors generate when installing new roofs. And when a roof must be replaced, Sika can recycle the used vinyl membrane.

To date, Sika's industry-leading Roof Recycling Program has diverted more than 45 million pounds of vinyl membrane from the landfill, recycling it back into roofing and waterproofing membrane products.



The feedstock of vinyl resin used to produce Sarnafil membranes is **53 percent salt** and represents the least amount of petroleum-based raw materials found in any common low-slope roofing product.



Reduce Consumption

Preventing solar radiation from elevating a building's internal temperature is an important strategy in reducing building cooling energy consumption. In research conducted by Lawrence Berkeley National Laboratory (LBNL)¹ for the U.S. Department of Energy and the Environmental Protection Agency, the Sarnafil EnergySmart Roof[®] reflected more than 80% of the sun's rays and scored an impressive Solar Reflective Index (SRI) of 104.

For the study a large retail store replaced a 100,000 sq. ft. black EPDM roof with a white Sarnafil roof. The study confirmed that the white roof membrane reduced average summertime air-conditioning peak demand by 14 percent and the total daily air-conditioning energy usage by 11 percent. Researchers estimated the total *annual* air-conditioning savings to be \$7,200 or 7.2 cents per square foot.

A comparative Life-Cycle Analysis (LCA) of commonly used low-slope roofing products conducted by the consulting firm Carbotech² ranked Sarnafil vinyl roofing membranes highest in eco-efficiency.

On top of all that, the EnergySmart Roof[®] requires minimal annual maintenance.

¹ Lawrence Berkeley National Laboratory, *Measured Energy Savings and Demand Reduction from a Reflective Roof Membrane on a Large Retail Store in Austin*, June 2001

² Carbotech AG, *Life Cycle Analysis of Low Slope Roof Systems*, November 2004

³ Lawrence Berkeley National Laboratory, *Potential Benefits of Cool Roofs on Commercial Buildings*, March 2009

Buildings account for 48 percent of all U.S. greenhouse gas emissions. Replacing dark-colored roofs with reflective, light-colored roofs like the EnergySmart Roof[®] on eighty percent of air-conditioned commercial building roof areas could reduce emissions enough to offset the CO₂ emissions of 1.2 million automobiles.

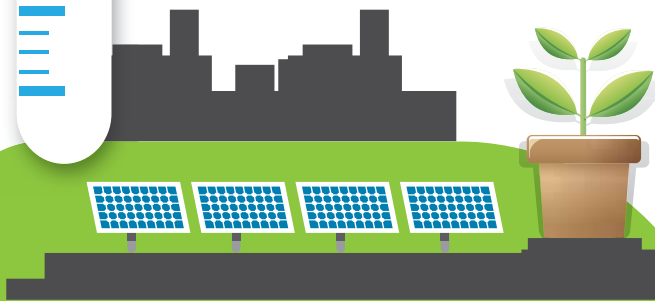
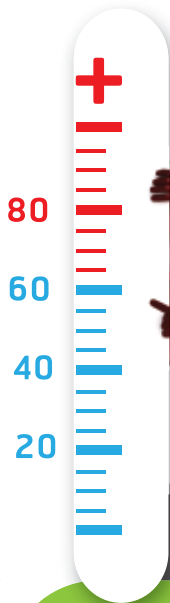
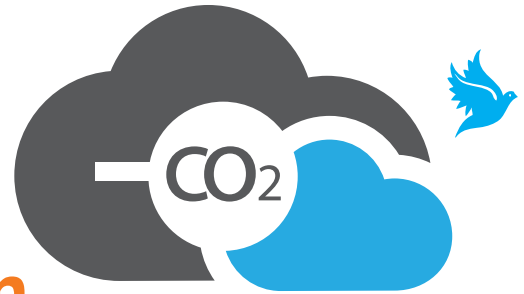
On average, a Sarnafil vinyl membrane in North America is carbon neutral after 1.7 years³.

< 50%

Less than fifty percent of raw materials used to make vinyl resin is derived from petroleum.

The **GREEN ROOF** is one of today's most recognizable symbols of sustainable building practices. Sika's green roof systems rely on the Sarnafil G476 waterproofing membrane to protect structures from the effects of water infiltration while hosting healthy, sustainable and regenerative roof landscapes.

The rooftop is also an ideal setting for solar power generation. Because of its longevity, a Sarnafil roof system is an outstanding platform for all types of solar configurations.



UNPARALLELED LEADERSHIP IN SINGLE-PLY ROOFING.

Sika pioneered the use of PVC for roofing applications in 1962, developing the world's first thermoplastic membrane reinforced with fabric. This development revolutionized the single-ply roofing industry, and since that time the company has manufactured more than 15 billion square feet of membrane from production facilities located in six different countries.

EXPO 64 Pavilions – Lausanne, Switzerland



1994

NEW RECYCLING PROGRAM TURNS SARNAFIL
MEMBRANE INTO WALKWAY PADS

1998

A ROOFING MEMBRANE'S INGREDIENTS SERVE AS THE FOUNDATION FOR ITS LONG-TERM PERFORMANCE AND DURABILITY. SIKA USES ONLY THE BEST INGREDIENTS TO PRODUCE CONSISTENTLY HIGH QUALITY SARNAFIL ROOFING AND WATERPROOFING PRODUCTS.

POLYMER THICKNESS

While the reinforcement's role is to provide dimensional stability and mechanical properties, the polymer provides the waterproofing. Increased polymer thickness improves the life expectancy of the membrane, improves consistency of heat-welded seams and enhances durability and puncture resistance. Sarnafil membranes are available in a variety of thicknesses to match your need with your budget.



SARNAFIL THICKNESS GUARANTEE

The roofing industry standard allows membranes to be manufactured up to 10% below the advertised thickness.

Recent testing showed that only the Sarnafil-branded adhered and mechanically-attached membranes and one additional membrane met the labeled thickness, with all the other membranes failing to measure up.

To ensure that architects and roofing consultants can specify with confidence and that building owners will get what they pay for, Sika has instituted a Sarnafil Thickness Guarantee program. The program guarantees that the measured thickness will meet the labeled thickness per ASTM D751 at the time of installation.

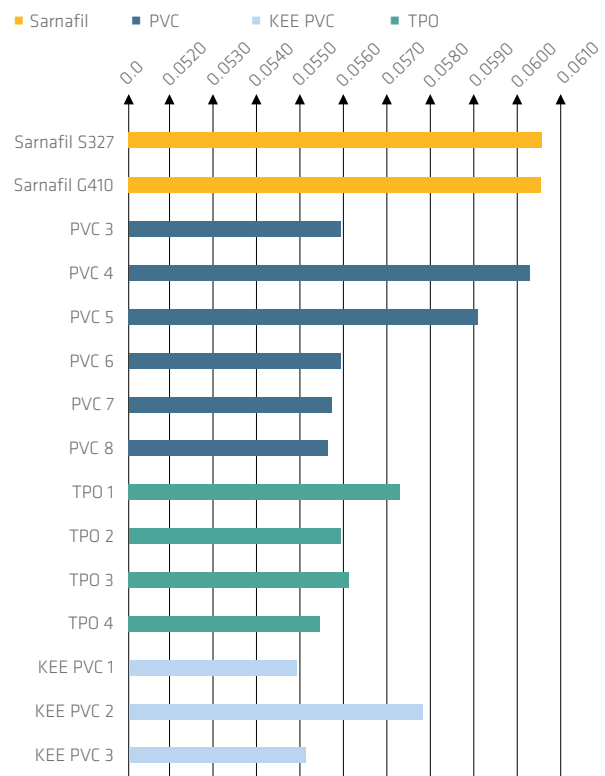
POLYMER ABOVE THE SCRIM

Waterproofing polymer protects a building from the intrusion of inclement weather; the reinforcement does not. Polymer above the scrim is exposed to the environment and is what keeps the elements from entering the building. In Sarnafil membranes, this polymer exceeds the thickness mandated by the ASTM. It is a premium blend formulated to withstand the elements for decades.

FACTORY-APPLIED LACQUER SURFACE COATING

Sarnafil membranes are manufactured with a unique coating. This coating helps repel dirt and airborne contaminants from the membrane's surface.

LABELED VS. MEASURED MEMBRANE THICKNESS – ALL MEMBRANES LABELED 60 MIL



Sika Corporation – Roofing, 2013

PERFECTION IS IN THE DETAILS

When choosing the optimum roofing solution, quality products and proven performance are essential but it doesn't stop there. Attention to every detail from the right automatic welding equipment to expert installation support to a superior warranty makes a big difference - and helps make Sarnafil the biggest name in the industry.



2000

SARNAFIL RATED #1 BY SG&H IN
THERMOPLASTIC ROOF MEMBRANE
STUDY

2001

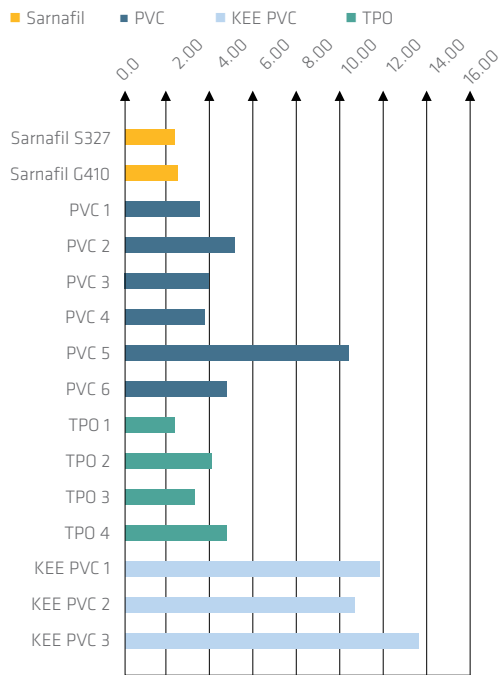
TECHNICAL SUPPORT

Sika allows only authorized applicators to install Sarnafil roofing and waterproofing systems. These applicators are trained by Sika to ensure a high level of quality. Technical support services are also available, and the company's support team provides the most coverage in the industry with field technicians located in every region of the country. They work closely with roofing applicators to ensure that the installation process goes smoothly, and they're available before, during and after each roof installation.

SEAM WELDING AND DETAILING

Faulty seams and details are a common source of leaks with many roofing systems. Some roofing membranes use sealants, adhesives or tapes that can deteriorate over time. The Sarnafil membrane is thermoplastic - its seams and flashings are welded together using Sika's automatic hot air welder, the Sarnamatic. When welded together, the sheets of membrane become one monolithic layer of material impervious to water and moisture infiltration.

CHANGE IN WEIGHT AFTER IMMERSION IN WATER, MAX%, D570 MODIFIED 3.0%



Sika Corporation – Roofing, 2013

WATER ABSORPTION

Water absorption can cause membrane delamination, affect the quality of seam welds and reduce the long-term performance of the membrane. Sarnafil membranes absorb less water than many competitive thermoplastic roofing systems. The occurrence of standing water also does not affect the coverage of a Sarnafil system warranty, which is not the case for all roofing systems.

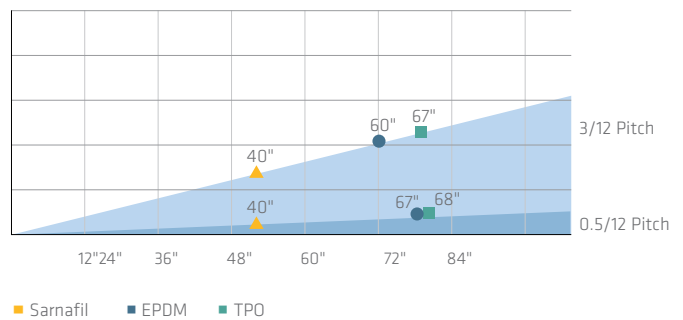
FIRE PERFORMANCE

While fire safety codes have greatly improved over the years, losses from fire are still an ongoing issue. One of the most vulnerable components of a building when exposed to fire is the roof. PVC roof membranes are naturally fire resistant.

ASTM E108 evaluates the fire characteristics of roof coverings when exposed to external fire sources. The coverings with a Class A rating can withstand severe test exposure and afford a high degree of protection to the roof deck.

The results on the graph below show the Sarnafil membrane has a much greater resistance to spread of flame than the EPDM and TPO membranes. Also while the other membranes will burn until fully consumed, the PVC membrane will self-extinguish if the source of the flame is removed.

MAXIMUM SPREAD OF FLAME (ASTM E108 RESULTS)



DESIGN AND COLOR OPTIONS

A roof can be an important design element for a building – sometimes transforming a facility into an architectural statement. Sarnafil roofing systems lead the way in innovative designs with colored membranes that can effectively accent these distinctive features. And because of the manufacturing process that builds color into the membrane, no recoating is ever needed.

VERSATILE SARNAFIL ROOFING SOLUTIONS FOR EVERY APPLICATION.

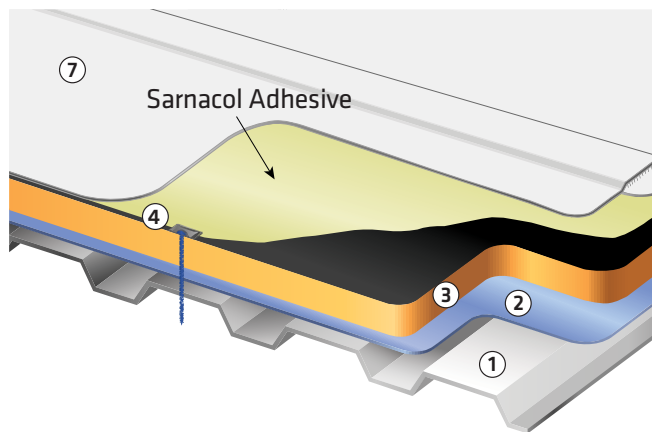
Sarnafil creates innovative roofing systems specially designed to suit the application. Each configuration uses the same Sarnafil membrane formulation that has established the company's world-class reputation for reliability and performance.

ILLUSTRATION KEY

- ① Structural Deck
- ② Vapor Retarder (if required)
- ③ Insulation
- ④ Insulation Fastener
- ⑤ Gypsum Roof Board
- ⑥ Sarnafil S Membrane
- ⑦ Sarnafil G Membrane
- ⑧ Sarnafil G Feltback Membrane
- ⑨ Asphalt
- ⑩ Mod. Bit Base Ply
- ⑪ Feltback Membrane Adhesive

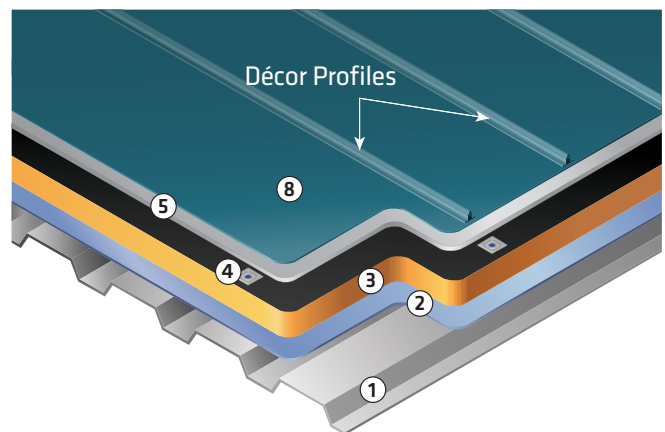
Sarnafil "G" series membranes have a unique fiberglass-reinforced, single-ply membrane. Specifically designed for adhered and loose laid systems, they deliver exceptional dimensional stability and a low coefficient of thermal expansion and contraction to extend the service life of the roof. The Sarnafil "S" series membranes are polyester-reinforced and used in mechanically-attached roof systems to resist the high point loads imposed on the membrane.

ADHERED



ADHERED SYSTEMS

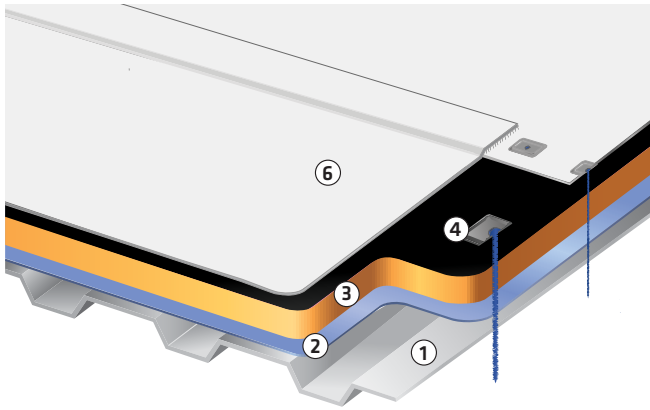
Sarnafil adhered roof systems are best for low sloped, uniquely shaped or pitched roof applications composed of nonnailable substrates such as precast or prestressed concrete, cementitious wood fiber or gypsum. They're also effective over nailable substrates such as steel and wood decks. For rough surfaces such as cellular concrete, the Sarnafil adhered feltback system minimizes the appearance of the substrate irregularities and offers high wind uplift resistance as well as increased puncture resistance.



DÉCOR ROOF SYSTEMS

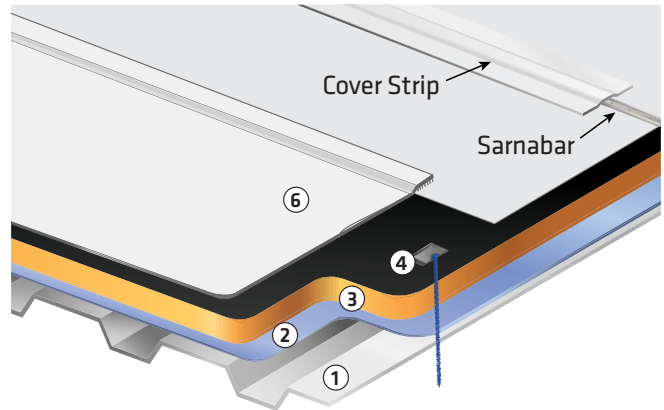
The Sarnafil Décor Roof System is the ideal choice for new or existing buildings that call for the look of a metal roof but require the watertight integrity and design flexibility of a thermoplastic roofing membrane. Décor systems achieve the appearance of metal with a thermoplastic rib that is hot air welded to the membrane surface. These systems come in seven standard color options and a nearly unlimited number of custom colors.

MECHANICALLY-ATTACHED



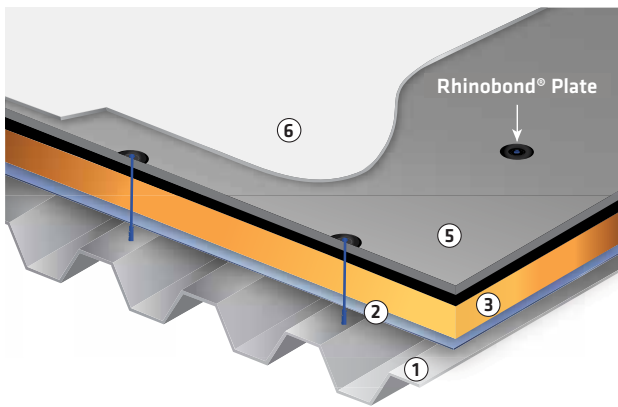
SARNAFAST

This mechanically-attached system is your best choice when speed and ease of installation are important. Sarnafast features metal plates fastened in the membrane overlap and spaced according to the roof's wind uplift requirements. It is designed to meet wind conditions on most building types.



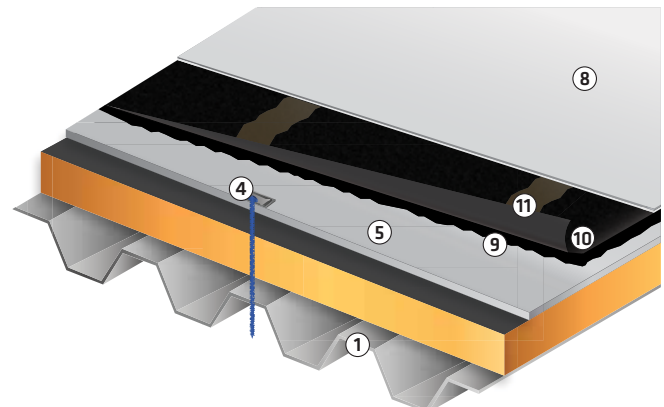
ENGINEERED

The Sarnafil Engineered System is designed for roofs that are subject to severe or extreme wind uplift forces. The advantage of this system is the fastening pattern – both row spacing and fastener spacing can be customized or “engineered” for any specified wind load. The Engineered System utilizes a specially designed bar which is secured to the structural roof deck with corrosion-resistant fasteners. The bar clamps the membrane fully along its length, uniformly distributing the dynamic load produced by wind uplift. Sika offers wind warranty protection of up to 120 mph with this system.



RHINOBOND ROOF SYSTEMS

This innovative attachment system is used with Sarnafil membranes to increase contractor productivity and enhance roof wind uplift resistance. It uses electromagnetic induction welding to eliminate fastener penetrations through the membrane. Specially coated membrane plates are fastened to the roof deck and later fused to the underside of the membrane using the RhinoBond tool, which is lightweight, portable, and simple to use. The system achieves an FM I-90 and higher rating in the field while requiring 30 percent fewer fasteners per square than traditional systems.



HYBRID ROOFING SYSTEM

The “hybrid” roofing system uses Sarnafil® G410 Feltback roof membrane with an approved SBS modified bitumen product. It is ideal when a durable, multi-layered roofing system is desired, without sacrificing the energy savings of a highly reflective roof membrane. The integration of these two roofing systems provides the customer with a multi-layered, high performance roofing system using highly reflective, time proven materials.

WATERPROOFING GREEN ROOFS AND ABOVE GRADE AREAS FOR MORE THAN FOUR DECADES

Green roofs and plaza decks require special attention because they are designed with the membrane buried beneath the soil media and vegetation or the overburden of a plaza deck. A membrane leak in one of these systems can be difficult to find and expensive to repair. The Sarnafil G476 waterproofing membrane is a critical component in these environments, with a history of providing long-term durability.

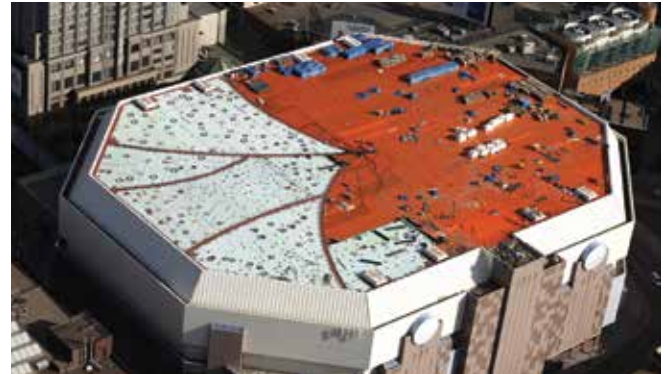


1
Chase Tower Plaza – Dallas, Texas

The G476 membrane is puncture resistant, extremely flexible and able to conform to even the most difficult details.

It is designed to remain watertight while overcoming constant dampness, ponding water, high and low alkaline conditions and exposure to plant roots, fungi and bacterial organisms.

Green roofs and plaza decks provide aesthetic, ecological and social benefits to modern buildings. With more than 45 years of proven performance, Sarnafil is the preferred system choice of design professionals and building owners.

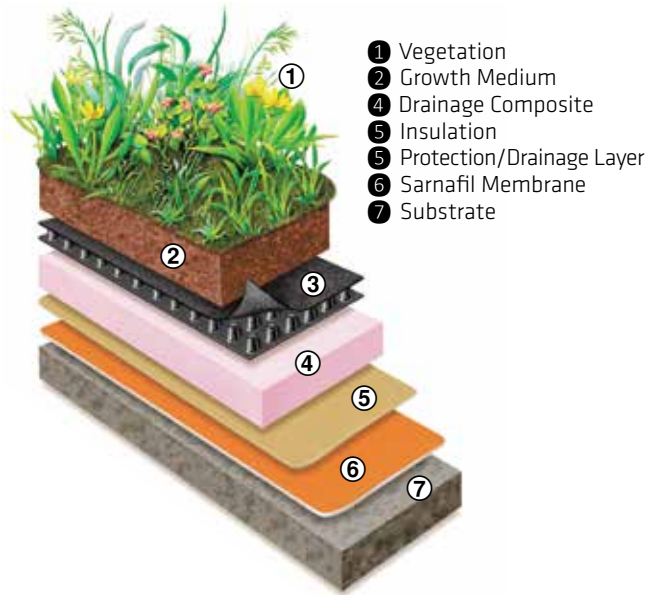


2
The G476's bright orange surface color makes it easy to identify and inspect to maintain high levels of quality assurance and control during construction.



2
Target Center – Minneapolis, Minnesota

GREEN ROOF



GREEN ROOFS

Sika has Sarnafil waterproofing systems designed for both Extensive and Intensive green roof configurations. Sarnafil membranes have passed the most stringent European tests for root resistance, including both the German FLL and the Swiss SIA 280 standards.

Complete system delivery including vegetation is available with a single source warranty. Electronic leak detection is an available option and can greatly reduce the risks associated with accidental leaks.

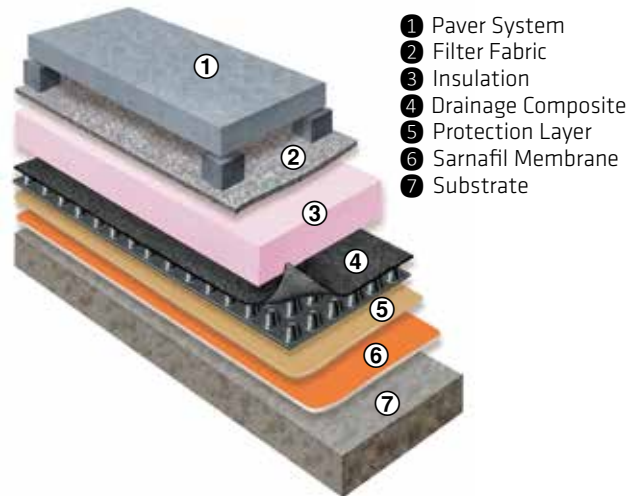
PLAZA DECKS

Sika also offers a variety of high quality Sarnafil waterproofing systems that encompass the full range of plaza deck conditions, including pedestrian and vehicular plazas, balconies, terraces and observation decks. A 20 year system warranty is an available option.

ADHERED SYSTEMS

The Sarnafil G476 Self-Adhered (SA) membrane is a composite sheet comprised of the heat-weldable G476 waterproofing membrane with a closed-cell foam backing. The foam backing is coated with a pressure sensitive adhesive that produces a steadfast bond to the substrate, mitigating potential water

PLAZA DECK



migration under the membrane. Sarnafil G476 SA is best suited for new construction. It can also be used effectively on renovation projects where the old waterproofing system can be removed completely, or where a new concrete topping slab is placed over the structural deck.

GRID SYSTEM

For renovation projects where the substrate is contaminated or removal of the existing waterproofing is not practical, Sika offers the grid system. It combines all of the advantages of a loose-laid Sarnafil membrane installation with the added security of adhered membrane grid strips. The adhered grid strips act as a sub-membrane waterstop to compartmentalize the waterproofed areas and limit overburden removal if a problem develops. The grid system can be installed economically over existing waterproofing with minimal deck preparation and removal of the existing waterproofing system.

LOOSE-LAID SYSTEM FOR GREEN ROOFS

The most common design approach over a metal deck is to build a conventional loose-laid roof assembly. The Sarnafil G476 waterproofing membrane is installed over the XPS insulation and the felt separation barrier and then covered with a drainage composite or protection layer, followed by the vegetated cover or pavers. Local building codes usually require a fire-tested thermal barrier over the metal deck prior to installing the XPS.

SIKA SOLUTIONS FROM ROOF TO FOUNDATION

Roofing Systems



Sarnafil®
Sikaplan®
Sikalastic®

Concrete Production



Sika® ViscoCrete®
Sika® Plastocrete®, SikaSet®
Sika® Air / AER^{CA}

Joint Sealing



Sikaflex®
Sikasil®
Sikadur® Combiflex

Grouting and Anchoring



SikaGrout®
Sikadur®
Sika AnchorFix®

Concrete Repair & Protection



Sika® MonoTop®
SikaTop®, SikaRepair®
Sikagard®

Structural Strengthening



Sikadur®, Sika® CarboDur®
SikaWrap®
Sika® CarboShear

Floor & Wall Systems



Sikafloor®
Sikagard®
Sikagard® Duroplast

Waterproofing Systems



SikaProof®, SikaFuko®
Sika® Greenstreak®
SikaSwell®, SikaFix®

Sika Canada Inc., a member of the Sika Group, is a leader in the field of speciality chemicals, for construction and manufacturing industries. Our product lines feature high quality roofing systems, concrete admixtures, mortars and resins, sealants and adhesives, structural strengthening components, industrial and decorative flooring, as well as protective coatings and waterproofing systems. Our expertise is borne out of a global presence and served by strong, local support. Sika has earned the trust of our industries for over 100 years, by delivering the highest standards of commitment and partnership.



ADDRESSING THE CHALLENGES OF TRANSPARENCY - LEED® v4

As a leading manufacturer of specialty chemicals for the construction and manufacturing sectors, and a member of the Canadian Green Building Council (CaGBC), Sika Canada is officially engaged in the transparency process associated with sustainable construction. Environmental Product Declarations (EPD) are available for Sarnafil® G410 and S327 Membranes (Cradle-to-Grave) and Sikaplan® Adhered & Fastened Roofing Membranes (Cradle-to-Gate). For more information, contact your local Sika Technical Sales Representative.

The information, and in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions, within their shelf life. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any recommendations, or from any other advice offered. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users should always refer to the most recent issue of the Product Data Sheet for the product concerned, copies of which will be supplied on request or can be accessed in the Internet under www.sika.ca.

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Certified ISO 9001 (CERT-0102780)
Certified ISO 14001 (CERT-0102791)

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