



ROOFING

Sikaplan[®] - PVC VERSUS TPO?

BUILDING TRUST
CONSTRUIRE LA CONFIANCE



DON'T RISK YOUR GOOD REPUTATION ON A MEMBRANE WITH A BAD ONE

As the most trusted single-ply thermoplastic membrane manufacturer in the world, Sika is dedicated to educating its current and potential customers about the differences between PVC and TPO systems. When choosing between Sikaplan® and TPO, make the logical decision; choose the proven membrane that will best protect your investment.

Over the past 20 years, TPO has grown to become one of the most commonly used low-slope, single-ply roof membranes thanks in large part to its low price point. What you might not know is that most, if not all, TPO membrane manufacturers are on their second, third or even fourth generation of membrane formulations due to performance inconsistencies and many are still having issues.

HISTORY

Sikaplan®: Sika pioneered the use of PVC for roofing applications back in 1962, developing the world's first thermoplastic reinforced membrane. Since that time, the company has manufactured more than 15 billion square feet of membrane. Over the past 30 years, more than 5 billion square feet of Sikaplan® have been installed and are performing on roofs all over the world.

TPO: Since being introduced in the 1990s, billions of square feet of TPO have been installed on roofs across the country. While that fact may seem impressive on the surface, it's no secret that TPO products have gone through numerous formulation changes, particularly with regard to their flame-retardant, UV and heat stabilizer packages. Those changes continue today while manufacturers struggle to find a consistent formula to provide a long-term, durable membrane.

UV RESISTANCE

Sikaplan®: It's no surprise that a roofing membrane's formulation is the cornerstone for its performance and long-term durability. Manufactured right here in America, Sikaplan® membranes are produced utilizing time-proven raw materials and are formulated to ensure long-term weatherability and protection from harsh UV rays.

TPO: The latest formulations of TPO membranes have relatively few years of "real world" exposure, so their resistance to heat, UV and general weathering is still unknown. Early generations of TPO membranes had many performance issues, which led to changes in their formulations. One of the most common problems was TPO failing in hot climates or when exposed to increased UV.

FIRE PERFORMANCE

Sikaplan®: While fire safety codes have improved, losses from fire are still an ongoing concern. One of the most vulnerable parts of a building

exposed to fire is its roof. Sikaplan® membranes are made using PVC resin. Since PVC is inherently fire resistant, Sikaplan® membranes will self-extinguish when the source of the flame is removed.

TPO: Though some TPO manufacturers advertise a more fire resistant sheet at an upcharge, many TPO membranes will typically continue to burn even if the source of the flame is suppressed.

SEAM WELDING

Sikaplan®: When welding seams on user-friendly Sikaplan® membranes, there is a distinct "bleed out" to help ensure a proper weld. You also have the ability to probe the seam immediately, making quality control that much easier. This is crucial as seams can be a trouble area for water penetration.

TPO: There is a lack of visual "bleed out" during proper seam welding on TPO membranes, and there is a wait time before being able to probe the seam. As a result, it can be tricky to produce a good weld with TPO. Often times, you end up with cold welds or a membrane that isn't watertight, which could eventually lead to leaks.

RECYCLING

Sikaplan®: Sika is the only commercial roofing company in the U.S. to receive certification from UL Environment relating to the recycled content of its roofing membrane products. Sika's membranes contain an average of 10 percent recycled vinyl content from pre- and post-consumer sources..

TPO: At this time, there does not appear to be any formal systematic program for recycling TPO at the end of its service life, specifically back into new membrane.



AGED-MEMBRANE WELDING

Sikaplan®: Sikaplan® sheets are repairable throughout their serviceable life. New Sikaplan® membrane can be hot-air welded to aged material to create a “like-new” watertight seam.

TPO: TPO membranes are known to be very difficult to re-weld and/or patch. This can limit repair and rooftop modification as the material ages.

DIMENSIONAL STABILITY

Sikaplan®: Sikaplan®'s PVC membrane is dimensionally stable and offers two attachment methods. The Sikaplan® Fastened system uses membrane with an internal polyester scrim to provide tear resistance. The Sikaplan® Adhered system uses a fiberglass-reinforced membrane that delivers exceptional dimensional stability. Thanks to a low coefficient of thermal expansion and contraction, the service life of the roof is extended.

TPO: TPO membranes only offer a scrim reinforcement, making adhered roofs a challenge. The membranes have a higher coefficient of expansion and contraction than PVC membranes. This often results in roofs that are loose and baggy when installed, and over time they may shrink to the point of creating stress at fixation points.

WATER ABSORPTION

Sikaplan®: Water absorption can cause membrane delamination and reduce the long-term performance of the membrane. Sikaplan® membranes absorb less water than many competitive TPOs due to its anti-wick scrim and extrusion coating process, and with Sikaplan® there is no cut edge sealing required.

TPO: In contrast, you need to seal all cut edges (including factory edges) as TPO membranes typically use an uncoated or untreated

scrim and therefore have the potential to wick water along the reinforcement. Water absorption also can affect the quality of seam welds.

FLEXIBILITY

Sikaplan®: The beauty of the Sikaplan® membrane is that it's incredibly easy to work with. Flexible sheets make handling and detailing much easier, even in cold weather.

TPO: TPO membranes are noticeably stiffer, making sheet handling and detailing more difficult, especially in cold weather. There could also be problems resulting from sheet wrinkling caused by automatic welder “tracking” issues.



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



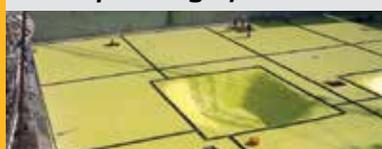
Sikadur®, Sika® CarboDur®
SikaWrap®
Sika® CarboShear

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 customers for over 100 years, by delivering the highest standards of commitment and partnership.

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 shelflife. 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 information contained herein does not relieve the user of the products from testing them for the intended application and purpose. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request or may be downloaded from our website at: www.sika.ca

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