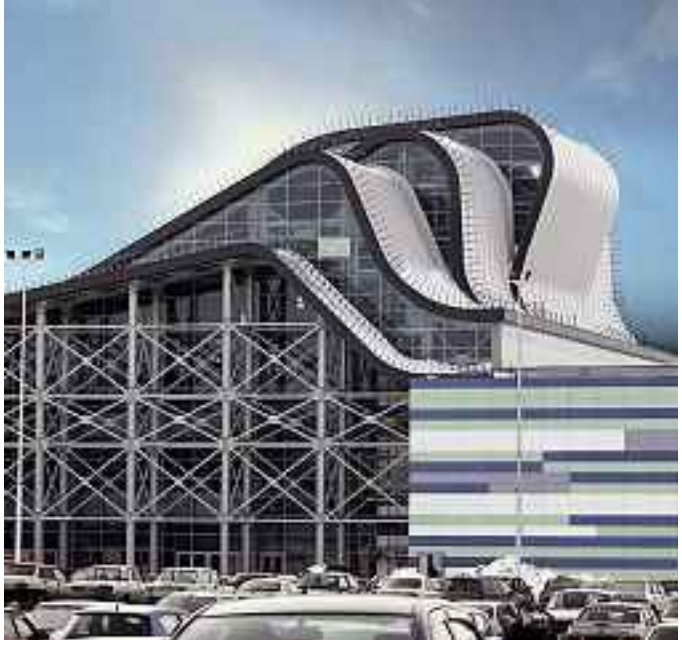


Sika Technology and Concepts for Roofing

Innovation & Consistency | since 1910

Sika Technology and Concepts for Roofing

As a leading worldwide materials manufacturer for the construction industry, Sika has a strong focus on roofing and produces a wide range of different products and systems to meet our customers' requirements and conform to the latest-standards. This brochure illustrates our basic range of high performance solutions in this field, developed from more than 50 year experience in roofing and incorporating the latest technologies.
We are present locally in more than 70 countries, which allows us to bring our customers and their clients not only proven roofing products, but additional services, such as wind load calculations, application trainings, CAD details and technical consultations, guarantees, etc. Sika is the only full range materials supplier for materials used in concrete production, waterproofing, roofing, flooring, sealing, bonding, grouting, reinforcing, concrete repair and protection, structural glazing and more, for all types of buildings and civil engineer structures. This makes us the most complete and competent partner for the new construction or refurbishment of your projects.
We hope that this brochure will give you an overview of Sika's solutions for roofing. For further information, advice or assistance, please contact your local Sika Company or go to www.sika.com.

The Sika Roofing Team

Content

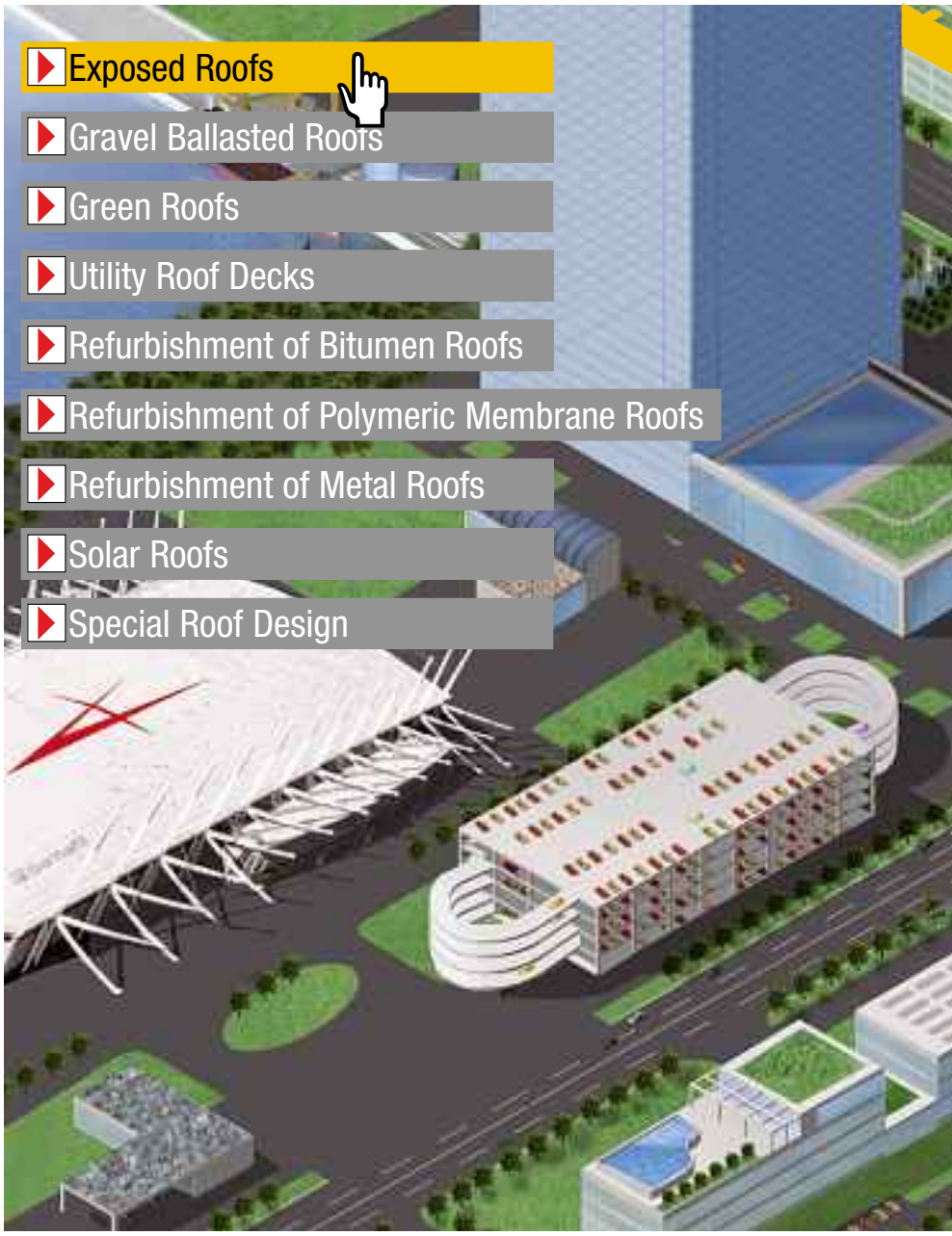
Sika Roofing Capability – Factory House Internet Tool at

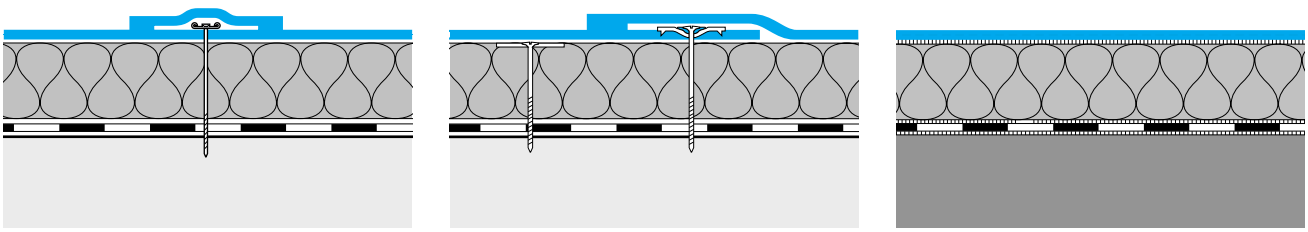
Visualized Tool is Available Now for Browsing through Roofing Solutions by Clicking

Exposed Roofs Page 14–23

Gravel Ballasted Roofs Page 24–29

Green Roofs Page 30–35





Exposed Roof

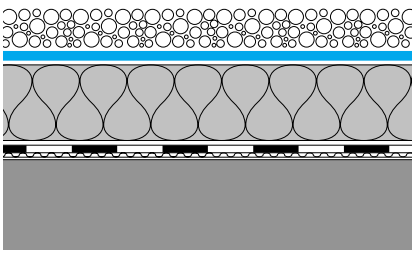
www.sika.com/en/solutions_products.html

on Buildings or on Pop-up Menus

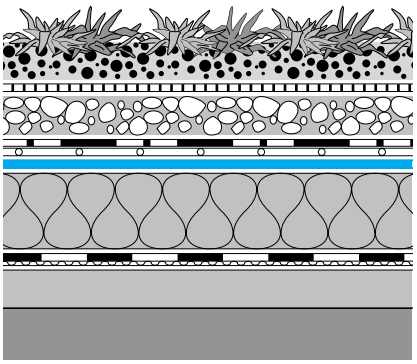
Utility Roof Decks Page 36–41

Solar Roofs Page 42–43

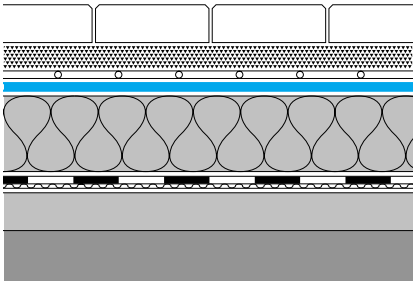
Special Roof Design Page 44–45



Gravel Ballasted Roof

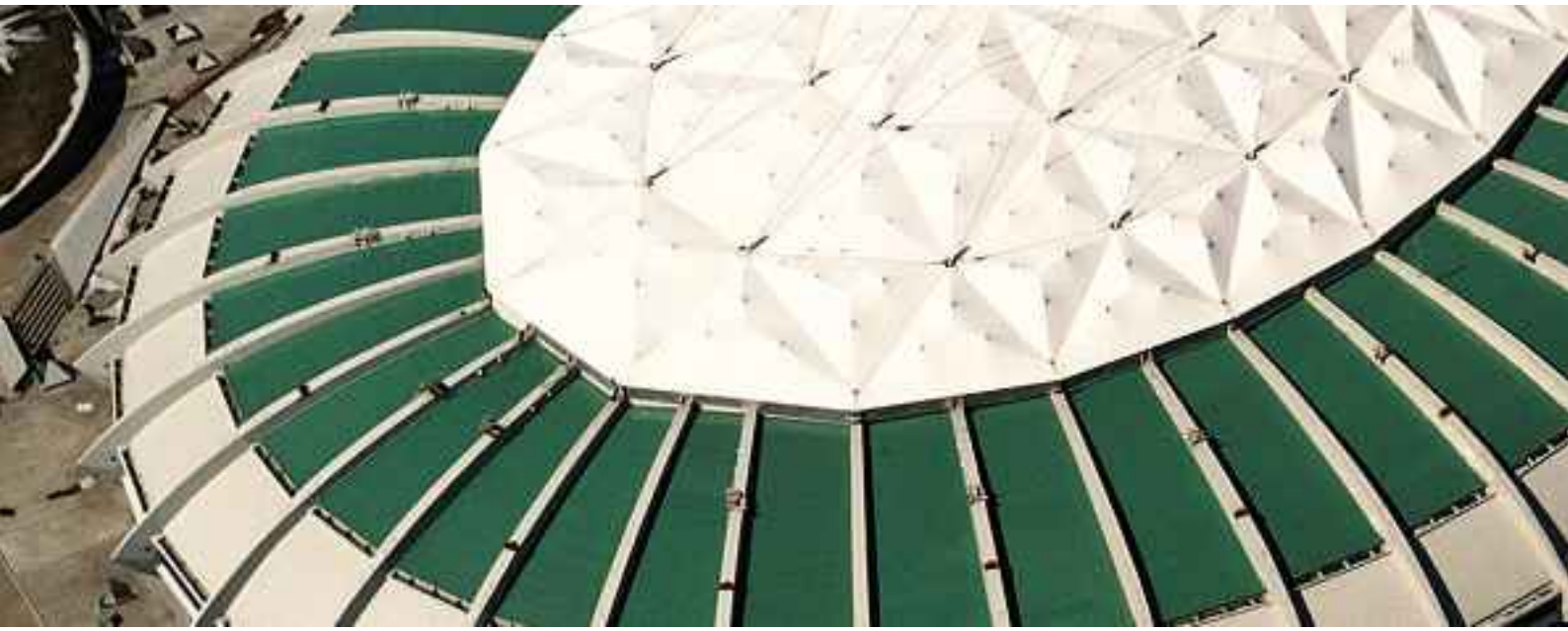


Green Roof



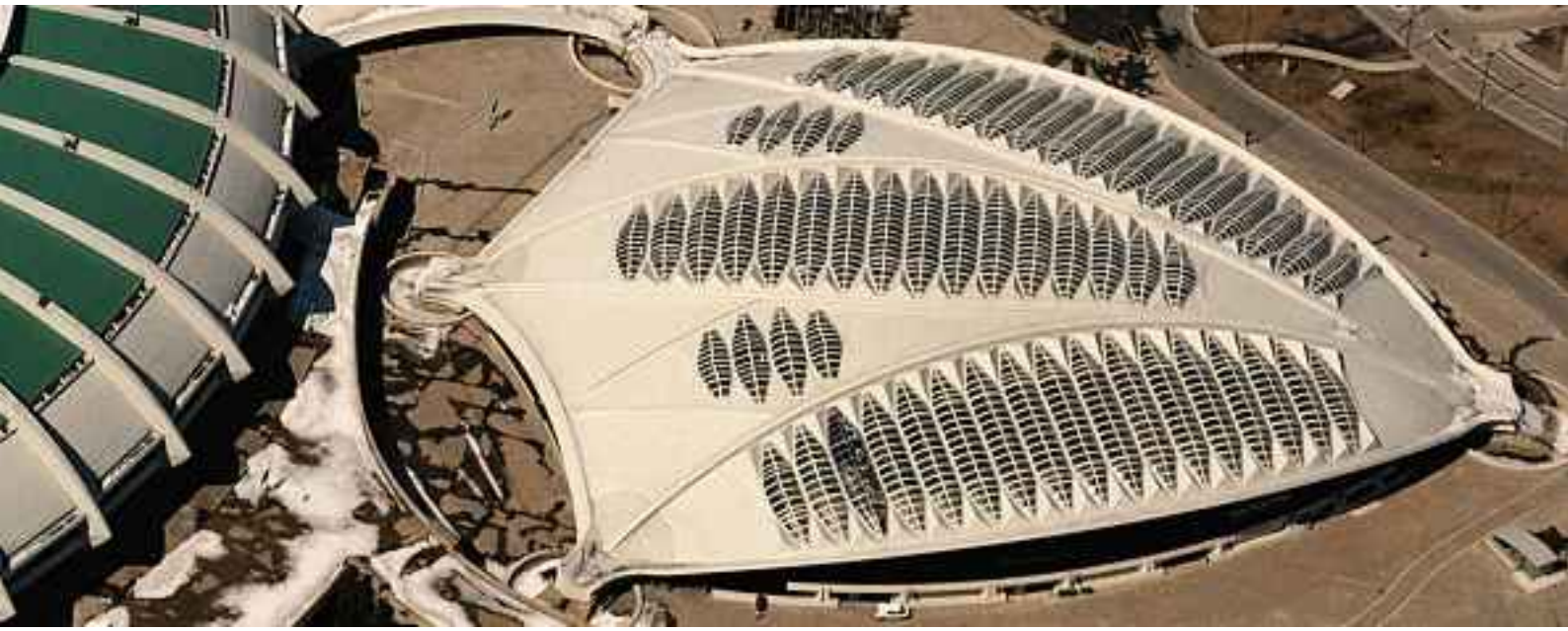
Utility Roof Deck

Sika's Capabilities for Different Building Types and Appl



	Commercial and Industrial Buildings (Shopping, Logistic Centers, Factories)	Sport and Leisure Facilities
Exposed Roof		
Gravel Ballasted Roof		
Green Roof		
Utility Roof Deck		

ications



Residential Buildings	Health, Educational and Other Public Buildings	
		Exposed Roof
		Gravel Ballasted Roof
		Green Roof
		Utility Roof Deck

Sika as Global Leader in Roofing Material Technology

Single Ply Membranes

PVC

Type
PVC membranes

Brand names
Sarnafil®, Sikaplan®

Advantages
- Established technology with the longest track record
- Availability of products for exposed roofing applications with high fire ratings / extended fire resistance
- Easy to repair
- Possibility of customized design solutions (colours, profiles, and roof graphics)
- Homogeneous hot air welded joints
- Easy to handle on site
- Suitable for use and exposure in different climatic conditions
- Fast installation independent of the weather
- Good vapour permeability
- Highly flexible
- Flame free installation
- Recyclable

FPO

Type
Polyolefin membranes

Brand name
Sarnafil®

Advantages
- High chemical resistance
- Suitability for direct application on such substrates, as bitumen, EPS and XPS insulation (polystyrenes)
- Availability of products for exposed roofing applications with high fire ratings / extended fire resistance
- Plasticizer free (no migration / contamination or leaching)
- Long life expectancy
- Easy to repair
- Homogeneous hot air welded joints
- Easy to handle on site
- Suitable for use and exposure in different climatic conditions
- Fast installation independent of the weather
- Outstanding ecological profile
- Flame free installation
- Recyclable
- Proven track record for over 20 years

Liquid Applied Membranes

MTC 1-C PU

Type
Moisture triggered 1-component polyurethane

Brand names
SikaRoof® MTC systems with **Sikalastic®** liquid membranes

Advantages
- Unique technology that means systems are rain and moisture tolerant almost immediately after application
- High fire resistance, self-extinguishing characteristics when cured
- Can be applied on different substrates
- Easy and fast detailing with unique reinforcement
- Seamless waterproofing
- No water underflow, due to the full bond of the waterproofing on the substrate
- Minimal investment in tools and equipment
- Flame free installation procedures

2-C PU

Type
Rapid reaction curing 2-component polyurethane

Brand name
Sikalastic®

Advantages
- Outstanding resistance to traffic
- Fast machine application
- Easy to repair
- Can be applied on different substrates
- Easy and fast detailing
- Seamless waterproofing
- No water underflow, due to the full bond of the waterproofing on the substrate
- Flame free installation procedures

Single Ply Membranes – Sika's Production and Material

Production Technologies

Sika is one of the most experienced single ply membrane producers with track record of more than 50 years. Our production incorporates most efficient and proven technologies such as:

- **Calendering** – means to roll out with heat. Production line consists of several pairs of heated rollers that press the polymer compound into a sheet.
- **Extrusion** – a process by which a doughlike polymer compound is forced through a wideslot die by a slowly and continuously rotating screw, emerging as a continuous sheet
- **Spread Coating** – a method by which a liquid polymer compound is spread across a support layer.
- **Extrusion-coating** – a combination of extrusion and coating

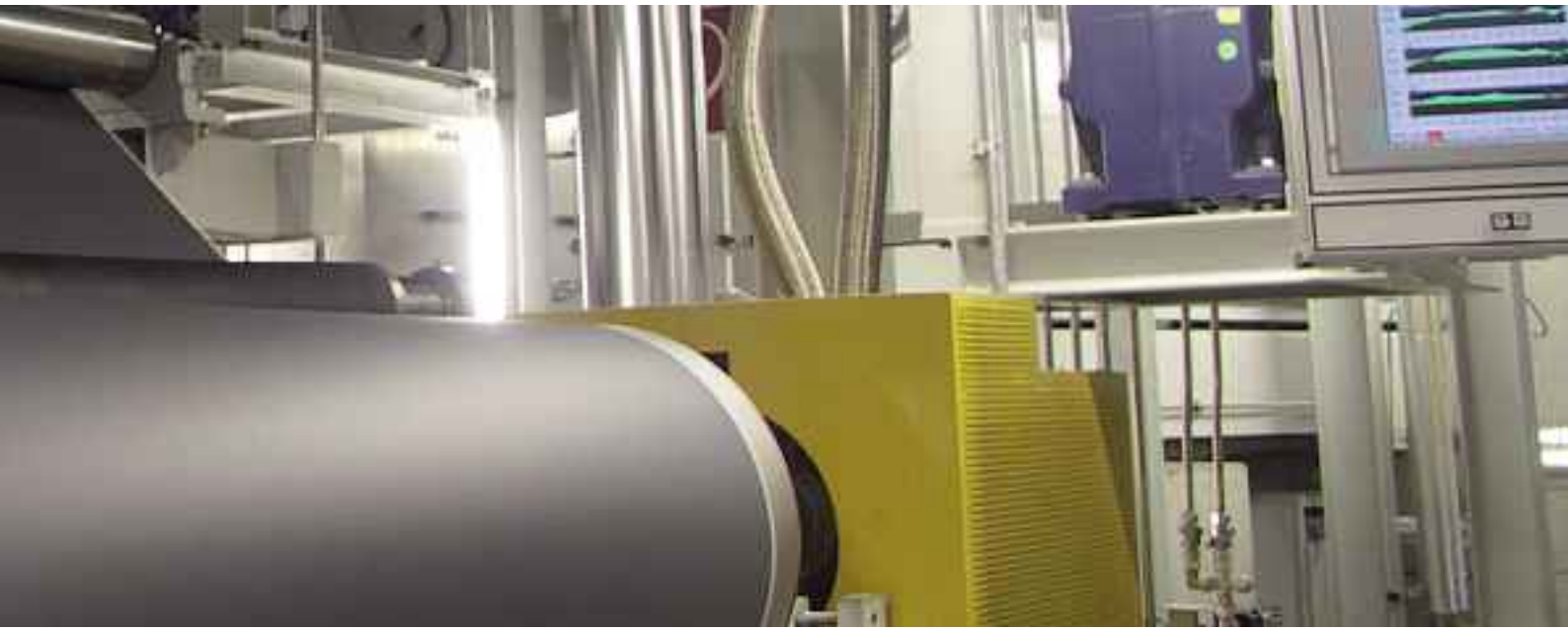
Lacquer, Surface Texturing

Sika single ply PVC membranes are manufactured on extrusion, calandered and spread coating production lines.
This widest range of production possibilities opens unique flexibility and membrane choice to our clients – different colours and surfaces, thicknesses and sheet widths, reinforcements and laminated felts.
Sika is the only company which unites all these production technologies for PVC membranes "under one roof".
Sika single ply FPO membranes are manu factured on extrusion coating production line. This method was specially designed for FPO membranes production by Sika engineers and gathers positive sides of both processes. FPO membrane layers are extruded in semi-liquid state allowing better embedment of reinforcement. This unique technology allows us to provide clients with most advanced and technically developed FPO membranes.

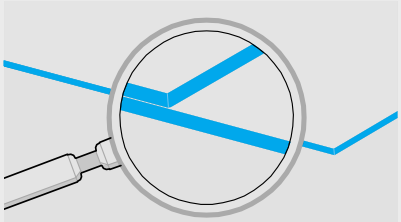
Sika introduced a special technology of **lacquer coating** for PVC membranes that seals the surface of the membrane to protect it from external influences. Lacquer prevents plasticizer migration and extends service life of the roof.

Sika has wide possibilities of membranes **texturing** for various purposes such as an embossed matte finish, which provides a safe nonslip surface.

Competence



Homogeneous Membranes



High flexibility and are ideal for executing details.
Sika product:
Sika-Trocal® S, Sikaplan® D, Sarnafil® T 66-15D

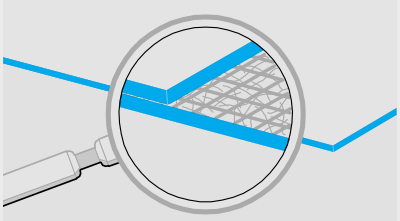
Membranes with Glassfibre Mat Inlay

Dimensionally stable and undergo negligible shrinkage.
Sika product:
Sarnafil® TG 66 / G410, Sikaplan® SGmA

Membranes with Glass Mat Inlay and Felt Backing

Felt as a leveling or separating layer, it provides keying for the adhesive bond. These are typically used in adhered systems or roofs where aesthetics is central.
Sika product:
Sarnafil® TG 76 Felt / G410 Felt, Sikaplan® SGK

Reinforced Membranes with Fully Embedded Fabric or a Scrim



Reinforcement provides high tensile strength. The embedded reinforcing transfers wind forces to the mechanical fasteners anchored to the roof deck.
Sika product:
Sarnafil® S 327,
Sarnafil® TS 77 (with additional glass matt),
Sikaplan® G / VG / VGWT

Liquid Applied Membranes – Sika's Production and Mat

General Description

Since 1910 Sika has been widely known for top quality solutions in waterproofing and polyurethanes are clearly one of the main products here.
PU is a base raw material for liquid membranes and at the same time it is a key competence of Sika for many years.

Developments and know-how, modern production facilities, wide product range and extensive experience allows Sika to be a solid world market leader for polyurethanes in variety of application fields like:

- sealing and bonding in industry,
- liquid membranes in roofing and other applications,
- flooring,
- sealing and bonding in construction

Liquid applied membranes are a main focus of Sika. Huge innovation work allowed Sika to develop and customize products specially for roofs and resulted in brand new advanced technologies such as **SikaRoof® MTC.** These systems are unique on the market and bring our clients new level of reliability and security, workability and longevity.
Beside liquid applied membranes assortment of reinforcements, primers and carrier layers, installation tools were created, which gives our clients not only the liquid membrane itself, but the whole system with components fully compatible to each other.

erial Competence

Production

Sika's polyurethane coatings are produced using automated plants with electronically measured and dosed raw materials in stainless steel dissolving mixers. Each production unit has a powerful motor, its own heating and cooling system and an automatic discharging and cleaning system. Products are then packaged in steel drums.

New Generation of 1-C PU Membranes

This unique MTC technology was developed with use of own custom pre-polymers and gives liquid polyurethane moisture triggered curing. It means no CO_2 outgassing in contact with water while curing and as a result far better tolerance to moisture than standard PUs: MTC can resist rain and moisture within minutes after its application.
Specially designed reinforcement is activated in the MTC coating allowing easy application even on complicated details.

Sika Product:
SikaRoof® MTC Systems with
Sikalastic® 6th Series

Solutions for Exposed Roofs

General Description

Roof structures without ballast or wearing layers on the waterproofing membrane are known as “Exposed Roofs”. They are ideal for lightweight roof structures with large spans as well as for complex roof structures and geometries, including domes for example.

- Light weight roof build-ups
- Possibility of light / bright coloured surfaces for sun and heat reflection, reducing the “heat island” effect
- Almost unlimited design possibilities with membrane colours, profiles and roof graphics, etc.

Sika has a wide range of exposed roof systems, all of them designed to provide high performance, long lasting and sustainable roof waterproofing. They easily withstand all common environmental influences:

- UV light exposure
- Heat and cold
- Air born pollution and dust
- Wind uplift forces
- Rain, hail, snow and all other common exposures

Mechanically Fastened Systems with **Sarnafil**® / **Sikaplan**®

- Mechanically fastened roofs are the most cost efficient for exposed roofing applications.
- The fastest installation speed is achieved with mechanical fastening
- The **Sarnafil**® / **Sikaplan**® membranes for mechanical fastening have special polyester reinforcement, enabling high wind load resistance
- Installation is almost not weather dependent

Mechanically fastened systems are ideal for large, lightweight metal decked structures and buildings, such as distribution and logistics centres, warehouses, supermarkets, workshops.

Adhered Systems with **Sarnafil**® / **Sikaplan**®

Sarnafil® / **Sikaplan**® adhered systems are a great solution if there is a need for:

- High aesthetic appearance
- Freedom of design and suitability for complex roof shapes
- No penetrations of the roof deck are required

These adhered systems also have additional advantages in many situations such as:

- Very low noise emissions during installation
- Easy refurbishment of existing bitumen roofs

Sika adhered systems are generally installed on public and residential buildings, including schools, offices, hotels, hospitals, apartments, sports centres etc, plus all types of refurbishment projects.

Liquid Applied Membrane Systems with **Sikalastic**®

Liquid applied systems powered by the unique **SikaRoof**® **MTC** technology provide many advantages:

- Cold applied waterproofing – no flame, no heat
- Seamless waterproofing completely bonded to the substrate
- Waterproofing is moisture and rain resistant just 10 minutes after application
- 1-C products with viscosity ideal for roofing applications (no need for thinners, hardeners)
- Easy installation using simple rollers and brushes over even complicated shapes
- High tensile strength and elasticity
- Long shelf life of products

These systems are ideal for exposed roofs with large number of complicated detailing and penetrations.

Solutions for Exposed Roofs: Mechanically Fastened Sys

Systems with PIR/Mineral Wool Thermal Insulation

Requirements

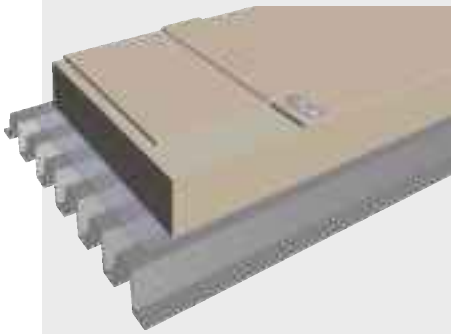
- **PVC-membrane with laquered surface and extended guarantee**
- Fast and easy installation
- Special colours and design (décor profiles)
- High fire resistance of the thermal insulation

Design / Build-up

Sika System

- PVC membrane **Sarnafil® S 327** mechanically fixed with **Sarnafast® SF** 4,8 mm and **Sarnafast® Washer KT**
- Mineral wool or PIR insulation
- Vapour control layer **Sarnavap® 500 E** or **1000 E**
- Steel deck

- **FPO membrane with extended guarantee**
- Fast and easy installation
- High chemical resistance of the waterproofing membrane
- High fire resistance of the thermal insulation



- FPO membrane **Sarnafil® TS 77** mechanically fixed with **Sarnafast® SF** 4,8 mm and **Sarnafast® Washer KT**
- Mineral wool or PIR insulation
- Vapour control layer **Sarnavap® 1000 E**
- Steel deck

- **Standard PVC membrane**
- Fast and easy installation
- Standard guarantee (from your local Sika organisation)
- High fire resistance of the thermal insulation

- PVC membrane **Sikaplan® G** mechanically fixed with **Sarnafast® SF** 4,8 mm and **Sarnafast® Washer KT**
- Mineral wool or PIR insulation
- Vapour control layer **Sarnavap® 500 E or 1000 E**
- Steel deck

- **PVC membrane with increased fire and cold resistance**
- Slip resistant surface
- Standard guarantee (from your local Sika organisation)
- High fire resistance of the thermal insulation

- PVC membrane **Sikaplan® VGWT** mechanically fixed with **Sarnafast® SF** 4,8 mm and **Sarnafast® Washer KT**
- Mineral wool or PIR insulation
- Vapour control layer **Sarnavap® 500 E or 1000 E**
- Steel deck

tems on Steel Deck

Systems with EPS/XPS Thermal Insulation

Requirements

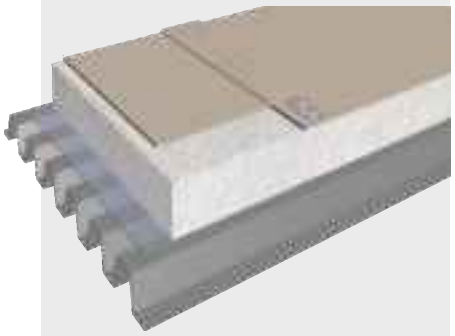
- **PVC-membrane with laquered surface and extended guarantee**
- Fast and easy installation
- Special colours and design (décor profiles)
- Increased compressive strength of the thermal insulation

Design / Build-up

Sika System

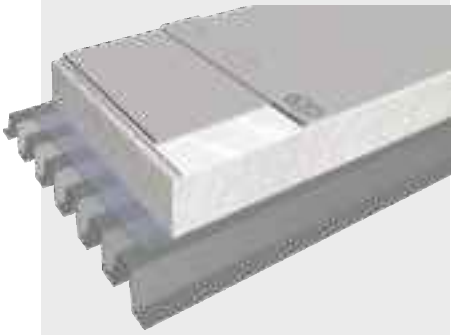
- PVC membrane **Sarnafil® S 327** mechanically fixed with **Sarnafast® SF** 4,8 mm and **Sarnafast® Washer KT**
- Separation layer **S-Glass Fleece 120**
- XPS or EPS insulation
- Vapour control layer **Sarnavap® 500 E** or **1000 E**
- Steel deck

- **FPO membrane with extended guarantee**
- Fast and easy installation
- High chemical resistance of the waterproofing membrane
- Increased compressive strength of the thermal insulation



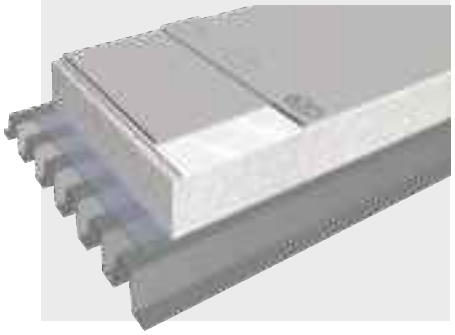
- FPO membrane **Sarnafil® TS 77** mechanically fixed with **Sarnafast® SF** 4,8 mm and **Sarnafast® Washer KT**
- Separation layer **S-Glass Fleece 120** if required by fire regulations
- XPS or EPS insulation
- Vapour control layer **Sarnavap® 1000 E**
- Steel deck

- **Standard PVC membrane**
- Fast and easy installation
- Standard guarantee (from your local Sika organisation)
- Increased compressive strength of the thermal insulation



- PVC membrane **Sikaplan® G** mechanically fixed with **Sarnafast® SF** 4,8 mm and **Sarnafast® Washer KT**
- Separation layer S-Glass Fleece 120
- XPS or EPS insulation
- Vapour control layer **Sarnavap® 500 E or 1000 E**
- Steel deck

- **PVC membrane with increased fire and cold resistance**
- Fast and easy installation
- Slip resistant surface
- Standard guarantee (from your local Sika organisation)
- Increased compressive strength of the thermal insulation



- PVC membrane **Sikaplan® VGWT** mechanically fixed with **Sarnafast® SF** 4,8 mm and **Sarnafast® Washer KT**
- Separation layer **S-Glass Fleece 120**
- XPS or EPS insulation
- Vapour control layer **Sarnavap® 500 E or 1000 E**
- Steel deck

Solutions for Exposed Roofs: Mechanically Fastened Sys

Systems with PIR/Mineral Wool Thermal Insulation

Requirements

- **PVC-membrane with laquered surface and extended guarantee**
- Fast and easy installation
- Special colours and design (décor profiles)
- High fire resistance of the thermal insulation

Design / Build-up

Sika System

- PVC membrane **Sarnafil® S 327** mechanically fixed with **Sarnafast® SB** 6,3 mm and **Sarnafast® Washer KTL**
- Mineral wool or PIR insulation
- Vapour control layer **Sarnavap® 3000 M**
- Concrete deck

- **FPO membrane with extended guarantee**
- Fast and easy installation
- High chemical resistance of the waterproofing membrane
- High fire resistance of the thermal insulation

- FPO membrane **Sarnafil® TS 77** mechanically fixed with **Sarnafast® SB** 6,3 mm and **Sarnafast® Washer KTL**
- Mineral wool or PIR insulation
- Vapour control layer **Sarnavap® 3000 M**
- Concrete deck

- **Standard PVC membrane**
- Fast and easy installation
- Standard guarantee (from your local Sika organisation)
- High fire resistance of the thermal insulation

- PVC membrane **Sikaplan® G** mechanically fixed with **Sarnafast® SB** 6,3 mm and **Sarnafast® Washer KTL**
- Mineral wool or PIR insulation
- Vapour control layer **Sarnavap® 3000 M**
- Concrete deck

- **PVC membrane with increased fire and cold resistance**
- Fast and easy installation
- Slip resistant surface
- High fire resistance of the thermal insulation

- PVC membrane **Sikaplan® VGWT** mechanically fixed with **Sarnafast® SB** 6,3 mm and **Sarnafast® Washer KTL**
- Mineral wool or PIR insulation
- Vapour control layer **Sarnavap® 3000 M**
- Concrete deck

tems on Concrete Deck

Systems with EPS/XPS Thermal Insulation

Requirements

- **PVC-membrane with laquered surface and extended guarantee**
- Fast and easy installation
- Special colours and design (décor profiles)
- Increased compressive strength of the thermal insulation

Design / Build-up

Sika System

- PVC membrane **Sarnafil® S 327** mechanically fixed with **Sarnafast® SB** 6,3 mm and **Sarnafast® Washer KTL**
- Separation layer **S-Glass Fleece 120**
- XPS or EPS insulation
- Vapour control layer **Sarnavap® 3000 M**
- Concrete deck

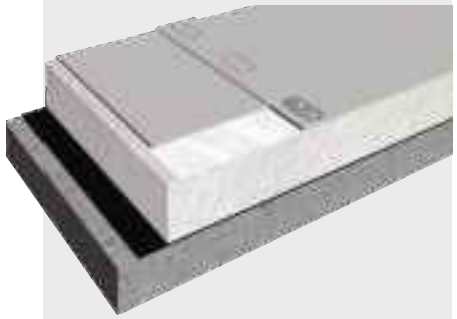
- **FPO membrane with extended guarantee**
- Fast and easy installation
- High chemical resistance of the waterproofing membrane
- Increased compressive strength of the thermal insulation

- FPO membrane **Sarnafil® TS 77** mechanically fixed with **Sarnafast® SB** 6,3 mm and **Sarnafast® Washer KTL**
- Separation layer **S-Glass Fleece 120** if required by fire regulations
- XPS or EPS insulation
- Vapour control layer **Sarnavap® 3000 M**
- Concrete deck

- **Standard PVC membrane**
- Fast and easy installation
- Standard guarantee (from your local Sika organisation)
- Increased compressive strength of the thermal insulation

- PVC membrane **Sikaplan® G** mechanically fixed with **Sarnafast® SB** 6,3 mm and **Sarnafast® Washer KTL**
- Separation layer **S-Glass Fleece 120**
- XPS or EPS insulation
- Vapour control layer **Sarnavap® 3000 M**
- Concrete deck

- **PVC membrane with increased fire and cold resistance**
- Fast and easy installation
- Slip resistant surface
- Increased compressive strength of the thermal insulation



- PVC membrane **Sikaplan® VGWT** mechanically fixed with **Sarnafast® SB** 6,3 mm and **Sarnafast® Washer KTL**
- Separation layer **S-Glass Fleece 120**
- XPS or EPS insulation
- Vapour control layer **Sarnavap® 3000 M**
- Concrete deck

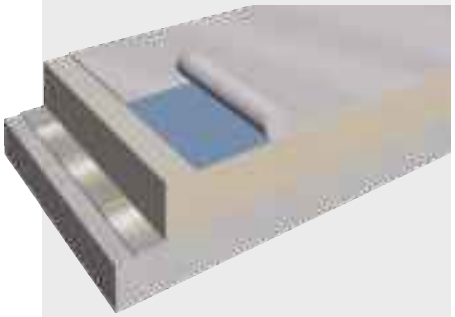
Solutions for Exposed Roofs: Adhered Systmes on Vario

Fully Adhered Systems with Single Ply Membranes

Requirements

- **Fully adhered laquered felt-backed PVC membrane with extended guarantee**
- Highest aesthetic appearance
- No penetration of the roof deck (when all roof build-up components are adhered)
- Special colours and design (décor profiles)
- Limited water underflow

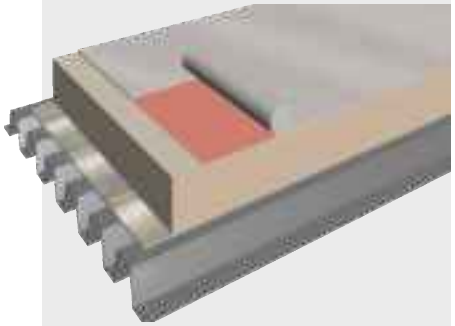
Design / Build-up



Sika System

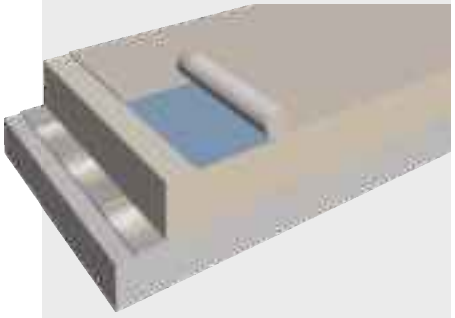
- PVC membrane **Sarnafil® G 410 EL Felt** fully adhered to the insulation with **Sarnacol® 2142 S**
- PIR, EPS/XPS insulation bonded to the vapour control layer with **Sarnacol® 2162** or mechanically fastened to the substrate
- Self adhesive vapour control layer **Sarnavap® 5000E SA** or bitumen
- **Primer 600**, where required
- Concrete (or timber / steel) deck

- **Fully adhered laquered PVC membrane with extended guarantee**
- High aesthetic appearance
- Instant adhesion, convenient for application on steep roof slopes
- No penetration of the roof deck (when all roof build-up components are adhered)
- Special colours and design (décor profiles)
- Limited water underflow



- PVC membrane **Sarnafil® G 410 EL** fully adhered to the insulation with **Sarnacol® 2170**
- PIR insulation bonded to the vapour control layer with **Sarnacol® 2162** or mechanically fastened to the substrate
- Self adhesive vapour control layer **Sarnavap® 5000E SA** or bitumen
- **Primer 600**, where required
- Concrete (or timber / steel) deck

- **Fully adhered felt-backed FPO membrane with extended guarantee**
- High aesthetic appearance
- High chemical resistance of the waterproofing membrane
- No penetration of the roof deck (when all roof build-up components are adhered)
- Special colours and design (décor profiles)
- Extended guarantee (from your local Sika organisation)
- Limited water underflow



- FPO membrane **Sarnafil® TG 76 Felt** fully adhered to the insulation with **Sarnacol® 2142 S**
- PIR, EPS/XPS insulation bonded to the vapour control layer with **Sarnacol® 2162** or mechanically fastened to the substrate
- Self adhesive vapour control layer **Sarnavap® 5000E SA** or bitumen
- **Primer 600**, where required
- Concrete (or timber / steel) deck

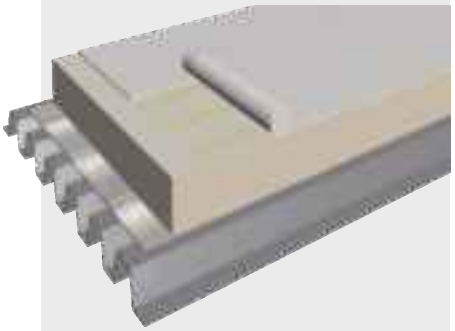
us Substrates

Partly Adhered and Self-Adhered Systems with Single Ply Membranes

Requirements

- **Parly adhered standard felt-backed PVC membrane**
- Fast installation
- No penetration of the roof deck
- Standard guarantee (from your local Sika organisation)

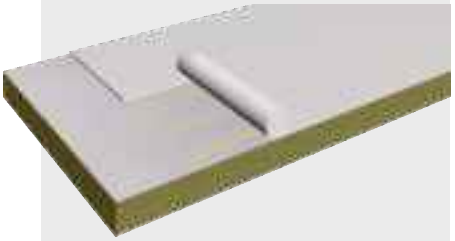
Design / Build-up



Sika System

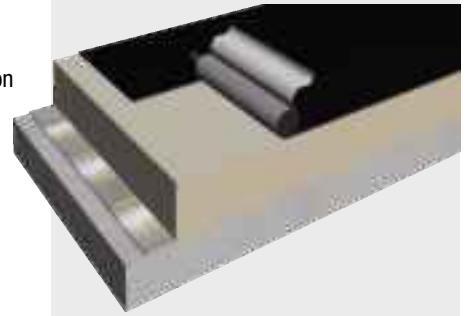
- PVC membrane **Sikaplan® SGK** partially adhered to the insulation with **Sika-Trocal® C 300**
- PIR, EPS/XPS insulation bonded to the vapour control layer with **Sarnacol® 2162** or mechanically fastened to the substrate
- Self adhesive vapour control layer **Sarnavap® 5000E SA** or bitumen
- **Primer 600**, where required
- Steel (or timber / concrete) deck

- **Partly adhered standard felt-backed PVC membrane on composite panel**
- No penetration of the roof deck
- Standard guarantee (from your local Sika organisation)



- PVC membrane **Sikaplan® SGK** partially adhered to pre-fabricated panels with **Sika-Trocal® C 300**
- Composite or sandwich panels

- **Self-adhered PVC membrane**
- Easy and fast installation
- Instant adhesion, convenient for application on steep roof slopes
- No penetration of the roof deck
- Standard guarantee (from your local Sika organisation)
- Limited water underflow



- Self-adhered PVC membrane **Sikaplan® RV-S**
- PIR insulation bonded to vapour control layer with **Sarnacol® 2162**
- Self adhesive vapour control layer **Sarnavap® 5000E SA** or bitumen
- **Primer 600**, where required
- Concrete (or timber / steel) deck

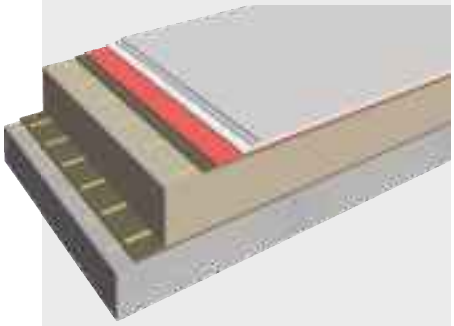
Solutions for Exposed Roofs: Systems with Liquid Appli

Systems with Thermal Insulation

Requirements

- **Warm roof waterproofing with MTC Technology**
- Seamless waterproofing
- No penetration of the roof deck
- Extended guarantee (from your local Sika organisation)
- Increased fire resistance
- No water underflow

Design / Build-up

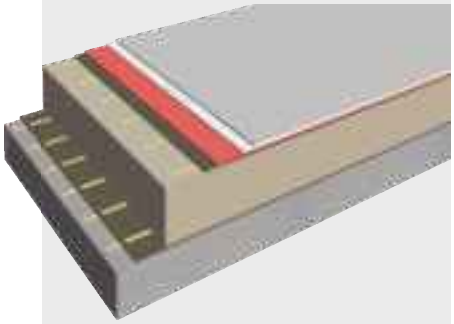


Sika System

SikaRoof® MTC 22 Cold Fusion build-up

- 2 Top coats of **Sikalastic®-621 TC**
- Reinforcement with **Sikalastic® Reemat Premium**
- Base coat **Sikalastic®-601 BC**
- Carrier layer **Sikalastic® Carrier** bonded with **Coldstick®**
- PIR, EPS insulation bonded to the vapour control layer with **Coldstick®**
- Control layer **Sikalastic® Vap** adhered to substrate with **Coldstick®**
- Concrete (or timber / steel) deck

- **Warm roof waterproofing with MTC Technology**
- Seamless waterproofing
- No penetrations of the roof deck
- Standard guarantee (from your local Sika organisation)
- Increased fire resistance
- No water underflow



SikaRoof® MTC 12/15/18 Cold Fusion build-up

- 1 Top coat of **Sikalastic®-621 TC**
- Reinforcement with **Sikalastic® Reemat Premium**
- Base coat **Sikalastic®-601 BC**
- Carrier layer **Sikalastic® Carrier**
- PIR, EPS insulation bonded to the vapour control layer with **Coldstick®**
- Control layer **Sikalastic® Vap** adhered to substrate with **Coldstick®**
- Concrete (or timber / steel) deck

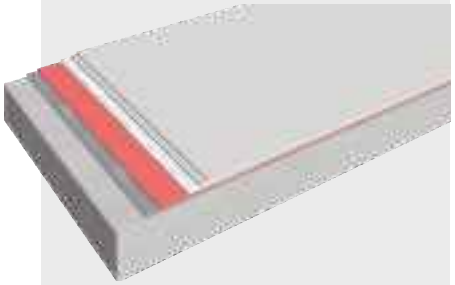
ed Membranes

Systems without Thermal Insulation

Requirements

- **Cold roof waterproofing with MTC technology**
- Seamless waterproofing
- No penetrations of the roof deck
- Extended guarantee (from your local Sika organisation)
- Increased fire resistance
- No water underflow

Design / Build-up

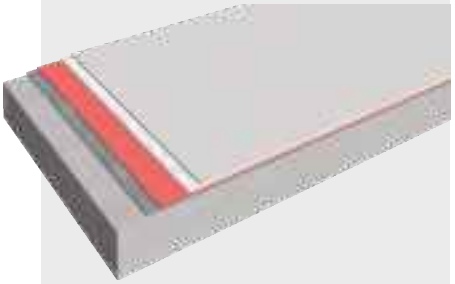


Sika System

SikaRoof® MTC 22 build-up

- 2 Top coats of **Sikalastic®-621 TC**
- Reinforcement with **Sikalastic® Reemat Premium**
- Base coat **Sikalastic®-601 BC**
- **Sika® Concrete Primer** where required
- Concrete deck

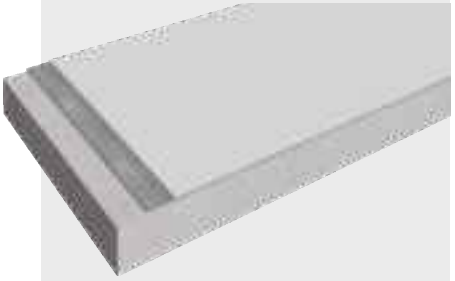
- **Cold roof waterproofing with MTC technology**
- Seamless waterproofing
- No penetrations of the roof deck
- Standard guarantee (from your local Sika organisation)
- Increased fire resistance
- No water underflow



SikaRoof® MTC 12/15/18 build-up

- 1 Top coat of **Sikalastic®-621 TC**
- Reinforcement with **Sikalastic® Reemat Premium**
- Base coat **Sikalastic®-601 BC**
- **Sika® Concrete Primer**, where required
- Concrete deck

- **Roof coating with MTC technology**
- Seamless coating
- No penetrations of the roof deck
- Increased fire resistance



SikaRoof® MTC 8 Coating

- **Sikalastic®-621 TC** in 1 or 2 coats
- **Sika® Concrete Primer**, where required
- Concrete deck

Solutions for Gravel Ballasted Roofs

General Description

In gravel ballasted roofing systems, the waterproofing membrane is covered and ballasted against wind uplift and other exposures with a layer of gravel. Conventional gravel ballasted roofs have been established in most markets for many years and are suitable on most flat roofs and bearing structures. Sika has a proven track record of over 30 years supplying this type of system. With the **Sikaplan**® **/ Sarnafil**® and **Sikalastic**® product ranges, Sika can provide both single ply and liquid applied membranes for these roofs according to the client's specific requirements.

Gravel ballasted roofs have many benefits and frequently make a very economic roofing system with:

- Fast and easy installation
- No penetrations of the roof deck

Thanks to the simple build-up of a gravel ballasted roof, the system also has many advantages during the whole service life.

- Easy to maintain, low maintenance costs
- Protection of the waterproofing membrane against environmental exposure and mechanical damage
- The non-combustible properties of the gravel contribute significantly to the fire resistance of the whole roof. The gravel also prevents flames from spreading across the surface of the roof.

Loose Laid Membrane Systems with **Sikaplan**® / **Sarnafil**®

Several **Sikaplan**® and **Sarnafil**® single ply membranes are specially designed for use on gravel ballasted roofs where they provide durable, long lasting performance.

- Resistant against biological micro-organisms
- Application is even possible at minus temperatures, giving unique flexibility to contractors, their clients and specifiers

Gravel ballasted roofs with **Sikaplan**® or **Sarnafil**® single ply membranes are conventionally installed.

- The single ply membrane and other roof components, including the thermal insulation, are loose laid
- The build-up is ballasted with a gravel layer of at least 50 mm and 80 kg/m^2
- The gravel ballast secures the roof waterproofing against wind uplift forces

Liquid Applied Membrane systems with **Sikalastic**®

The high performance **Sikalastic**® liquid applied membranes provide:

- Seamless waterproofing
- Resistance against root penetration and micro-organisms
- Highly elastic and crack bridging systems

The **SikaRoof**® **MTC** systems have even more advantages and the application of liquid membranes has never been so easy and safe.

- Moisture and rain resistant in just 10 minutes after liquid application
- Totally cold applied
- Easy detailing
- Easy installation with simple application tools

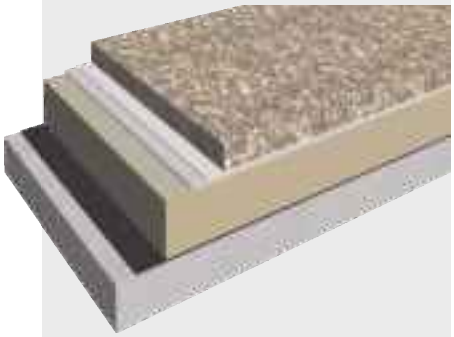
Solutions for Gravel Ballasted Roofs

Warm Roofs with Single Ply Membranes

Requirements

- **PVC-membrane with laquered surface and extended guarantee on PIR**
- Fast and easy installation
- Extended guarantee (from your local Sika organisation)
- High fire resistance

Design / Build-up



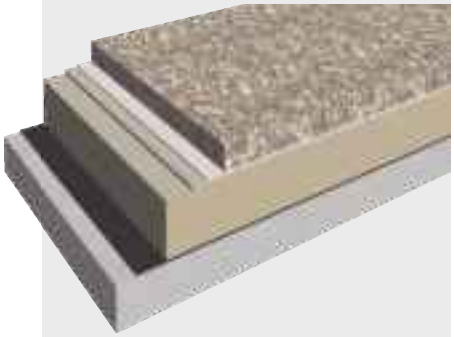
Sika System

- Gravel min. 50 mm and 80 kg/m²
- Protection layer **S-Felt T 300** or **S-Felt GK 400**
- PVC membrane **Sarnafil® G 410**
- PIR insulation
- Vapour control layer **Sarnavap® 3000 M**
- Concrete deck

- **PVC-membrane with laquered surface and extended guarantee on EPS/XPS**
- Fast and easy installation
- High fire resistance
- Increased compressive strength of the thermal insulation

- Gravel min. 50 mm and 80 kg/m²
- Protection layer **S-Felt T 300** or **S-Felt GK 400**
- PVC membrane **Sarnafil® G 410**
- Separation layer **S-Glass Fleece 120**
- XPS/EPS insulation
- Vapour control layer **Sarnavap® 3000 M**
- Concrete deck

- **FPO-membrane with extended guarantee on PIR/EPS/XPS**
- Fast and easy installation
- High chemical resistance of the waterproofing membrane
- Extended guarantee (from your local Sika organisation)
- High fire resistance



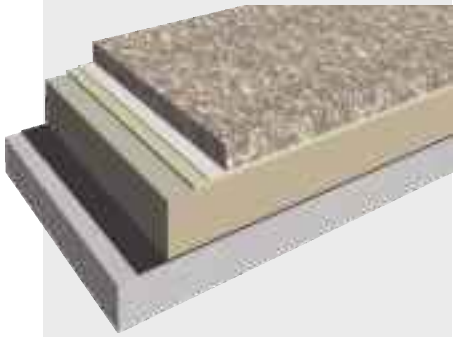
- Gravel min. 50 mm and 80 kg/m²
- Protection layer **S-Felt T 300** or **S-Felt GK 400**
- FPO membrane **Sarnafil® TG 66**
- PIR/EPS/XPS
- Vapour control layer **Sarnavap® 3000 M**
- Concrete deck

Warm Roofs with Single Ply Membranes

Requirements

- **Standard PVC membrane on PIR**
- Fast and easy installation
- Standard guarantee (from your local Sika organisation)
- High fire resistance

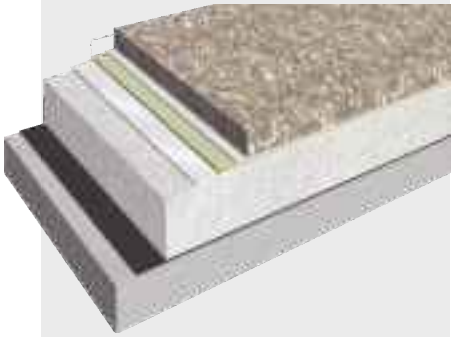
Design / Build-up



Sika System

- Gravel min. 50 mm and 80 kg/m²
- Protection layer **S-Felt T 300** or **S-Felt GK 400**, where required
- PVC membrane **Sikaplan® SGmA**
- PIR insulation
- Vapour control layer **Sarnavap® 3000 M**
- Concrete deck

- **Standard PVC membrane on EPS/XPS**
- Fast and easy installation
- Standard guarantee (from your local Sika organisation)
- Increased compressive strength of the thermal insulation
- High fire resistance



- Gravel min. 50 mm and 80 kg/m²
- Protection layer **S-Felt T 300** or **S-Felt GK 400**, where required
- PVC membrane **Sikaplan® SGmA**
- Separation layer **S-Glass Fleece 120**
- XPS/EPS insulation
- Vapour control layer **Sarnavap® 3000 M**
- Concrete deck

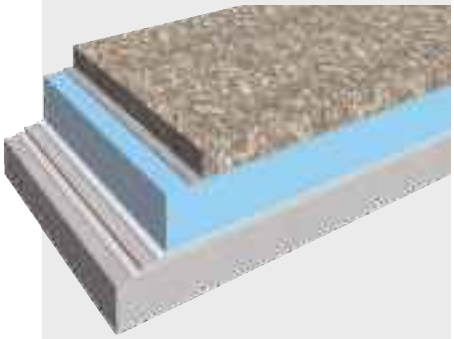
Solutions for Gravel Ballasted Roofs

Inverted Systems with Single Ply Membranes

Requirements

- **PVC-membrane with laquered surface and extended guarantee**
- Fast and easy installation
- Increased compressive strength for the thermal insulation
- Inverted roof build-up
- Additional protection of the waterproofing membrane
- High fire resistance

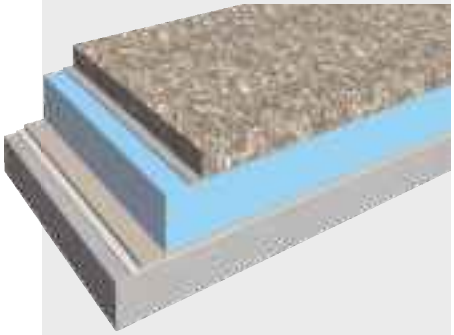
Design / Build-up



Sika System

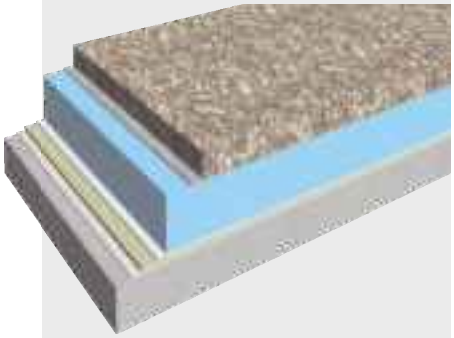
- Gravel min. 50 mm and 80 kg/m²
- Filter layer **S-Felt VS 140**
- XPS insulation
- Separation layer **S-Glass Fleece 120**
- PVC membrane **Sarnafil® G 410**
- Protection layer **S-Felt A 300**
- Concrete deck

- **FPO-membrane with extended guarantee**
- Fast and easy installation
- High chemical resistance of the waterproofing membrane
- Inverted roof build-up
- Additional protection of the waterproofing membrane
- High fire resistance



- Gravel min. 50 mm and 80 kg/m²
- Filter layer **S-Felt VS 140**
- XPS insulation
- FPO membrane **Sarnafil® TG 66**
- Protection layer **S-Felt A 300**
- Concrete deck

- **Standard PVC membrane**
- Fast and easy installation
- Standard guarantee (from your local Sika organisation)
- Increased compressive strength for the thermal insulation
- Inverted roof build-up
- High fire resistance
- Additional protection of the waterproofing membrane



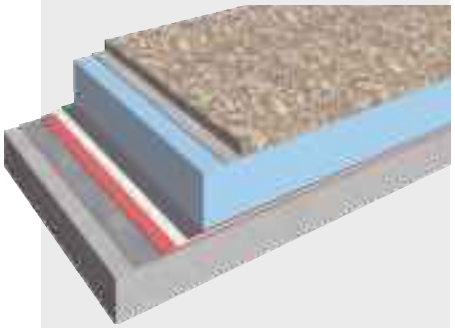
- Gravel min. 50 mm and 80 kg/m²
- Filter layer **S-Felt VS 140**
- XPS insulation
- Separation layer **S-Glass Fleece 120**
- PVC membrane **Sikaplan® SGmA**
- Protection layer **S-Felt A 300**
- Concrete deck

Inverted Systems with Liquid Applied Membranes

Requirements

- **Inverted roof waterproofing with MTC technology**
- Extended
- Seamless waterproofing
- Standard guarantee (from your local Sika organisation)
- No water underflow

Design / Build-up

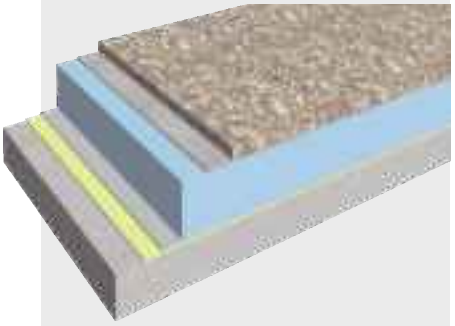


Sika System

SikaRoof® MTC Ballast build-up

- Gravel min. 40-60 mm and 80 kg/m²
- Filter layer **S-Felt VS**
- XPS insulation
- Top coat of **Sikalastic® 622 TR**
- Reinforcement fleece **Sikalastic® Reemat Premium**
- Base coat **Sikalastic®-602 BR**
- **Sika® Concrete Primer** where required
- Concrete deck

- **2-C PU waterproofing**
- Fast machine application
- Seamless waterproofing
- Standard guarantee (from your local Sika organisation)
- No water underflow



- Gravel min. 40-60 mm and 80 kg/m²
- Filter layer **S-Felt VS 140**
- XPS insulation
- Coat of **Sikalastic®-821 LV**
- Primer coat **Sikafloor® 156/161** (or other as required)
- Concrete deck

Solutions for Green Roofs

General Description

In so called 'Green Roofs' soil, or a suitable plant growing medium, is built up and planted with selected vegetation over the waterproofing membrane. Green roofs can therefore make a significant contribution and present practical solutions in the quest for sustainability, increased biodiversity and quality of life.

They provide many environmental and economic benefits including:

- Reducing heat-island effect in cities
- Protecting and prolonging the life of the waterproofing membrane
- Enhancing the aesthetics of the building
- Improved thermal performance of the building
- A natural environment on the roof with natural CO_2 absorption

Green Roofs are classified as **"Extensive"** or **"Intensive"**.

- **Extensive** green roofs have shallow growing medium with small plants
- **Intensive** green roofs have a thicker soil layer with additional drainage, for planting larger plants, bushes and small trees, thus creating roof gardens

In addition to the essential green roof waterproofing solutions, we have a wide range of supporting compatible and integrated accessories for green roof construction, including drainage and filter layers.

Loose Laid Membrane Systems with **Sikaplan**® / **Sarnafil**®

Sika has a proven track record of over 30 years with green roof construction. All of the **Sikaplan**® and **Sarnafil**® waterproofing membranes used in these systems are:

- Resistant against biological and micro-organisms
- Fully resistant to root penetration

Efficient application is also a key advantage of these materials:

- These single ply membranes can be installed in most weather conditions, even at minus temperatures. This gives a unique flexibility to contractors, their clients and designers.
- Loose laying of the membranes provides fast waterproofing layer installation
- Soil with a minimum weight of 80 kg/m^2 provides the necessary wind uplift resistance, eliminating the need for any additional mechanical fastening

Liquid Applied Membrane Systems with **Sikalastic**®

The **Sikalastic**® liquid applied membranes are also ideally suited to green roof systems. In addition to the normal **SikaRoof**® **MTC** system advantages, there are many other benefits:

- These systems have full surface adhesion to the substrate, eliminating the risk of lateral water flow under the waterproofing system, so that any potential leaks from future damage can not spread along the roof surface and therefore they can easily be identified and re sealed.
- Fast machine application and curing with 2-component PU materials
- All Sika's liquid membranes used in green roof construction have excellent root and micro-organism resistance
- The products can be applied directly on to prepared concrete decks and so they are ideal for inverted roof build-ups

Solutions for Green Roofs

Extensive Green Roofs with Single Ply Membranes

Requirements

- **FPO-membrane with extended guarantee**
- Extensive green roof with low maintenance
- High chemical resistance of the waterproofing membrane

Design / Build-up

Sika System

- Soil with plants (min. 80 mm thick and 80 kg/m²)
- Drainage layer **Sarnavert® Aquadrain 550**
- FPO membrane **Sarnafil® TG 66**
- PIR/EPS/XPS insulation
- Vapour control layer **Sarnavap® 3000 M**
- Concrete deck

- **PVC-membrane with laquered surface and extended guarantee**
- Extensive green roof with low maintenance

- Soil with plants (min. 80 mm thick and 80 kg/m²)
- Drainage layer **Sarnavert® Aquadrain 550**
- PVC membrane **Sarnafil® G 476 / G 410**
- Separation layer **S-Glass Fleece 120**
- PIR/EPS/XPS insulation
- Vapour control layer **Sarnavap® 3000 M**
- Concrete deck

- **Standard PVC membrane**
- Extensive green roof with low maintenance
- Standard guarantee (from your local Sika organisation)

- Soil with plants (min. 80 mm thick and 80 kg/m²)
- Drainage layer **Sarnavert® Aquadrain 550**
- PVC membrane **Sikaplan® SGmA**
- Separation layer **S-Glass Fleece 120**
- PIR/PS/XPS insulation
- Vapour control layer **Sarnavap® 3000 M**
- Concrete deck

Intensive Green Roofs with Single Ply Membranes

Requirements

- **FPO-membrane with extended guarantee**
- Roof garden (intensive green roof)
- High chemical resistance of the waterproofing membrane

Design / Build-up

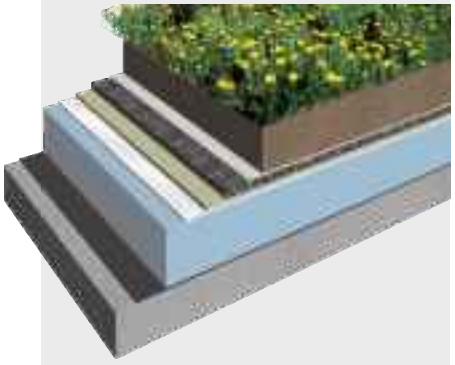
Sika System

- Soil with plants
- **Drainage Layer 30**
- FPO membrane **Sarnafil® TG 66**
- PIR/EPS/XPS insulation
- Vapour control layer **Sarnavap® 3000 M**
- Concrete deck

- **PVC-membrane with extended guarantee**
- Roof garden (intensive green roof)

- Soil with plants
- **Drainage Layer 30**
- PVC membrane **Sarnafil® G 476 / G 410**
- Separation layer **S-Glass Fleece 120**
- PIR/EPS/XPS insulation
- Vapour control layer **Sarnavap® 3000 M**
- Concrete deck

- **Standard PVC membrane**
- Roof garden (intensive green roof)
- Standard guarantee (from your local Sika organisation)



- Soil with plants
- **Drainage Layer 30**
- PVC membrane **Sikaplan® SGmA**
- Separation layer **S-Glass Fleece 120**
- PIR/EPS/XPS insulation
- Vapour control layer **Sarnavap® 3000 M**
- Concrete deck

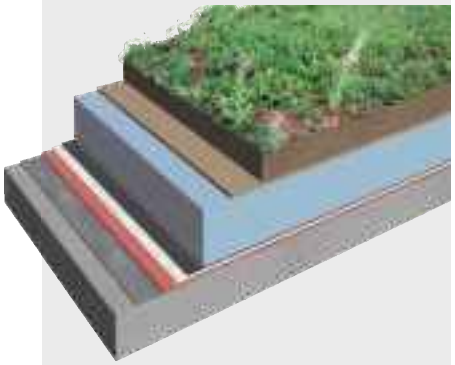
Solutions for Green Roofs

Extensive Green Roofs with Liquid Applied Membranes

Requirements

- **Inverted build up with MTC**
- Extensive green roof with low maintenance
- Standard guarantee (from your local Sika organisation)
- Seamless waterproofing
- No water underflow

Design / Build-up

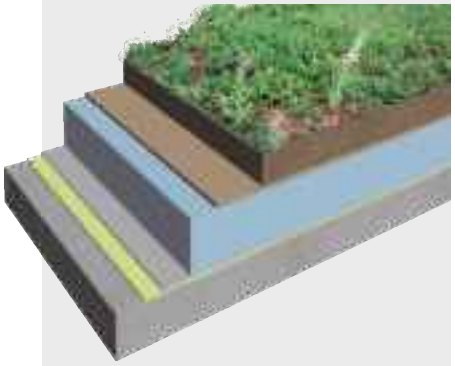


Sika System

SikaRoof® MTC Green

- Soil with grass
- Drainage layer **Sarnavert® Aquadrain 550**
- XPS insulation
- Top coat of **Sikalastic®-622 TR**
- Reinforcement **Sikalastic® Reemat Premium**
- Base coat **Sikalastic®-602 BR**
- **Sika® Conrete Primer** where required
- Concrete deck

- **Inverted build with 2-C PU**
- Fast machine application
- Extensive green roof with low maintenance
- Seamless waterproofing
- No water underflow



- Soil with grass
- Drainage layer **Sarnavert® Aquadrain 550**
- XPS Insulation
- Coat of **Sikalastic® 821 LV**
- Primer coat **Sikafloor® 156/161** (or other as required)
- Concrete deck

- **Warm roof build up with MTC**
- Extensive green roof with low maintenance
- Standard guarantee (from your local Sika organisation)
- Seamless waterproofing
- No water underflow

SikaRoof® MTC Green

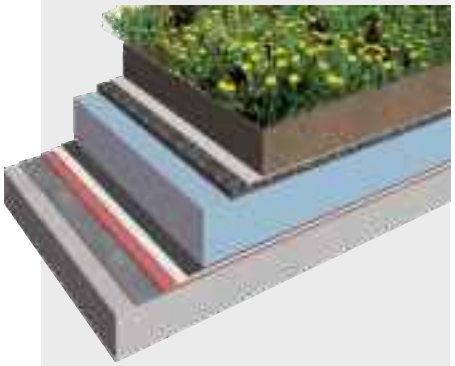
- Soil with grass
- Drainage layer **Sarnavert® Aquadrain 550**
- Top coat of **Sikalastic®-622 TR**
- Reinforcement **Sikalastic® Reemat Premium**
- Base coat **Sikalastic®-602 BR**
- Carrier layer **Sikalastic® Carrier** bonded with **Coldstick**
- PIR or EPS insulation bonded to the vapour control layer with **Coldstick®**
- Control layer **Sikalastic® Vap** bonded to the substrate with **Coldstick®**
- Concrete deck

Intensive Green Roofs with Liquid Applied Membranes

Requirements

- **Inverted build up with MTC**
- Roof garden (intensive green roof)
- Standard guarantee (from your local Sika organisation)
- Seamless waterproofing
- No water underflow

Design / Build-up



Sika System

SikaRoof® MTC Green

- Soil with plants
- **Drainage Layer 30**
- XPS insulation
- Top coat of **Sikalastic®-622 TR**
- Reinforcement **Sikalastic® Reemat Premium**
- Base coat **Sikalastic®-602 BR**
- **Sika® Concrete Primer** where required
- Concrete deck

- **Inverted build with 2-C PU**
- Fast machine application
- Roof garden (intensive green roof)
- Seamless waterproofing
- No water underflow

- Soil with plants
- **Drainage Layer 30**
- XPS insulation
- Coat of **Sikalastic®-821 LV**
- Primer coat **Sikafloor® 156/161** (or other as required)
- Concrete deck

- **Warm roof build up with MTC**
- Roof garden (intensive green roof)
- Standard guarantee (from your local Sika organisation)
- Seamless waterproofing
- No water underflow

SikaRoof® MTC Green

- Soil with plants
- **Drainage Layer 30**
- Top coat of **Sikalastic®-622 TR**
- Reinforcement **Sikalastic® Reemat Premium**
- Base coat **Sikalastic®-602 BR**
- Carrier layer **Sikalastic® Carrier** bonded with **Coldstick®**
- PIR or EPS insulation bonded with **Coldstick®**
- Control layer **Sikalastic® Vap** bonded to the substrate with **Coldstick®**
- Concrete deck

Solutions for Utility Roofs

General Description

On utility roof decks the top layer is designed as a wearing surface for pedestrian and / or vehicular traffic.

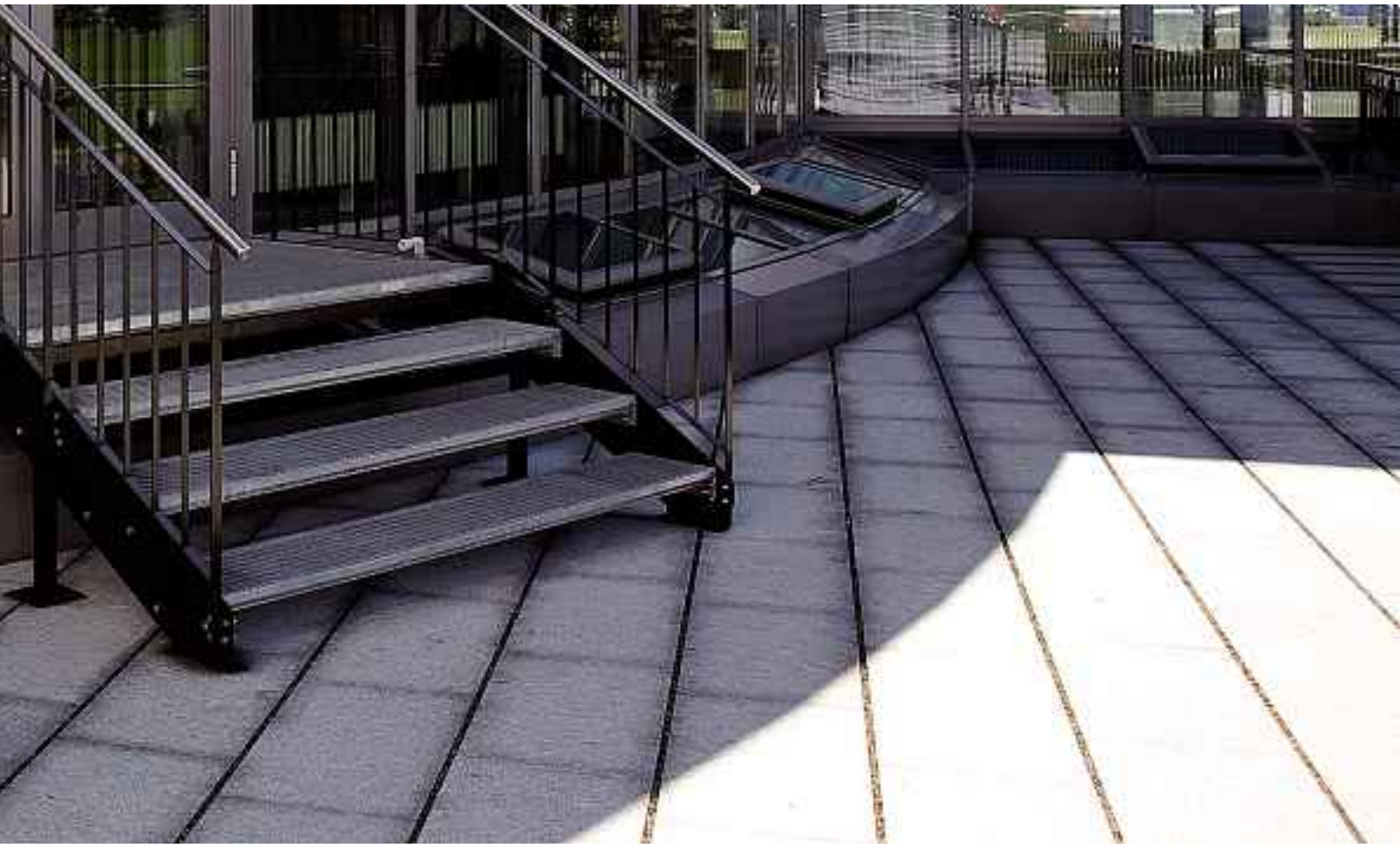
Utility roof decks can help to:

- Create more utilised space and bring additional value to the building
- Generate an increased return on investment by using the roof for a car park, restaurant area or any other viable purpose or facility

Utility roof decks share many features with gravel and green roof ballasted systems:

- The membrane is protected against any aggressive environmental exposure and mechanical damage
- The natural non-combustible properties of the paved wearing surface contribute significantly to the fire resistance of the whole roof

As Sika is not only a roofing materials supplier, but a major global construction chemical producer, we are also able to bring professional solutions for car park decks and many other special applications from one of our core business activities – Industrial and Commercial Flooring.



Loose Laid Membrane Systems with **Sikaplan**® / **Sarnafil**®

- The single ply membranes are loose laid on the substrate, welded together and then ballasted with the required utility deck build-up and wearing surface.
- These systems have a proven track record of over 30 years
- **Sikaplan**® / **Sarnafil**® membranes for utility roof decks easily resist biological influences and microorganisms
- These flexible membranes can be installed in most weather conditions, even at minus temperatures
- No additional fastening and no penetrations of the roof deck is needed

Liquid Applied Membrane Systems with **Sikalastic**®

- Utility roof decks can also be waterproofed easily and securely with liquid applied membranes. **Sikalastic**® systems provide a unique range of solutions for utility roof deck waterproofing:
- **Sikalastic**® top deck wearing surface layers with added quartz sand and / or coloured chips can give almost unlimited design possibilities for pedestrian terraces.
- Specific 2-C **Sikalastic**® products can be directly overlaid with hot poured asphalt, which can be a common solution for vehicular traffic access or car parking areas

All the main advantages of liquid applied membranes are also valid for utility roof decks:

- Cold applied waterproofing – no flame and no heat
- Seamless waterproofing, fully bonded to the substrate – preventing lateral water underflow
- The **SikaRoof**® **MTC** waterproofing layer is moisture and rain resistant just 10 minutes after application
- 1-C products with a viscosity that is ideal for roofing applications (no need for additional thinners or hardeners)
- Easy installation with brushes and rollers even over complicated surface shapes and detailing
- High tensile strength and crack bridging elasticity
- Long shelf life products

Solutions for Utility Roofs

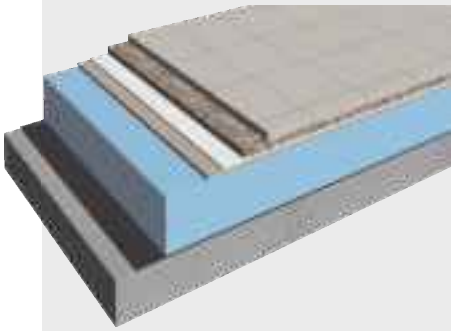
Pedestrian Traffic Roofs with Single Ply Membranes

Requirements

Design / Build-up

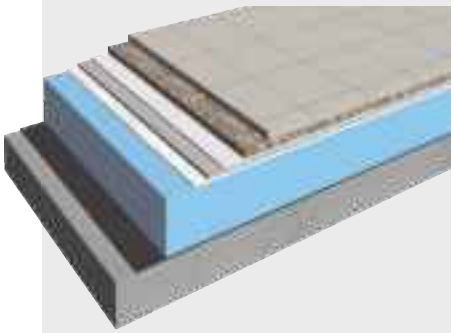
Sika System

- **FPO-membrane with extended guarantee**
- Pedestrian terrace
- Highly chemically resistant waterproofing membrane



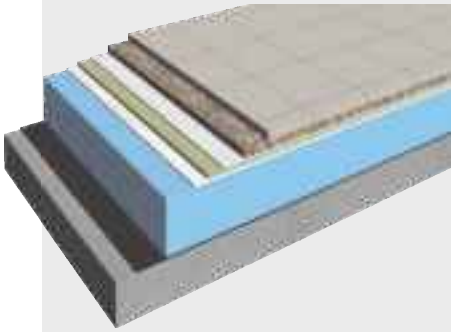
- Pavers on chipping bed min. 30 mm
- Protection layer **Sarnafil® TG 63** or **S-Felt T 300**
- FPO membrane **Sarnafil® TG 66**
- XPS/EPS or PIR insulation
- Vapour control layer **Sarnavap® 3000 M**
- Concrete deck

- **PVC-membrane with laquered surface and extended guarantee**
- Pedestrian terrace



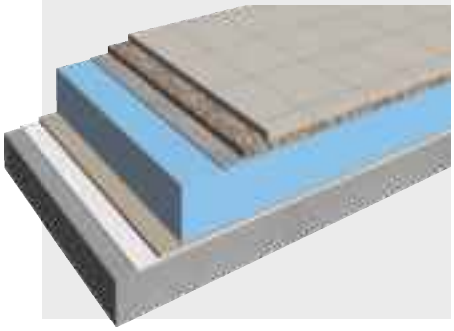
- Pavers on chipping bed min. 30 mm
- Protection layer **Sarnafil® G 445** or **S-Felt T 300**
- PVC membrane **Sarnafil® G 476 / G 410**
- Separation layer **S-Glass Fleece 120**
- XPS/EPS or PIR insulation
- Vapour control layer **Sarnavap® 3000 M**
- Concrete deck

- **Standard PVC membrane**
- Pedestrian terrace
- Standard guarantee (from your local Sika organisation)



- Pavers on chipping bed min. 30 mm
- Protection layer **Sikaplan® SBV** or **S-Felt T 300**
- PVC membrane **Sikaplan® SGmA**
- Separation layer **S-Glass Fleece 120**
- XPS/EPS or PIR insulation
- Vapour control layer **Sarnavap® 3000 M**
- Concrete deck

- **FPO-membrane with extended guarantee**
- Pedestrian terrace
- Highly chemically resistant waterproofing membrane
- Inverted roof build-up
- Additional protection of the membrane



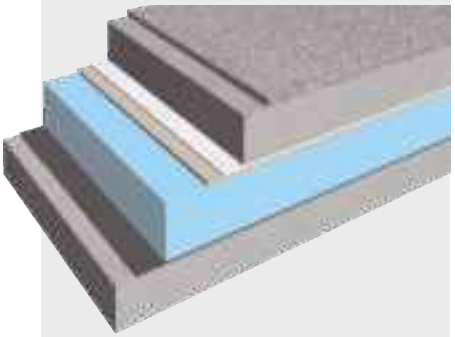
- Pavers on chipping bed min. 30 mm
- Filter layer **S-Felt VS 140**
- XPS insulation
- FPO membrane **Sarnafil® TG 66**
- Protection layer **S-Felt A 300**
- Concrete deck

Car Traffic Roofs with Single Ply Membranes

Requirements

- **FPO-membrane with extended guarantee**
- Car traffic roof deck with asphalt wearing surface
- Highly chemically resistant waterproofing membrane

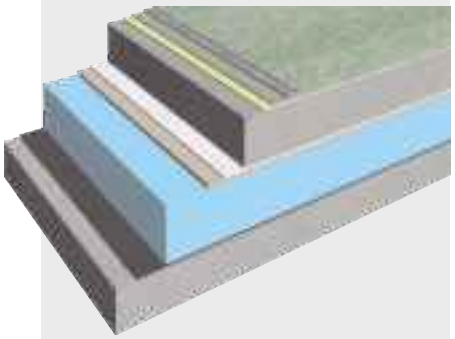
Design / Build-up



Sika System

- Asphalt wearing layer
- Concrete slab using **Sika Viscocrete®** concrete admixture technology
- Slip/protection layer **S-Felt GK 400**
- FPO membrane **Sarnafil® TG 66**
- XPS insulation
- Vapour control layer **Sarnavap® 3000 M**
- Concrete deck

- **FPO-membrane with extended guarantee and high quality polymer coating on top**
- Car traffic roof deck with durable, long lasting polymer top coating
- Highly chemically resistant waterproofing membrane



- Top seal coat **Sikafloor®-358**
- Quartz sand broadcast
- Elastic coat **Sikafloor®-350 N**
- Primer **Sikafloor® 156/161**
- Concrete slab using **Sika Viscocrete®** concrete admixture technology
- Slip/protection layer **S-Felt GK 400**
- FPO membrane **Sarnafil® TG 66**
- XPS insulation
- Vapour control layer **Sarnavap® 3000 M**
- Concrete deck

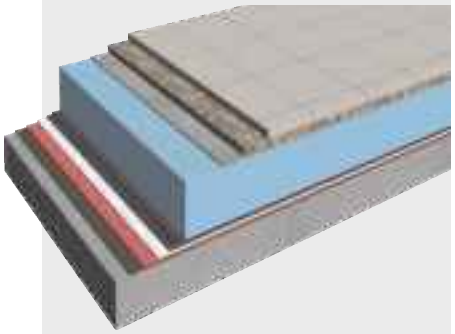
Solutions for Utility Roofs

Pedestrian Traffic Roofs with Liquid Applied Membranes

Requirements

- **Inverted build up with MTC**
- Pedestrian terraces
- Standard guarantee (from your local Sika organisation)
- Seamless waterproofing
- No water underflow
- Inverted roof build-up

Design / Build-up

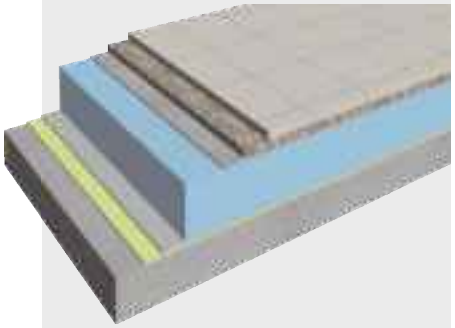


Sika System

SikaRoof® MTC Ballast

- Pavers on chipping bed 30 mm
- Filter layer **S-Felt VS 140**
- XPS insulation
- Top coat of **Sikalastic®-622TR**
- Reinforcement **Sikalastic® Reemat Premium**
- Base coat **Sikalastic®-602 BR**
- **Sika® Concrete Primer**, where required
- Concrete deck

- **Inverted build with 2-C PU**
- Fast machine application
- Pedestrian terraces
- Seamless waterproofing
- No water underflow
- Inverted roof build-up



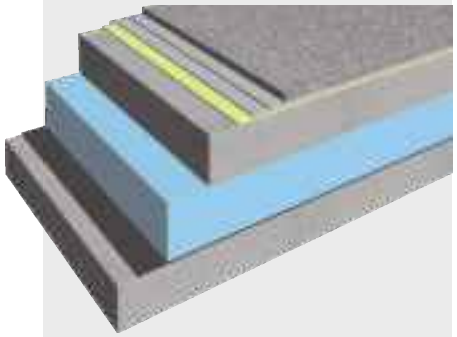
- Pavers on chipping bed 20 mm
- Filter layer **S-Felt VS 140**
- XPS insulation
- Coat of **Sikalastic®-821 LV**
- Primer coat **Sikafloor®-156/161**
- Concrete deck

Car Traffic Roofs with Liquid Applied Membranes

Requirements

- **2-C PU waterproofing with hot asphalt**
- Car traffic roof deck with asphalt wearing surface
- Fast machine application
- Possibility of direct asphalt application on waterproofing layer
- Highly chemically resistant waterproofing membrane
- Standard guarantee (from your local Sika organisation)
- Seamless waterproofing
- No water underflow

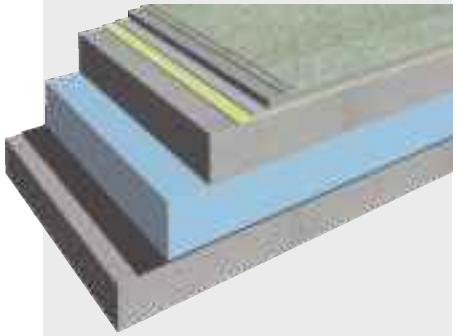
Design / Build-up



Sika System

- Asphalt layer applied directly on **Sikalastic®-823**
- Coat of **Sikalastic®-823**
- Coat of **Sikalastic®-821 LV**
- Primer coat **Sikafloor®-156/161**
- Concrete slab using **Viscocrete® concrete** admixture technology
- XPS insulation
- Vapour control layer **Sarnavap® 3000 M**
- Concrete deck

- **2-C PU waterproofing with high quality polymer coating on top**
- Car traffic roof deck with durable, long lasting polymer top coating
- Fast machine application
- Highly chemically resistant waterproofing membrane
- Standard guarantee (from your local Sika organisation)
- Seamless waterproofing
- No water underflow



- Top seal coat **Sikafloor®-358/359 N**
- Quartz sand broadcast
- Wearing coat **Sikafloor®-355 N**
- Coat of **Sikalastic®-821 LV**
- Primer coat **Sikafloor®-156/161**
- Concrete slab using **Viscocrete® concrete** admixture technology
- XPS insulation
- Vapour control layer **Sarnavap® 3000 M**
- Concrete deck

Variety of Liquid Applied and Single Ply Membranes for

Sika is Focused on Solar

Rooftop solar installations are becoming increasingly popular worldwide. More and more building owners see the opportunity to make effective use of their roof space to make a contribution to the environment through sustainable electricity production. Such installations are investments intended to provide a return over the long-term. Therefore, the roof itself needs a proven track record of high performance with low maintenance requirements as a critical component of solar applications that have an expected service life of 25 years.
Sika has years of experience in the manufacture of liquid and sheet membranes that can live up to the demands for performance and life expectancy not only as stand alone waterproofing systems but also ideal substrates for a variety of solar application. For the main solar technologies currently available, Sika can offer an ideally suited solution that either ensures or improves the overall performance of the solar application with as little maintenance and interruption as possible. Sika has created “Solar Parks” at its own facilities to showcase its expertise and flexibility of dealing with solar systems used in rooftop applications.

Building Integrated Photovoltaic (B.I.P.V)

Singly ply membrane sheets can be used as a carrier (master membrane) for the lamination of flexible solar cells. Such membrane sheets with integrated cells are installed over a primary waterproofing layer. Lightweight and easy to install, BIPV solutions take advantage of Sika`s range of membranes to create a building integrated solar system.

Solar Roofs

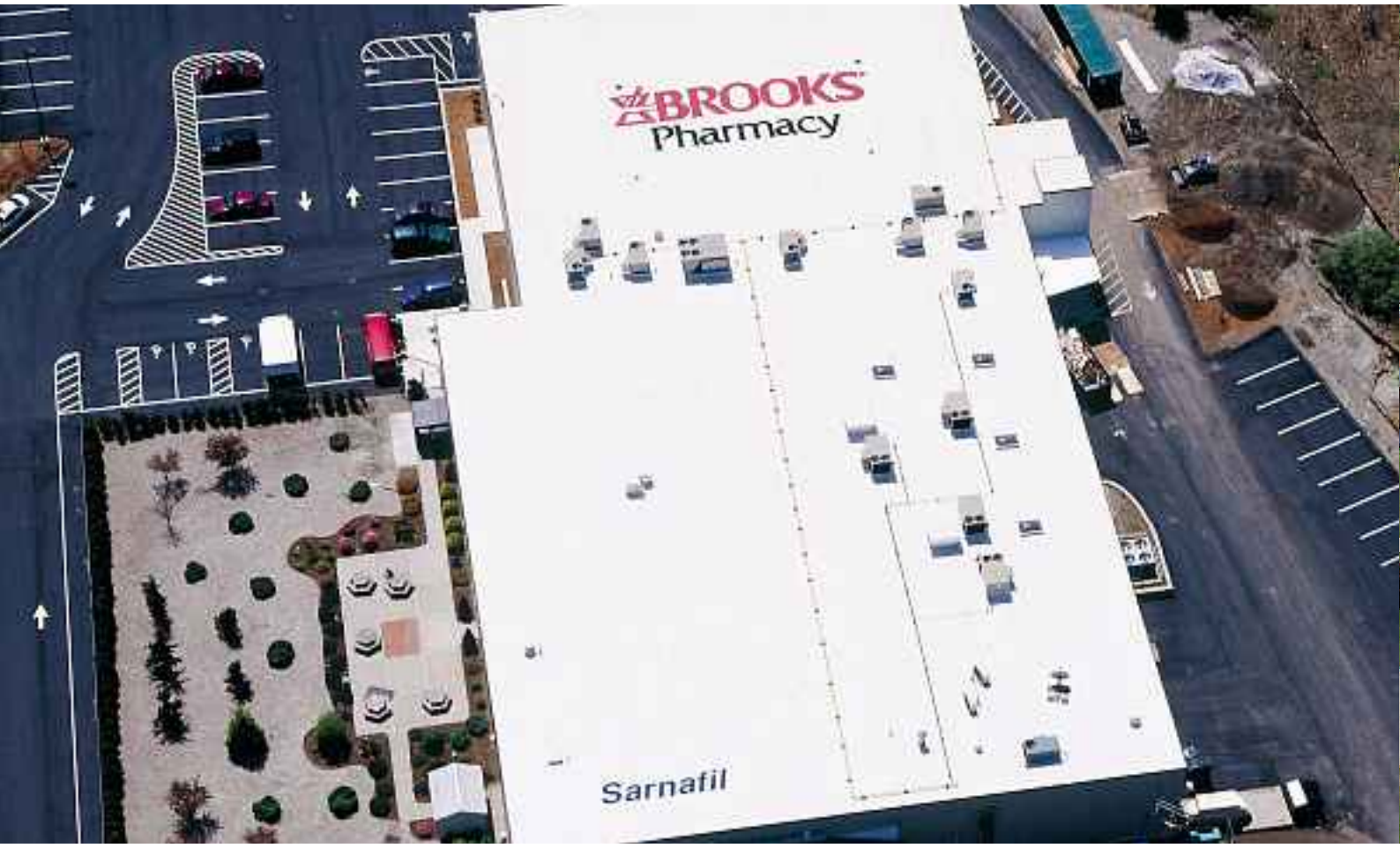
Highly Reflective Liquid and Sheet Roofing Membranes

Certain rooftop solar systems absorb light not only from the sun to produce electricity but also from the reflective roof surface itself – in some cases increasing the efficiency of the solar cell up to 15%. Sika`s highly reflective liquid and sheet membranes make a significant contribution to increased electricity production from the same area of solar roof space.

Rigid Solar Cell Systems

Crystalline solar cells continue to be used in a variety of rooftop solar applications. Sika offers also a wide range of possibilities to meet the design considerations of such systems.

Solutions for Special Roof Design and Colours



Definition of Special Roof Design Requirements

- Sika technologies and our extensive product range for roofing applications give almost unlimited possibilities in terms of special design and individual branding requirements. Commonly requested design and creative needs can be split into the following categories:
- Roofs with different colours
- Company logos and graphics on the roof
- Metal roof imitation – Standing seams and other profiles

All these special Sika solutions are:

- Reliable – all of the accessories, profiles or coloured coatings required are fully compatible with the Sika waterproofing membranes
- Long-lasting – coloured products have good colour stability.
- Easily installed – company logos and décor profiles require no supporting structure, they are installed directly on the Sika waterproofing membranes.
- Additional value to your roof – logos, graphics and colour can be a terrific 'eye catcher' for people and they can effectively attract and promote your brand or company name, differentiate your building and create a real landmark with your unique design.

Logos and Graphics on the Roof

Logos on roofs are generally produced over:
- Sika single ply PVC or
- Sika liquid applied PU membranes

Sika solutions for creating logos on PVC membrane roofs include:
- Coloured Sika PVC membrane sheets cut to size & shape and then welded on top of the waterproofing membrane
- PU based coating **Sikagard®-950** applied in the selected colours and design on top of the PVC membrane

Logos required on top of liquid applied membrane systems are easily produced using the same top coating materials in the different colours required.

Range of Colours

The widest coloured membrane choices are available using **Sarnafil® G410 / S327** PVC membranes. There is a standard colour range and in addition to special / custom colours can be produced on request.

A curtain standard colour range is also available with **Sikaplan® G / VGWT** membranes and **Sikalastic® 621 PU** liquid applied membrane.

Metal Roof (Standing Seam) Imitation

The single ply membranes **Sarnafil®** / **Sikaplan®** used together with the special Décor profiles (**Sarnafil® Décor Profile** / **Décor Profile SE**) allow our clients to imitate the look and appearance of a standing seam metal roof, but with the considerable advantages of Sika waterproofing membrane systems. These profiles are made out of the same material as the membranes, they are then easily welded on to the surface of the waterproofing system.

There are several clear advantages for this system compared to the conventional metal roofs:
- Faster and easier installation
- Simpler support structure and no need for additional ventilation gap
- Possibility of installation on lower slopes and gradients
- Secure waterproofing with easier detailing
- More cost effective

Solutions for the Refurbishment of Bitumen Roofs

General Description

Refurbishment of old existing bitumen roofs is by far the largest part of all roof reconstructions.

Sika has a full range of systems ideally suiting these roof refurbishment jobs:

- Adhered single ply membrane systems
- Mechanically fastened systems
- Liquid applied membrane systems

These systems can be installed with or without additional thermal insulation as required.

For the selection of the right refurbishment system, a specific project survey and assessment has to be undertaken. Please contact the Technical Services Department of your local Sika company for assistance.

Compared to traditional bitumen re-roofing, all of the Sika refurbishment systems have many advantages:

- Longer life-expectancy and guarantees
- Availability of light coloured reflective membranes which reflect heat and light, thus saving energy and costs
- Lower additional load on the structure – the additional weight of Sika single ply or liquid applied waterproofing is much lower than several layers of bitumen that would be required for the job
- Considerably higher flexibility and elasticity in cold temperatures
- No risk of fires during application due to the totally flame free installation methods
- Increased fire resistance of the waterproofing system itself

Mechanically Fastened Systems with **Sarnafil**® / **Sikaplan**®

- Mechanically fastened roofs are the most cost efficient systems
- **Sarnafil**® **T** polyolefin membranes are resistant to bitumen and can be applied directly on to the old bitumen water-proofing
- The fastest installation speed is achieved with mechanical fastening
- **Sarnafil**® / **Sikaplan**® membranes for mechanical fastening have special polyester reinforcement, enabling high wind load resistance
- Installation is almost not weather dependent

Adhered Systems with **Sarnafil**® / **Sikaplan**®

Sarnafil® / **Sikaplan**® adhered roofing systems are designed specifically for roof refurbishment works, making them the No.1 choice for the re-roofing of many bituminous roofs.

- Bitumen compatible membrane
- Membrane and insulation adhesives with excellent adhesion direct to bitumen
- No penetrations of the existing roof build up are required
- Very low noise emissions during installation
- Easy application on simple and complex roof shapes
- High aesthetic appearance and visual improvement
- Many design possibilities with coloured membranes and profiles

Liquid Applied Membrane Systems with **Sikalastic**®

- Liquid applied membrane systems using our unique **SikaRoof**® **MTC** technology can provide many advantages such as:
- Seamless waterproofing with full bond to the substrate
- Installation is possible directly on the old bitumen without special priming
- The new waterproofing layer is moisture and rain resistant just 10 minutes after application
- 1-C products with the ideal viscosity for roofing applications (no need for additional thinners or hardeners etc)
- Easy installation with brushes or rollers, even over complex shapes and forms.
- High tensile strength and elasticity
- Cold applied waterproofing – no flame, no heat.
- Long shelf life products

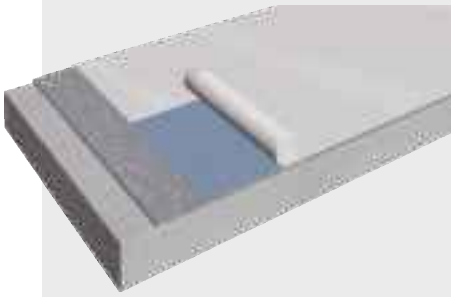
Solutions for the Refurbishment of Bitumen Roofs

Adhered Systems without Additional Insulation

Requirements

- **Fully adhered laquered felt-backed PVC membrane with extended guarantee**
- Special colours and design (metal roof imitation, décor profiles)
- Lacquered surface
- No drilling into the deck and no penetrations
- Low noise emission during refurbishment
- Limited lateral water underflow

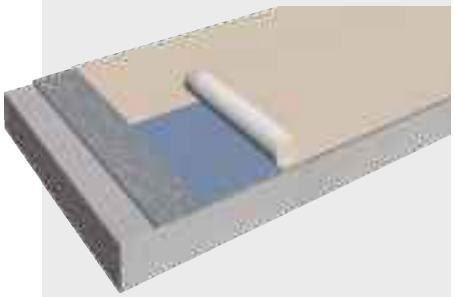
Design / Build-up



Sika System

- PVC membrane **Sarnafil® G 410 Felt** fully adhered to the bitumen substrate with **Sarnacol® 2142 S** adhesive
- Existing build-up on concrete deck

- **Fully adhered felt-backed FPO membrane with extended guarantee**
- Highly chemically resistant waterproofing layer
- No drilling into the deck and no penetrations
- Low noise emission during refurbishment
- Limited lateral water underflow

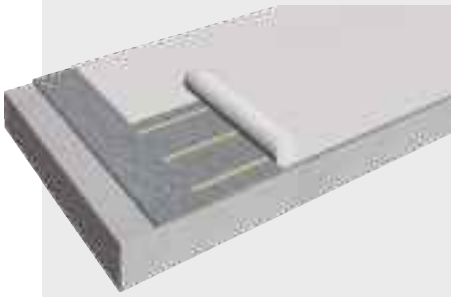


- FPO membrane **Sarnafil® TG 76 Felt** fully adhered to the bitumen substrate with **Sarnacol® 2142 S** adhesive
- Existing build-up on concrete deck

- **Self-adhered PVC membrane**
- Easy and fast installation
- Standard guarantee (from your local Sika organisation)
- No drilling into the deck and no penetrations
- Low noise emission during refurbishment
- No water underflow

- PVC membrane **Sikaplan® RV-s** bonded directly to the bitumen substrate
- Surface preparation with **Primer 600**
- Existing build-up on concrete deck

- **Parly adhered standard felt-backed PVC membrane**
- Fast installation
- Standard guarantee (from your local Sika organisation)
- No drilling into the deck and no penetrations
- Low noise emission during refurbishment



- PVC membrane **Sikaplan® SGK** partially adhered to the bitumen substrate with **Sika-Trocal® C 300** adhesive
- Existing build-up on concrete deck

Mechanically Fastened Systems without Additional Insulation

Requirements

Design / Build-up

Sika System

- **PVC-membrane with laquered surface and extended guarantee**
- Fast and easy installation
- Special colours and design (metal roof imitation, décor profiles)

- Mechanically fastened build-up
- PVC membrane **Sarnafil® S327** mechanically attached to substrate with **Sarnafast® SB** 6,3 mm and **Sarnafast® Washer IF/IG-C**
- Separation layer **S-Felt T 300**
- Existing build-up on concrete deck

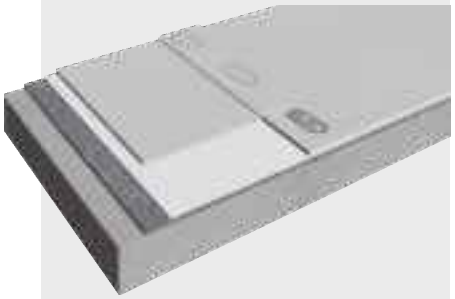
- **FPO membrane with extended guarantee**
- Fast and easy installation
- Highly chemically resistant waterproofing layer

- Mechanically fastened build-up
- FPO membrane **Sarnafil® TS 77** mechanically fixed to the substrate with **Sarnafast® SB** 6,3 mm and **Sarnafast® Washer IF/IG-C**
- Existing build-up on concrete deck

- **Standard PVC membrane**
- Fast and easy installation
- Standard guarantee (from your local Sika organisation)

- Mechanically fastened build-up
- PVC membrane **Sikaplan® G** mechanically fixed to the substrate with **Sarnafast® SB** 6,3 mm and **Sarnafast® Washer IF/IG-C**
- Separation layer **S-Felt T 300**
- Existing build-up on concrete deck

- **PVC membrane with increased fire and cold resistance**
- Fast and easy installation
- Standard guarantee (from your local Sika organisation)



- Mechanically fastened build-up
- PVC membrane **Sikaplan® VGWT** mechanically fixed to the substrate with **Sarnafast® SB** 6,3 mm and **Sarnafast® Washer IF/IG-C**
- Separation layer **S-Felt T 300**
- Existing build-up on concrete deck

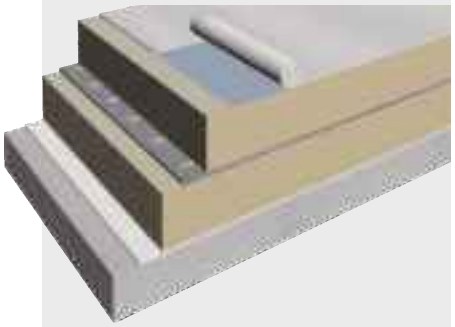
Solutions for the Refurbishment of Bitumen Roofs

Adhered Systems with Additional Insulation

Requirements

- **Fully adhered laquered felt-backed PVC membrane with extended guarantee**
- Additional thermal insulation
- Special colours and design (metal roof imitation, décor profiles)
- Lacquered surface
- No penetrations into the roof deck (when all roof build-up components are adhered)
- Low noise emission during refurbishment
- No water underflow

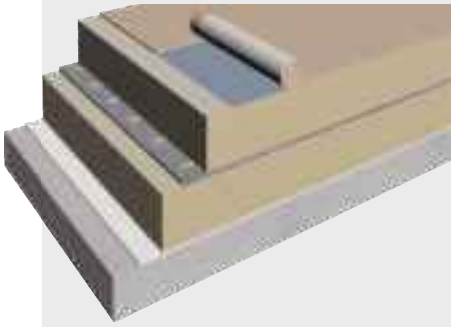
Design / Build-up



Sika System

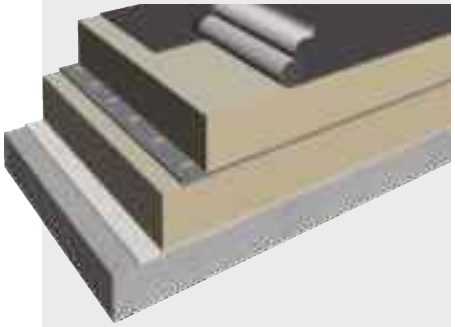
- PVC membrane **Sarnafil® G 410 Felt** fully adhered to the insulation with **Sarnacol® 2142 S** adhesive
- PIR, XPS/EPS insulation bonded to the bitumen with **Sarnacol® 2162** or mechanically fastened to the substrate
- Existing build-up on concrete deck

- **Fully adhered felt-backed FPO membrane with extended guarantee**
- Additional thermal insulation
- Highly chemically resistant waterproofing layer
- No penetrations into the roof deck (when all roof build-up components are adhered)
- Low noise emission during refurbishment
- No water underflow



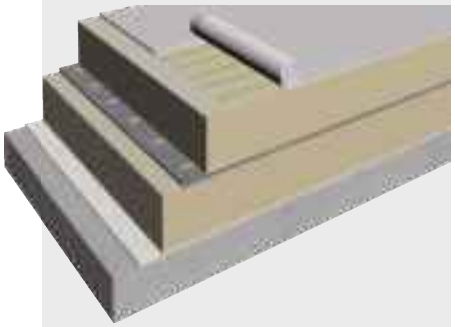
- FPO membrane **Sarnafil® TG 76 Felt** fully adhered to the insulation with **Sarnacol® 2142 S** adhesive
- PIR, XPS/EPS insulation bonded to the bitumen with **Sarnacol® 2162** or mechanically fastened to the substrate
- Existing build-up on concrete deck

- **Self-adhered PVC membrane**
- Additional thermal insulation
- Standard guarantee (from your local Sika organisation)
- No penetrations into the roof deck (when all roof build-up components are adhered)
- Low noise emission during refurbishment
- No water underflow



- PVC membrane **Sikaplan® RV-s** adhered to the PIR, XPS/EPS insulation
- PIR, XPS/EPS insulation bonded to the bitumen with **Sarnacol® 2162** or mechanically fastened to the substrate
- Existing build-up on concrete deck

- **Parly adhered standard felt-backed PVC membrane**
- Additional insulation
- Standard guarantee (from your local Sika organisation)
- No penetrations into the roof deck (when all roof build-up components are adhered)
- Low noise emission during refurbishment



- PVC membrane **Sikaplan® SGK** partially adhered to the insulation with **Sika-Trocal® C 300** adhesive
- PIR, XPS/EPS insulation bonded to the bitumen with **Sarnacol® 2162** or mechanically fastened to the substrate
- Existing build-up on concrete deck

Mechanically Fastened Systems with Additional Insulation

Requirements

- **PVC-membrane with laquered surface and extended guarantee**
- Additional thermal insulation
- Special colours and design (metal roof imitation, décor profiles)

Design / Build-up

Sika System

Mechanically fastened build-up

- PVC membrane **Sarnafil® S327** mechanically fixed to the substrate with **Sarnafast® SB** 6,3 mm and **Sarnafast® Washer KTL**
- Separation layer **S-Glass Fleece 120** (with EPS/XPS insulation)
- New thermal insulation
- Existing build-up on concrete deck

- **FPO membrane with extended guarantee**
- Additional thermal insulation
- Highly chemically resistant waterproofing layer

Mechanically fastened build-up

- FPO membrane **Sarnafil® TS 77** mechanically fixed to the substrate with **Sarnafast® SB** 6,3 mm and **Sarnafast® Washer KTL**
- New thermal insulation
- Existing build-up on concrete deck

- **Standard PVC membrane**
- Additional thermal insulation
- Standard guarantee (from your local Sika organisation)

Mechanically fastened build-up

- PVC membrane **Sikaplan® G** mechanically fixed to the substrate with **Sarnafast® SB** 6,3 mm and **Sarnafast® Washer KTL**
- Separation layer **S-Glass Fleece 120** (with EPS/XPS insulation)
- New thermal insulation
- Existing build-up on concrete deck

- **PVC membrane with increased fire and cold resistance**
- Additional thermal insulation
- Standard guarantee (from your local Sika organisation)

Mechanically fastened build-up

- PVC membrane **Sikaplan® VGWT** mechanically fixed to the substrate with **Sarnafast® SB** 6,3 mm and **Sarnafast® Washer KTL**
- Separation layer **S-Glass Fleece 120** (with EPS/XPS insulation)
- New thermal insulation
- Existing build-up on concrete deck

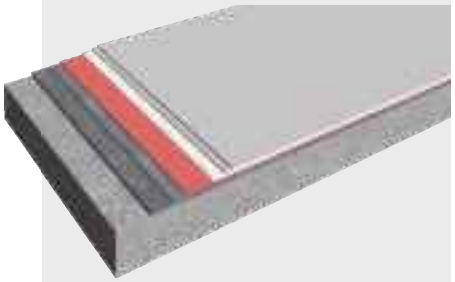
Solutions for the Refurbishment of Bitumen Roofs

Liquid Applied Membrane Systems without Additional Insulation

Requirements

- **Roof waterproofing with MTC**
- Seamless waterproofing
- Possibility of partial repairs
- No penetrations into the roof deck
- Standard guarantee (from your local Sika organisation)
- Increased fire resistance of the waterproofing system
- No lateral water underflow

Design / Build-up

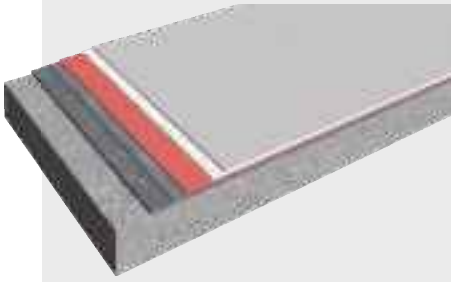


Sika System

SikaRoof® MTC 22

- 2 Top coats of **Sikalastic®-621 TC**
- Reinforcement **Sikalastic® Reemat Premium**
- Base coat **Sikalastic®-601 BC**
- **Sika® Concrete Primer** where required / Carrier layer **Sikalastic® Carrier** bonded with **Coldstick®** in case of very rough surfaces
- Existing build-up on concrete deck

- **Roof waterproofing with MTC**
- Seamless waterproofing
- Possibility of partial repairs
- No penetrations into the roof deck
- Standard guarantee (from your local Sika organisation)
- Increased fire resistance from the waterproofing system
- No lateral water underflow



SikaRoof® MTC 12/15/18

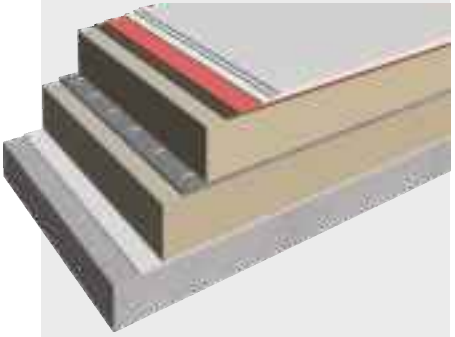
- 1 Top coat of **Sikalastic®-621 TC**
- Reinforcement **Sikalastic® Reemat Premium**
- Base coat **Sikalastic®-601 BC**
- **Sika® Concrete Primer** where required / Carrier layer **Sikalastic® Carrier** bonded with **Coldstick®** in case of very rough surfaces
- Existing build-up on concrete deck

Liquid Applied Membrane Systems with Additional Insulation

Requirements

- **Warm roof build-up with MTC**
- Seamless waterproofing
- Possibility of partial repairs
- No penetrations into the roof deck
- Extended guarantee (from your local Sika organisation)
- Increased fire resistance from the waterproofing system
- No lateral water underflow

Design / Build-up

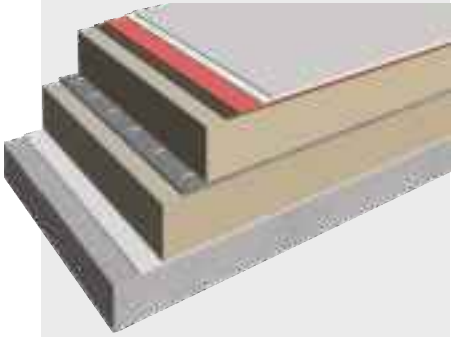


Sika System

SikaRoof® MTC 22

- 2 Top coats of **Sikalastic®-621 TC**
- Reinforcement **Sikalastic® Reemat Premium**
- Base coat **Sikalastic®-601 BC**
- Carrier layer **Sikalastic® Carrier** bonded with **Coldstick®**
- PIR or EPS insulation bonded to the bitumen layer with **Coldstick®**
- Existing build-up on concrete deck

- **Warm roof build-up with MTC**
- Seamless waterproofing
- Possibility of partial repairs
- No penetrations into the roof deck
- Standard guarantee (from your local Sika organisation)
- Increased fire resistance from the waterproofing system
- No lateral water underflow



SikaRoof® MTC 12/15/18

- 1 Top coat of **Sikalastic®-621 TC**
- Reinforcement **Sikalastic® Reemat Premium**
- Base coat **Sikalastic®-601 BC**
- Carrier layer **Sikalastic® Carrier** bonded with **Coldstick®**
- PIR or EPS insulation bonded to the bitumen layer with **Coldstick®**
- Existing build-up on concrete deck

Solutions for the Refurbishment of Metal Roofs

General Description

Metal roofs are also frequently in need of refurbishment and re-waterproofing due to the typical problems of:

- Metal corrosion
- High metal expansion and contraction over time, leading to loose fasteners and cracks in seals and joints
- Condensation
- Leaks related to the waterproofing of difficult details, joints and connections (i.e. inner gutters, sky-lights etc.)

The suitable Sika systems for the refurbishment of existing metal roofs are based on:

- Single-ply membranes **Sarnafil**®
- Liquid applied membranes **Sikalastic**®

These systems are designed to solve all of the above problems, to provide you with a durable, long-lasting and sustainable watertight metal roof refurbishment solution.

Mechanically Fastened Systems with **Sarnafil**®

This system requires additional thermal insulation to be added and create a smooth surface which is suitable for loose laying the membrane over, in addition to the thermal improvements that are gained.

By selecting this system you obtain:

- A watertight system without problem points, like gutters, connections, flashings, etc. are securely waterproofed)
- Reduced energy and heating/cooling costs due to the additional thermal insulation and highly reflective membranes
- Long life expectancy and low life-cycle maintenance costs

Liquid Applied Membrane Systems with **Sikalastic**®

This is the fast and easy way to renovate your metal roofs by spraying these advanced liquid applied membranes on to the cleaned and primed (where required) metal surfaces.

The Sika liquid membrane solutions provide

- Restored water tightness
- Additional protection for the metal deck
- Reduced ‘heat island’ effect (light, highly reflective surface)

Requirements

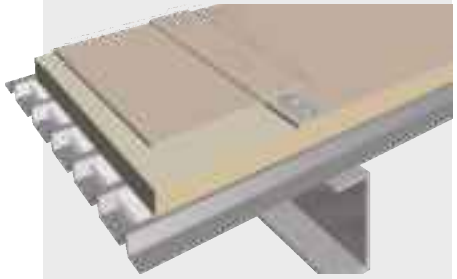
- Additional thermal and acoustic insulation
- Special colours and design (décor profiles)
- Extended guarantee (from your local Sika organisation)
- Lacquered surface

Design / Build-up

Sika System

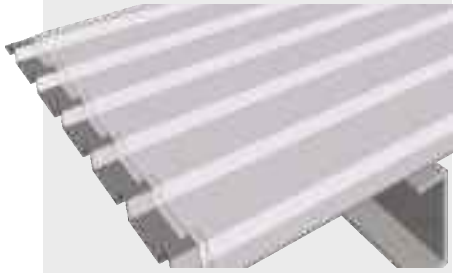
- PVC membrane **Sarnafil® S 327** mechanically fixed to substrate
- Mineral wool or PIR insulation
- Flute filler
- Metal deck
- Purlin

- Additional thermal and acoustic insulation
- High chemical resistance of the waterproofing membrane
- Extended guarantee (from your local Sika organisation)



- FPO membrane **Sarnafil® TS 77** mechanically fixed to substrate
- Mineral wool or PIR insulation
- Flute filler
- Metal deck
- Purlin

- Fast and easy installation (direct application on metal without any levelling layers)
- Seamless waterproofing
- No penetrations of the metal deck



- **Sikalastic®-621 TC** in 1 or 2 coats
- Detailing with **Flexistrip** applied over metal sheets joints and over fastener heads and covered with **Sikalastic®-621 TC**
- **Sikalastic® Metal Primer**, where required
- Metal deck

Solutions for the Refurbishment of Polymeric Roofs –

General Description

The refurbishment of polymeric membrane roofs is becoming more and more common.

As with bitumen roof refurbishment, Sika provides the best-performing systems for this purpose which include:

- Mechanically fastened membrane systems
- Liquid applied membranes
- These can both be installed either with, or without additional thermal insulation; to meet new environmental standards or reduce energy costs

For the best selection of a refurbishment solution, a specific project roof survey and assessment has to be undertaken. Please contact the Technical Services Department of your local Sika organization for assistance.

EPDM, PVC, FPO

Mechanically Fastened Systems with **Sarnafil**® / **Sikaplan**®

- Mechanically fastened roofs are usually the most cost efficient solution for polymeric sheet membrane roof refurbishment
- These also have the fastest refurbishment installation speed
- The **Sarnafil**® / **Sikaplan**® membranes for mechanical fixing have special polyester reinforcement to give them high wind load resistance
- Installation is almost non weather dependent

Liquid Applied Membrane Systems with **Sikalastic**®

Liquid applied membrane systems using the unique **SikaRoof**® **MTC** technology, have many advantages including:

- Primers for direct applications on EPDM membrane surfaces
- Seamless waterproofing solutions with a full bond to the substrate
- The waterproofing layer is moisture and rain resistant just 10 minutes after its application
- 1-C product with a viscosity that is ideal for roofing applications (no need for thinners or hardeners etc)
- Easy installation with rollers and brushes, even over the most complicated shapes and congested areas
- High tensile strength and elasticity
- Cold applied waterproofing – no flame, no heat.
- Long shelf life products

Solutions for the Refurbishment of Polymeric Roofs –
Mechanically Fastened Systems without Additional Insulation

Requirements

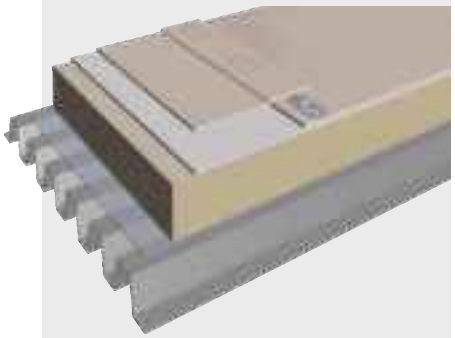
- **PVC-membrane with laquered surface and extended guarantee**
- Fast and easy installation
- Special colours and design possibilities (metal roof imitation, décor profiles)

Design / Build-up

Sika System

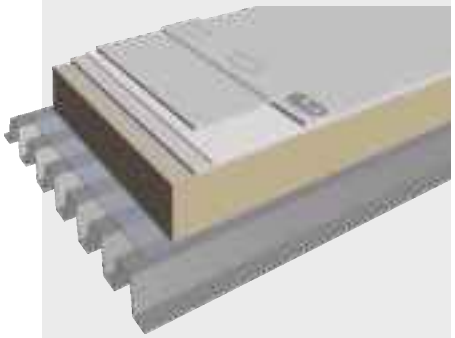
Mechanically fastened system build-up
- PVC membrane **Sarnafil® S327** mechanically fixed to the substrate with **Sarnafast® SF** 4,8 mm and **Sarnafast® Washer KT**
- Separation layer **S-Felt A 300**
- Existing build-up on steel deck

- **FPO membrane with extended guarantee**
- Fast and easy installation
- High chemical resistance of the waterproofing layer



Mechanically fastened system build-up
- FPO membrane **Sarnafil® TS 77** mechanically fixed to the substrate with **Sarnafast® SF** 4,8 mm and **Sarnafast® Washer KT**
- Existing build-up on steel deck

- **Standard PVC membrane**
- Fast and easy installation
- Standard guarantee (from your local Sika organisation)



Mechanically fastened system build-up
- PVC membrane **Sikaplan® G** mechanically fixed to the substrate with **Sarnafast® SF** 4,8 mm and **Sarnafast® Washer KT**
- Separation layer **S-Felt A 300**
- Existing build-up on steel deck

- **PVC membrane with increased fire and cold resistance**
- Fast and easy installation
- Standard guarantee (from your local Sika organisation)

Mechanically fastened system build-up
- PVC membrane **Sikaplan® VGWT** mechanically fixed to the substrate with **Sarnafast® SF** 4,8 mm and **Sarnafast® Washer KT**
- Separation layer **S-Felt A 300**
- Existing build-up on steel deck

EPDM, PVC, FPO

Mechanically Fastened Systems with Additional Insulation

Requirements

- **PVC-membrane with laquered surface and extended guarantee**
- Additional thermal insulation
- Special colour and design possibilities (metal roof imitation, décor profiles)

Design / Build-up

Sika System

Mechanically fastened system build-up

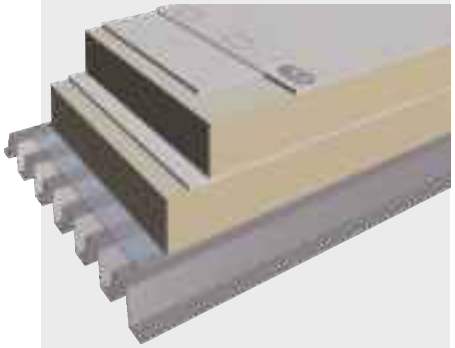
- PVC membrane **Sarnafil® S327** mechanically fixed to the substrate with **Sarnafast® SF** 4,8 mm and **Sarnafast® Washer KT**
- Separation layer **S-Glass Fleece 120** (for use with EPS/XPS insulation)
- Thermal insulation
- Existing build-up on steel deck

- **FPO membrane with extended guarantee**
- Additional thermal insulation
- High chemical resistance of the waterproofing system

Mechanically fastened system build-up

- FPO membrane **Sarnafil® TS 77** mechanically fixed to the substrate with **Sarnafast® SF** 4,8 mm and **Sarnafast® Washer KT**
- Thermal insulation
- Existing build-up on steel deck

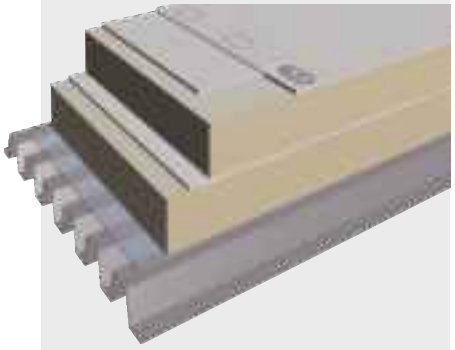
- **Standard PVC membrane**
- Additional thermal insulation
- Standard guarantee (from your local Sika organisation)



Mechanically fastened system build-up

- PVC membrane **Sikaplan® G** mechanically fixed to the substrate with **Sarnafast® SF** 4,8 mm and **Sarnafast® Washer KT**
- Separation layer **S-Glass Fleece 120** (for use with EPS/XPS insulation)
- Thermal insulation
- Existing build-up on steel deck

- **PVC membrane with increased fire and cold resistance**
- Additional thermal insulation
- Standard guarantee (from your local Sika organisation)



Mechanically fastened system build-up

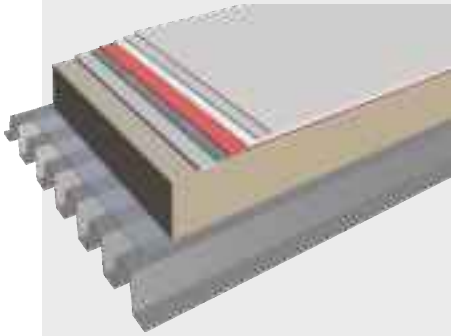
- PVC membrane **Sikaplan® VGWT** mechanically fixed to the substrate with **Sarnafast® SF** 4,8 mm and **Sarnafast® Washer KT**
- Separation layer **S-Glass Fleece 120** (for use with EPS/XPS insulation)
- Thermal insulation
- Existing build-up on steel deck

Solutions for the Refurbishment of Polymeric Roofs –
Liquid Applied Membrane Systems without Additional Insulation

Requirements

- **Roof waterproofing with MTC**
- Seamless waterproofing
- Possibility for partial repairs
- No penetrations into the roof deck
- Extended guarantee (from your local Sika organisation)
- Increased fire resistance of the waterproofing system
- No water underflow

Design / Build-up

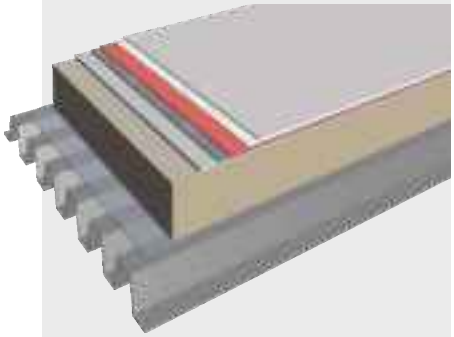


Sika System

SikaRoof® MTC 22

- 2 Top coats of **Sikalastic®-621 TC**
- Reinforcement **Sikalastic® Reemat Premium**
- Base coat **Sikalastic®-601 BC**
- **Sikalastic® Metal Primer** for PVC and FPO or **Sikalastic® EPDM Primer** for EPDM
- Existing build-up on steel deck

- **Roof waterproofing with MTC**
- Seamless waterproofing
- Possibility for partial repairs
- No penetrations into the roof deck
- Standard guarantee (from your local Sika organisation)
- Increased fire resistance of the waterproofing system
- No water underflow



SikaRoof® MTC 12/15/18

- 1 Top coat of **Sikalastic®-621 TC**
- Reinforcement **Sikalastic® Reemat Premium**
- Base coat **Sikalastic®-601 BC**
- **Sikalastic® Metal Primer** for PVC and FPO or **Sikalastic® EPDM Primer** for EPDM
- Existing build-up on steel deck

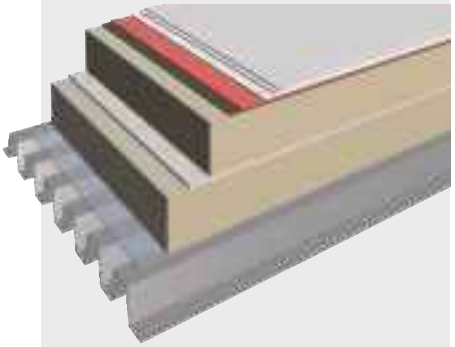
EPDM, PVC, FPO

Liquid Applied Membrane Systems with Additional Insulation

Requirements

- **Warm roof build-up with MTC**
- Seamless waterproofing
- Possibility for partial repairs
- No penetrations into the roof deck
- Extended guarantee (from your local Sika organisation)
- Increased fire resistance from the waterproofing system

Design / Build-up

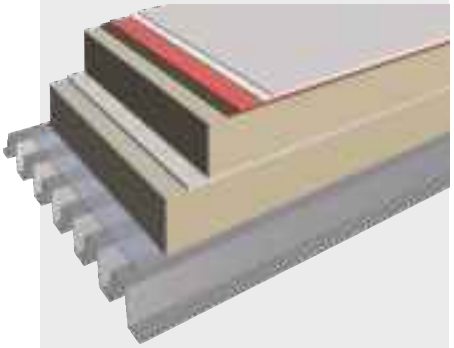


Sika System

SikaRoof® MTC 22

- 2 Top coats of **Sikalastic®-621 TC**
- Reinforcement **Sikalastic® Reemat Premium**
- Base coat **Sikalastic®-601 BC**
- Carrier layer **Sikalastic® Carrier** bonded with **Coldstick®**
- PIR or EPS insulation bonded with **Coldstick®**
- Existing build-up on steel deck

- **Warm roof build-up with MTC**
- Seamless waterproofing
- Possibility for partial repairs
- No penetrations into the roof deck
- Standard guarantee (from your local Sika organisation)
- Increased fire resistance from the waterproofing system



SikaRoof® MTC 12/15/18

- 1 Top coat of **Sikalastic®-621 TC**
- Reinforcement **Sikalastic® Reemat Premium**
- Base coat **Sikalastic®-601 BC**
- Carrier layer **Sikalastic® Carrier** bonded with **Coldstick®**
- PIR or EPS insulation bonded with **Coldstick®**
- Existing build-up on steel deck

Performance and Installation Related Requirements

UV-Resistance

Light, especially energy-rich ultraviolet light, has an ageing effect on roof membranes that can eventually result in surface cracking and degradation. Sika roofing membranes for exposed roofs are all more than sufficiently UV stabilized against this to perform for the long term, even in extreme climates and locations with high UV light exposure.

High Fire Resistance

Fire resistance requirements can be very individual and dependent on the type of construction and use of the building. If the roofing membrane is the top roof surface, then the membrane material must generally be classified as self-extinguishing. Sika roofing materials are all designed to comply with this and all relevant international and local building regulations in terms of fire.

Compatibility to Bitumen

As bitumen has been used as a traditional roofing material for many years, it is often still present on existing roofs to be refurbished or upgraded in terms of waterproofing, fire or insulation. For a fast and secure solution bitumen compatibility is a major requirement. Sika provides systems which are bitumen-resistant and can be used in almost any refurbishment situation.

Resistance to Cold

The weather around the world provides different climatic conditions in which roofing systems have to perform and resistance to minus temperatures is one of the main requirements here. All membranes from Sika stay flexible in cold within their stated performance limits. Some Sika roofing systems have the advantage that they can be installed at temperatures below zero.

Thermal Shock Resistance

Sika roof waterproofing membranes and all of the ancillary roofing products are specially designed to withstand sudden changes of temperature and weather conditions. They will not be damaged by extended or sudden thermal changes in cold, heat, snow, hail, rain, etc.

Slip Resistance

The Sika roofing product range includes sheet membranes with embossed surfaces to provide slip resistance. Different degrees of slip resistance can be also achieved with Sika liquid applied membranes by broadcasting with selected grades of quartz sand.

Root Resistant

Membranes used under ballast must also withstand penetration from the roots of plants. Roof gardens and other green roofs obviously have a particular requirement for this, not only from the membrane, but also at their welded seams, connections and terminations. Sika single ply and liquid applied membranes for ballasted roof systems all resist root penetration and are treated to be resistant against micro-organisms, or they are inherent by fully resistant.

Resistance to Pedestrian and Light Wheeled Traffic

Increasingly, roofing systems are being used for areas exposed to pedestrian and vehicular traffic, i.e. on roof terraces or car parking areas. If the roofing membrane is the top surface for traffic, it must withstand this abraison and wear without additional protection. It also has to be slip-resistant and may need different colours for line marking etc. Sika liquid applied membrane systems provide full service trafficability for pedestrians and / or vehicles as required.

Fast Installation

Installation time is always an important issue and cost factor for roofing systems. Sika has developed many special roofing systems and ancillary products which allow extremely rapid and cost effective installation.

Mechanical fastenings and fixings

If the membrane is installed as the top layer of the roof, wind uplift will occur through wind suction and pressure. The membrane must therefore be restrained against wind uplift and the most cost effective method of doing this is by mechanical fastening into the support structure. Sika systems are designed to withstand wind loads using the most efficient fixings.

No Penetrations into the Deck

A mechanical fastening system may not be possible due to unacceptable drilling noise for the fixings, contamination through the deck, or due to the structural design itself. All of these difficulties and their potential costs can be overcome by using Sika adhered, ballasted or liquid applied membrane systems.

Loose Laid Build-up

Loose laying of the flexible membrane and its ancillary materials is the main method established to build-up a roof deck and waterproofing system. It allows free air flow to ventilate the thermal insulation and it also helps to compensate for the structure's movement. The membrane must then be mechanically fixed or ballasted for restraint against wind uplift.

Partially Adhered to the Substrate

If the membrane is to be used in an exposed situation, but mechanical fixing is not desirable for technical or other reasons, all layers of the system build-up must be bonded to the substrate below. In Sika partially adhered systems the liquid adhesive is applied on the substrate in beads or strips. This provides fast cost effective installation with low adhesive consumption.

Fully Adhered to the Substrate

Superior aesthetic appearance, regardless of the roof shape, or with no penetration of the roof deck, is often a requirement for both new and refurbishment projects. With Sika fully adhered systems the membrane is fully bonded to the substrate, therefore it can meet these high aesthetic and performance requirements reliably and with low maintenance costs.

Highest Aesthetic Appearance

Sometimes roofing materials not only have an important waterproofing function, but they must also meet high design and architectural requirements. Sika has developed several advanced systems suitable for installation over complex roof shapes with good looking top surfaces, i.e. including smooth surfaces, standing seam metal roof imitation and other special profiles, etc.

Wide Colour Range

Sika membranes are supplied in several standard colours, some in an extensive range. Special colours can also be made to order or colour matched to a client's requirements.

Seamless Waterproofing

The Sika liquid applied membranes provide seamless waterproofing over the entire roof surface. In addition to technical advantages, it can also create an excellent visual appearance.

Crack Bridging Ability

The Sika liquid applied membranes in particular can provide outstanding crack-bridging properties, with high flexibility and elasticity – even at low temperatures

Single Component Products

1-C Sika liquid applied membranes are probably the easiest to install. They are applied 'direct from the can' and do not require mixing with other components.

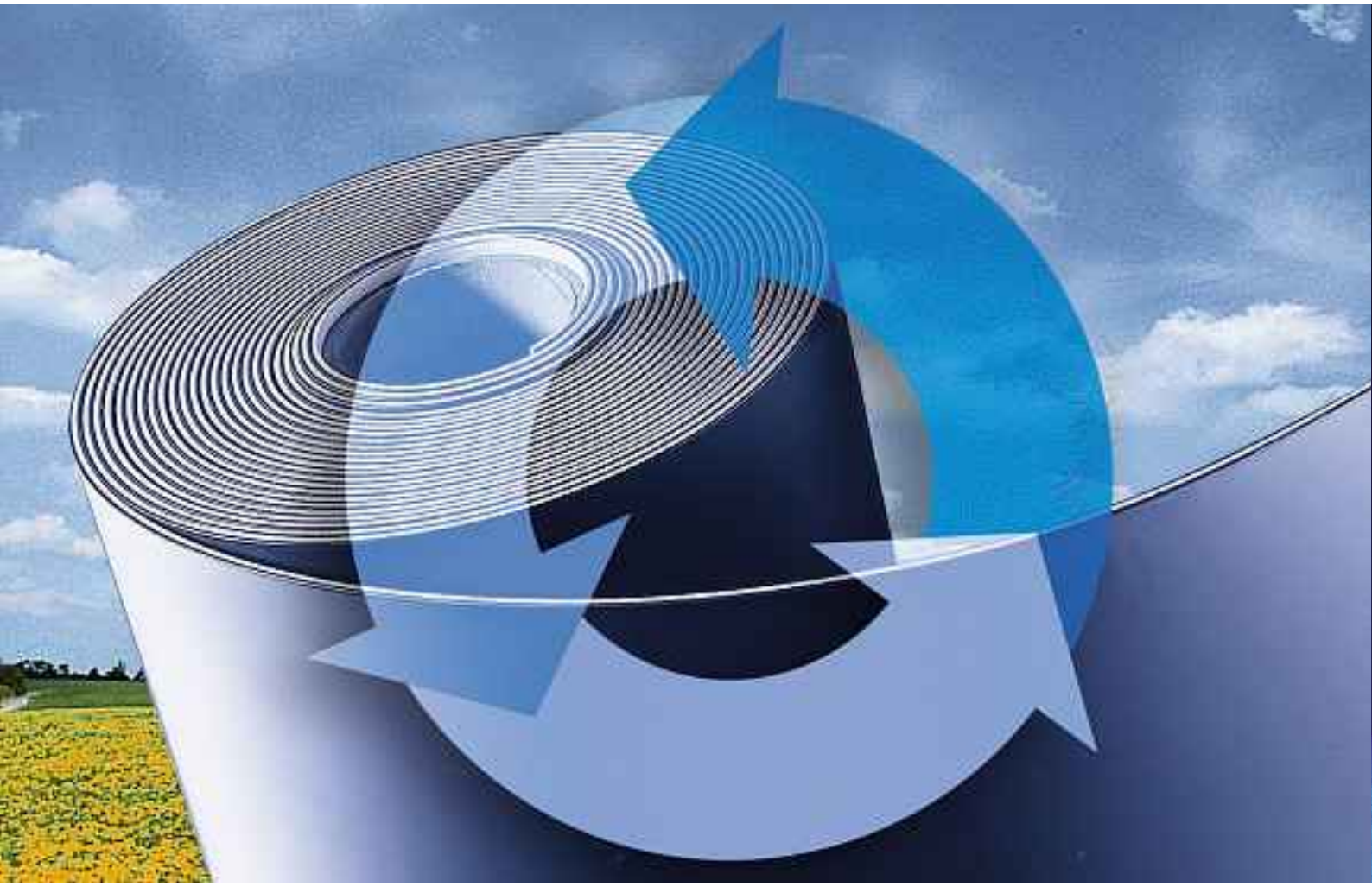
Good Vapour Permeability

Sika has developed membranes which are waterproof, but with excellent vapour diffusion properties. This allows any moisture in the structure below to evaporate.

Easy Application by Brush or Roller

Sika liquid applied membranes can be applied by brush and roller. This application is easy and does not require investment in expensive application equipment.

Environment and Sustainability



General Description

Sika has developed solutions which can help ensure that the roof creates minimal impact on the environment whilst meeting the functional requirements of clients, specifiers, contractors and nature.
Roofing membranes / products are not only manufactured in an ISO 14001:2000 accredited production facility they have a low embodied energy and long life expectancies.

The following important environmental and sustainability aspects are always taken into account in Sika roofing systems:

- Recycling
- Embodied Energy
- Durability
- Sun light reflectivity

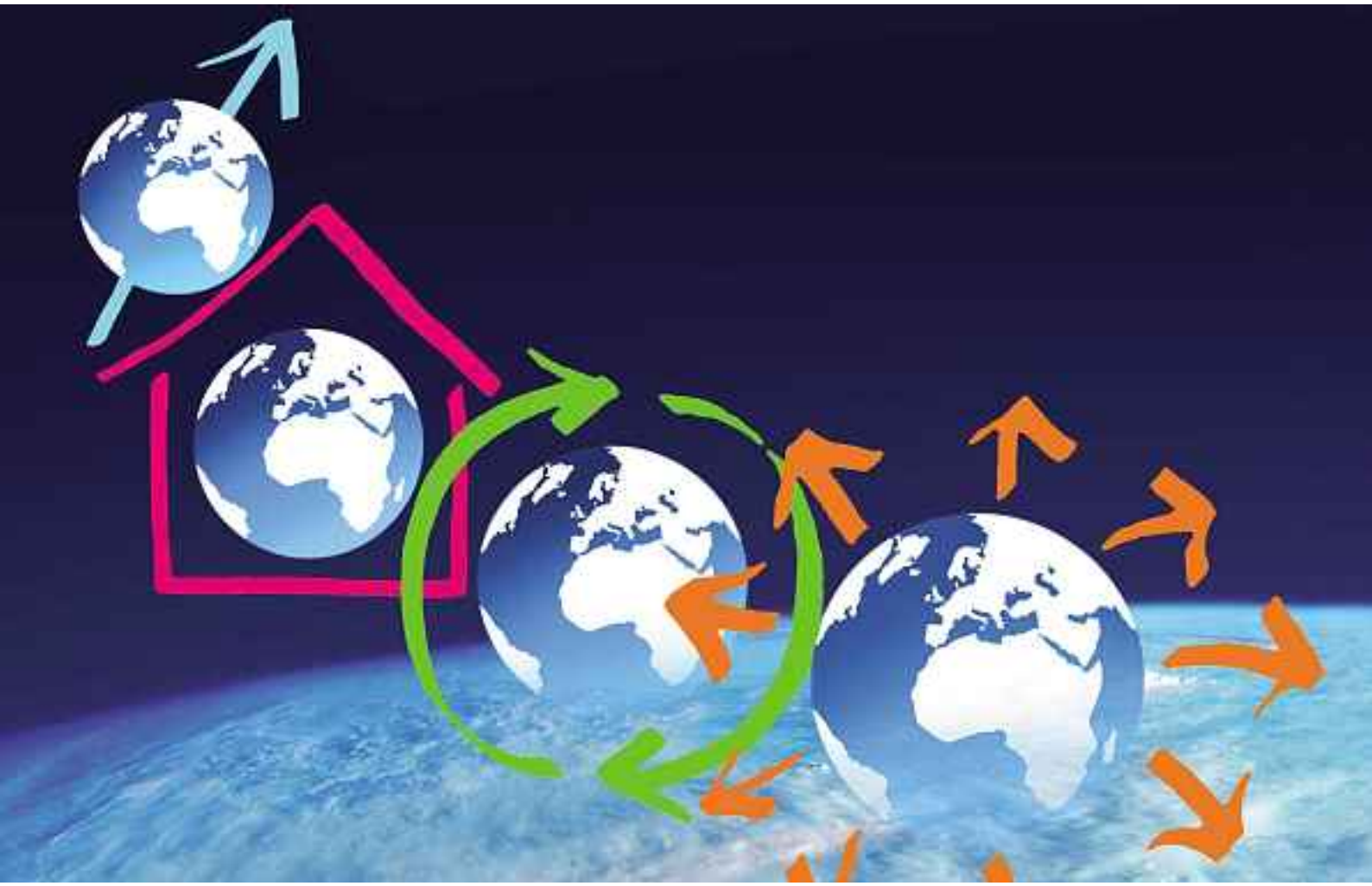
Recycling

Sika has proactively recycled factory waste back into production since 1960. Wherever possible, higher quantities of production and post-consumer membrane are recycled into new products, such as Roof Protection Sheets and Walkway Pads.
Today walkway pads, manufactured in Europe since 2000, provide tough, durable solution for pedestrian access on exposed roofs and at the same time they are produced from almost 100% recycled material. The only non-recycled product being less than 1% carbon black that is added for colour consistency.
Sika recyclate is also sourced from existing membrane roofs when they are removed to enable the client to thermally upgrade the building, a common practice in Western Europe. This process is managed through the company's involvement with the RoofCollect scheme operated by Vynyl 2010.

Embodied Energy

Embodied energy is the measurement of the amount of energy required to produce a tonne or square metre of a product, it can also be used to measure the carbon embodied within a product. Generally the lower the embodied energy and carbon levels, the better a product is for the environment.

All Sika roofing membranes have low embodied energy, contributing less to global warming than many alternative roofing technologies.



Sun Reflectivity

The benefits of solar reflective materials and colours are well known and understood in warm climates around the world. With urban density increasing, the "heat island" (Albedo) affect is impacting on cities at an ever-increasing rate.

A significant contribution to reducing the Albedo affect can be made by simply replacing dark roof surfaces with a lighter colour, ideally white – Sika roofing systems include solutions which allow the reflection of up to 83% of the heat in sunlight.

Ronnen Levinson & Hashem Akbari's December 2007 report *"Potential Energy Savings and Environmental Benefits of Cool Roofs on Commercial Buildings"* demonstrated that by changing from a relatively low solar reflectivity light grey membrane, to a higher reflectivity white membrane, large energy cost savings could be made. Therefore significantly reducing emissions of carbon dioxide (CO_2), nitrogen dioxide (NO_2), sulphur dioxide (SO_2) and mercury (Hg).

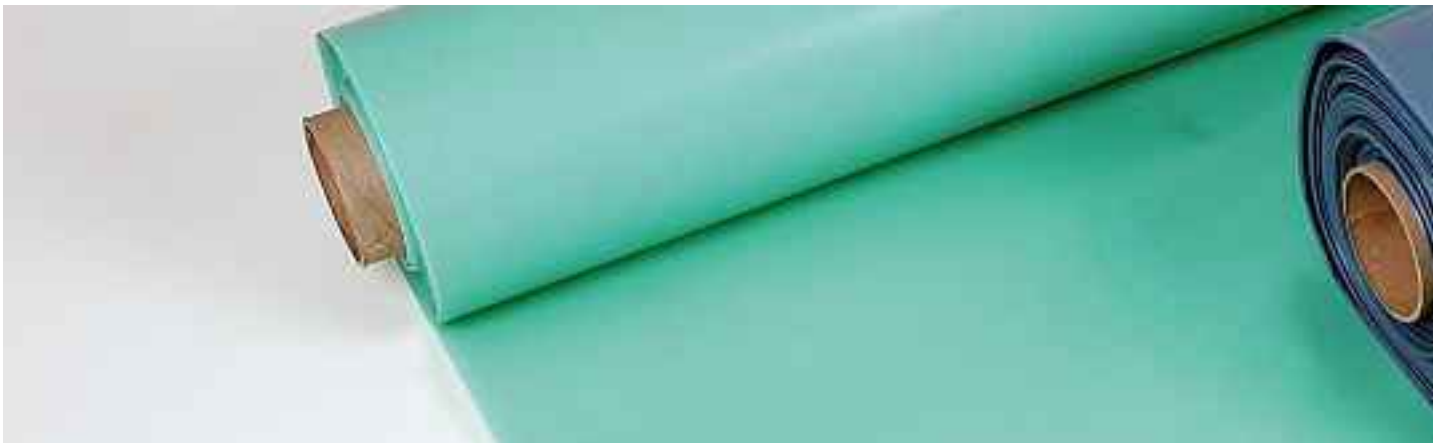
Durability

Long service life is a key element of sustainability, the longer something lasts the less damage it should do to the environment in use.

Sika roofing systems has been tested for aging and life expectancy by different Institutes and organizations with outstanding results.

As an example the British Board of Agrément (BBA) certifies a standard 1.2mm thick Sarnafil G/S membrane to have a life expectancy "in excess of 35 years".

Main Accessories and Ancillary Products – Vapour Control



Description Vapour control layers are placed between the substrate and the thermal insulation to prevent the roof build up from absorbing moisture.

PE Vapour Control Layers

A wide range of PE foils with different densities and design to cater for all common applications

- High water vapour resistance
- Cost effective solutions
- Easily attached to each other with adhesive tapes
- Suitable for all main substrates (steel, concrete, wood)
- Very low weight gives no additional load on the structure
- High flexibility at low temperatures

Sika products:

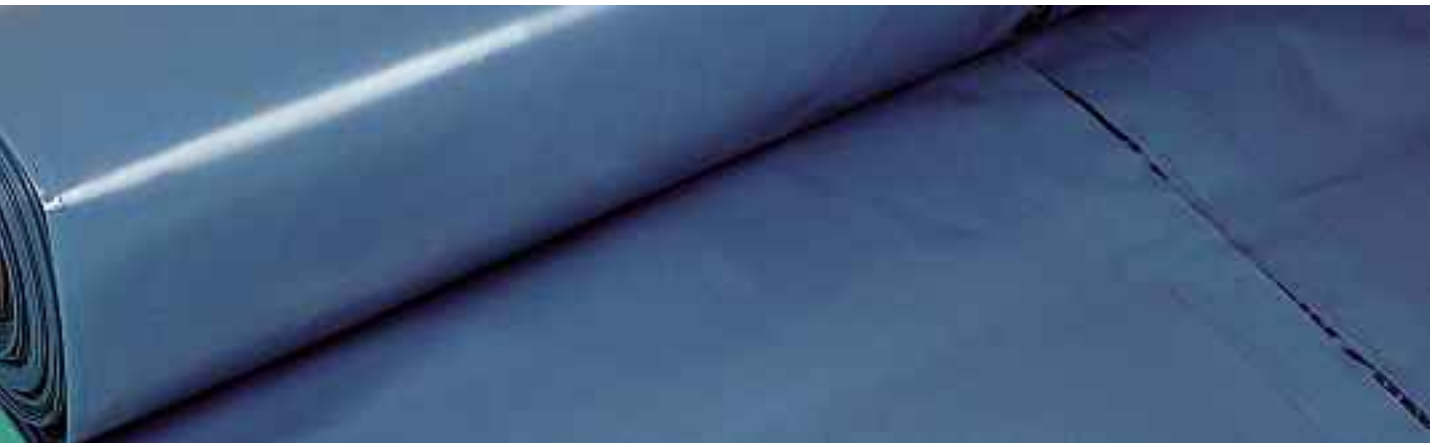
Sarnavap® 500E
- Thickness 0.15 mm
- Good water vapour permability resistance (sd value 100 m)
- Compatible with PVC membrane systems

Sarnavap® 1000E
- Thickness 0.20 mm
- High water vapour permability resistance (sd value 220 m)
- Compatible with PVC and FPO membrane systems

Sarnavap® 2000E
- Thickness 0.225 mm
- Very high water vapour permability resistance (sd value 420 m)
- Compatible with PVC and FPO membrane systems

Sarnavap® 3000M
- Thickness 0.40 mm + protective foam 1.00 mm
- High water vapour permability resistance (sd value 250 m)
- Compatible with PVC and FPO membrane systems
- Ideal for use on concrete substrates

Layers



Aluminium Self-Adhered Vapour Control Layer

Thermal insulation boards consisting of expanded polystyrene granules.
This is one of most cost efficient solutions for **exposed the ballasted roofing systems**.

- Completely vapour tight aluminium foil
- Full bond to the substrate, Ideal for adhered membrane systems
- Can be used as a temporary waterproofing layer
- Improved fire resistance due to added flame-retardant
- Easy self-adhered application
- Very low weight gives no additional load on the structure
- Suitable for all main substrates (steel deck, concrete, wood)

Sika product:

Sarnavap® 5000E SA

- Thickness 0.60 mm
- Not water vapour permable due to the aluminium layer
- Compatible with PVC and FPO membrane systems

Main Accessories and Ancillary Products – Thermal Insu

Description This is one of the most important system components in whole roofing structure, providing resistante to cold and heat, keeping the required temperatures inside the buildings and at the same time helping to save energy for the heating or cooling. The Sika roofing range incorporates the most efficient types of thermal insulation available on the market.

PIR/PUR

Thermal insulation boards produced from rigid PU foam with an isocianurate catalyst. This is a very universal and efficient solution of **all kinds of exposed roofs**. It is also one of the most suitable insulation types for **adhered systems**, plus it can be also used in different **ballasted roof applications.**

- Very good fire resistance (more than 250 °C)
- Extremely low thermal conductivity value of 0.023-0.028 W/m·K
- High compressive strength in the range of 120-160 kPa which is also sufficient for some ballasted applications
- Lightweight of 30-40 kg/m^3

Sika product:
SarnaTherm® PIR, Sikatherm® Sarnapur®

Stone Wool

Thermal insulation boards produced from basalt stone fibres.
These are one of the most common solutions for **exposed mechanically fastened roofs**, especially where very high fire resistance is required.

- Excellent fire resistance (to more than 1000 °C), most stone wool products are classified as non-combustible
- Low thermal conductivity value of 0.038-0.041 W/m·K
- Compressive strength in the range of 40 to 80 kPa which is sufficient for exposed roofing applications
- Weight is in the range of 100-200 kg/m^3

Sika product:
SarnaTherm® Mineral Wool, Sikatherm®, Sarnaroc®

lation

EPS

Thermal insulation boards produced from expanded polystyrene granules.
It is one of most cost efficient solutions for **exposed and ballasted roofing systems.**

- Most of the products are self-extinguishing in fine
- Low thermal conductivity value of 0.037-0.041 W/m·K
- High Compressive strength in the range of 140-250 kPa which is also sufficient for some ballasted applications lightweight in the range of 20-40 kg/m^3

Sika product:
SarnaTherm® EPS, S-Therm EPS

XPS

Thermal insulation boards produced from polystyrene in an extrusion process.
Due to its special characteristics XPS Insulation is the ideal solution for **inverted ballasted systems** and **utility roof decks**.
It can be also used in **exposed roofing systems**.

- Almost zero water absorption
- Most XPS products are self-extinguishing in fine
- Very low thermal conductivity value of 0.034-0.038 W/m·K
- Very high compressive strength in the range of 250-700 kPa which is sufficient for utility decks with high traffic
- Lightweight in the range of 25-35 kg/m^3

Sika product:
SarnaTherm® XPS, Sikatherm®

Main Accessories and Ancillary Products – Adhesives

Description

Adhered roofing systems are one of the main specialties and focuses of Sika Roofing. Our extensive experience in adhesive technologies has resulted in a wide range of high-performance adhesives covering all of the possible bonding needs in roofing. Sika provides well proven solutions for bonding roofing membranes and thermal insulation to almost any common substrate.

Contact Adhesives

High quality adhesives designed for bonding membranes to different substrates on roof areas or at upstands, flashings and perimeter termination areas.

- Excellent adhesion properties
- Full compatibility with Sika single ply membranes
- Wide range of adhesives suitable for all different substrates
- Immediate adhesion
- Single component products in the range

Sika products:

- **Sarnacol® 2105** – Water based and VOC compliant adhesive for **Sarnafil® G/S** and **Sikaplan®** PVC membranes
- **Sarnacol® 2170** – adhesive for bonding **Sarnafil® G 410** and **Sarnafil® 410 Felt** PVC membranes to roof surfaces and flashings
- **Sarnacol® T 660** – adhesive for bonding **Sarnafil® TG 66** membranes to flashings
- **Sika-Trocal® C 733** – adhesive for bonding **Sikaplan®** PVC membranes to flashings

PU-Based Membrane Adhesives

These are used in fully and partially adhered roofing systems to bond the membranes to various different substrates

- Excellent adhesion properties
- Full compatibility with Sika single ply felt-backed membranes
- Wide range of adhesives suitable for all different substrates
- Compatible with EPS/XPS insulation
- Bond very well in humid conditions
- Low solvent content
- Single component products – easy to use and handle

Sika products:

- **Sarnacol® 2142 S** – adhesive for bonding **Sarnafil® G410 Felt** and **Sarnafil® TG 76 Felt** membranes to roof substrates
- **Sika-Trocal® C 300** – adhesive for bonding **Sikaplan® SGK** membranes to roof substrates

Insulation Adhesives

Specially designed adhesives for bonding different types of thermal insulation to the vapour control layer or to the roof deck.

- Excellent adhesion properties
- Suitable for a wide range of thermal insulation types and different substrates
- Compatible with EPS/XPS insulation
- Bonds very well in humid conditions
- Has a limited foaming effect allowing improved adhesion on rough roof surfaces
- Low solvent content
- Single component products in the range

Sika products:

- **Sarnacol® 2162** – Single component and slightly foaming insulation adhesive
- **Sikalastic® Coldstick** – Two component insulation adhesive used in the **SikaRoof® MTC** systems.

Main Accessories and Ancillary Products – Fasteners and

Description Fasteners and fixings are crucial components, especially in mechanically fastened roof systems. Wind uplift forces and corrosion of the metal are the two most vertical influences that put tough demands on those components of a roofing system.

Sarnafast®

High quality metal screwster ideally suited for the mechanical fixing of roofing membranes in the main roof areas and in the perimeter zones to various different substrates.

- Excellent corrosion resistance due to special Durocoat® protection coating, includes stainless steel screws in the range
- Suitable for most common substrates (steel, concrete, wood)
- Wide range of lengths
- Compatibile with other fixing components (bars, pressure plates etc.)
- Excellent pull-out values

Sika products:
Sarnafast® SF 4.8 mm for steel decks. Combined with Washers KT 82x40, IF/IG-C-82x40, RT 90, DT 70x70, Sarnabars / fixing bars
Sarnafast® SB 6.3 mm – universal screw for concrete, steel and wood deck. Combined with Washers KTL 82x40, IF/IG-C-82x40, RTL 90, DTL 70x70, Sarnabars / fastening profiles
BS-4.8 (standard), **BS-S-4.8** (stainless) for tube fixings on steel decks
TI-T25-6.3 (standard), **TI-S-T25-6.3** (stainless) for tubular fixings on concrete decks

Washers and Termination Plates

There are used in combination with Sarnafast screws to provide proper mechanical fastening of the membranes or thermal insulation boards

- Very high corrosion resistance (galvanized)
- Suitable for soft and hard substrates
- Compatible with Sarnafast screws

Sika products:
Sarnafast® Washers KT, KTL 82x40 – for fixing membrane on thermal insulation
Sarnafast® Washers IF/IG-C-82x40 – for fixing membrane on rigid substrates
Sarnafast® Washers DT, DTL 70x70 – for fixing thermal insulation
Termination plates RT, RTL 90 for terminations in corner / perimeter areas

Fixings

Tube System

Polyamide 6 plastic tube elements developed specially for spot and linear fastening of single ply membranes.

- Thermally broken fastening solution with no chance of cold bridging
- High quality Polyamide plastic provides resistance to very low temperatures and high pull-out values
- Four spikes on the tube for spot fastening gives improved membrane anchoring
- Compatible with the appropriate Sarnafast screws and fixing bars

Sika products:
Sarnafast® Tube SFT – for spot fastening
Sarnabar® Tube SBT – for linear fastening with Sarnabars / Fixing bars 6/15

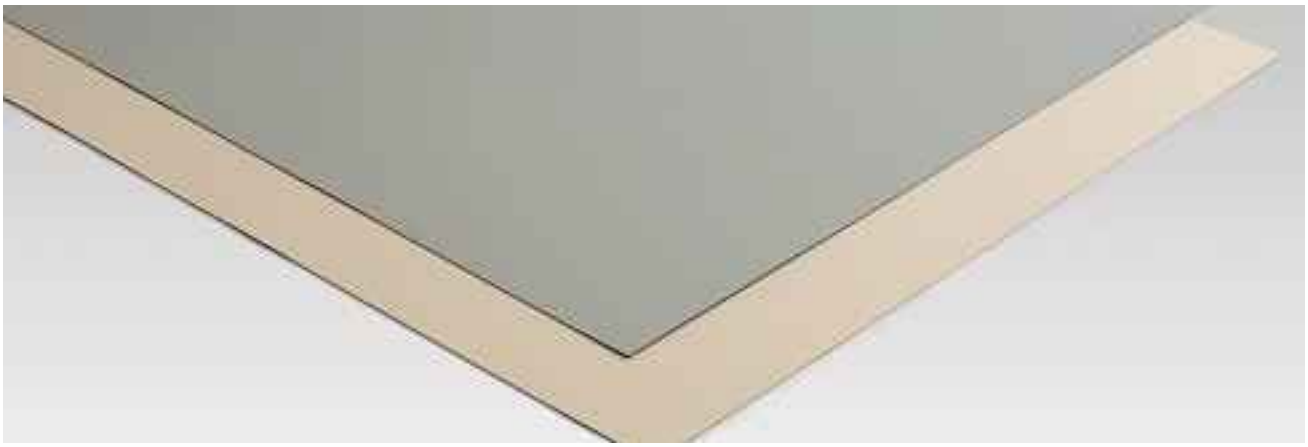
Fastening Profiles / Sarnabars®

Metal profiles specially designed for linear and perimeter membrane fastening

- 2 stiffening ribs and 1.5 mm thick steel provides extraordinary mechanical properties
- Very high corrosion resistance from the hot dipped galvanized steel
- Compatible with to **Sarnafast®** screws
- Universal linear distribution of wind forces gives the possibility of wider gaps between fastening rows in the main roof areas and provides the highest security in perimeter zones

Sika products:
Sarnabar® 6/10
Sarnabar® 6
Sarnabar® 6/15 for tube system

Main Accessories and Ancillary Products – Laminated Met



Description

Laminated metal sheets consist of galvanized sheet metal laminated on the top side with **Sikaplan**® or **Sarnafil**® membrane. The lamination has the same properties and compatibility as the roofing membrane sheets. The laminated metal sheets can therefore easely be welded to the waterproofing membranes during installation.

This product creates the widest range of possibilities for flashings and terminations. An extensive variety of different edge profiles can be formed out of these metal sheets. Flashings where these profiles can be used include:

- Parapet details
- Roof edge details
- Connection to skylights
- Connections to walls

Main Advantages

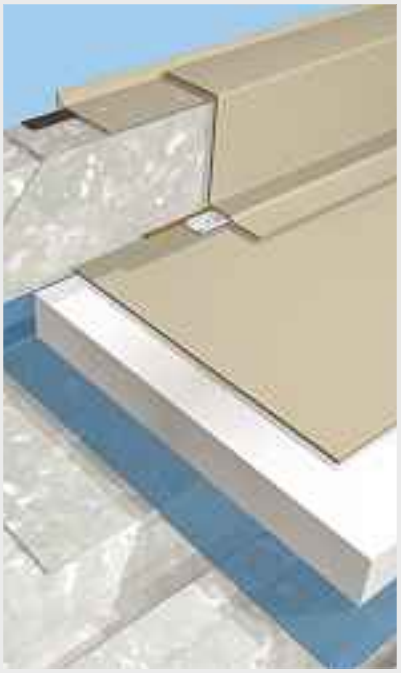
- Fully watertight connections of tailored profiles to the membranes
- Watertight compensation gaps for expansion/contraction of metal which is easily welded over with membrane pieces
- Very high resistance against corrosion due to the additional protection of PVC/FPO laminated top layer
- Edge profiles with the same uniform colour as the roof membrane

Sika products:

- **Sarnametal® G/S** – for roofing systems with single ply PVC membranes **Sarnafil® G 410 / 476, S 327**;
- **Sarnametal® T** – for roofing systems with single ply FPO membranes **Sarnafil® TG 66 / 76, TS 77**;
- **Sika-Trocal® Metal Type S** – for roofing systems with single ply PVC membranes **Sikaplan® G / VGWT / SGK / S / SGMA**

al Sheets

Examples of Laminated Profile Use in Different Flashings



Parapet flashings

Profiles of laminated metal are used on the outer edge of the parapet. The profile is fastened mechanically to the structure.

- Membrane is welded on top leaving no fastener penetrations exposed
- Profiled edge prevents water going from vertical parapet surfaces into the façade
- Good aesthetics and no need for installation of additional parapet cap – cost effective, good looking solutions

Roof edge flashings

As with parapet details, the profile is attached mechanically to the structure.

- All profile fastenings are covered with the waterproofing membrane securely welded to the laminated metal
- Easy to install fully watertight solutions
- The profile is made without upstand which allows the free flow of rain water into the gutter

Other Accessories and Ancillary Products

Membrane Adhesives, Cleaners and Seam Preparation Agents

A complete, fully compatible range of integral components to support adhered membrane instations, with reliable surface preparation and efficient execution of the welded membrane seams. Sika roofing accessories include the correct primers, adhesives and cleaners for each type of membrane.

- **Sarnacol®**, **Sika-Trocal®** and **Sikalastic® Coldstick®** adhesive products
- **Sarna®** and **Sika-Trocal®** cleaning products
- **Sarnafil® T Prep** for membrane seam preparation

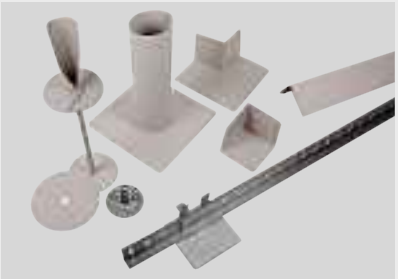
Adhesive Sealants

Adhesive sealants are used to waterproof the terminations of roofing membranes at edge flashings and different types of penetrations or junctions with other materials.

- **Sikaflex® AT-Connection, Sikaflex® 11 FC, Sikasil N Plus**

Prefabricated Parts, Pieces and Sections

Sika produces a wide range of different prefabricated pieces and sections used to allow easier membrane application and installation on different details in the waterproofing system such as terminations, corners, pipe penetrations, etc.



- Corners
- Pipe and post flashings
- Lightning conductors and connections
- Gravel ballast stopends

Drainage Products

A large variety of different drains, scuppers, overflows which are fully compatible with the Sika roofing membranes.

- Drains (single and sets)
- Leafguards
- Scuppers
- Overflows

Walkways

These are used in exposed roofing systems to provide pedestrian access – mainly for equipment another maintenance purposes.

- Walkway pads **Sarnafil® PVC**
- Walkway pads **Sarnafil® T**
- **Sikaplan®** Walkway membrane

Decor Profiles

Decor profiles are used to imitate metal standing seam roofs. They are available in many different colours and in both Sika PVC and FPO membrane products.

- **Sarnafil® G/S** Decor Profile
- **Sarnafil® T** Decor Profile
- **Decor Profile SE**

Protection, Separation and Levelling Layers

Separation layers are placed between non-compatible components in the roof build up. Protection layers are used to protect the waterproofing membrane from different kinds of damage. Levelling mats are used to smooth out rough or uneven substrates before the membrane is laid.

- Protection and separation layer felts **S-Felt A 300, T 300, GK 400, M 500, S 800**
- Protection layer sheets **Sarnafil® TG 63, Sarnafil® G445, Sikaplan® SBV**
- Separation layer fleece **S-Glass Fleece 120**

Drainage Layers

Drainage is used in green roof build-ups for drainage and water retaining functions.

- Drainage layers **Sarnavert® Aquadrain 550**
- **Drainage Layer 30**

Detailing with Single Ply Membranes

One of the most important keys to success in roof waterproofing is the correct design, installation and watertight performance of details, such as the membrane connections to penetrations and terminations.

Sika provides a wide range of different detailing accessories and ancillary products including:

- Laminated metal
- Bars and other fixing elements
- Sealants
- Adhesives
- Homogenous membrane sheets
- Prefabricated pieces and sections
- Drainage products

All of which are fully compatible with the flexible **Sikaplan**® / **Sarnafil**® membranes, thus ensuring waterproof detailing solutions for almost any connection, penetration and termination – making them as watertight as the membrane itself.

Please refer to the Method Statements and Installation Handbooks for **Sikaplan**® / **Sarnafil**® membranes which contain all of the necessary instructions for most of the common details required.

Parapet terminations using:

- Sika laminated metal profiles
- Sika roof membrane
- **Fixing bars** and **cords**

Wall terminations using:

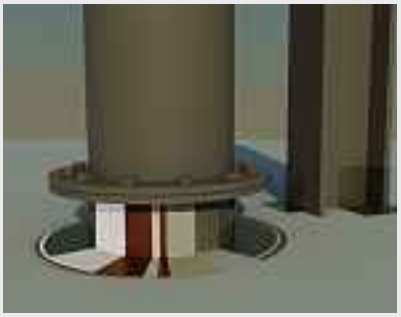
- Sika roof membrane
- **Sikaflex**® **AT Connection** Sealant
- **Fixing bars** and **cords**

Drainage outlets:

- Sika roof membrane
- Sika drainage set (leaf guard, upper drain unit, lower drain unit) made out of PVC/FPO
- **Fixing bars** and **cords**

Detailing with Liquid Applied Membranes

Liquid applied **Sikalastic**® membranes can be used in conjunction with glass reinforcement mats, to provide seamless waterproofing around all different types of detailing at areas including: upstands, plant and equipment entries, or around other roof penetrations and components.



Pipe penetrations using:

- **Sikalastic®-601 BC** (base coat)
- **Sikalastic®-621 TC** (top coat) reinforced with
- **Sikalastic® Reemat Premium**

This type of detailing is very easy to install and ensures durable, long-lasting successful waterproofing to almost any shape or design of upstand (square, T or U shaped metal profiles, etc), many of which would be impossible or much more time consuming with sheets or other materials.

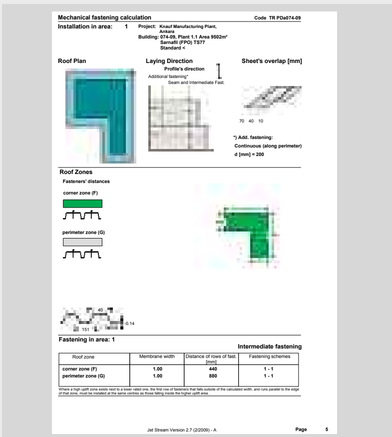
Wall connections and terminations using:

- Base coat of **Sikalastic®-601 BC** for exposed roofing applications or **Sikalastic®-602 BR** for ballasted roofing applications reinforced with
- **Sikalastic® Reemat Premium**
- Top coat of **Sikalastic®-621 TC** for exposed roofing applications or **Sikalastic®-623 TR** for ballasted roofing applications
- Sealant **Sikaflex® AT Connection**

Services and Support in Roofing

Sika is a proven and reliable partner to the whole building and construction industry. Worldwide we provide our customers far more than just the best 'state of the art' and technically proven waterproofing materials. We also assist and add value for our customers, by providing many more support services for our products and their installation.

Wind Load Calculations



Mechanical fastening calculation — Code TR PDa074-09

Installation in area: 1 — Project: Knauf Manufacturing Plant, Ankara — Building: 074-09, Plant 1.1 Area 9502m² — Sarnafil (FPO) TS77 — Standard <

Roof Plan — Laying Direction — Profile's direction — Additional fastening* — Seam and Intermediate Fast. — Sheet's overlap [mm] — 70 40 10

*) Add. fastening: Continuous (along perimeter) d [mm] = 200

Roof Zones — Fasteners' distances — corner zone (F) — perimeter zone (G)

40 — 151 — -0.14

Fastening in area: 1

Intermediate fastening

Roof zone	Membrane width	Distance of rows of fast. [mm]	Fastening schemes
corner zone (F)	1.00	440	1 - 1
perimeter zone (G)	1.00	880	1 - 1

Where a high uplift zone exists next to a lower rated one, the first row of fasteners that falls outside of the calculated width, and runs parallel to the edge of that zone, must be installed at the same centres as those falling inside the higher uplift area.

Jet Stream Version 2.7 (2/2009) - A — Page 5

Our specially developed "Jet Stream" computer software is used to design mechanical fixing systems for our clients and their designers. This 'state of the art' software now includes most national standards and regulations. It is an extremely efficient and practical tool for producing the most effictive fixing solutions including a detailed layout and Method Statements, with all of the necessary information for contractors to estimate and carry out the works on site. It can also contribute to significant savings in the roof build-up and your overall construction costs.

Roof Survey and Assessments for Refurbishment Specifications and Details

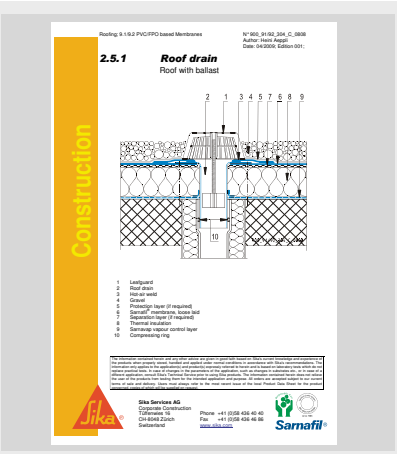
Sika roofing engineers can advise and assist with the production of the necessary survey and assessment work required for roof refurbishment projects. This provides customized roof re-waterproofing specifications which also include detailing solutions and Method Statements etc.

Sika Installation Equipment

Equipment which is specifically developed for installation of Sika roofing systems includes:
- Welding machines
- Sikalastic application tools

Sika provides an extensive support and service for each of our roofing product lines. This is tailored to each system and in each product line it covers all stages in the design, planning and execution of membrane roof waterproofing, from the roof condition survey or requirements analysis, through full documentation, to expert training and support on site throughout the installation – anywhere in the world.

CAD Details, Technical Documentation



A wide range of CAD drawings, installation guidelines, Method Statements, Product Data Sheets and considerable additional technical documentation, approvals and certificates are available for Sika roofing membranes and systems.

Guarantees

Guarantees are provided to fulfil our different client's needs and demands. Comprehensive warranties for watertightness and compatibility with other building materials are issued individually for each project in accordance with all relevant local regulations.

Technical and Product Application Training

The many different applications for Sika waterproofing systems require different installation techniques and detailing solutions. The theoretical and practical, technical and application training courses run by Sika roofing engineers also help to ensure the security and durability of the installation.

Welding Procedures – Single Ply Membranes

In every roofing system being installed, the Sika PVC and FPO single ply membranes must always be securely welded together with special welding equipment using hot air. The following methods are used for welding – hand welding and automatic welding.

Manual / Hand Welding

Manual hot air welding creates a secure watertight membrane, particularly around complex or difficult details where access for automatic machine welding is not possible

Manual hot air welding is carried out in three stages:

- Spot tacking the membrane sheets in overlaps to prevent the membrane sheets from moving during the welding process
- Welding of the rear seam to prevent any migration of hot air during the main welding operation
- Main welding of the front seam

When welding Sika FPO membranes additional preparation of the seam area is required (using Sarnafil T Prep)

Equipment and tools:

- Welder Leister Triac PID,
- 20 and 40 mm nozzles,
- Silicon and teflon preasure rollers (please refer to the respective Sika membrane application manuals and Method Statements for details of all of the specific equipment and tools required)

Cold Welding Homogeneous Sika-Trocal® S Membrane with Welding Agent

The seam overlaps to be welded must be at least 50 mm wide and both surfaces must be dry and free from dust or dirt. Dirt or contamination must be removed, usually with water and a cloth (Trocal L100 Cleaner in case of heavy soiling). The minimum width of the welded area of the overlap must be 30 mm. A mini-jet brush head or a welding brush charged with Welding Agent is introduced between the two surfaces of the overlap and drawn along the seam for about 400 mm, being followed by light pressure from the operative's other hand. The objective is to wet both surfaces simultaneously and then press together firmly.

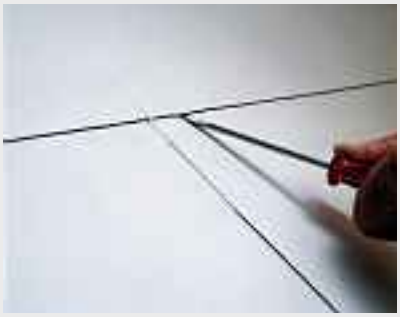
Automatic Welding

Automatic welding equipment is used to weld membrane seams safely and efficiently, with high quality and reliability, particularly on large flat areas. The welding and equipment parameters always need to be adapted to the site conditions. The welding machines developed for use with with Sika membranes allow adjustment to suit almost any weather conditions, including high humidity or for welding in the wet and in very cold weather, even at temperatures below 0 °C.

Equipment:

- Sarnamatic 661 Plus
- Leister Varimat

Seam Control



Every seam that is welded manually or automatically must be checked and tested when welding is finished to confirm its integrity and high quality workmanship. If there are any voids or misses, then the seam has to be made good by additional manual welding. Sika provides detailed guidelines for installing all of our membrane roofs. These include Method Statements and Application Manuals which contain full information regarding all of the installation methods and the correct execution of details, such as those at terminations and upstands etc. They also include our recommendations and useful checklists for site safety and quality control procedures.

Application Procedures – Single Ply Membranes

Application of Mechanically Fastened Single Ply Membranes Systems

Sika single ply membranes are mechanically fastened to the roof deck against wind uplift forces, using single fasteners or fastening bars with their fixings drilled into the deck or into the support structure according to the engineers requirements.

Spot fastening

In spot fastening systems the membranes are fixed using steel screws (**Sarnafast**® 4.8 or 6.3 mm in diameter) with pressure plates or plastic tubes anchored into the deck. Adjacent membrane sheets are overlapped and the seams are hot air welded. This can be an efficient solution that allows very fast, cost effective installation.

Linear (Sarnabar) fastening

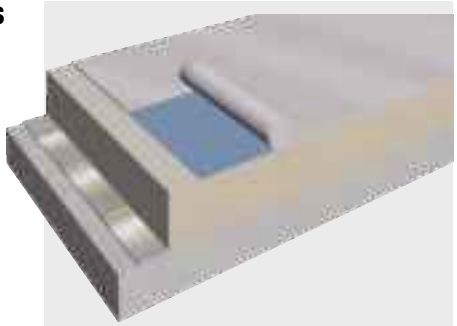
In the Sarnabar system (fastening bars), the sheets are loose laid and secured using the fastening bars anchored to the deck. The bars are then covered with additional strips of the same membrane and welded to the waterproofing layer. This system provides high resistance to wind uplift because loads are transferred through the fastening bars to the supporting roof structure.

Installation of Adhered Systems

Fully Adhered

The membrane is adhered to the full surface of the substrate, giving the highest quality of aesthetic appearance. This type of application can be carried out in 2 ways:

- Contact adhered with non-felt backed membranes
- Wet-bed adhered with felt backed membranes



Contact adhered:

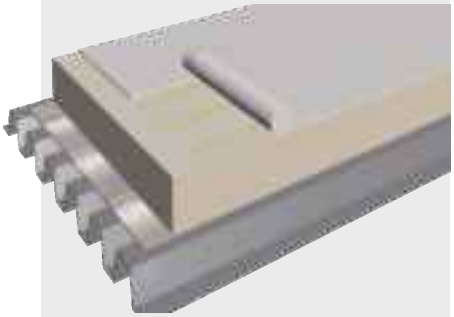
- **Sarnacol® 2170** is applied to both surfaces, the membrane and substrate
- Instant adhesion takes place when the two surfaces come into contact

Wet-bed adhered:

- **Sarnacol® 2142S** or **Sarnacol® 2170** is applied to the substrate only
- Immediately roll out the felt backed membrane over the wet adhesive bed

Partially Adhered

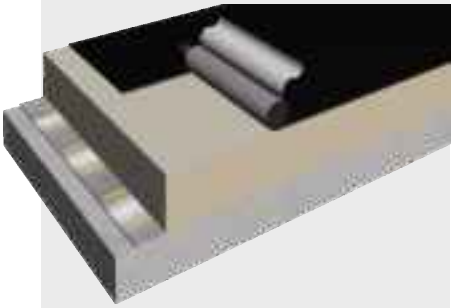
The partially adhered system is used with felt backed membranes and **Sika-Trocal® C 300** adhesive, ideally suited for use large industrial roofs. For very large roofs an adhesive application trolley cart is another practical Sika innovation.



- Liquid **Sika-Trocal® C 300** adhesive is applied directly from the tin onto the substrate in strips
- A fine mist of water is sprayed over the adhesive to start the curing process
- The adhesive strips are then spread out to a thin film with a squeegee
- The membrane is unrolled and immediately pressed firmly into the wet adhesive film

Self Adhered

Self adhered membranes have a factory manufactured adhesive film on the back side of the membrane which is rolled out and bonded directly to the substrate when it's release liner is removed.



- A Primer can be required on difficult substrates
- The membrane with self adhesive backing is unrolled and properly positioned
- The protective film on the adhesive is removed and at the same time the membrane is pressed firmly on to the substrate
- Instant adhesion takes place, no adjustment is possible after application

Application Procedures – Liquid Applied Membranes

Roller Application

1-C PU liquid roofing membranes are mainly applied by roller and brush (brushes are always used for detailing).

The application is done in several stages: First the base coat of liquid PU membrane is applied directly on the prepared / cleaned substrate.

Then the reinforcement material (e.g. **Sikalastic® Reemat**) is rolled out and bedded into the wet base coat. The reinforcement material is always fully embedded into the liquid membrane.

After the first coat is cured the top coat of liquid membrane is applied over it.

Tools & equipment:
- Rollers and brushes

1-C PU Spray Application

In addition to roller application the 1-C PU liquid applied membranes can also be applied with airless spray equipment. This method is used for the **SikaRoof® MTC 8** System and top coat applications in other **SikaRoof® MTC** Systems. Two spray applied coats are still the minimum requirement to ensure the correct thickness is applied.

Equipment:
The spray equipment should have the following capabilities:
- min. pressure: 220 bar
- min. output: 5.1 l/min
- min. ø nozzle: 0.83mm (0.033 inch)

For example:
Wagner Heavycoat HC 940 E SSP Spraypack

Trolley Cart Application

To speed up the application of 1-C PU liquid membrane applications on large areas, a special tool – the **Sikalastic®** **Applicator** has been developed. By using this innovative Sika equipment, roofing contractors can significantly increase their rate of application and reduce costs on large open roof spaces.
The liquid PU membrane is put into the **Sikalastic® Applicator** and as it is moved along the roof surface, the liquid applied membrane is released in strips along the surface through the controlled holes in the base of the equipment.
A uniform thickness of the membrane is then produced by the use of rollers in the normal way.

Equipment:
- **Sikalastic® Applicator**

Hot Sprayed 2-C PU Machine (Spray) Application

2-C PU liquid applied membranes are usually machine applied through hot spray equipment.

These automatic airless spray machines allow fast professional application on larger surface areas.

Equipment:
- Graco Reaktor XP-2

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