



BUS AND COACH  
LEADING INNOVATIONS  
PROVIDE CUSTOMER  
BENEFITS

BUILDING TRUST



# SIKA TRANSPORTATION AT A GLANCE

**150,000 BUSES**

PRODUCED EVERY YEAR  
CONTAIN SIKA PRODUCTS

QUIETER TRUCK CABINS:

**25 %  
NOISE REDUCTION**

WITH SikaBaffle® AND SikaDamp®  
ACOUSTIC SYSTEMS

LIGHTER BUS DESIGN:

**80 KG  
WEIGHT  
REDUCTION**

WITH Sikaflex® LOW DENSITY  
ADHESIVES AND SEALANTS

**250,000  
TRUCK CABINS**

PRODUCED WITH SIKA SOLUTIONS  
ANNUALLY

**22 MILLION KG  
SIKA PRODUCTS**

PURCHASED BY THE TRANSPORTATION  
MARKET EVERY YEAR

For decades, Sika has been supporting its customers in the global transportation industry. This dynamic and challenging environment demands that owners and operators require not only ever lower vehicle running and repair costs, but also improved reliability and durability. Additionally, government regulations demand lower vehicle emissions and the use of safer process materials as well as improved passenger and driver safety. As a major supplier and partner to the global transportation industry, Sika is committed to providing a vast range of state-of-the-art solutions to assist manufacturers in meeting these challenges.

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## AUGMENTED REALITY

You can now experience animations of our bus applications on your mobile device. To do so, please follow the instructions below for iOS or Android.



1. Download the free app "Layar" from the App-Store.
2. Open the app on your device and scan the expanded views marked with the "Layar" logo.
3. Enjoy the animations.

# BUS AND COACH TRENDS

LIGHTER, STRONGER, FASTER, SAFER

In all regions across the globe, buses and coaches are the most widely-used mode of public transport. Their demand goes hand in hand with several, mostly region-specific factors, including demographics, mobility of people, and increasing environmental awareness. It is efficiency in all of the following aspects which drives the manufacturers the most.



## LIGHTWEIGHT DESIGN



Nowadays vehicles must comply with ever increasing legislative requirements for reduced emissions. At the same time, more and more electronic driving aid systems must be incorporated into modern buses to ensure increased driving safety. Furthermore, fleet operators demand the lowest possible operating cost. These combined requisites have given bus and coach manufacturers the daunting task of producing lighter vehicles with lower fuel consumption. Sika technologies help reduce vehicle weight substantially with Sikaflex® sealing and bonding materials which allow the use of lighter and dissimilar substrates. In order to further reduce weight, Sika provides low density solutions as well.

## IMPROVED CRASH PERFORMANCE



New regulations and broad implementation of more stringent crash standards strongly impact the transport industry. This is a challenge for bus manufacturers since the required crash tests and redesign of vehicles in order to comply with these tough regulations can be quite costly.

Sika offers custom-made solutions which are easy to implement and require limited or no re-design of the bus body.





## FASTER PROCESSES



In a fierce market environment, quality plays a key role. However, costs are of equal importance to bus and coach manufacturers in order to maintain competitiveness and success. Therefore, focus is put on process simplification in order to reduce the risk of mistakes and on shorter cycle times to increase capacity and remove bottlenecks. Sika provides advice and solutions on how to achieve these goals with our accelerated and two-component systems – simple products which require neither heat for curing nor a lot of pre-treatments.

## ENVIRONMENTAL HEALTH AND SAFETY



The global chemical industry is constantly evolving with technology playing a greater role helping companies ensure compliance, drive profitability, reduce risks, and improve environmental and social performance. At the same time, new legislation, harsher classification, and higher demands on worker safety are problematical for everyone involved with chemical substances. Sika is dedicated to sustainable development and provides innovative solutions like water-based pre-treatments, phthalate- and tin-free sealants and adhesives, as well as products which allow reduced consumption and considerable weight saving.



# BUS AND COACH APPLICATIONS

Bus and coach operators and manufacturers require reliability and durability in combination with continuous reduction of vehicle production and operating costs. Sika is dedicated to developing new systems and offering customized solutions with a vast range of leading technologies for the bus and coach market in order to help fulfill these requests for improved quality and reduced production costs.

## LUGGAGE DOOR AND HATCH BONDING

Different bonding technologies can be provided to satisfy demands like fast time and limited pre-treatment steps.  
**>> Page 10**

## BODY STRUCTURE

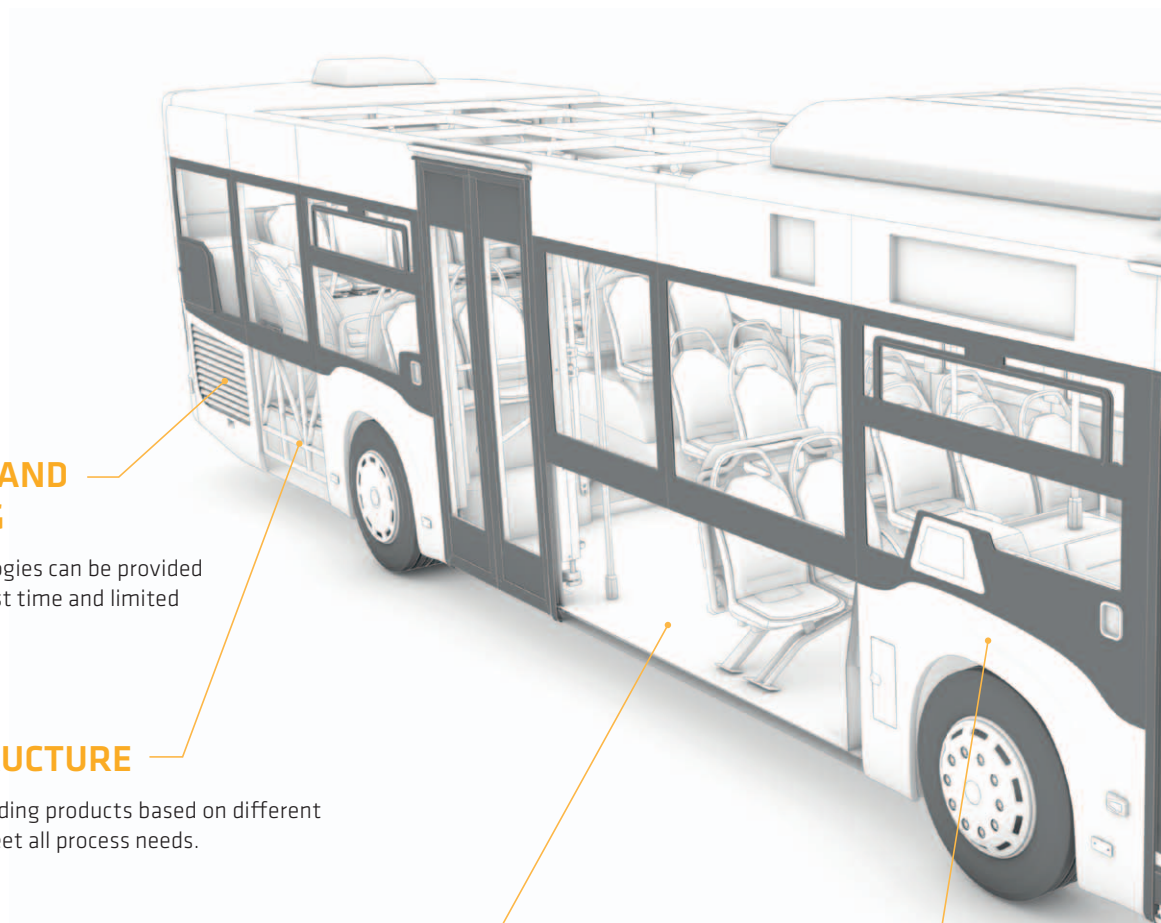
Sealing and bonding products based on different technologies meet all process needs.  
**>> Page 8**

## FLOOR BONDING

Complete portfolio offering tight seal, fast-curing and excellent noise damping characteristics, ensuring longevity and increased comfort.  
**>> Page 10**

## SIDE PANEL BONDING

Large variety of solutions to meet process and EH&S demands and provide improved aesthetics and quality.  
**>> Page 10**





## ROOF BONDING

Large components require long open time adhesives which provide sufficient time for the assembly. At the same time fast-curing speed and strength build up is required to support the manufacturing process.

>> **Page 12**

## DIRECT GLAZING

A large portfolio of direct glazing adhesives is available to meet all process needs, from high nonslip down performance to fast-curing speed or process simplification thanks to black primerless solutions.

>> **Page 16**

## INTERIOR TRIM

Large variety of technologies offering fast assembly and high initial tack to ensure no interruption of the manufacturing process.

>> **Page 18**

## FRONT AND REAR MASK

Bonding solutions ensure watertight assembly and less risk for corrosion whilst providing improved interior and exterior vehicle noise levels.

>> **Page 14**

## UNDERBODY COATING AND ACOUSTIC

Best application properties and very high abrasion resistance for long lasting protection.

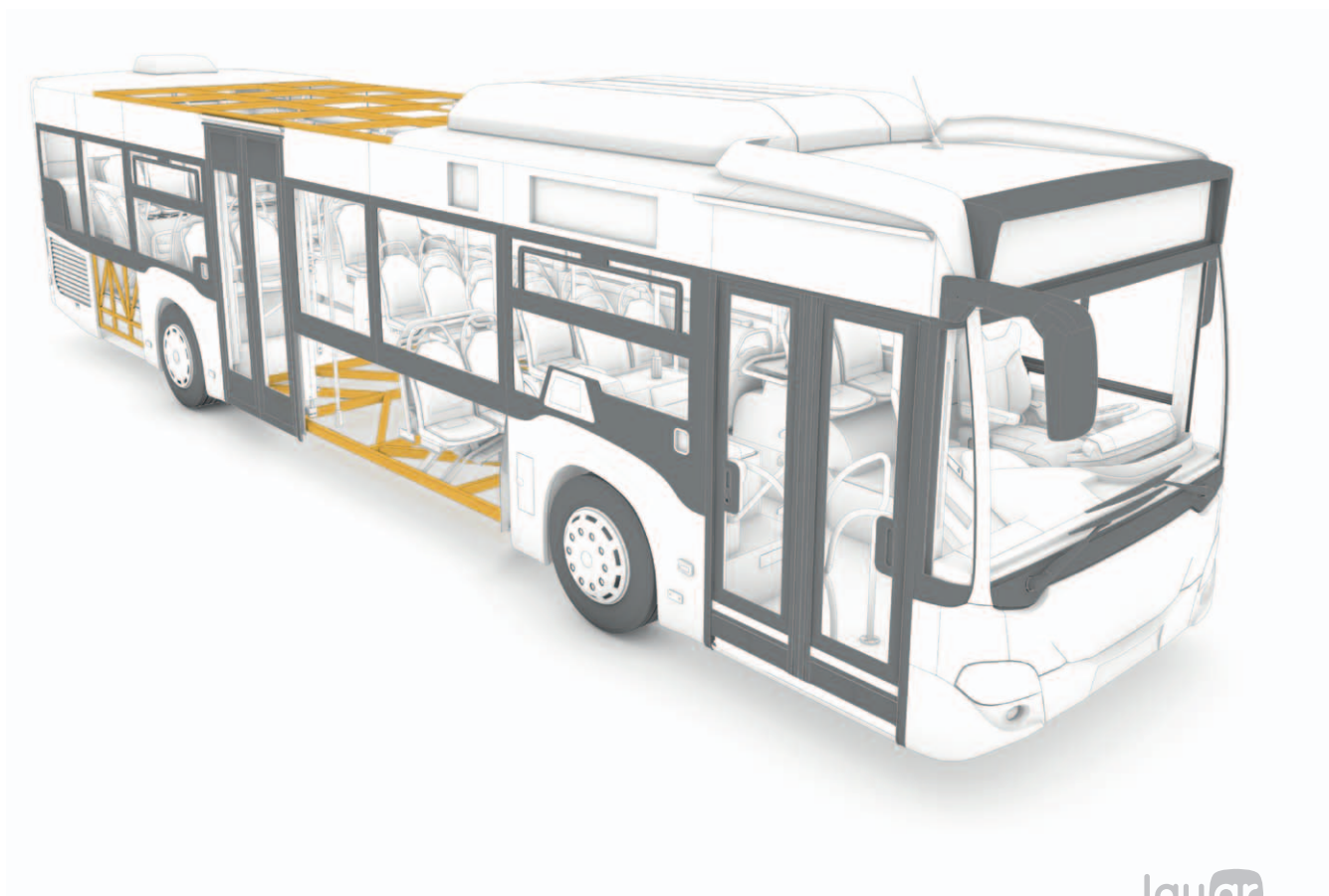
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# BODY STRUCTURE

Bus and coach manufacturers strive for stiff and durable body structures. In order to achieve this goal, different materials and processes during assembly need to be utilized. Sika provides a comprehensive range of technologies ideally suited to the various process needs.

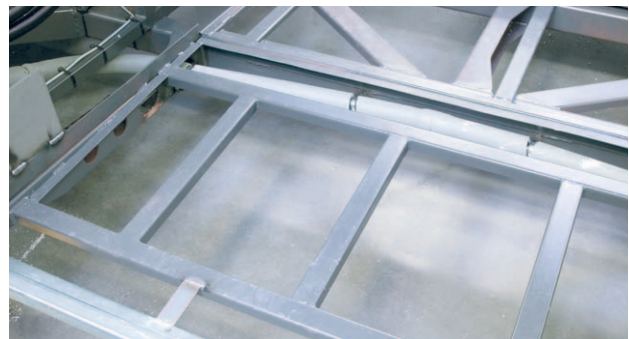
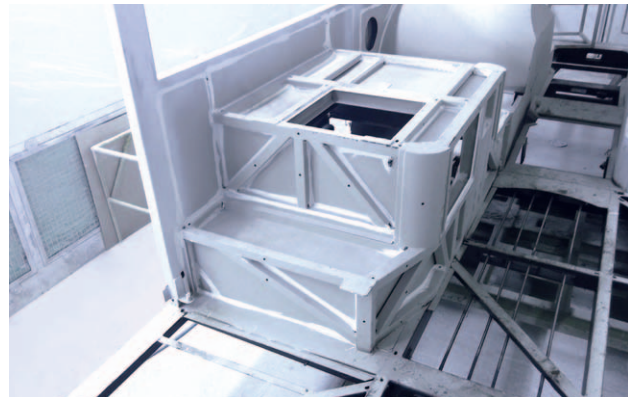
Sikaflex® sealing solutions are easy to use one-component formulations which provide excellent tooling properties and help substantially reduce the risk of corrosion, water ingress and standing water.

SikaPower® sealing solutions are warm-applied heat-curing products with an epoxy/polyurethane base. They combine durability and strength with the flexibility of polyurethane elastomers.



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PRODUCTS	PRODUCT DESCRIPTION
Sikaflex®-211 EMEA	Standard sealant for interior applications
Sikaflex®-215	Low viscous, brushable seam sealant with outstanding application properties
Sikaflex®-221	Standard adhesive sealant
Sikaflex®-529 AT	Sprayable sealant for vehicle bodies
SikaPower®-4506	Pre-curable, general purpose sealant

"Drivers and passengers want to have a calm ride and must be kept safe. Sika solutions enhance the comfortability and durability of the bus body structure."

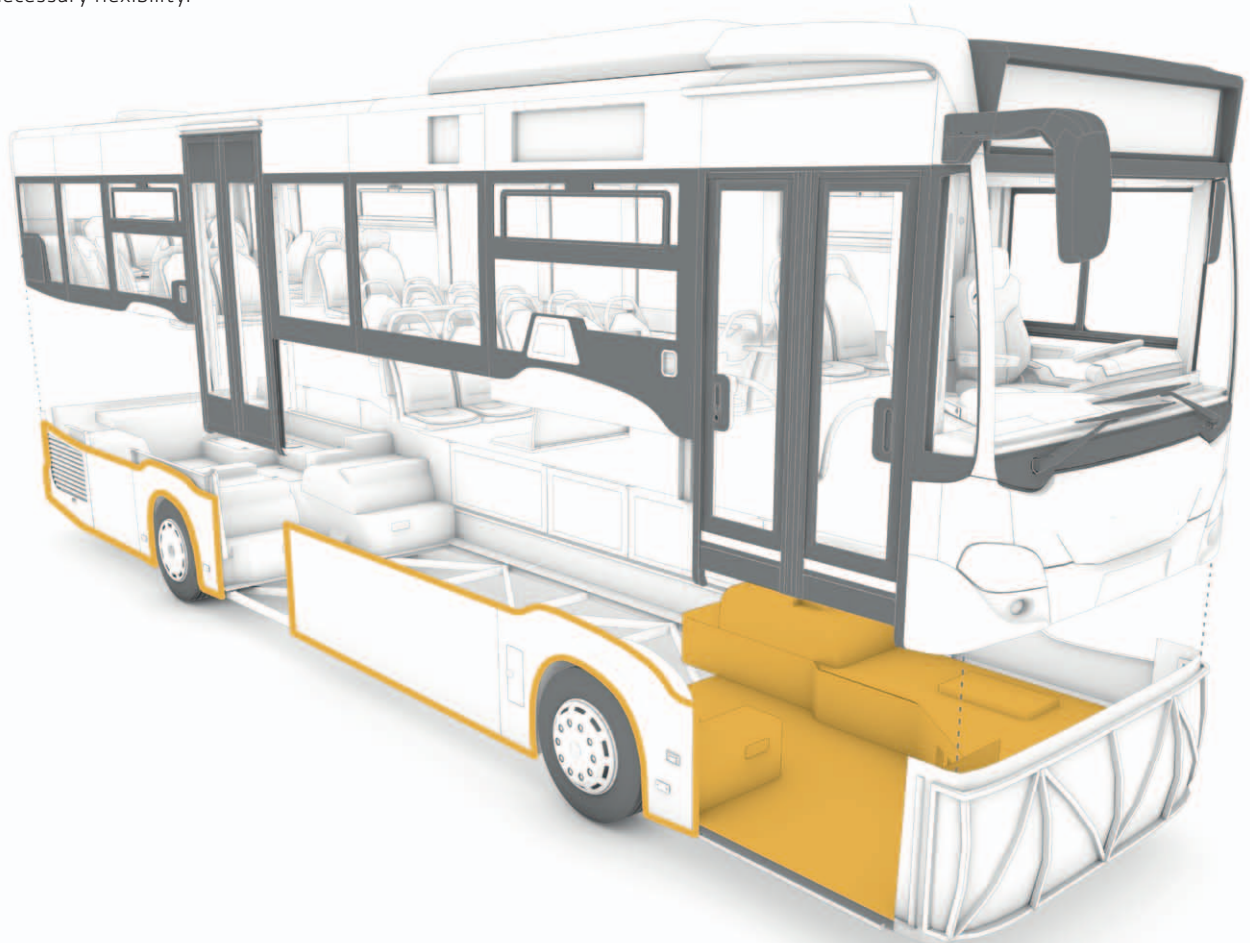
## BENEFITS

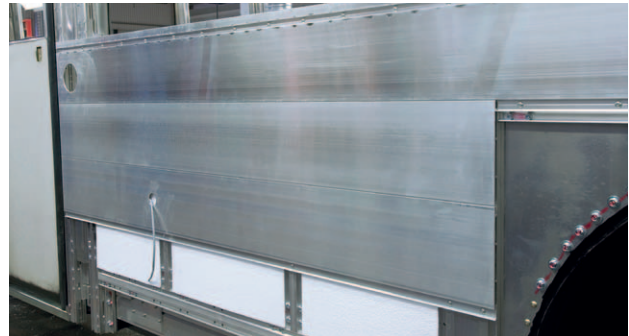
- Improved corrosion resistance
- Noise and vibration damping
- Combination of dissimilar materials possible
- Smooth surface appearance
- Improved quality
- Less rework
- Reduction or elimination of spot welding

# FLOOR, SIDE PANELS, LUGGAGE DOORS AND HATCHES

Bus and coach operators expect high levels of durability from their vehicles in all driving conditions. The vehicles must continuously keep up with harsh climatic conditions as well as avoid potential accidents.

Sikaflex® polyurethane adhesives provide high-performance elastic assembly with easy to use one-component formulations. Sikaflex® hybrid technology offers the attributes of Sikaflex® polyurethanes combined with reduced substrate preparation and improved ecology. SikaBooster® and PowerCure technology offer rapid curing speed and SikaForce® two-component polyurethanes combine high strength with necessary flexibility.





PRODUCTS	PRODUCT DESCRIPTION
Sikaflex®-252	Multi-purpose assembly adhesive
Sikaflex®-254 + SikaBooster®	Fast-curing assembly adhesive
Sikaflex®-259 + SikaBooster®-30W	Fast-curing, low density assembly adhesive
Sikaflex®-268 System	All-in-one adhesive/sealant with good ageing and weathering resistance and accelerated sealing capability
Sikaflex®-552 AT	Assembly adhesive, reduced substrate preparation
Sikaflex®-554 + Sika® Hybrid Booster	Fast-curing, reduced substrate preparation
Sikaflex®-953	Two-component assembly adhesive and sealant
SikaForce®-7752	Non-sagging structural assembly adhesive

"Elastic bonding solutions from Sika provide impact safety, sound and vibration damping as well as resistance against extreme temperature conditions."

## BENEFITS

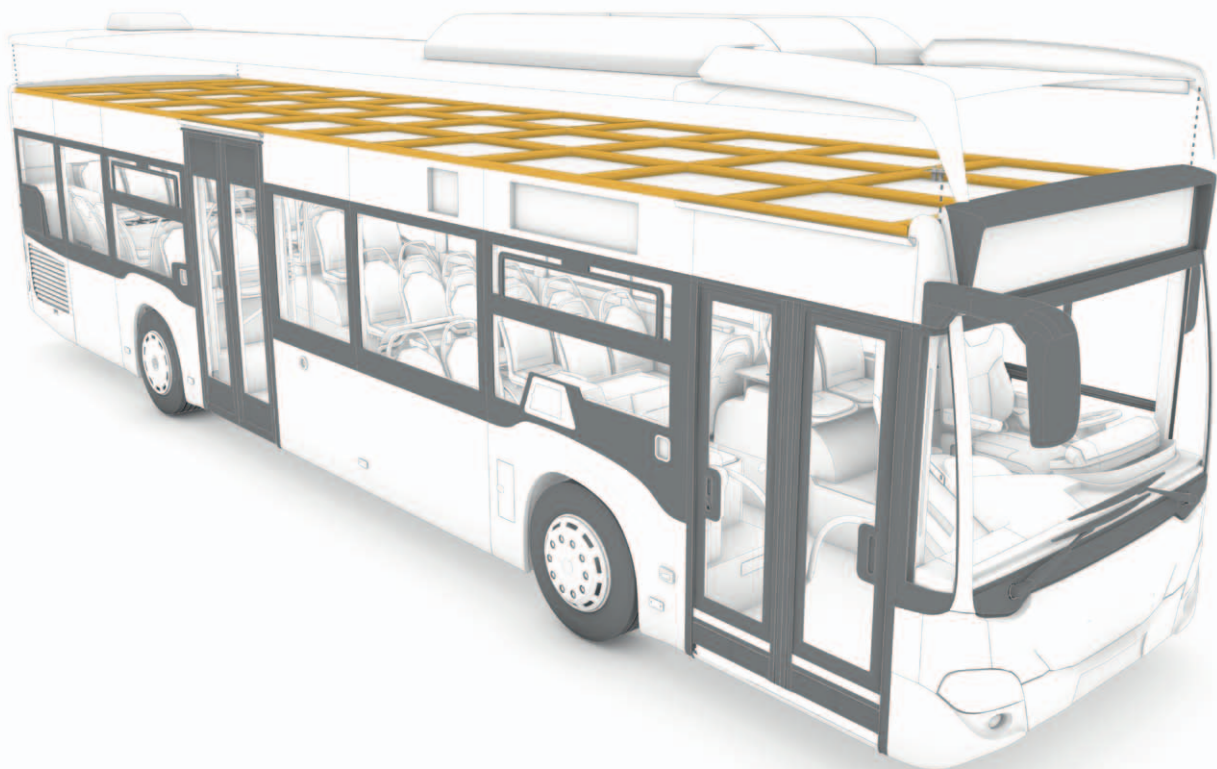
- Improved protection against accidents and higher occupant safety
- Improved water and moisture leak resistance
- No damage to corrosion protection system
- Improved sound and vibration damping
- Enhanced aesthetic via elimination of visible fixings

# ROOF BONDING

Protection against water intrusion is still one of the biggest challenges for bus and coach manufacturers. Additionally, high temperature development, thermal expansion coefficients and structural integrity all must be considered when roofs are designed.

Bus and coach manufacturers face particularly tough challenges in the design and assembly of roofs. It is one of the most critical areas to protect against water ingress, and challenging conditions like high temperature development can lead to different thermal elongation of the substrates used.

Sika provides easy to use high-performance flexible one- and two-component Sikaflex® polyurethane and hybrid technology adhesives for roof assembly. In addition to Booster or PowerCure systems, SikaForce® two-component polyurethane adhesives with long open time and faster curing speed are available when rapid cycle times are required.



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PRODUCTS	PRODUCT DESCRIPTION
Sikaflex®-252	Multi-purpose assembly adhesive
Sikaflex®-254 + SikaBooster®	Fast-curing assembly adhesive
Sikaflex®-259 + SikaBooster®-30W	Fast-curing, low density assembly adhesive
Sikaflex®-923	Fast-curing, two-component assembly adhesive and sealant
Sikaflex®-268 System	All-in-one adhesive/sealant with good ageing and weathering resistance and accelerated sealing capability
Sikaflex®-552 AT	Assembly adhesive, reduced substrate preparation
Sikaflex®-554 + Sika® Hybrid Booster	Fast-curing, reduced substrate preparation
Sikaflex®-953	Two-component assembly adhesive and sealant

"Longevity and durability against climatic influences in combination with the lowest possible weight for vehicle handling and lower fuel consumption is a must for modern buses and coaches. Sealants and adhesives from Sika fulfill these requirements in an optimal way."

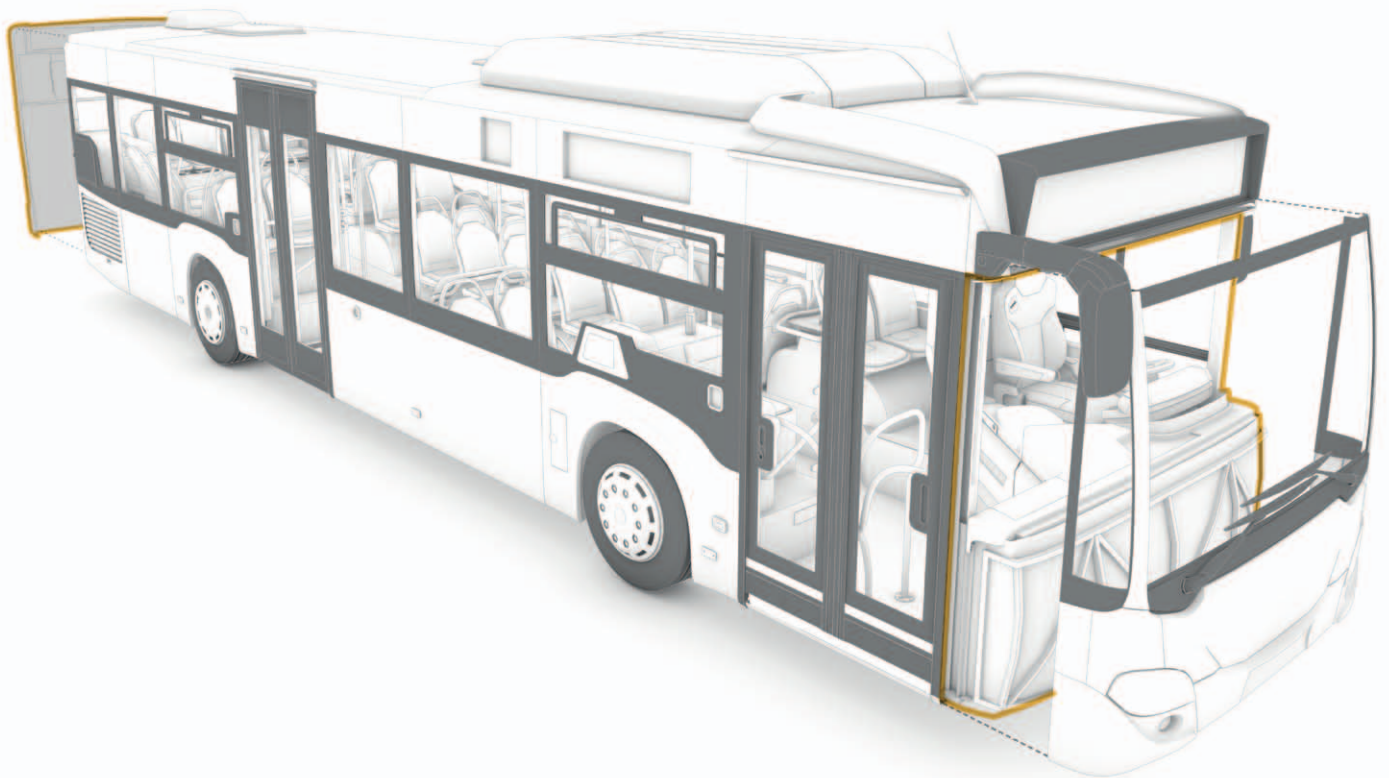
## BENEFITS

- Improved body stability combined with potential weight and fuel consumption reduction
- Excellent protection against water and moisture ingress
- No damage to corrosion protection system
- Improved sound and vibration damping

# FRONT AND REAR MASKS

In the last 15 years, shapes and design of city buses and coaches have been improved through the introduction of thermoset components. This is most apparent at the front and rear modules. Vehicles have become more durable and increasingly more productive through the introduction of these materials.

Sika offers a versatile spectrum of sealants and assembly adhesives for front and rear mask bonding. Sikaflex® polyurethane and hybrid sealants and adhesives incorporate excellent elastic behavior with operator friendly one-component formulations. Booster technology combined with dedicated Sikaflex® products and our PowerCure system provide high-performance attributes of Sikaflex® combined with rapid full cure.





PRODUCTS	PRODUCT DESCRIPTION
Sikaflex®-252	Multi-purpose assembly adhesive
Sikaflex®-254 + SikaBooster®	Fast-curing assembly adhesive
Sikaflex®-259 + SikaBooster®-30W	Fast-curing, low density assembly adhesive
Sikaflex®-923	Fast-curing, two-component assembly adhesive and sealant
Sikaflex®-268 System	All-in-one adhesive/sealant with good ageing and weathering resistance and accelerated sealing capability
Sikaflex®-552 AT	Assembly adhesive, reduced substrate preparation
Sikaflex®-554 + Sika® Hybrid Booster	Fast-curing, reduced substrate preparation
Sikaflex®-953	Two-component assembly adhesive and sealant

"The use of thermoset plastics for the assembly of front and rear masks is well established and has led to improved manufacturing processes and drastically reduced weight. Sika's sealing and bonding solutions ensure watertight joints and the longevity of bonded parts which undergo constant dynamic stress."

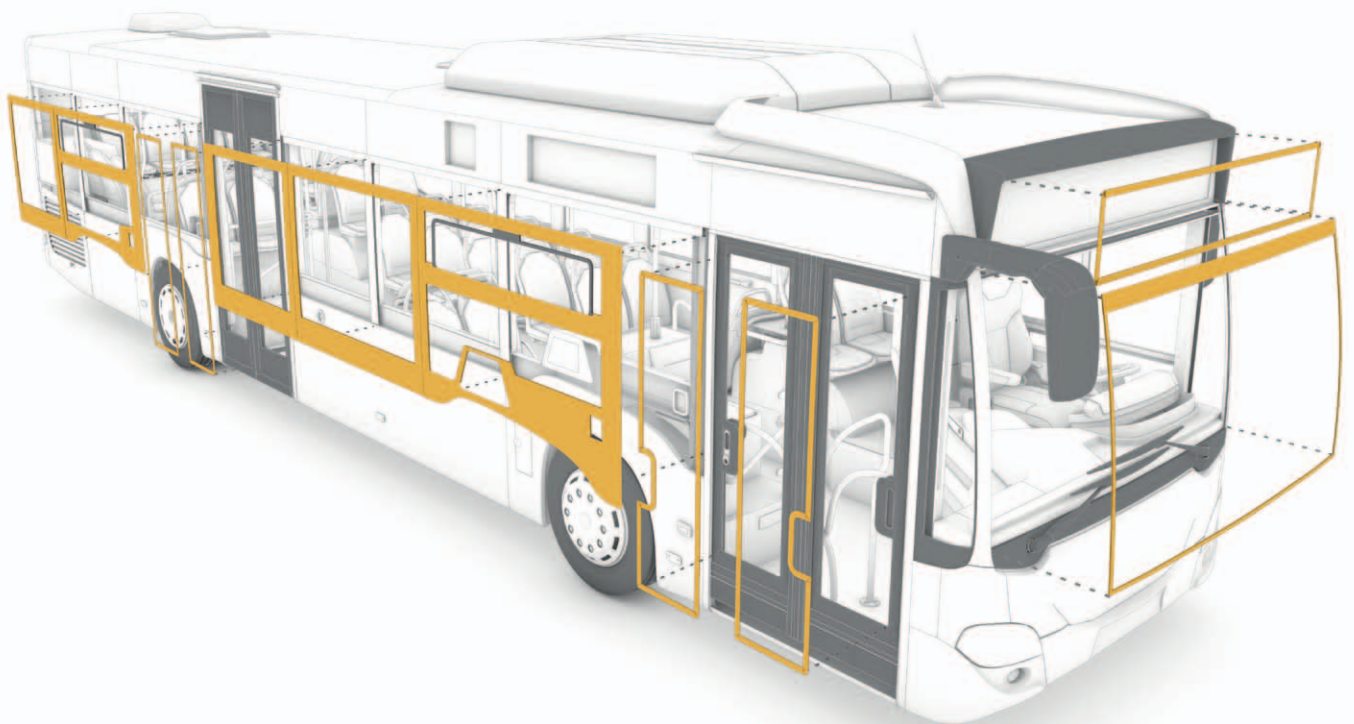
## BENEFITS

- Improved body stability combined with potential weight and fuel consumption reduction
- Excellent protection against water and moisture ingress
- No damage to corrosion protection system
- Improved sound and vibration damping

# DIRECT GLAZING

For over 30 years, Sika has been providing bus and coach assembly lines with adhesives and joint sealants for direct glazing applications. The solutions vary from standard products to innovative systems with high initial strength and accelerated curing speed.

Sika offers a wide range of adhesives to suit various needs for direct glazing applications. Sikaflex® materials are capable of retaining glass in position following installation, allowing for elimination of secondary clips, fixings or tape. Our products can also contain low electrically conductive properties for elimination of galvanic corrosion/antenna signal loss. The Sikaflex® Booster and PowerCure range offers ultimate solutions for OEM's seeking excellent mechanical properties with the shortest possible full cure time and provides the opportunity to have the same system accelerated from line application to repair.







PRODUCTS	PRODUCT DESCRIPTION
Sikaflex®-263	Direct glazing adhesive with enhanced weathering stability
Sikaflex®-268 System	All-in-one adhesive/sealant system with very good ageing and weathering resistance and accelerated sealing capability
Sikaflex®-265 DG-1	Very efficient nonslip down performance
Sikaflex®-271 + SikaBooster®-20W	Fast-curing direct glazing adhesive system for line operations and small accelerated applications and repair
Sikaflex®-271 PowerCure	
SikaTack® Move Transportation	Direct glazing adhesive for repair
Sikaflex®-558	Weathering resistant PUR-Hybrid glazing and assembly adhesive

"Significant cost reduction and simplification of production processes can be achieved through the use of Sika adhesives. Manual or automated pre-treatment without the use of black primer is possible."

## BENEFITS

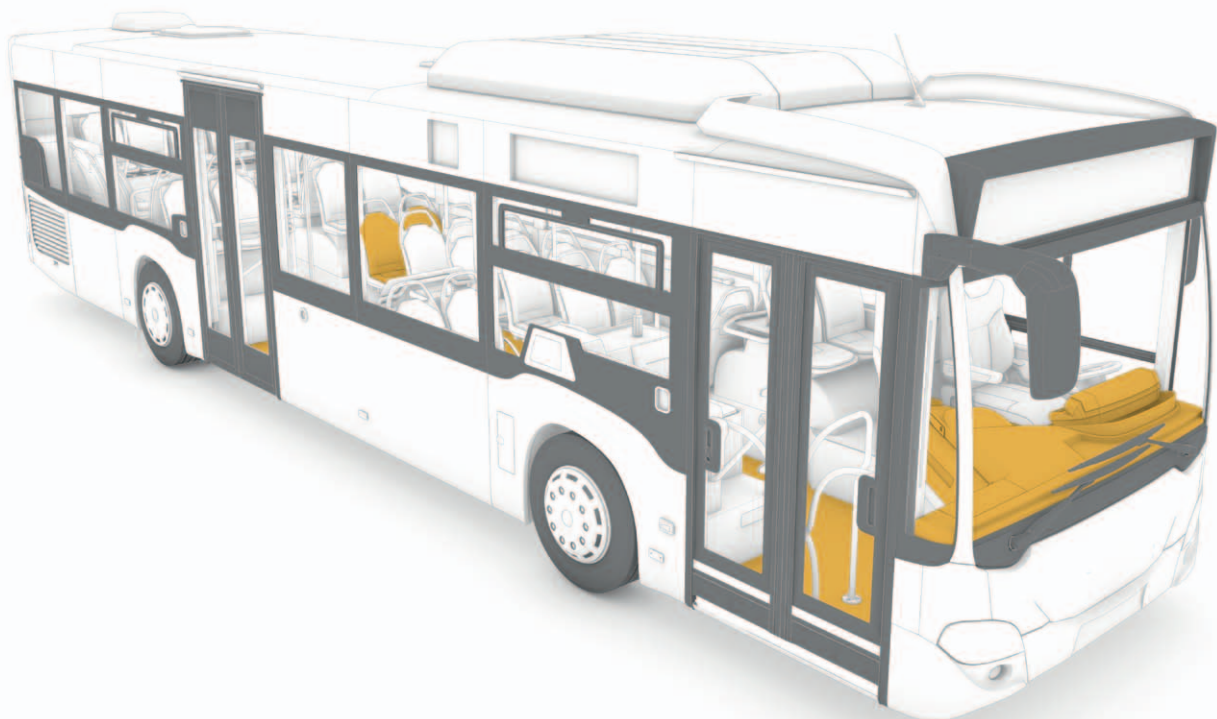
- Enhanced body stability combined with potential weight reduction and fuel consumption resulting in decreased costs
- Improved aerodynamics
- Excellent protection against water and moisture ingress
- Improved sound and vibration damping
- Compatible with automated- and robot-guided applications

# INTERIOR TRIM

Vehicle operators' wishes and government regulations have prompted a significant improvement in interior comfort and functionality in recent years, requiring the use of an increasingly diverse mix of interior plastics and fabrics.

Attractive interiors for better travel comfort require the use of different materials. Reduction of emissions, environmental care, cost savings and faster cycle times in the production process are just some requirements the operator has to deal with on a daily basis.

Sika has developed several hot melt, solvent-based and water-based solutions to create strong adhesion to many substrates. SikaMelt® and SikaSense® technologies are used in the lamination and bonding of a variety of interior applications including instrument panels, interior door trims, carpets, pillar trims, headliners, center consoles, stowage bins and seat assemblies.



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PRODUCTS	PRODUCT DESCRIPTION
SikaSense®-4600	Fast contact adhesive with high initial strength
SikaSense®-4335 + SikaCure®-4935	Water based high performance contact adhesive system with good heat and plasticizer resistance
SikaMelt®-9209 HT	All-rounder PSA hot melt with high cohesion and peel strength
SikaMelt®-9289	Permanent tacky PSA hot melt for floor lamination
SikaMelt®-9600 FS	Textile lamination PUR hot melt with high final strength and flexibility

"Aspects like operational temperature range and ecology in conjunction with lowest cost and limited cycle times must be considered for the assembly process of interior trims."

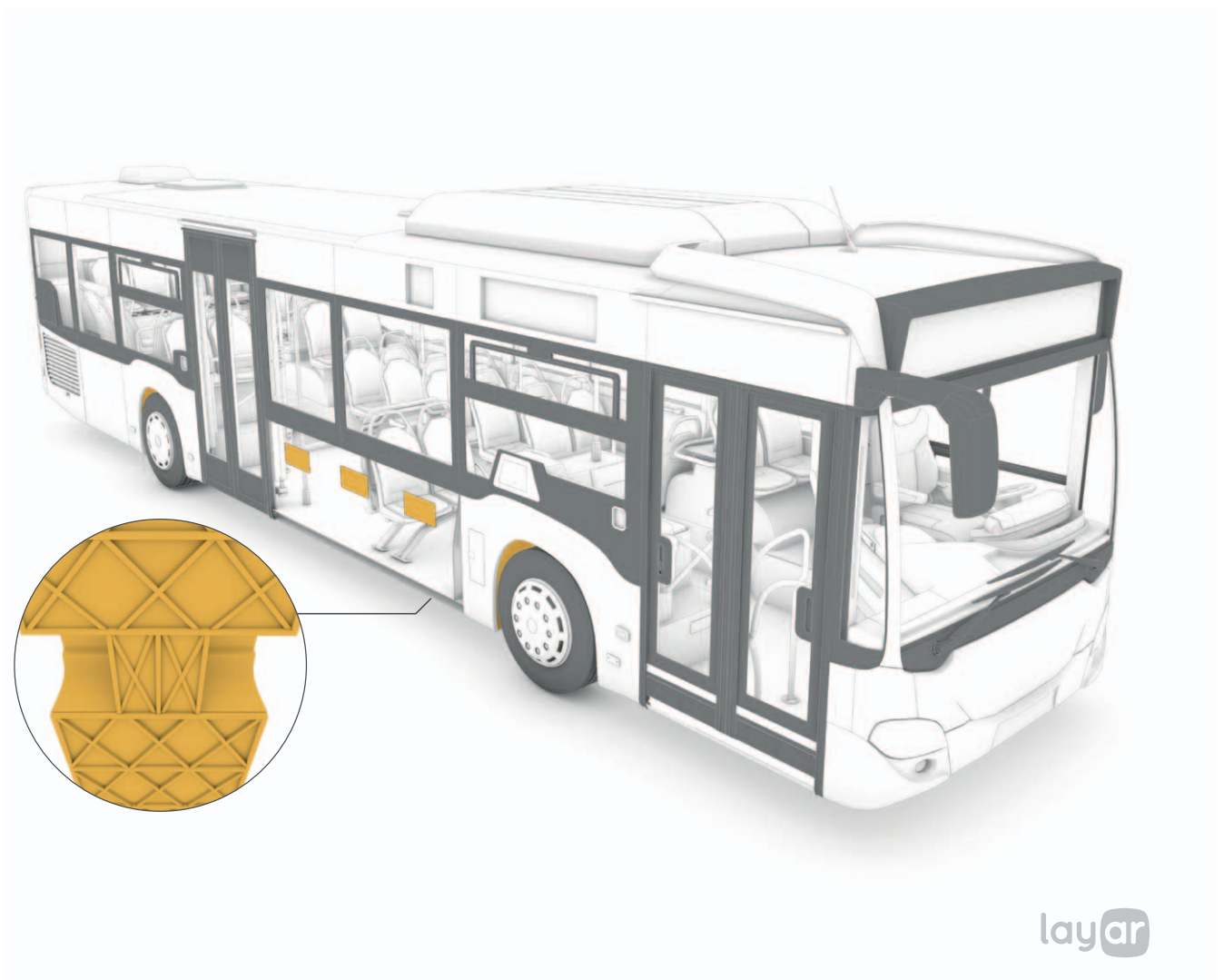
## BENEFITS

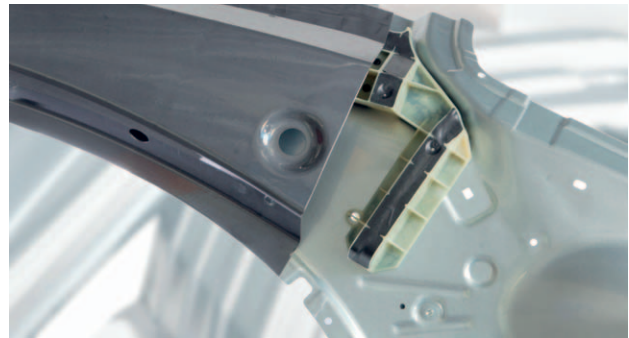
- No visible fixings
- Broad substrate compatibility
- Fast production process
- Environmental friendly and safe solutions

# UNDERBODY COATING AND ACOUSTIC

Bus and coach operators and government regulations demand strict standards for interior and exterior vehicle noise. Sika offers high-technology solutions to facilitate significant reductions in vehicle noise via absorption of various vibrations within the vehicle body.

SikaDamp® products are lightweight, elastomeric, constrained layer sheets which reduce vibrations dramatically. The sheets can be cut to any shape or size. Sikagard® products can be used for interior or exterior noise damping and underbody coating and show excellent sound deadening and stone chip resistance together with outstanding workability characteristics.





PRODUCTS	PRODUCT DESCRIPTION
SikaDamp®-620 SikaDamp®-630	Lightweight self-adhesive mastic with aluminum constrained layer system with excellent damping properties
Sikagard®-6682	Water-based sound deadening and anti chip underbody coating with excellent adhesion on e-coat and paints

"Public transport companies and passengers themselves have increasing demands for comfortable journeys. Various solutions from Sika are helping to significantly reduce vibrations, acoustic noise and impacts."

## BENEFITS

- Excellent sound damping characteristics
- Easy workability and processing
- High resistance to abrasion
- Broad adhesion range
- Can be installed in any area of assembly
- Customized part/design possible
- Non-toxic and odour-free

# SERVICE AND SUPPORT

Sika goes beyond the supply of materials and products. A motivated team is dedicated to providing and maintaining the highest standard of quality with its products and services. All Sika solutions are designed with the customers' success in mind and to establish long-lasting and mutually-beneficial relationships.



## **TECHNICAL SERVICE AND ENGINEERING SUPPORT**

Sika Industry's well-proven solutions are equally complemented with an unmatched level of support and service. The technical functions of the company are organized into dedicated local and regional teams in order to provide customers with innovative solutions, experience and knowledge. Our teams help from the idea through to the design stage and until the completion of a project with:

- Organization of project-specific material and durability tests performed by qualified laboratories
- Supplying technical documentation to support design, simulation and manufacturing processes
- Helping determine the best fit for production setups by building up similar production processes in-house
- Supporting customers independently with the evaluation and setup of equipment such as pumps and dosing units, all the way up to fully-automated cells
- Providing tailored customer application trainings

## **RESEARCH AND DEVELOPMENT (R&D)**

With about 70 patent applications every year, Sika is one of the most innovative companies in Switzerland. 20 global technology centers are the backbone of product development. This footprint offers access to a worldwide network of partners, suppliers and scientists to guarantee customer-oriented solutions.

## **SUSTAINABILITY IMPACT ON TRANSPORTATION BUSINESS**

- Energy-saving products
- Reduced material consumption
- Considerable weight savings
- Durable and long lasting systems
- EH&S friendlier solutions

# SIKA INDUSTRY BRANDS

BRAND FAMILIES	DESCRIPTION
Sikaflex®	Prepolymer-based flexible adhesives and sealants for glazing, sealing, bonding, bedding and caulking in Automotive and Industry
SikaTack®	1-component or accelerated windshield adhesives (PowerCure)
SikaForce®	1- and 2-component polyurethane adhesives range from flexible to structural strength for industrial application
Sikasil®	Silicone-based sealants and adhesives for industrial applications
SikaMelt®	Reactive and non-reactive hot melt adhesives for industrial applications
SikaReinforcer®	2-component molded epoxy expandable foam with FRP carrier for selective reinforcement in vehicle structures
Biresin®	Casting resins for models, moulds, composites, special applications
SikaBlock®	Tooling boards for model making
SikaFast®	1- and 2-component adhesive systems based on advanced acrylic chemistry
SikaLastomer®	1-component butyl sealant systems
SikaDamp®	Butyl rubber-based products for acoustic damping
SikaPower®	1- and 2-component epoxy and epoxy-hybrid adhesives and sealants for body shop and industrial applications
SikaBaffle®	Thermoplastics or rubber-based products for acoustic insulating and sealing the vehicle cabin against noise, dust and in cavities of Automotive and Truck, granulate for moulding or co-extruded tape
SikaSense®	Water- and solvent-based 1- and 2-component adhesive systems, engineered to create an elastic, strong and durable bond on plastics, wood, synthetic, leather, cotton fibers or wood fibers
Sikagard®	Protective coating

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CONCEPT, DESIGN, TEXT, 3D RENDERINGS AND REALIZATION  
fachwerk Kommunikation AG, www.fachwerkag.ch

# GLOBAL BUT LOCAL PARTNERSHIP



## FOR MORE BUS & COACH INFORMATION:



[www.sika.com/bus-coach](http://www.sika.com/bus-coach)

### WHO WE ARE

Sika is a specialty chemicals company with a leading position in the development and production of systems and products for bonding, sealing, damping, reinforcing and protecting in the building sector and automotive industry. Sika has subsidiaries in 97 countries around the world and manufactures in over 190 factories. Its more than 17,000 employees generated annual sales of CHF 5.75 billion in 2016.

Our most current General Sales Conditions shall apply. Please consult the most current local Product Data Sheet prior to any use.



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