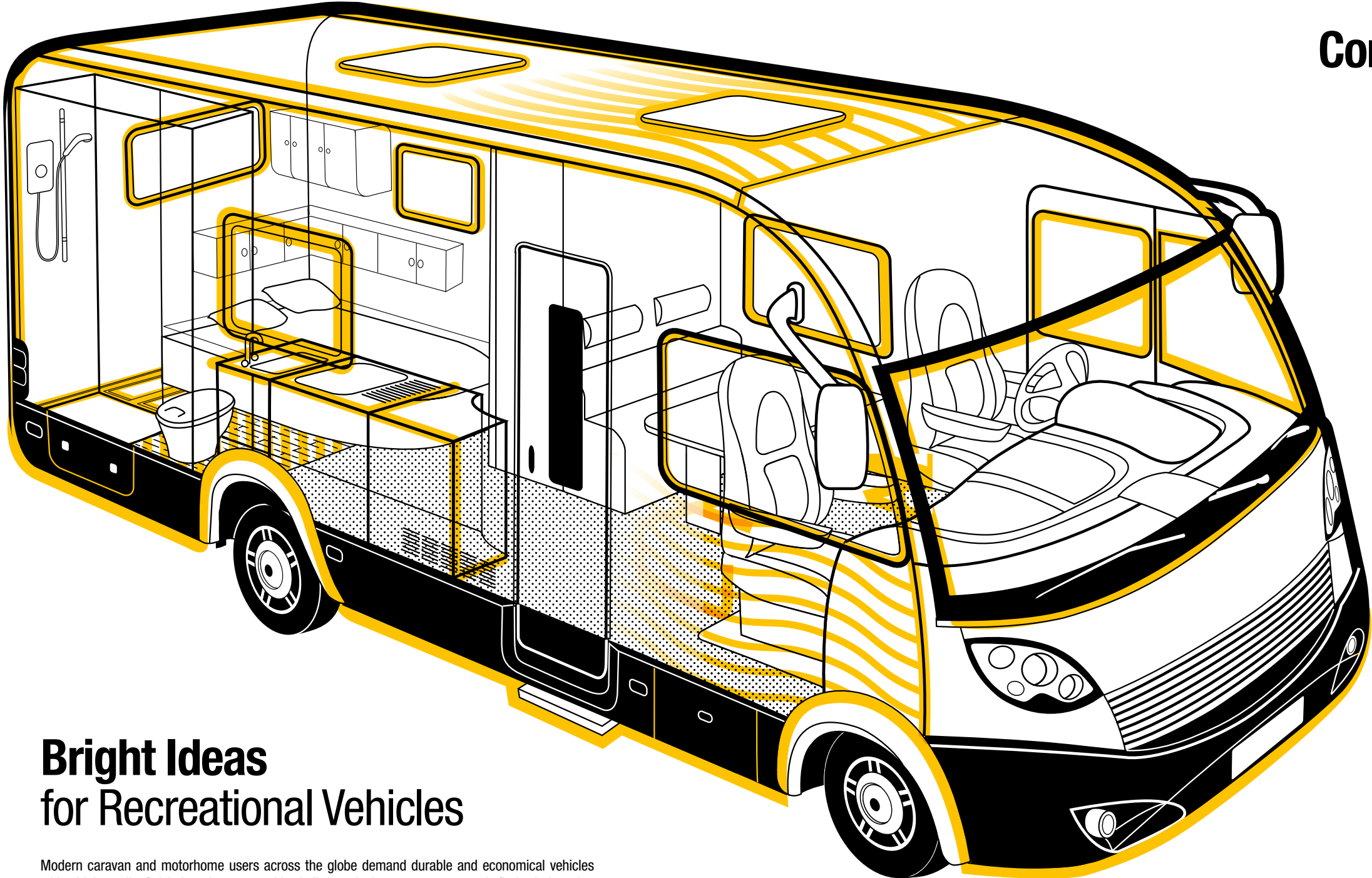




Caravan and Motorhome Bright Ideas for Recreational Vehicles

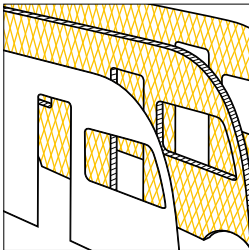


Bright Ideas for Recreational Vehicles

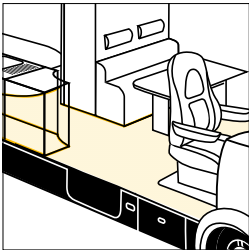
Modern caravan and motorhome users across the globe demand durable and economical vehicles with a high-quality finish. In order to meet this challenge, designers must constantly find solutions that enable manufacturers to improve their build times and manufacturing efficiency, reduce the number of parts and vehicle weight, increase rigidity and strength and extend the longevity of the product.

Sika, as the partner to the global caravan and motorhome industry, provides a wide range of state-of-the-art technologies to assist manufacturers in meeting their requirements. We provide specific solutions on our core competencies: Bonding, Sealing, Damping and Reinforcing. As a globally operating company, we are represented in your countries with own subsidiaries, ensuring first-class technical and commercial support, order handling and delivery, from the first concept through the entire life cycle of your vehicle.

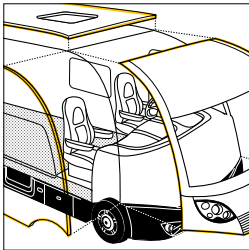
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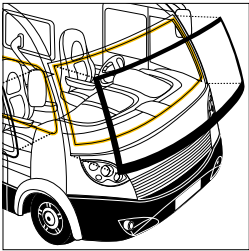
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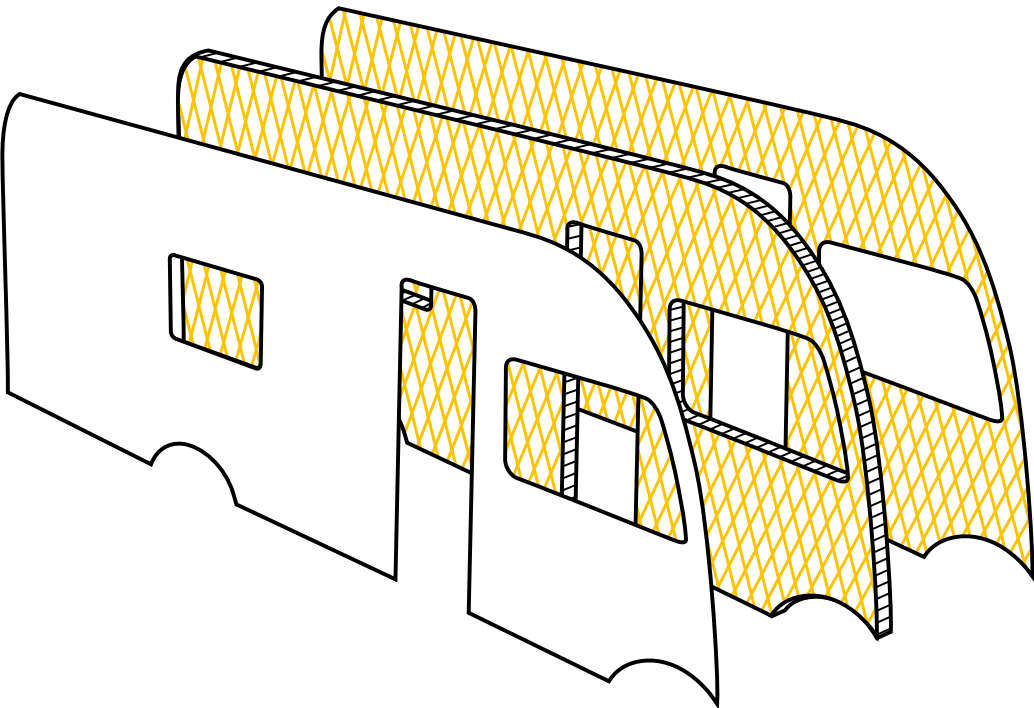
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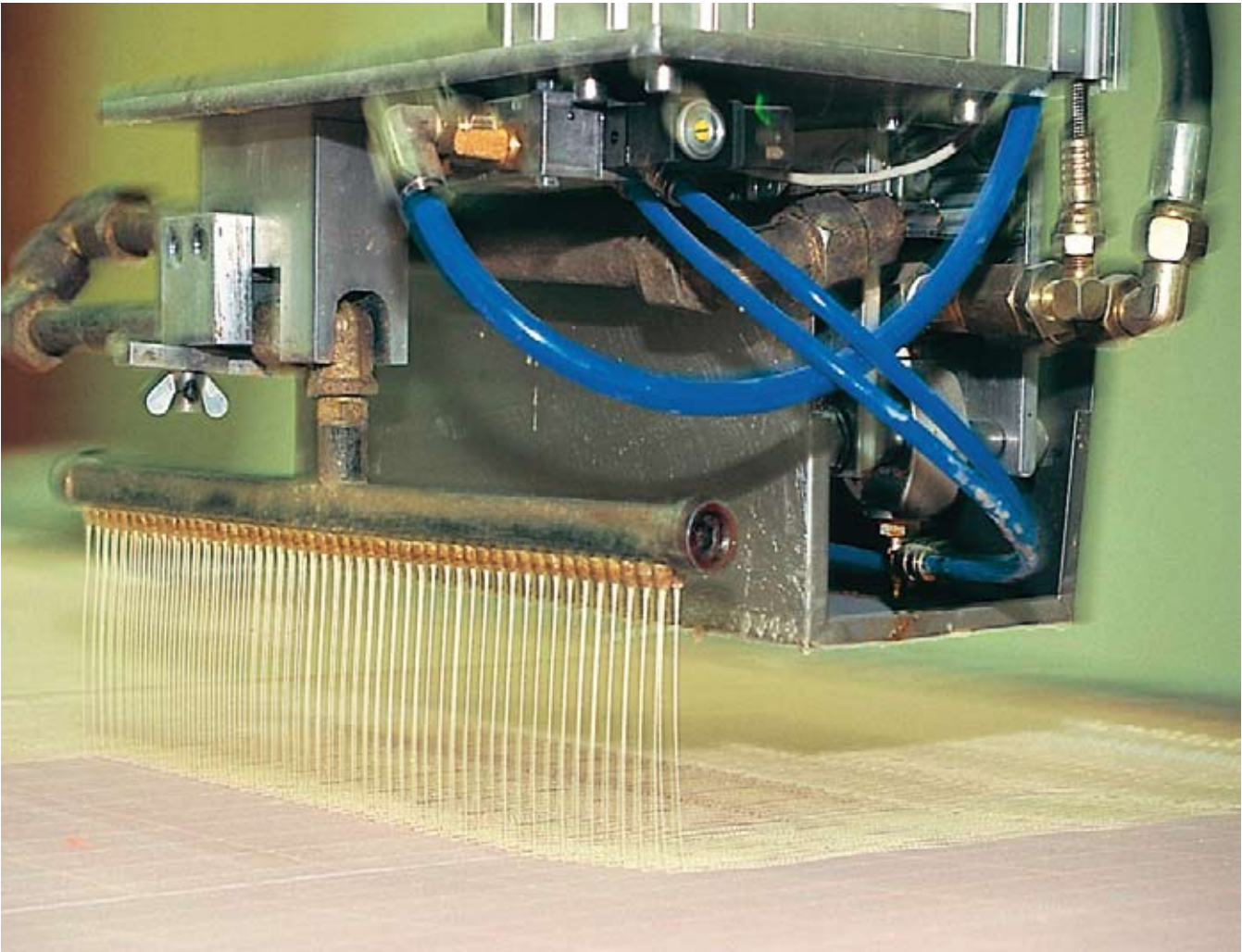


Sandwich Panel Production



Caravan and motorhome manufacturers use metal, wood, fibreglass and foam insulation in the production of side and rear walls, floors and roofs. Increased efficiency in production is a critical factor for this competitive market place. Good thermal insulation, light-weight construction and high acoustic dampening are required to provide enhanced occupant comfort and better fuel economy.

Traditional fixing methods can result in buckling, deformation and denting of side and roof panels. Such issues require significant cost and labour to repair and rework. The use of adhesive bonding to fabricate the panels eliminates such risks and improves efficiency, quality and cost. Sika provides solutions custom formulated to match with different customer process requirements. For example, systems are available with a wide range of press times, green strengths, open times and other key factors to adapt to the process needs of each customer manufacturing requirements. We offer one- and two-component polyurethane (PUR) technologies (SikaForce®), as well as reactive hot-melt (RHM) technology (SikaMelt®), for such applications.



SikaForce® adhesive applied by spreader bar

Why Use Sandwich Panel Adhesive?

- Improved structural rigidity
- Lower panel weight, resulting in reduced total vehicle running costs
- Allows the use of high-performance foam cores to enhance thermal insulation
- Excellent water resistance
- Good process control, providing consistent and repeatable high-quality output
- Flexibility of the design

Technological Benefits

- Bonds well to a wide variety of substrates
- Faster production due to fast strength build-up
- Compatible with manual and automatic application processes
- Custom formulation to meet customer requirements
- Full range of technologies for sandwich panel assembly, including PUR lamination, hot-melt and reactive hot-melt systems

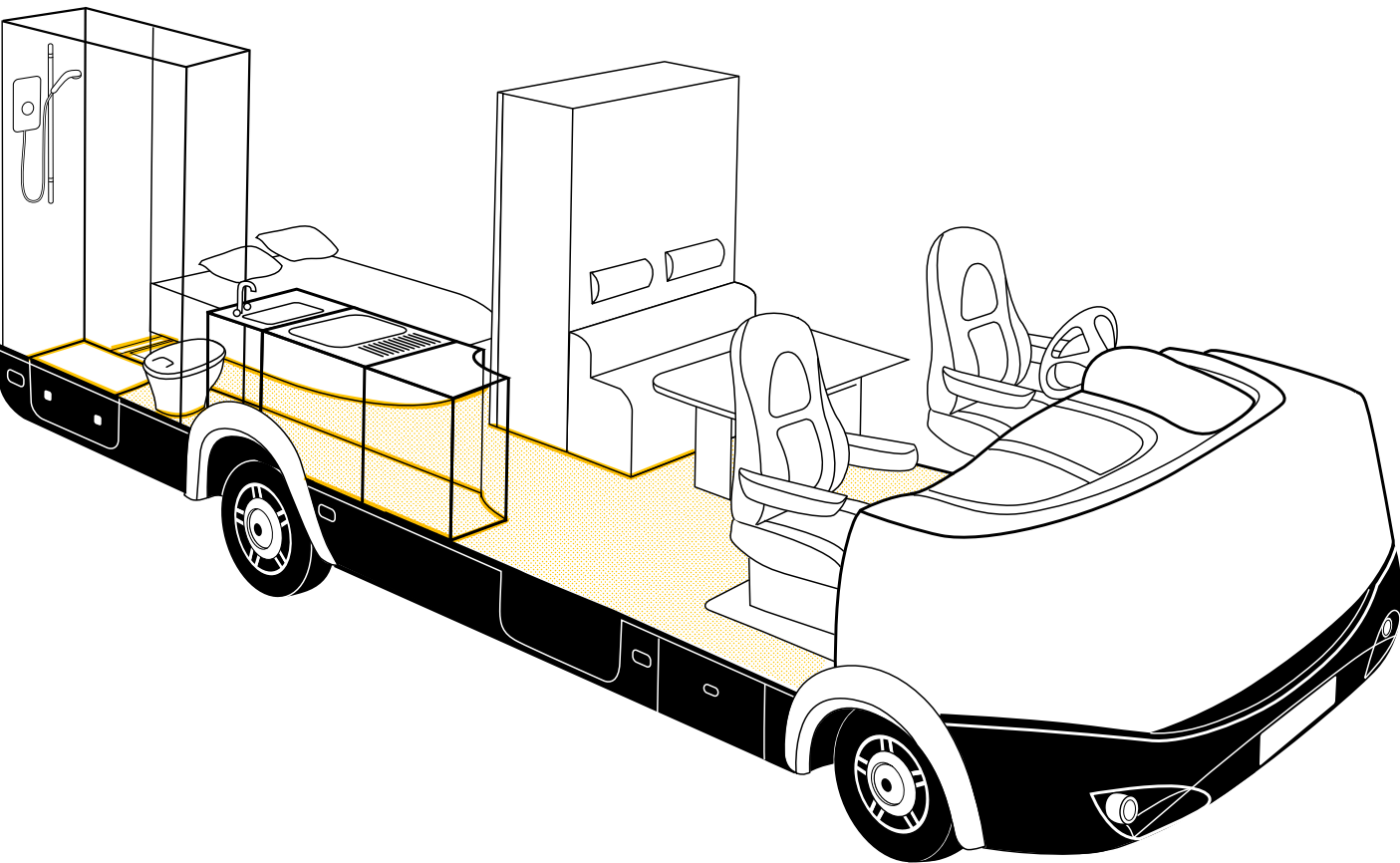
Best Recommended Sika Products

Features and Benefits

- SikaForce®-7710**
Two-component PUR adhesive with high strength, medium to long open and different press times for all types of lamination
- SikaForce®-7715**
Two-component PUR sandwich panel adhesive with the possibility of heat activation to reach very short press times
- SikaMelt®-9600 Series**
High green strength PUR hot-melt adhesives for sandwich panel production with different open time



General Bonding and Sealing in Interior



Effective sealing of the vehicle body against water ingress is essential for the elimination of expensive warranty costs and quality claims from end customers. A robust watertight seal protects wiring looms, vital electronic equipment and the entire vehicle interior. Modern vehicle interiors are expected to look stylish, attractive and inviting, and also to be finished to a very high standard. Bonded systems allow for the combination of high-performance sealing with improved aesthetics and performance.

Sika has several solutions capable of providing durable elastic sealing and high-performance adhesive bonding to many common substrates. Sikaflex® polyurethane sealants and adhesives combine simplicity of application with excellent durability and adhesion. Sikaflex® PUR-Hybrid technology (based on Sika’s silane terminated polymer (STP) technology) combines the performance of traditional Sikaflex® polyurethane systems, but demonstrates additional benefits such as reduced substrate preparation and improved worker safety. SikaFast® two-component adhesives combine low surface preparation and high tensile strength with rapid de-jigging and full cure.

Why Use General Bonding and Sealing in Interior?

- Watertight seals ensure durable and long-lasting protection of the interior and vital electronic equipment
- Improved acoustic environment
- Reduced air leakage: more efficient air-conditioning and heating
- Avoidance of corrosion via elimination of drilling or piercing of the chassis for mechanical fasteners
- High levels of aesthetic finish achievable

Technological Benefits

- Improved water and leak resistance
- Very easy to use
- Simple substrate preparation
- Good worker safety
- Wide range of standard colours available
- Excellent resistance to harsh climatic conditions



Bonded and sealed interior of a motorhome

Best Recommended Sika Products

Features and Benefits

Sikaflex®-221
High-quality multi-purpose sealant and adhesive, suitable for making permanent elastic seals of high adhesive strength

Sikaflex®-521 UV
Joint sealant with excellent UV, ageing and weather resistance. Reduced substrate surface preparation needed. Solvent and VOC-free

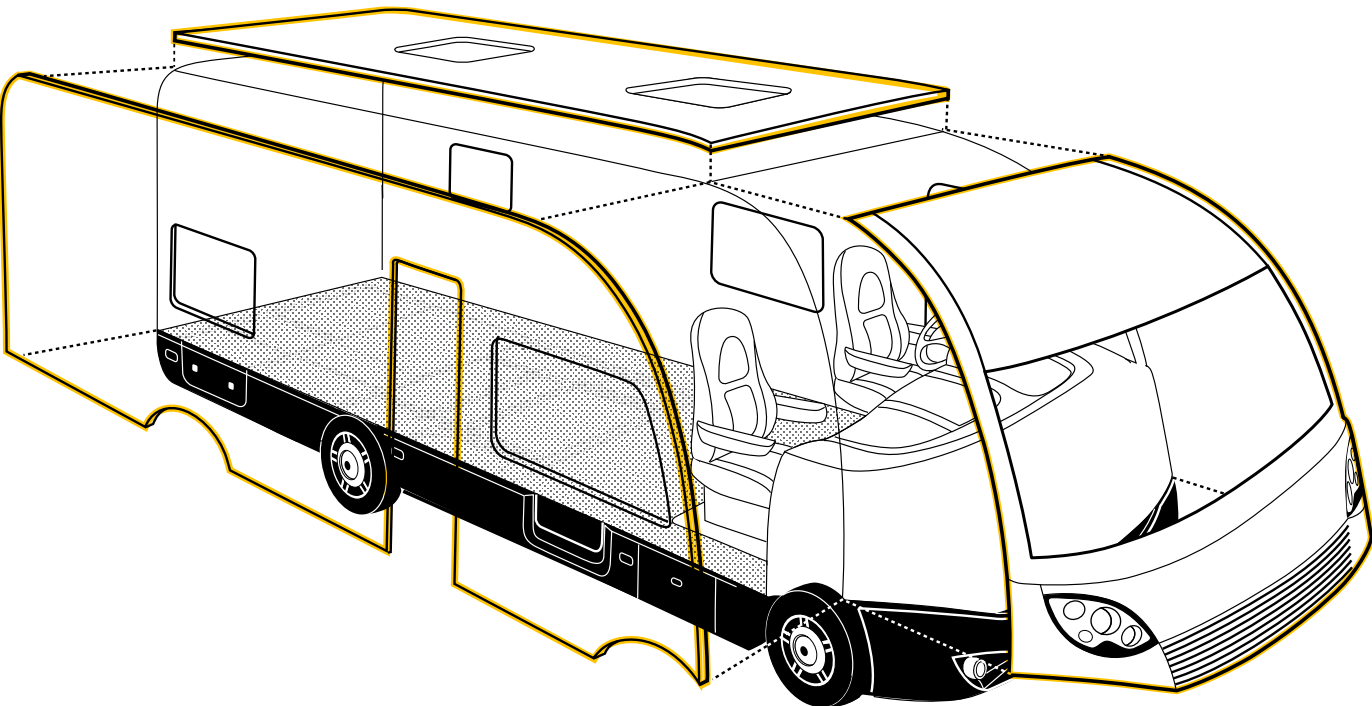
Sikaflex®-552
UV-stable assembly adhesive for sealing and bonding, excellent adhesion properties, ecology-friendly; suitable also for exterior joints

SikaFast®-3000 Series
High tensile properties, elasticity and impact resistance; excellent adhesion profile; gap-filling capability

SikaFast®-5000 Series
High mechanical properties; fast curing with long open times; excellent adhesion profile; low odour



Body Assembly and Exterior Sealing



Recent years have seen dramatic changes in the aerodynamics and styling of caravan and motorhome vehicles. The mix of materials used to fabricate such vehicles has also radically changed. The use of fibreglass composites and sandwich panel structures is now commonplace, as manufacturers seek to reduce vehicle weight, improve fuel economy and enhance thermal insulation and user comfort.

Sika can provide a range of high-performance solutions for body assembly. SikaForce® two-component PUR adhesives demonstrate high strength, good flexibility and are capable of curing at room or elevated temperatures. Sikaflex® polyurethane sealants and adhesives combine simplicity of application with excellent durability and adhesion. Sikaflex® PUR-Hybrid technology (based on Sika’s silane terminated polymer (STP) technology) combines the performance of traditional Sikaflex® polyurethane systems, but demonstrates additional benefits such as reduced substrate preparation and improved worker safety. SikaFast® two-component adhesives combine low surface preparation and high tensile strength with rapid de-jigging and full cure. SikaLastomer® butyl sealants provide excellent sound damping and sealing properties.

Why Use Body Assembly and Exterior Sealing?

- Improved sound and vibration damping
- Enhanced aesthetics and aerodynamic efficiency
- Higher rigidity of the structure without damage to thermal insulation – unlike mechanically fastened systems
- Lower weight, generating reduced running costs
- Excellent water resistance due to elimination of holes and drilling required by mechanical fasteners
- Improved aesthetics due to no visible fixings
- Reduced risk of warpage, as adhesives compensate for different thermal expansion rates between metal and nonmetal substrates
- Enhanced ability to withstand shock, impact and torsion

Technological Benefits

- Excellent balance of strength, flexibility and impact resistance
- Low thermal conductivity
- Excellent water resistance
- Wide range of cure speeds
- Suitable for automated or manual application
- Superb adhesion to a wide range of substrates commonly used for motorhome construction

Best Recommended Sika Products

Features and Benefits

Sikaflex®-222 UV
UV-resistant, ideal for use with organic glass or open joints; easy application; suitable for bonding and sealing; compatible with PC (polycarbonate) and PMMA (poly-methylmetacrylate) with proprietary Sika surface preparation system; high elasticity and low modulus

Sikaflex®-252
Structural assembly adhesive for flexible joints subjected to dynamic stresses

Sikaflex®-254 Booster
Fast curing; ‘fail-safe’ systems cures even in the absence of Sika® Booster Paste; good mechanical properties and adhesion

Sikaflex®-521 UV
Joint sealant with excellent UV, ageing and weather resistance. Reduced substrate surface preparation needed. Solvent and VOC-free

Sikaflex®-552
UV stable assembly adhesive for sealing and bonding, excellent adhesion properties, ecology-friendly; suitable also for open joints

SikaLastomer®-700 Series
Butyl sealants with good sound damping and sealing properties

SikaFast®-3000 Series
High tensile properties, elasticity and impact resistance; excellent adhesion profile; gap-filling capability

SikaFast®-5000 Series
High mechanical properties; fast curing with long open times; excellent adhesion profile; low odour

SikaForce®-7550
Two-Component, high-strength elastic assembly adhesive



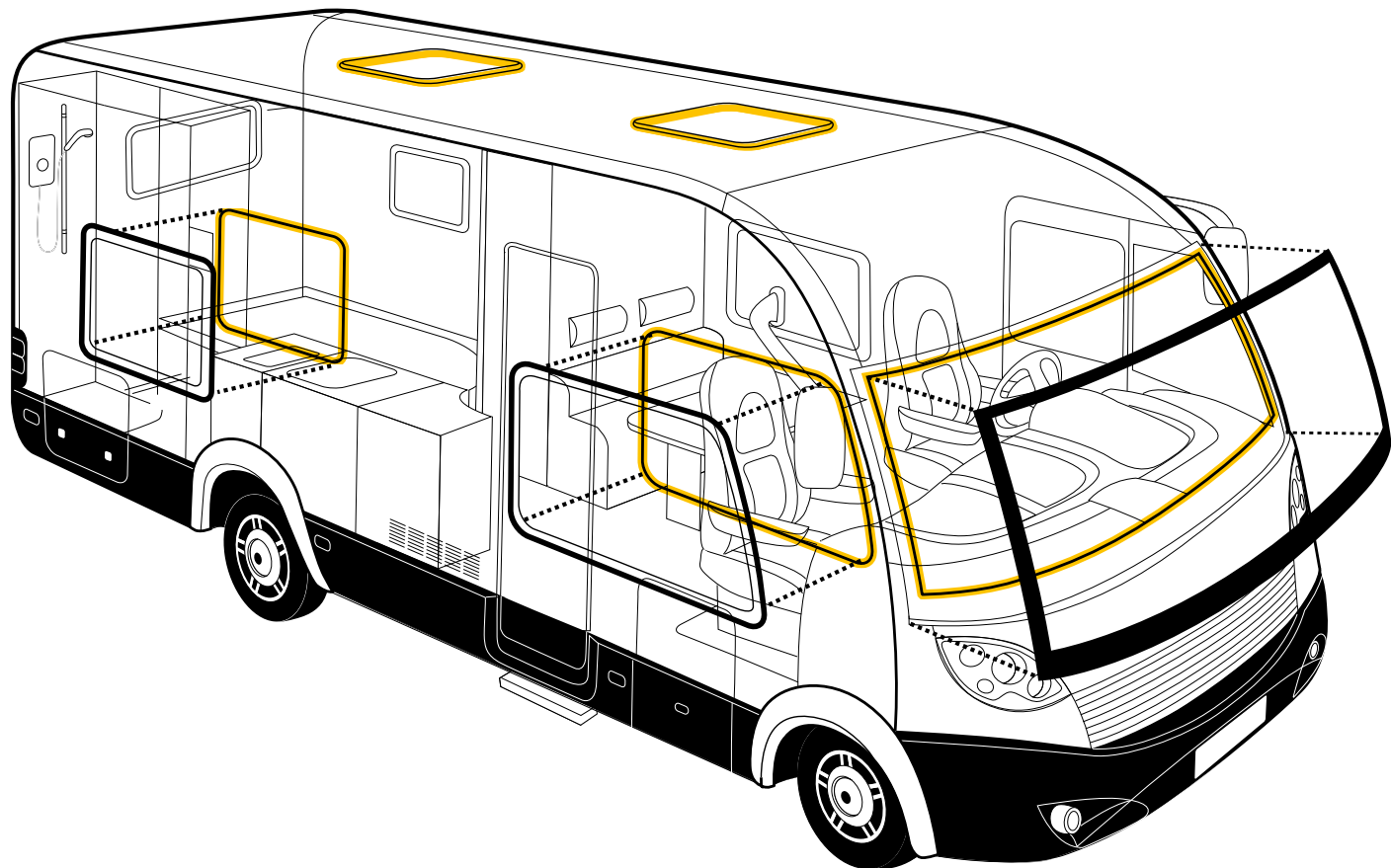
Bonded roof of a semi-integrated motorhome



Front mask bonding



Direct Glazing



For over 20 years, Sika has been providing caravan, motorhome, bus and coach, automotive, truck and rail OEM assembly lines with solutions for direct glazing. Primerless, manual and automated pretreatment options are available to fit the needs of a variety of OEM application processes in order to create significant cost savings and manufacturing process simplification.

Sika offers a wide range of adhesive technologies to suit all direct glazing applications. Specific Sikaflex® solutions are available to suit cold, warm and hot application processes. Proprietary Sikaflex® materials are capable of retaining the glass in position following installation, allowing for elimination of secondary clips, fixings and tape. Sikaflex® materials can also provide low electrically conductive properties for elimination of galvanic corrosion. The SikaTack®-Plus Booster range provides the ultimate solution for OEM's seeking excellent mechanical properties with the shortest possible full cure time. Unlike traditional two-component systems, this boosted one-component system has the significant benefit of full material cure irrespective of the presence of the accelerator paste, providing enhanced process/quality consistency and security.

Why Direct Glaze?

- Increased body stiffness for enhanced roll-over strength and improved occupant impact protection
- Enhanced aerodynamics versus glazed gasket systems to improve fuel economy and vehicle emissions
- Higher body stiffness to reduce noise, vibration and harshness within the vehicle body
- Reduction of leakages compared to rubber gasket sealed windows

Technological Benefits

- Sika's tried and tested primerless to glass technology
- Primerless to paint
- Accelerated with Sika® Booster for rapid full cure
- High initial green strength
- Hot and warm applied systems to eliminate secondary clips, fixings and tape

Best Recommended Sika Products

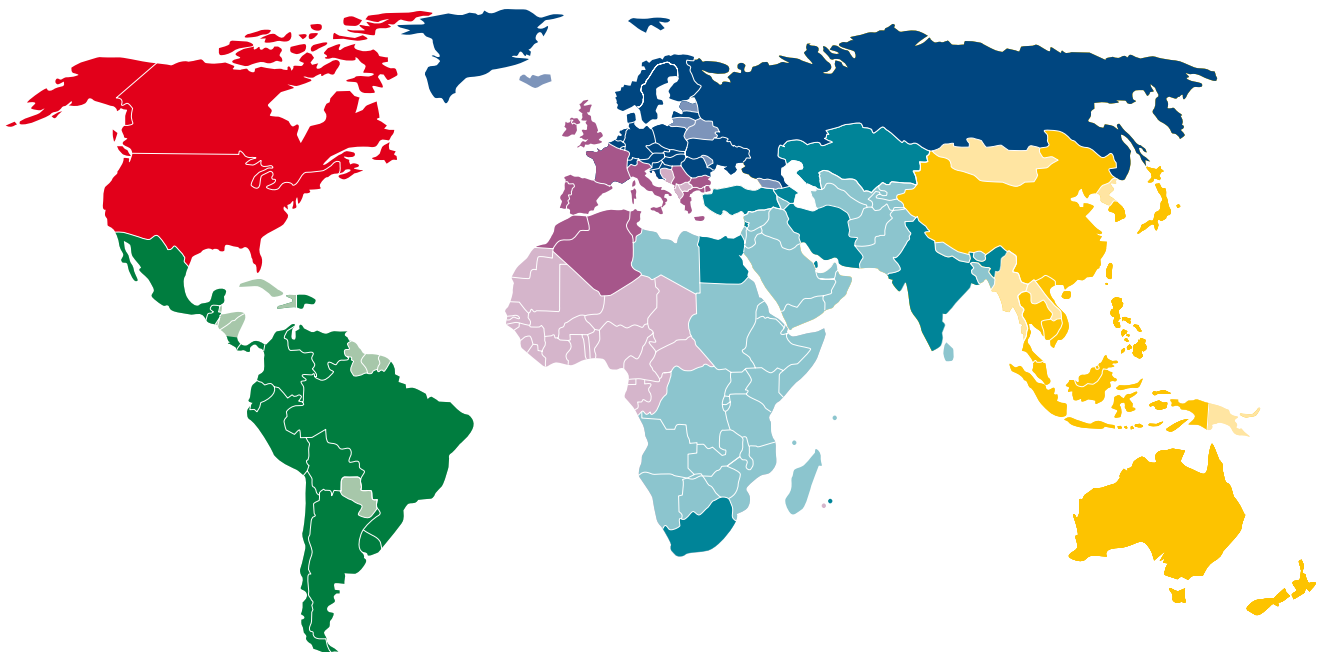
Features and Benefits

- Sikaflex®-222 UV**
UV-resistant, ideal for use with organic glass or open joints; easy application; suitable for bonding and sealing; compatible with PC (polycarbonate) and PMMA (polymethylmetacrylate) with proprietary Sika surface preparation system; high elasticity and low modulus
- Sikaflex®-250 PC**
Warm applied system; high green strength enables reduction in clips, fixings and tape; good tooling behaviour; widely OEM-approved; excellent adhesion characteristics
- Sikaflex®-265**
Easy-to-use system with excellent work characteristics; suitable for bonding and sealing; large gap-filling capabilities; long open time; UV-stable
- Sikaflex®-555**
STP direct glazing adhesive and sealant, suitable also for open joints
- SikaTack®-Plus Booster**
Fast curing; 'fail-safe' systems cures even in the absence of Sika® Booster paste; good mechanical properties and adhesion



Installation of a direct glazed windshield

Sika Worldwide



- 5 continents
- over 70 countries
- 90 production and marketing companies
- approx. 12,000 employees



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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