



SYSTEM SOLUTIONS FOR BUSES

High Performance Adhesives and Sealants
for Comfort and Safety



H.B. Fuller



KÖMMERLING

TRAVEL COMFORT & SAFETY

A photograph of passengers inside a bus. In the foreground, a young woman with blonde hair is smiling and looking out the window. Behind her, several other passengers are seated in rows of blue seats, looking forward. The interior of the bus is visible, including the ceiling and windows.

Modern fastening solutions can help to achieve greater travel comfort while boosting passenger safety. In transportation, the intelligent use of innovative adhesive technologies leads to the desired result. KÖMMERLING provides high-performance adhesives which take into account individual manufacturing processes and the most varied material combinations.

BENEFITS OF ADHESIVE TECHNOLOGIES IN MODERN VEHICLE CONSTRUCTION

BUSES

Energy-efficient vehicles need to meet stringent requirements. To enable their fulfilment, we rely on technically sophisticated customer-specific solutions. The result are innovative products that already make welding, bolting and riveting unnecessary in many cases today.

On the one hand, KÖMMERLING products help to improve the noise dampening in vehicles such as motorcars, trucks, buses, caravans and ships, for example, leading to greater comfort. And on the other they also ensure a weight reduction that is immediately reflected in lower fuel consumption – and thus in the preservation of natural resources. Designed for more efficient transport, our products hence ultimately also benefit nature.

Benefits

Cost savings

- + Lower fuel costs through weight reduction
- + Lower manufacturing costs by reducing the number of process steps
- + Lower repair costs, fewer down-times thanks to reduced corrosion, etc.
- + Lower long-term investment costs thanks to greater longevity

Added value

- + Enhanced functionality
- + Greater comfort
- + Moisture-proof
- + Noise dampening inside and outside
- + Safety
- + Reduction of emissions
- + Energy savings

Design

- + Improved look
- + Greater freedom in the design





TECHNOLOGY IN BUS CONSTRUCTION

Omnibuses of today need to meet the highest requirements in their design, comfort and safety, coupled with maximum individualization. KÖMMERLING adhesives and sealants greatly contribute to achieving these objectives.

Buses are for example exposed to high mechanical stress throughout their lifetime. These include the weight of the passengers and luggage as well as the vibrations continuously attending their driving operation. To save fuel, the bus itself should weigh as little as possible, without compromising its stability.

Adhesive applications in modern coach or service buses are multi-layered and also highly customized in many cases. With the right adhesive consultant by your side, solutions will be found for all relevant tasks.

KÖMMERLING's philosophy in this respect is to cater to the specific wishes and possibilities of the bus manufacturer and come up with adhesives that are tailored to the respective bonding process. Ever since its establishment in the year 1897, KÖMMERLING has continually set milestones in modern bonding and sealing by the development of new technologies, making it one of Europe's leading adhesive suppliers for commercial vehicles.

APPLICATIONS



1 Bodywork

3 Interior Construction

2 Module Assembly

4 Glazing

RECOMMENDED TECHNOLOGIES

2-component Polyurethane Reaction Adhesives | Körapur

Solvent-free, 2-component polyurethane-based reaction adhesives that will harden at room temperature for bonding a great variety of surfaces such as wood-based materials, GRP, untreated, primed and painted steel and aluminium sheets, many plastics and foams cores based on PUR, PS or PVC.

Körapur 2-component products consist of a resin and a hardening component that are mixed at a fixed ratio, whereupon they will harden into structural or semi-structural adhesives, irrespective of the humidity, that are also particularly suitable for applications involving large surfaces.

1-component Polyurethane Reaction Adhesives | Körapur

Polyurethane-based 1-component reaction adhesives that will harden at room temperature for bonding and sealing a great variety of materials such as wood-based materials, GRP, untreated, primed and painted or anodized metals, as well as many plastics.

Körapur 1-component products react with moisture to form elastic adhesives and sealants that are in particular applied where different thermal length expansions require permanent compensation.

1-component Silane-Terminated (Polymer) Reaction Adhesives | Körapop

Solvent-free 1-component reaction adhesives that are based on silane-terminated polymers and will harden at room temperature for bonding and sealing a great variety of components such as wood-based materials, GRP, untreated, primed and painted or anodized metals, as well as many plastics.

Körapop 1-component products react with moisture to form elastic adhesives and sealants that are in particular applied where different thermal length expansions require permanent compensation.

Solvent based adhesives | Körapren und Köraplast

Solvent-containing, polychloroprene- or polyurethane-based adhesives that cure at room temperature for gluing a wide range of different materials such as wooden composites, steel, aluminium, textiles, plastics like PVC, leather or foams.

Solvent-based adhesives offer good wetting properties and can be easily applied with many different methods. The evaporation of the solvents helps to achieve fast initial strengths.

Dispersion adhesives | Köracoll

Water-based adhesives based on various polymer systems such as polyurethane or acrylate for gluing a wide range of different materials such as wooden composites, steel, aluminium, textiles, plastics like PVC, leather or foams.

In comparison to solvent-based adhesives, dispersion adhesives are distinguished by a longer wet life. An aspect that is highly advantageous for gluing large areas.

APPLICATIONS

BODYWORK

Higher flexibility, longer durability, vibration and noise damping are only some of the advantages that the gluing technology can bring to body construction. Gluing the side panels to the body structure prevents the thermal stress attending traditional welding processes, while the adhesive doubles up as an active anti-corrosive. Welded seams are also sealed with elastic polyurethanes or silane-terminated polymers nowadays.

Körapur range

1-component polyurethane adhesives

- + Permanently elastic, vibration-damping
- + Non-ageing
- + Can be overpainted after hardening
- + Non-sagging to self-levelling formulations
- + Also applicable as 2-component products with accelerator paste

Körapop range

1-component silane-terminated polymers

- + Permanently elastic, vibration-damping
- + Good ageing-, UV- and weather resistance
- + Can be overpainted wet-in-wet
- + Non-sagging to self-levelling formulations
- + Hardens with little to no shrinkage in volume
- + Also applicable as 2-component products with accelerator paste

Körapur range

2-component polyurethane adhesives

- + Hard-tough to impact-resistant types with high damping across a broad temperature range
- + Reaction speed individually adjustable within a broad pot life range
- + High stability



MODULE ASSEMBLY

Modules such as the roof, back and front mask or flaps and doors are made from a mixture of materials including metals and a wide range of plastics. The sealants and adhesives from KÖMMERLING see to the optimal attachment of such composites. They safely bond a great variety of materials, are temperature-resistant and weatherproof, compensate various length expansions and will permanently keep moisture out. Our broad range of different pot lives meanwhile makes them suitable for manual as well as automated processing.

Körapur range

1-component polyurethane adhesives

- + Permanently elastic, vibration-damping
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Körapop range

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INTERIOR CONSTRUCTION

The requirements for the design and comfort inside the bus are constantly mounting, but also for the functionality and safety. The number of plastic, wooden and textile composites is growing in parallel. KÖMMERLING adhesives will safely and durably join side and roof panels, but also floor coverings and dashboards. Gluing the wooden floor instead of bolting them ensures its acoustic isolation from the body, and thus reduces the noise inside.

Körapur range

1-component polyurethane adhesives

- + Permanently elastic, vibration-damping
- + Non-ageing
- + Can be overpainted after hardening
- + Non-sagging to self-levelling formulations
- + Also applicable as 2-component products with accelerator paste

Körplast range

1-component polyurethane adhesives, solvent-based

- + High initial adhesion
- + Good resistance to moisture
- + Good temperature resistance
- + Applicable as a 1-component or 2-component product

Köracoll range

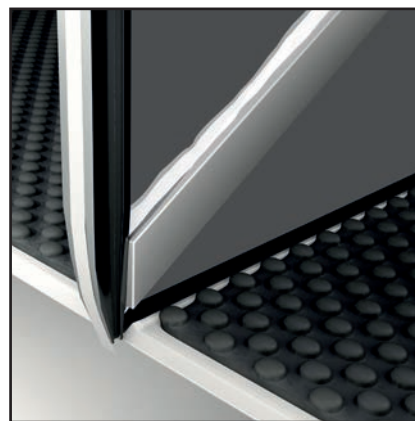
Dispersion adhesives

- + Water-based, environmental-friendly
- + Good initial adhesion
- + Good temperature resistance
- + Usable as a contact adhesive or one-sided

Körapop range

1-component silane-terminated polymers

- + Permanently elastic, vibration-damping
- + Good ageing-, UV- and weather resistance
- + Can be overpainted wet-in-wet
- + Non-sagging to self-levelling formulations
- + Hardens with little to no shrinkage in volume
- + Also applicable as 2-component products with accelerator paste



GLAZING

Glued windows improve the body's stability and reduce the weight. They therefore help to lower the fuel consumption, and thus protect the environment and save costs.

At the same time, KÖMMERLING window adhesives will safely protect from corrosion while dampening noise and vibrations.

Körapur range

1-component polyurethane adhesives

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- + Non-ageing
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Körapop range

1-component silane-terminated polymers

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COMPLEMENTARY PRODUCTS

PRIMERS AND CLEANERS

The reliable adhesion of the glue on the surface of the material is a decisive factor for successful execution. To ensure this, the surface needs to be thoroughly cleaned beforehand. Apart from that, the adhesion between substrate and glue can also be optimized by the application of a primer.

For the pretreatment of metal and plastic surfaces, KÖMMERLING has developed primers and cleaners that are individually tailored to the materials to be bonded, and to the KÖMMERLING adhesives. This ensures that the products reach their greatest possible effectiveness.

Körabond HG 74 E

- Primer for pretreating absorbent substrates such as wood, for example

Körabond HG 77

- Primer for pretreating rigid PVC and ABS

Körabond HG 81 / Körabond HG 83

- Bonding agent for pretreating painted surfaces, metals or plastics

Körabond HG 17

- Black primer and UV protection for direct glazing, bonding agent for glass, aluminium, steel and plastics

Körasolv WL

- Cleaner for powder-coated metals, as well as GRP

Körasolv GL

- Cleaner for plastic, metal and glass surfaces

Körasolv CL 17

- Cleaner / activator specifically for direct glazing; fast-drying through single application (wipe on-wipe off) with a lint-free cloth

KÖMMERLING – YOUR SYSTEMS PARTNER

COMPETENCE AND SERVICE

Our competent consultancy in all product selection, process and quality assurance issues is based on decades of experience gained in cooperation with the leading manufacturers of commercial vehicles, and offers a broad foundation for the safe use of the adhesive and sealant technology.

KÖMMERLING considers itself a system provider offering not only high-quality products, but also individual consultancy and support services which are tailored to its customers and their needs, from the project planning through to the final realization.

The top priority here is individual customer support – which will naturally also include on-site assignments.

We will for example support our clients in the selection of the sealants and adhesives, in the attendant surface preparation, in the project phase, the integration of our products in their manufacturing process, and in their specific quality and production control.



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