



SYSTEM SOLUTIONS FOR COMMERCIAL VEHICLES

Modern Vehicle Construction at the Highest Level



H.B. Fuller



KÖMMERLING



The weight reduction that is achieved with modern lightweight construction is essential for efficient mobility. 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

COMMERCIAL VEHICLES

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 COMMERCIAL VEHICLE CONSTRUCTION

The conveyance of temperature-controlled freights is one of the most exacting tasks in transport. Key requirements to be unfailingly met include the integrity of the conveyed goods, high standards in the area of hygiene, and precise temperature specifications.

A task that can only be managed by effectively insulated refrigerated vehicles.

Refrigerated trailers are exposed to high mechanical stress throughout their lifetime. This includes the heavy weight of the freight, as well as the constant vibrations generated in operation. To save fuel, trailers need to have the lowest possible net weight, but without compromising their stability at the same time.

Adhesive applications in modern commercial vehicles 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 commercial vehicle 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 in general, and trailer construction in particular.

APPLICATIONS



1 Sandwich Elements

3 Floor Coating

2 Assembly Bonding and Interior Finishing

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, GFRP, 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, GFRP, 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, GFRP, 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.

2-component Epoxy Resin Coating Systems | Körapox

Solvent-based 2-component coating and primer that will harden at room temperature to form a non-slip surface on a 2-component Körapur base coat as well as aluminium, GFRP and primed sheets of steel.

Körapox 2-component products are in particular applied for vehicles transporting refrigerated food, meat, fish and frozen goods.



APPLICATIONS

SANDWICH ELEMENTS

Sandwich-type structures and designs are particularly suitable when it comes to achieving the lowest possible weight for vehicles without compromising their stability.

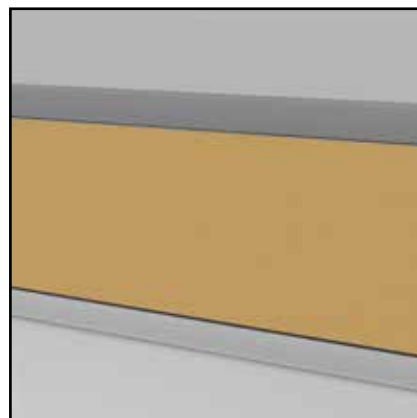
This involves combining various materials such as wood, metal, plastic or composites with a foam core to form side panels, roofs and floors.

Conventional assembly methods such as riveting or bolting would lead to the thermal insulation being damaged by deformation or corrosion. The use of adhesives and sealants not only prevents this, but even increases the stiffness while lowering the panel weight, thus improving the insulation.

Körapur range

2-component polyurethane adhesives

- ✚ Broad range of consistencies from low viscosity to thixotropic formulations
- ✚ Reaction speed individually adjustable within a broad pot life range
- ✚ High tolerance to wood moisture contents of up to +16 %



ASSEMBLY BONDING AND INTERIOR FINISHING

After the sandwich production side panels, front wall, rear door frame, roof and floor are assembled. This is followed by the finishing of the trailer's inside such as the attachment of loading rails, skirting boards or door seals. At the end, the vehicle's inner and outer seams are sealed against water entry.

KÖMMERLING adhesives and sealants master these tasks in the best possible way. They will safely bond the various materials, are temperature-resistant and weatherproof, compensate different linear expansions, and will keep moisture out for good. Their broad pot life range meanwhile qualifies them for manual as well as automated application.

Körapur range

1-component polyurethane adhesives

- + Permanently elastic, vibration-damping
- + Non-ageing
- + Can be overpainted after hardening
- + Non-sagging to self-levelling formulations
- + Certified for indirect contact with food
- + 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



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
- + Certified for indirect contact with food
- + Also applicable as 2-component products with accelerator paste



FLOOR COATING

Floor coatings need to meet many requirements, even more so in refrigerated vehicles. They need to be hygienically flawless while being easy to clean and also keeping the temperature stable. The frequent loading and unloading with lift trucks or forklifts require high resilience and slip resistance.

For this application, KÖMMERLING offers a modular system based on polyurethane and epoxy resins. The products can be flexibly combined in keeping with the requirements for the floor coating.

Base Coat

Körapur range

2-component polyurethane adhesives

- ✚ Especially used for vehicles transporting refrigerated food, meat, fish and frozen goods (tested up to -30 °C)
- ✚ Self-levelling base coating, silica sand-containing sealant
- ✚ Uniform look
- ✚ Usually applicable without primer
- ✚ Certified for indirect contact with food
- ✚ Stacked container for convenient use

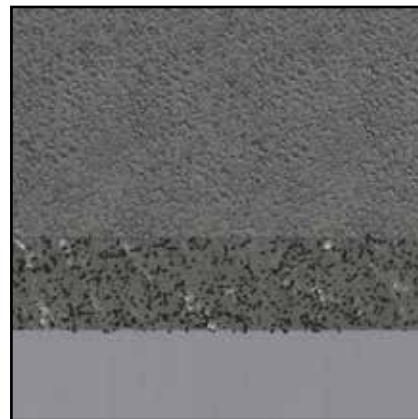


Anti-Slip Surface

Körapox range

Epoxy resins

- ✚ Especially used for vehicles transporting refrigerated food, meat, fish and frozen goods (tested up to -30°C)
- ✚ Good abrasion resistance
- ✚ Boosts the resistance to chemicals and media
- ✚ Good UV-resistance
- ✚ Low-viscosity and/or silica sand-containing sealant
- ✚ Certified for indirect contact with food
- ✚ Stacked container for convenient use



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 pre-treatment 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 pre-treating absorbent substrates such as wood or concrete, for example

Körabond HG 77

- Primer for pre-treating rigid PVC and ABS

Körabond HG 81 / Körabond HG 83

- Bonding agent for pre-treating painted surfaces, metals or plastics

Körabond HG 92

- Moisture-hardening primer for pre-treating stainless steel, aluminium, rigid PVC and GFRP, as well as absorbent substrates such as wood, etc.

Körasolv WL

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

Körasolv PU

- Cleaner for untreated metals and for diluting the floor coating



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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