

KÖGEL

NOVUM: LIGHT & STRONG



KÖGEL LOAD-SECURING

PASSIONEERING FOR OUR CUSTOMERS

What's more exciting than the transport sector? The future of the transport sector! We passionately believe that to stay profitable, you have to stay ahead of the game – and our experience has shown that to be true. Competitive pressure on our customers is building. That's why we want to lighten the load – along with the cargo that you transport with reliable Kögel trailers every day. A close, cooperative partnership with our customers is the starting point of all our innovations. Only then can we quickly identify their changing needs and requirements – and get the right solutions on the road. That's where engineering comes in, which we have loyally practised for over 80 years. Our commitment to uncompromising quality. And, of course, our dedicated professional team.

From practice to theory and from plan to practice: Passioneeing never stops.

All our customers' challenges flow directly into the development process. We subject our innovations to intensive testing, far beyond the usual requirements. Extreme driving manoeuvres, heavy loads, poor road surfaces, rain, ice, snow and scorching sun – our trailers have to withstand it all without a hitch. Only then are we satisfied – for now, at least. Because only then can we be sure that our most discerning customers are satisfied too. But the end of every development process is only the beginning of something new. After all, everything we do is about shaping the future of the transport sector.

Find out more about passioneeing and our exceptional quality standards at

www.koegel.com

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BASICS AND GUIDELINES

1. VDI 2700

VDI 2700 describes which inertial forces affect the load. In order to secure the load, these forces must be set against the load-securing measures. With stable cargo, through the friction of the load or the loading equipment (e.g. pallets) alone, one part of the inertial force is absorbed in the floor. Nevertheless, a large proportion of surplus inertial force remains. These forces must be neutralised with load-securing equipment (see Figure 1).

2. Certified body stability according to EN 12642

Body stability levels must be increased to ensure the cargo is secured on the loading platform without any additional load-securing measures. Load-securing on vehicles built to EN 12642 XL is very easy: it's all in the body. If the trailer is loaded form-locked, the body's structure is used for load-securing purposes. The body absorbs the forces arising from the driving dynamics. This means: No additional load-securing elements are required for form-locked loading (see Figure 3).



Figure 1: Corresponds to the maximum inertial forces arising from the driving dynamics. If the cargo is in a stable position, the inertial force then counteracts the frictional force between the load and vehicle floor.



Figure 2: With form-locked loading, no additional load-securing measures are required.

LOAD-SECURING

With the following elements, the body fulfils the requirements in accordance with EN 12642 XL

WITH SLIDING TARPAULIN BODIES

..... Front wall



Standard aluminium front wall with additional stabilising profiles.

..... Roof



With the integrated roof cover reinforcing belts hanging in the inside are no longer a problem.

..... Side wall



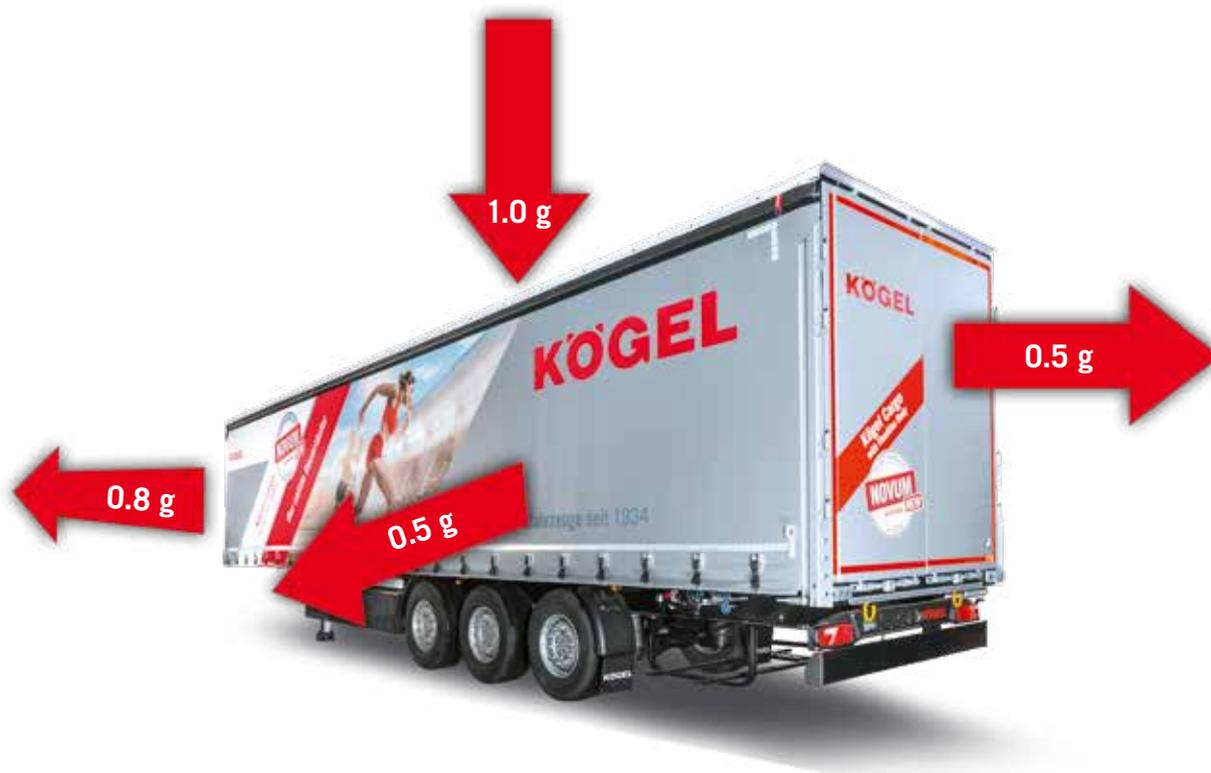
- Strengthened side tarpaulin made of high-strength, closely woven material with reinforcement
- Reinforced sliding stakes
- Lattices are not required for appropriate cargo

..... Rear wall doors



The body is additionally strengthened with the optimum arrangement of the integrated power brace locks and hinges.

THE FORCES OF DRIVING DYNAMICS



LOAD-SECURING FOR PARTIAL LOADS

The Kögel load-securing package for partial loads builds on the load-securing measures via the body in accordance with EN 12642 XL. The load can be fixed in position by form-locked securing using modular components at any point in the trailer – either in the direction of travel or crosswise.

STEEL COMBI ANCHOR RAIL AND LOAD-SECURING BEAM

.... As side load-securing rail



The steel combi anchor rail with integrated adjustment steps form the basis for the partial load concept.

..... Corner post with mounting slots



These are used for installing locking beams or lashing eyelets for load-securing for partial loads at the rear of the vehicle if the distance between the load and rear portal is more than 15 cm.

..... Locking beam



This can be mounted to the lateral load-securing rail, lateral pallet limiting rail or the Vario locking beam.

- Telescopic from 1,650 to 2,500 mm
- Suitable for securing loads vertically and horizontally

..... Vario locking beam



The locking beam with variable fixing position grid is used to fix additional locking elements (additional locking beams or belts).

INSERTABLE STAKES WITH LOCK



The vehicle's frame provides the possibility of inserting square pipe stakes into the vehicle floor at different positions in longitudinal and lateral directions and can also be used for securing partial loads or at the front wall.

Insertable stakes with spring bolt locking that lock automatically are optionally available. They are extremely useful particularly for transport without body.

LASHING OPTIONS

For the transportation of some goods, it is not possible to use the form-locking method to secure the load. Kögel also offers the ideal solutions for different industries.

.....Lashing rings (standard)



- Fastening force up to 2.5 tonnes
- Visible from the inside in accordance with EN 12640

.....Lashing rings (heavy-duty)



- Lashing capacity up to 5 tonnes
- Optionally available in addition to standard lashing rings

.....Lashing eyelet on front wall



According to EN 12640, the lashing eyelet is used to wrap around and secure goods positioned directly against the front wall.

.....Non-slip coating



Increased sliding friction to reduce the number of fixing points

.....VarioFix steel perforated outer frame



- Short oblong hole spacing. In this way, cargo can be safely secured at any position on the trailer
- Lashing angle and lashing capacity in accordance with EN 12640
- The perfect lashing angle with optimised external frame design prevents wear on the tension straps

.....Tension strap



The ergonomically designed long-lever ratchets with pre-tensioning force offer optimum lashing.



KÖGEL STRONG & GO BODY

The new Kögel Strong & Go body consists of the innovative body of the NOVUM generation combined with a Kögel integral roof tarpaulin with stiffening belts and a side tarpaulin, which complies with Daimler Guideline 9.5.



- ✓ **Faster, simpler and safer**
handling during loading and unloading
- ✓ **Improved safety** for the driver and load
- ✓ Optional equipment for **all NOVUM** trailers

WHAT IS THE KÖGEL STRONG & GO BODY?

The new Kögel Strong & Go body consists of the innovative body of the NOVUM generation combined with a **Kögel integral roof tarpaulin reinforced with stiffening belts and a side tarpaulin**, compliant with Daimler Directive 9.5.

FOR WHICH TRAILERS IS THE KÖGEL STRONG & GO BODY AVAILABLE?

The Kögel Strong & Go body is available as an option for all versions of the Kögel platform trailers: **Cargo, Mega and Light^{plus}** of the **NOVUM** generation.

WHAT BENEFITS DOES THE KÖGEL STRONG & GO BODY OFFER?

Thanks to this solution, lattices are no longer necessary for compliance with Daimler Guideline 9.5 when transporting box pallets and banded loads. For certified beverage transport, the Strong & Go body eliminates the need for lattices for single-level and twin-level beverage crates on standard pallets thanks to the restraint system integrated in the side tarpaulin instead of the three or four rows in the standard body of the NOVUM generation.

This means that Kögel not only complies with the requirements of the sector for shorter loading times, but it is able to offer drivers **faster, simpler and safer handling during loading and unloading**.

In addition, safety is improved for the driver and the load. Falling lattices and damage to the goods from the lattices are now a thing of the past.



BEVERAGE INDUSTRY



In the beverage industry, cargo is transported first and foremost using standardised boxes placed on Euro pallets. The following Kögel load-securing elements are used for additional load-securing in the floor area, on the one hand, or for partial loading and narrow cargo on the other:

..... Standard body



- Standard body according to EN 12642 XL

..... Aluminium lattices



- For a cargo width of at least 2,400 mm.

TWIN-LEVEL TRANSPORTATION OF EMPTIES AND BARREL GOODS



Twin-level transport of empties is possible too.



The standard Kögel trailer transports barrel goods safely.

SPECIAL SOLUTIONS

For crates positioned on spring pallets (cargo width between 2,200 and 2,400 mm), other load-securing solutions have been developed:



- At least three rows of aluminium reversible slats are used for lateral load-securing
- The reversible slats can be inserted in the standard stake pockets

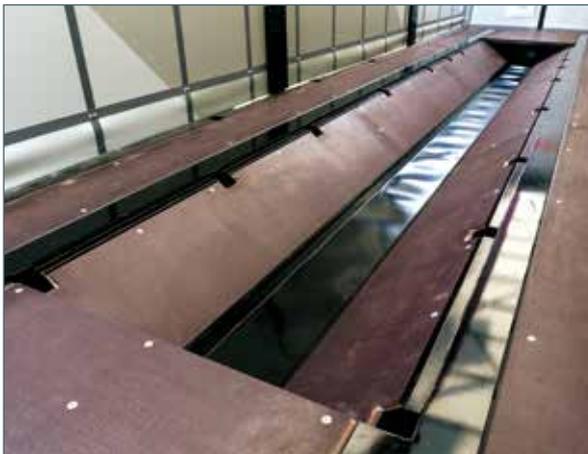


Securing of partial loads with reversible slats: The slats can be combined with the lateral load-securing rails.

KÖGEL COILFIX



The CoilFix load-securing system is used for form-locking coils and slit strips at risk of tipping. Due to the flat arrangement of the tension beam as well as the insertable stakes (according to the SIDMAR guideline), damage to the coils and split strips is avoided.



Coil trough: For guaranteed safe loading, the vehicle is equipped with a coil trough according to VDI 2700 which can accommodate steel coils and split strips with diameters ranging from 900 to 2,100 mm.



5-tonne heavy-duty lashing rings: These allow secure bracing of heavy coils and steel bands in the area around the coil trough and are compatible with standard split strip securing systems.



AUTOMOTIVE TRANSPORT

In most cases, automotive transport involves pallet cages and small-sized carriers, but sometimes special transport frames and even large frame components. As ever, the industry standard for this type of transport is Daimler Guideline 9.5

..... Standard body



- Standard reinforced body according to EN 12642 Code XL
- The body includes patented roof construction, optimised front wall, reinforced side tarpaulin, high floor load-bearing capacity and rear doors with integrated power brace locks

..... Pallet limiting rail



The pallet limiting rail prevents movement of the sharp-edged plate-type bases on the cage boxes to the tarpaulin and resulting damage.

..... VarioFix perforated steel external frame



- The standard perforated steel external frame meets the requirements of Daimler load-securing 9.5
- Many lashing options as per EN 12640
- Can be used even in combination with the screwed pallet limiting rail for friction-locked load-securing

PAPER TRANSPORT

Paper transport is one of the biggest challenges in the business. Paper rolls are not only heavy, but also prone to damage from moisture and mechanical loads. Kögel NOVUM generation trailers feature excellent body sealing in addition to the correct load-securing thanks to special solutions for paper transport.

..... Floor



- Non-slip floor with high load-bearing capacity for secure loading of large, heavy paper rolls
- Recessed loading tracks made of aluminium or steel for form-locked anchoring of the variable load-securing wedges
- Forklift axle load: with paper design 9 tons

..... Adapter plate



The plate can be flexibly mounted anywhere on the complete floor area and also allows form-locked load-securing at positions in the trailer which are not covered by the loading track arrangement.

..... Patented variable load-securing wedges



With the practical and easy-to-fit wedges, loads such as paper rolls can be securely transported in a form-locked fashion in all loading positions according to VDI 2700.

- Load-securing force of 2,500 daN per wedge
- Vertical rolls: wedge as end stop to the front



- Horizontal rolls crosswise to the direction of driving: wedge with inclined surface area towards the roll, secured to the front and rear
- Horizontal rolls longitudinal to the direction of driving: wedge with inclined surface area towards the roll, secured to the side
- Horizontal rolls longitudinal to the direction of driving: wedge with inclined surface area to the front side of the roll, secured to the front

..... VarioFix perforated steel external frame



For securing unstable rolls at any position on the external frame.

..... Load-securing (storage) boxes



The load-securing box serves as a storage box for wedges and load-securing accessories.

..... Certified front wall with Joloda container



- With integrated transport container for 24 load-securing wedges and 2 paper rollers
- Theft-proof

OTHER SOLUTIONS

WHITE GOODS

Household goods can be transported safely in Kögel Mega vehicles: Thanks to the lifting roof and the internal height of 3 metres, the freight is extremely easy to load and transport.

..... Centre stake bearing



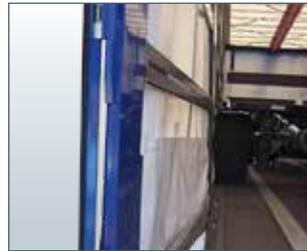
To take full advantage of the entire load width, sliding stakes are parked at another part of the external frame. Additional stake bearings are needed for this.

.....Certified body without lattices



For the transportation of household appliances, a loading width of up to 2,540 mm is required. To ensure that the body has this width, it must comply with the requirements of EN 12642 XL without lattices and the welded pallet limiter. The body of the Kögel sliding tarpaulin vehicles fulfils these conditions.

..... Laterally-adjustable rear portal



In order to allow loading from the rear, the corner posts can be mechanically adjusted in a lateral direction.

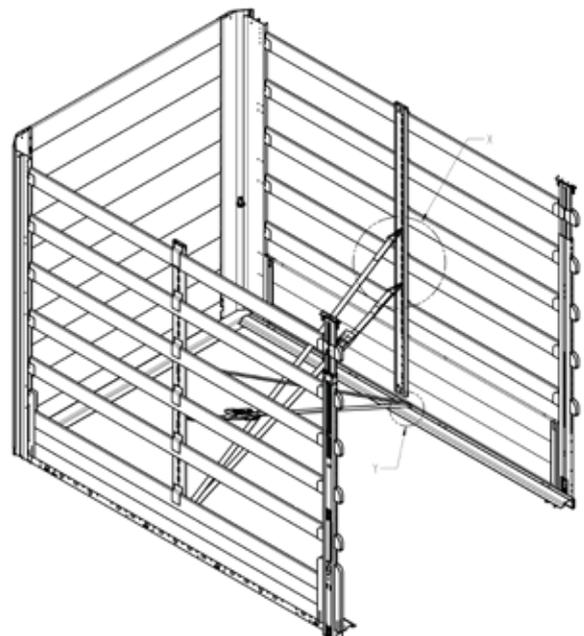


TYRE TRANSPORT

..... Secure solution for tyres



Kögel vehicles conform to the DIN EN 12642 Code XL certification for load-securing. The vehicle body with additional equipment makes tyre transport possible; stacked, dressed and graded with a technical payload of up to 18,000 kg.



BOARDS AND PALLETED GOODS

Boards and palletted goods such as cardboard stacks, bricks, bags or particle board can be secured with Kögel load-securing elements.

..... VarioFix perforated steel external frame



- Short oblong hole spacing: In this way, cargo can be safely secured at any position on the trailer
- Lashing angle and lashing capacity in accordance with EN 12640
- Optimised outer frame design offers perfect lashing angle. This prevents chafing of the tensioning strap

..... Friction-locked load-securing



Versatile Kögel load-securing elements such as tension straps with long-lever ratchets, and standard or 4-tonne heavy-duty lashing rings can secure the load at the VarioFix perforated steel external frame. Other auxiliary accessories recommended by manufacturers such as edge protectors are compatible with Kögel load-securing elements.

..... Screwed stake bearings



To ensure that the full loading width can also be flexibly used with boards and palletted goods, additional stake bearings on the external frame must also be available for this transport solution.

OCTABIN

..... Locking beam

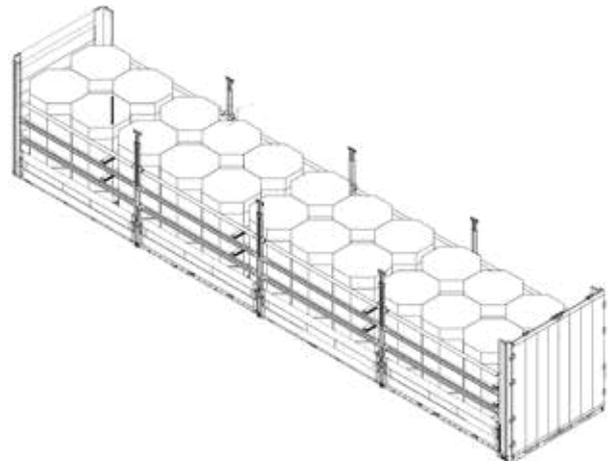


Partial loads are secured to the rear with locking beams combined with steel combi anchor rails.

..... Octabin reversible slats



Loads are secured from the side using a minimum of three specially developed Octabin reversible slats.



BOX TRAILERS

The loads on box trailers are secured by the body – at Kögel, this also applies to the range of dry and refrigerated boxes. All vehicle types are statically and dynamically tested according to EN 12642 XL. Double-deck loading has also been certified in accordance with the forces defined in the standard. With the double-deck loading, the side walls are subjected to more load which is accordingly reflected in the test load which has been increased by 3 tonnes. With sliding tarpaulin bodies the body fulfils the requirements in accordance with EN 12642 XL with the following elements:

Reinforced body



- The whole body absorbs all forces defined according to EN 12642 XL
- The front wall and the side wall meet the most rigid test requirements

Aluminium rails for multi-level loading



- Rail system completely integrated in the side wall
- Small adjustment raster for adapting to different pallet heights
- Two-level loading possible



Anchor rail



- Recessed anchor rail for optimum load-securing over the entire load length, whether the load is secured from the front and/or rear with loading bars
- Optimum for load-securing for partial loads with general cargo
- It is used for securing heavy-duty locking beams (up to 2.7 tonnes)

Kögel Cool



- Full-surface aluminium covering

Kögel Box



- 12640 for friction-locked load-securing
- Allows other industrial goods etc. to be secured



Screen printed surface:
A non-slip surface with high friction coefficient ensures good adhesion.

KÖGEL TESTS



The vehicles are subjected to internal tests covering intensive handling and bad weather testing, in rain, on snow and ice and under a blazing sun.

This is because only products that pass these strenuous tests will be capable of withstanding all the stress and strain of day-to-day use for years to come.



Kögel insists on high-quality materials, outstanding finish and quality-oriented processes throughout the entire production chain.

THE KÖGEL QUALITY PROMISE



Safety

Complex components guarantee a high degree of active and passive safety: specially developed panelling elements on the frame for improved aerodynamics, underride guard compliant with the new EC Directive, standard load-securing as per EN 12642 XL, RSS for greater driving stability and safety-optimised height adjustment valve (lifting roof with BG support). Kögel trailers also have outstanding trailing characteristics.



Electronic system and lighting

EBS is fitted as standard. Full LED lighting is available to provide a long life and minimise power consumption.



Underride guard

All Kögel trailers are equipped with a reinforced underride guard, which significantly increases passive safety in road transport and conforms to EU Directive UN/ECE-R 58.

Light carrier

The light carrier is made of impact-resistant plastic and provides 100% corrosion protection. It can be installed and replaced separately.



Corrosion protection

Nano-ceramic and cathodic dip-paint coating, the most modern and highest quality industrial surface treatment on the market, provides the same outstanding properties as the coating previously applied using zinc phosphate but it is more environmentally friendly and achieves a better energy balance. The durable, clean surface coating can be repainted at any time.



Service

Visit www.koegel.com to take advantage of our comprehensive range of services at any time, from anywhere. Repair and warranty services can be managed conveniently online. Our Kögel Hotline Assistance is available around the clock in many European languages.



Extensive tests

All trailer components are inspected to the highest standards during static and dynamic tests.



Frame construction

The stable, welded frame concept forms the backbone of Kögel vehicles and guarantees a long service life.



Environmental protection and sustainability

Kögel trailers make an active contribution to reducing fuel consumption and environmental pollution: The aerodynamics are optimised, structural noise emissions are reduced and strict guidelines are observed during production to protect the environment and ensure that the materials used can be recycled.



Load-securing and body stability

Kögel fulfils all stability requirements for reinforced bodies according to EN 12642 XL. Securing the load on trailers with this certificate is very simple: With a form-locked load secured at the rear, the body absorbs all forces arising from the driving dynamics in accordance with VDI 2700.





KÖGEL

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