

CAUTION!!!!

The transport vehicles have to be suitable in accordance with the VDI-guideline VDI 2700 sheet 19. Depending on the load, a suitable transport vehicle with a corresponding bodywork and load securing equipment has to be used. The transport vehicles must meet the applicable regulations of technology. The load securing measures should also identify if the vehicles fulfill the state of the art regarding the strength of the bodywork. If the bodyworks were manufactured according to DIN EN 283 or DIN EN 12 642 Code L or Code XL, they have to meet the test values stated in these regulations. The degree to which those bodyworks can be considered for load securing has to be certified by the manufacturer.

Load securing equipment and tools have to be chosen in a sufficient number and regarding the necessary technical features. Stanchions have to be used accordingly when used with different goods (coils, slit strips, metals etc.). The number and dimensioning of the necessary load securing tools and equipment for each transport order (lashing material, stanchions, anti-slip material etc.) have to be determined before the transport between the sender/shipper and the carrier. Anti-slip material has to be chosen considering the measures of the load, the occurring surface pressure and the sliding friction coefficients. It has to be ensured that the load is decoupled from the loading area by using anti-slip material.

1. Examples for goods on palettes and in boxes:



Loading area with sufficient strength.

- clean-swept and dry
- show no traces of oil
- no holes in the ground of the loading area
- no breakages on the floor of the loading area.

Lashing points according to DIN EN 12640 or preferably a perforated strip



Anti-slip material or anti-slip mats with a minimum sliding friction coefficient $0,6\mu$ have to be laid out.

1. Possibility with a central loading:
Roll form, lay out two paths (see left)

2. Possibility: place cuts under the palettes.

($0,6\mu$ = 60% of the load weight has to be secured through a mat)



A trailer with a length of 13 meters, has to be equipped with a minimum of 15 lashing straps, approximately 30 edge protectors and anti-slip material with a sliding friction coefficient of a min. $0,6 \mu$ or in agreement with Wickeder Westfalenstahl GmbH.

Only lashing straps according to DIN EN 12195-2 with a corresponding labelling may be used.

2. Examples for coils, slit strips and spools in coil through:



Loading area with adequate strength. • clean-swept and dry

- show no traces of oil
- no holes in the ground of the loading area
- no breakages on the floor of the loading area.

Lashing points according to DIN EN 12640 with a minimum permitted tractive force of 5000daN.



Stanchions must be capable of accepting the maximum load (which is frequently used for load securing and specified by the vehicle and/or bodyworks manufacturer) and of transferring it into the vehicle structure. The distance of the stanchions which are arranged in pairs on the vehicle's longitudinal axis should not exceed 400mm in order to guarantee the securing of the load.



A trailer with a length of 13 meters has to be equipped with a minimum of 4-5 chains, 4 lashing straps, 8 edge protectors and anti-slip material with a sliding friction coefficient of a min. 0,6 μ or in agreement with Wickeder Westfalenstahl GmbH. Short link chains are used as a clamping device and have to at least correspond to grade 8 of DIN EN 818-2. Turnbuckles with ratchets or a centered locking bolt are mainly used as a clamping element. Connecting elements must conform to DIN EN 1677-1, -2 or -4, depending on the design. Every lashing chain has to be equipped with a metal identification tag. Round steel chains can be tightened over sharp edges, if they are loaded with a maximum of 80% of their LC.

Transport vehicles that have little or no safety equipment will not be loaded!!!

Adequate lashing material is to be provided by the carrier or the forwarding agent in a sufficient way.

Transport vehicles that already carry a load that is inadequately or not secured will not be loaded!!!

The carrier or the forwarding agent is responsible for the compliance with driving and rest times!!!

If the transport order is subcontracted to another company, it is the responsibility of the carrier or their forwarding agent to inform them about the requirements.

The obligation to load securing on road vehicles results from:

“Legal basis /laws and regulations“

Road traffic regulations

§ 22 “Load“

§ 23 “Other duties of the driver“

Road traffic approval regulations

§ 31 section 2 “Responsibility for the operation of vehicles“

ADR, part 7.5.7, Handling and stowage

Regulations and standards: Association of German Engineers VDI

2700 “Load Securing on Road Vehicles”

2700 sheet 1 “Training and training contents“

2700 a “Certificate of training in load securing“

2700 sheet 2 “Load Securing on Road Vehicles: lashing capacities“

2700 sheet 3.1 “Instructions for lashing systems“

2700 sheet 3.2 “Load securing tools and equipment“

2700 sheet 4 “Load distribution plan“

2700 sheet 5 “QM systems“

2700 sheet 6 “Loading of piece goods“

2700 sheet 7 “Combined transport“

2700 sheet 8 “Securing of passenger cars and light-duty vehicles on car transporters“

2700 sheet 15 “Anti-slip Material“

2700 sheet 19 “Coiled strip, sheets and sectional steel“

European and German industry standard (DIN EN)

DIN EN 12195-1 “Lashing capacities“

DIN EN 12195-2 “Synthetic fibre lashing“

DIN EN 12195-3 “Lashing chains“

DIN EN 12195-4 “Lashing wire ropes“

DIN EN 12640 “Lashing points“

DIN EN 12642 “Vehicle structures“(Code L and Code XL)

Professional association for vehicle maintenance

BGV 29

§22 “Vehicle structures, attachments, installations and tools for load securing”

§37 “Loading and unloading“

§412 Commercial Code

“Loading and unloading“

CMR (article 17)

“International conditions of carriage for cross-border road transport, liability of the carrier“