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**Certificate - Tested system for restraining loads
(Brief summary)**

**Loading restraints for glass and PET packaging
on vehicles for road transport**

Order placed

15.10.2019 by email by: Wiegand-Logistik GmbH
Mr Markus Schulz
Otto-Wiegand-Straße 9
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Compliance with guidelines, specifications and standards

VDI 2700:2004 "Securing of loads on road vehicles"
DIN EN 12195:2011 "Load restraining on road vehicles"
DIN EN 12642:2006 Attachment B "Dynamic road test"
DIN EN 12642:2017 Attachment B "Dynamic road test"

Tests dated 17/18.10.2014, 26.10.2015, 20.06.2018 and 24.10.2019

Series of tests dynamic: Investigation of 0.5 g on the side, rear and up to 0.8 g on the front wall.
1 g = 9.81m/s²

1 Unit loads

- Different types of glass packaging, shrink wrapped.
- Certificate valid for packaging from Wiegand-Glas in a comparable form with parts of the tested packaging.
- Single load up to one loading height ≤ 230 cm (CODE L).
- Double load up to one loading height > 230 cm (CODE XL).
- Tight-fit loading of the pallets from the end wall.
- Tight fit with the side at 2.40 m load width is available.
- PET Verpackungen GmbH Deutschland, single and double wooden pallets and doubled-up pallet cages.
- PET drums and containers stretched over wooden pallets (single or multiple-use pallets) placed on top of one another singularly and in double format.
- Octabins on wooden pallets (single or multiple-use pallets) with preforms (production blanks).
- Cardboard packaging stretched over wooden pallets (single or multiple use).
- Beverage products in the form of crates with empties loaded on top of one another singularly or in double format.
- Beverage products in the form of cisterns with empties, with the packaging formation “9x3” or “9x4” shrink wrapped on EPAL pallets, loaded singularly on top of one another and in double format. The cisterns are stacked on top of one another up to 4 high.

2 Vehicle equipment

- The cargo area must be free from ice and grease, swept clean, free from odours, pests, mould, and free from any risk of physical or chemical contamination.
- The tarpaulins must be tight and sealed.
- The permitted axle loads and maximum weights must be observed.
- Vehicles in accordance with DIN EN 12642-L/XL, with side lashing points in accordance with DIN EN 12640 and an LC ≥ 2000 daN.
- Loading:

Vehicle construction:	CODE L	CODE XL
Maximum load height:	≤ 230 cm	> 230 cm
Loaded in double format on top of one another:	-	✓
Aluminium side slats (at least up to the loading height)	✓*	depending on the certificate
Pallet retaining bar (in accordance with DIN EN 12642) or platform gates:	✓	✓ (Although at least 2 V-aluminium side slats on the floor)
Loading of the plastic products (see Point 3.2)	-	✓

- *For CODE L vehicles with platform gates (height ≥ 80 cm) wooden side slats up to the load height are possible.
- Side slats must be available at least up to the load height (tested without certificate specification CODE XL without side slats →, although a stop bar on the floor required).

3 Unit loads with loading & restraints

- Vehicle in accordance with DIN EN 12642 CODE XL.
- A tight fit must be created with the front, side (load width ≥ 240 cm) and rear wall.
- A loading width of ≥ 235 cm is to be maintained for PET drums, PET containers and cardboard packaging on wooden pallets (see above for examples).
- The load units must be loaded so that they interlock with one another.
- For double loads stacked on top of one another, there must at least two side slats in the area at the top.

3.1 Single-layer and double loads of glass products



3.2 Single-layer and double loads of plastic products



PET drums on wooden pallets



PET containers on wooden pallets



Octabins on wooden pallets



Cardboard on wooden pallets

3.3 Load distribution and alternative restraint in the forward direction of travel

- To comply with permitted axle loads, it may be necessary for the unit loads to be loaded at a distance from the front wall. An alternative tight-fit restraint in the direction of travel is possible to the front, with a head lashing and two wooden pallets.
- Restraint through a clamping bar or locking beam is not permitted.
- A maximum load weight of 8,000 kg must not be exceeded when using a restraint using a head lashing (relating to the upper unit loads in the picture below).
- The lashing angle of the head lashing must be $\alpha \leq 45^\circ$.
- The unit loads must not project more than approx. 40 cm over the wooden pallet.

- View of a head lashing with two wooden pallets. The lashing material is run over the central bridging boards of the wooden pallet.



- Side view of the head lashing with two wooden pallets. The lashing angle must be $\alpha \leq 45^\circ$.



3.4 Rear closure

A rear restraint must be fitted at a distance of ≥ 15 cm from the rear door.

A head lashing or a loading bar must be used for a **loading height ≤ 2.3 m**.

The restraint can be by means of:

- Head lashing with two wooden pallets.
- Clamping board/tie rod (undamaged and in working order) with two wooden pallets.
- Blocking bars with two wooden pallets.
- Two clamping rods with rear frame horizontally or in the box truck

Restraint by means of head lashing with two pallets

Restraint by means of two clamping rods



Restraint by means of a clamping board and two pallets

Restraint by means of loading bars with two pallets



An additional restraint must be placed over the first for a **load height of > 2.3 m** or where two load units are placed on top of one another. In the case of double loads, the top row must be prevented from slipping down behind. The restraint can be by means of:

- Head lashing with two wooden pallets and also a restraint installed from above
- Two clamping boards or two blocking bars with two wooden pallets, one of which installed from above.
- One blocking bar and a tie bar with two wooden pallets, one of which installed from above.



4 Loading of palletised beverage crates with empties

Conditions and vehicles in accordance with:
 DIN EN 12642 CODE XL & VDI 2700 sheet 12 (suitable for beverages), which are approved for the two-layer transport.
 The vehicles must be equipped in accordance with the enclosed certificate (number of rungs, side slats etc.) of each manufacturer.
 A tight fit on all sides (loading width ≥ 240 cm) is necessary without additional restraint.
 A possible restraint to the rear must be provided by means of loading bars or head lashings with pallets to the back.



4.1 Cisterns shrink wrapped on ELAP pallets

- A tight fit to the front (ELAP pallets including cisterns) crossways to the side (load width ≥ 240 cm by means of the ELAP pallets) and towards the back (with additional measures, if necessary, see Point 4).
- A pallet retaining bar, platform gates or at least 2 V-aluminium side slats are required.
- The load units must be loaded so that they interlock with one another.
- For double loads stacked on top of one another, there must at least two side slats in the area at the top.

Single-layer loads



Double loads



Tight-fit loading of the load units (ELAP pallets including cisterns) in direction of travel



5 Information and requirements

This certificate is seen as a handling and operating instruction for the certified load units in the tested form and their loading and restraint options. It shall lapse as soon as new statutory requirements, changes to key elements of the packaging, loading and restraint specifications come into force. Key changes or new developments to the packaging, loading and restraint options must be subsequently certified by DEKRA Automobil GmbH.

The certified additional cargo restraint systems and means, e.g. polyester restraint assemblies are permitted annually in keeping with guideline VDI 2700 ff. and DIN EN 12195, for example, at the time of the vehicle's general inspection in accordance with section 29 of the German road traffic licensing authority (StVZO) by DEKRA Automobil GmbH, an inspection by the manufacturer or by organisations it has authorised.

It is crucial that any loading operations adhere to and follow regulation 70 of the accident prevention regulations of German Social Accident Insurance (DGUV).

This brief summary of the certificate comprises 7 pages and is only valid in its complete form.

6 Other applicable documents

- DEKRA series of tests: 17/18.10.2014
- DEKRA series of tests: 26.10.2015
- DEKRA series of tests: 20.06.2018
- DEKRA series of tests: 24.10.2019
- Extended version of the DEKRA certificate dated 24.10.2019

Certificate no.: 226/35527/703550/1824637612

DEKRA expert
 Michael Gürtner
 Master of Science (M.Sc.)




Augsburg, 24.10.2019

Place, date

Stamp and signature