

# Guidelines for Transport Equipment used for Chemical Packed Cargo



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### Disclaimer

This document is intended for information only and sets out guidelines for transport equipment used for chemical packed cargo. The information contained in these guidelines is provided in good faith and, while it is accurate as far as the authors are aware, no representations or warranties are made about its completeness. It is not intended to be a comprehensive guide to all detailed aspects of transport equipment. No responsibility will be assumed by the participating associations, Cefic and ECTA, in relation to the information contained in these guidelines.

## 1. INTRODUCTION

Continuous efforts to improve safety during transport and the associated handling of chemicals are part of the overall objective of both the chemical industry and the transport industry to improve the safety performance and to operate in accordance with the guiding principles of Responsible Care.

The current guidelines have been developed with the aim of offering guidance regarding the transport equipment used for the transport of packed cargo. These guidelines are of a voluntary nature. Individual companies may decide to apply the guidelines either in full or partly, according to their own judgment and taking into account their specific circumstances and requirements.

The applicable national and international regulations should always be complied with and take precedence over the recommendations made in the present guidelines.

## 2. OBJECTIVE AND SCOPE

The objective of the present guidelines is to promote the use of the appropriate equipment for the transport of packed chemical cargo.

The scope of these guidelines includes existing and new transport vehicles, trailers and containers used for:

- the different modes of transport except air transport;
- the carriage of palletized and non-palletized packed cargo;
- the transport of dangerous and non-dangerous goods;
- FTL (full truck loads) and LTL (less than full truck loads). For certain types of LTL, different requirements may be needed.

The tractor unit and any specialized or product specific equipment (e.g. equipment for temperature control, goose necks, high volume road trains) are outside the scope of these guidelines.

Additional guidance on the roles and tasks for load securing are included in the Cefic/ECTA Behaviour Based Safety Guidelines for the Safe Loading and Unloading of Road Freight Vehicles (Issue 2, March 2007).

See <http://www.cefic.org/files/Publications/LoadingUnloadingMarch2007.pdf>

Further guidance on cargo securing can also be found in the European Best Practice Guidelines on Cargo Securing for Road Transport, issued by the European Commission - Directorate General for Energy and Transport.

See: [http://ec.europa.eu/transport/road\\_safety/vehicles/doc/cargo\\_securing\\_guidelines\\_en.pdf](http://ec.europa.eu/transport/road_safety/vehicles/doc/cargo_securing_guidelines_en.pdf)

### 3. DIFFERENT TYPES OF TRANSPORT EQUIPMENT

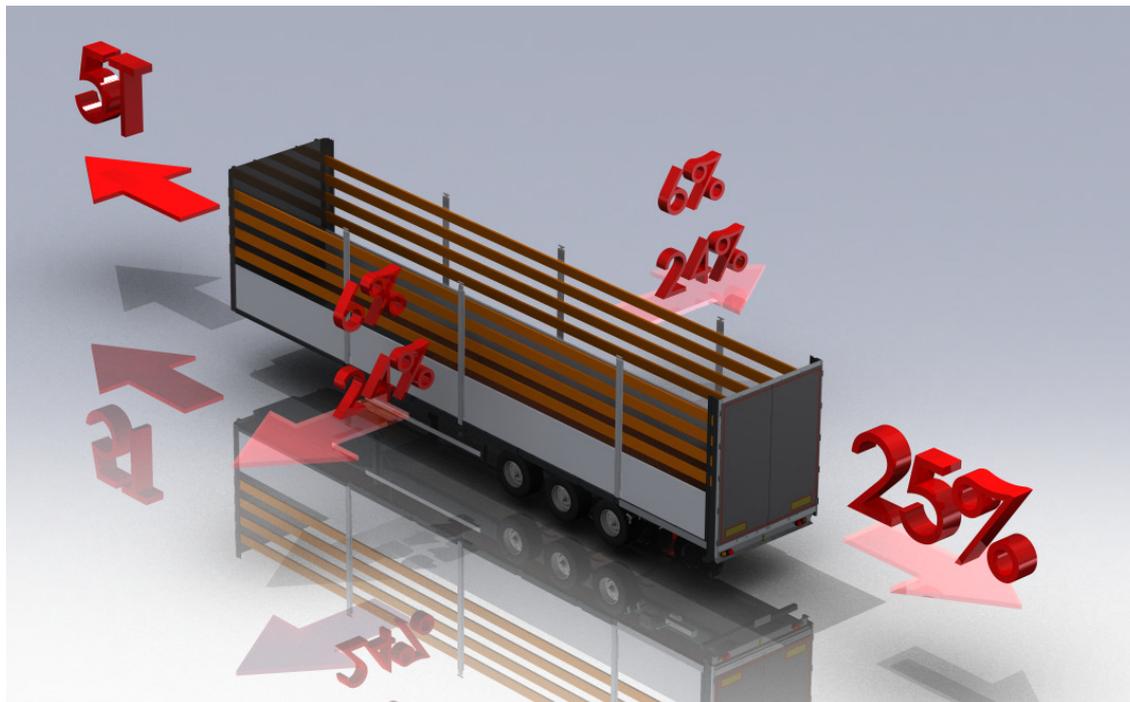
This section gives an overview of the main types of transport equipment used for packed cargo, with a short description of each type.

#### 3.1 VEHICLE WITH SIDEBOARDS constructed according to EN 12642 Code L (tilt trailer or cover/stake body type, so called 'L'-trailer)

Tilt trailers are trailers with tarpaulins on both sides and with sideboards which are fixed to the floor frame and can be tilted in order to allow loading and unloading from both sides as well as from the back. The dimensions are in general as follows: 13,60 m length and 2,44 m internal width.

A tilt-trailer according norm EN 12642 Code L has a blocking capacity of:

- Front direction: 40% of the load-capacity, with a **maximum of 5 Tonnes**;
- Side directions, 30% of the load-capacity ( 24% to the sidegates and the remaining 6% to the aluminium or wooden planks).
- Rear direction: 25% of the load-capacity and a **maximum of 3.1 Tonnes**.



### 3.2 VEHICLE WITHOUT SIDEBOARDS constructed according to EN 12642 Code L (curtainsider or “tautliner”)

A curtainsider is based on the same construction as the tilt trailer but without sideboards fixed to the floor frame. Its tarpaulin sides can be moved easily by pushing them aside like a curtain. The tarpaulin is meant to protect the cargo against weather conditions, but is not suitable for cargo securing.

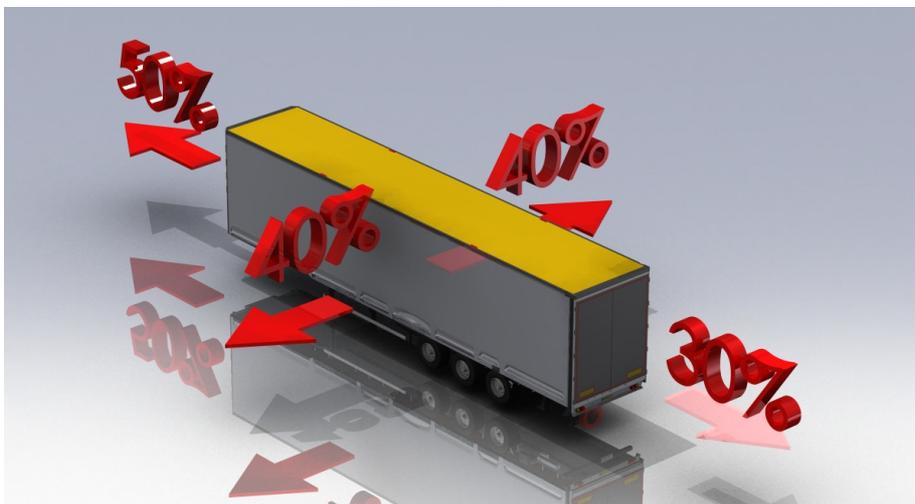
**The blocking capacity of a curtainside trailer is similar to trailer as described in section 3.1 with the exception that the sidewalls have NO blocking capacity.**



### 3.3 VEHICLES CONSTRUCTED ACCORDING TO STANDARD EN 12642 Code XL

EN 12642 Code XL refers to reinforced body structures as described in the revised standard EN 12642:2007 which replaces EN 12642:2001 “Securing of cargo on road vehicles – body structure of commercial vehicles – minimum requirements”.

Vehicles constructed according to the revised standard EN 12642 Code XL need to fulfill certain minimum requirements regarding stability criteria and test conditions of the front wall, rear wall and side walls. Vehicle body structures in compliance with the requirements of this standard have a certificate and are in general marked with a specific sign.



### 3.4 BOX TRAILER

As opposed to the above-described vehicle types, the box trailer does not have flexible tarpaulin sides but is completely surrounded by a stable metal or steel construction. The closed unit offers improved stability and cargo securing for different types of packaging. Because its sides cannot be opened, only loading and unloading from the back of the vehicle is possible. This requires a fixed ramp or a movable ramp ('loading bridge') for the cargo to be moved in or out of the box trailer.

### 3.5 SWAP BODY constructed according to EN 283

Swap bodies have nearly the same constructional characteristics as the above described four vehicle types, but need to be put on a chassis for any kind of movement. They are typically used for intermodal transport and drop and swap operations.

### 3.6 CONTAINER

ISO containers have a solid closed construction as defined in ISO standards (e.g. ISO 830 and ISO 1496-1) including requirements such as:

- a rigid construction for repeated use, trans-loading and terminal operations;
- a design to facilitate the carriage of goods by one or more means of transport;
- fittings permitting its easy stowage, handling and stacking.

ISO containers with a length of 20 or 40 foot and an internal width of 2,34 m are most used. In addition there are 40 and 45 foot containers with an inner width of 2,44 m (pallet wide) which are not constructed according to an ISO standard.

## 4. GENERAL TRANSPORT EQUIPMENT REQUIREMENTS

To ensure a proper loading and transport process, all the equipment should be selected, assembled and used in such a way that the loaded vehicle withstands the forces under normal transport conditions. Normal transport conditions include emergency brakes, sudden maneuvers, shunting operations (during intermodal carriage), handling and container terminal operations.

The following general specifications should apply:

- All transport vehicles, trailers and containers should be in a road-worthy condition, clean and odour-free inside, fit for purpose, compliant with all relevant legislation and well maintained.
- For vehicles constructed according to EN 12642 Code XL, there should be a system that allows verification that they are constructed according to this standard.
- The strength of the headboard of trailers described in section 3.1, 3.2, 3.4 and 3.5 should as a minimum be in accordance with EN12642/EN 283 .
- Although most trailers built after 2001 are coded EN12642 and hence the headboard should have a strength of minimum 5000 daN, it is recommended to have a confirmation of the strength of the headboard available for every trailer type.
- The floor should be solid and capable of supporting fork-lift trucks (with maximum total weight of 5740 kg) entering the loading space (in accordance with standard EN 283).
- The floor should be flat, level and free of objects (e.g. protruding nails) and holes or other damage that might either cause risk to loading/unloading staff or damage to the cargo.

- The surface of the load floor should be swept clean (no oil, grease or product), free from odor and free from frost/ice or snow. The friction factor should as a minimum be according to the normative table B1 of EN 12195-1.
- The roof, walls and tarpaulin/curtain should be free of holes and protect the cargo against normal weather conditions.
- All transport equipment should be sealable and easy to lock tightly from ground level.
- Lashing points should be in accordance with EN12640 and must have a minimum strength of 2000daN. The number of lashing points should be sufficient to allow appropriate cargo securing methods.
- Lashings and ratchets should be in accordance with EN12195-2, labeled and in good condition. Lashings should have a LC of at least 2500daN and a minimum length of 9m.

All newly purchased equipment should be constructed in compliance with EN 12642 Code XL. This should be marked on the equipment with a specific sign.