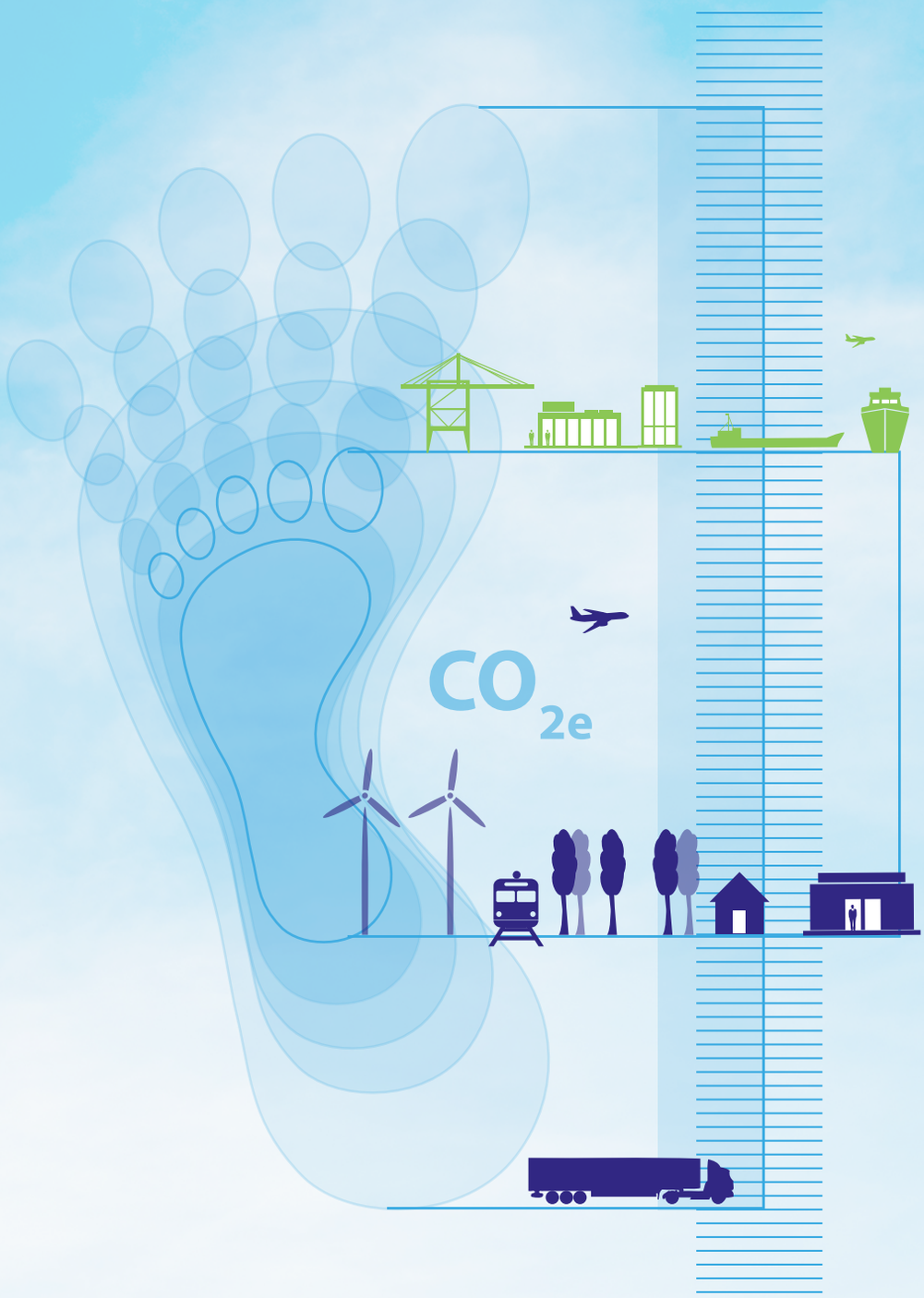
GUIDELINE 13 - CARBON FOOTPRINT IN LOGISTICS




# General road transport

*Measuring, calculating, allocating and reducing*

Connekt

LEAN & GREEN EUROPE

Topsector Logistiek

# Colophon

***Guideline 13 - General road transport***
*Measuring, calculating, allocating and reducing*

*Carbon Footprint in logistics*
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# General road transport

## Measuring, calculating, allocating and reducing

This guideline deals with general transport by road. It does not relate to the road transport of sea containers, loose bulk, liquid bulk, post, parcels, temperature-controlled cargo or foodstuffs, but covers everything that does not fall into these categories. We refer to this as general road transport. The allocation of emissions to cargo is dealt with in detail in guideline 2. A peculiarity of general road transport is that a mix of many different load carriers is used. Often counting is performed in these units rather than in weight.

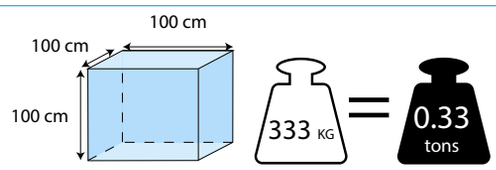
The range of different load carriers used in general road transport includes: roll cages, pallets, crates, loose items and packaging.


In practice, the quantity of cargo transported can be counted in a number of ways: pallets, roll cages, crates, loading meters, volumetric weight, tons, cubic meters, etc.

How is the capacity utilization of the vehicle determined from this to allow you to allocate $CO_{2e}$? On the following pages conversion factors are shown that are customary in the Netherlands. We do not yet know of any conversion factors that have been determined at international level.

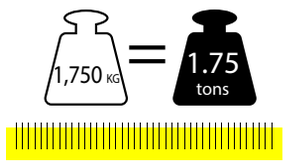
## One type of load carrier or measure (e.g. roll cage or volumetric weight) is carried at a time


1 TEU (container plus cargo)

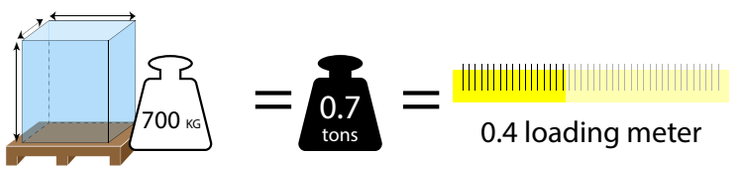



1 M³


1 pallet

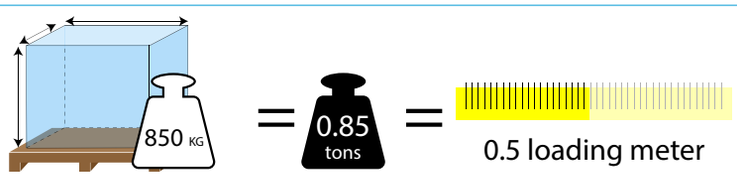



1 loading meter




0.4 loading meter

1 Euro pallet




0.5 loading meter

1 Standard pallet

**Example of conversion factors:**

1 TEU = 10 tons

1 m³ = 333 kilos, 0.33 tons

1 pallet = 500 kilos, 0.5 tons

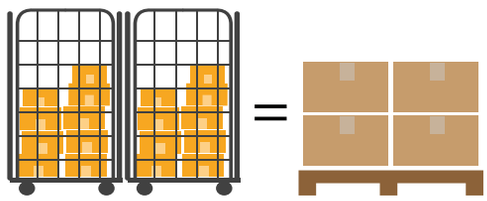
1 loading meter = 1,750 kilos, 1.75 tons

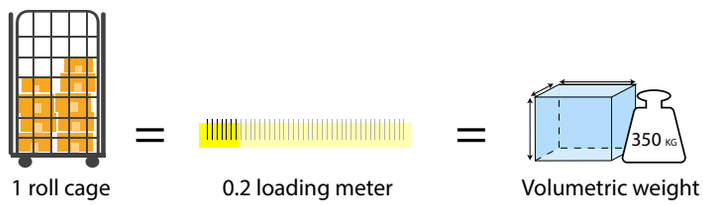
1 Euro pallet = 700 kilos, 0.7 tons (volumetric weight)

1 Euro pallet = 0.4 loading meters

1 Standard pallet = 850 kilos, 0.85 tons (volumetric weight)

1 Standard pallet = 0.5 loading meters (volumetric weight)

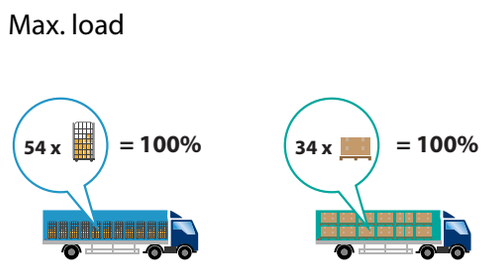




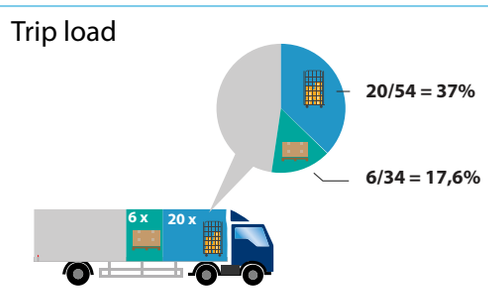

If a company transports both pallets and roll cages, calculations are often performed internally using a pallet equivalent: 2 roll cages equal 1 pallet, for example. A figure of 0.2 loading meters or a volumetric weight of 350 kilos per roll cage is taken into account for planning purposes. If a different factor applies, the transporter has to indicate this specifically.

## Several types of load carrier are carried at a time on the same truck

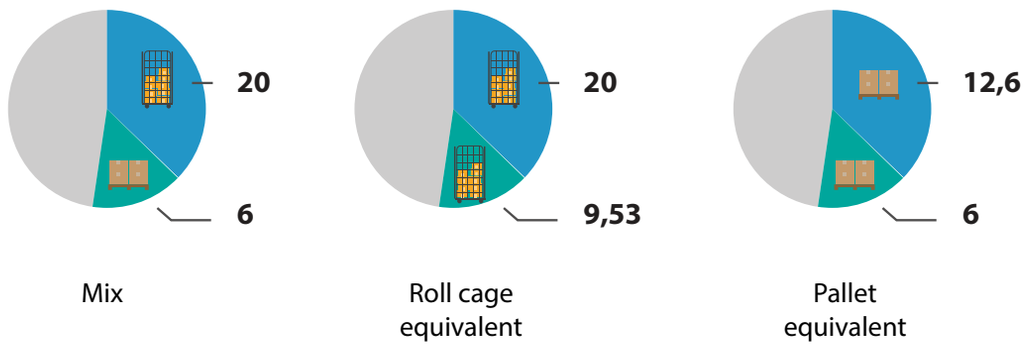
It is possible that all kinds of different load carriers are transported at the same time. In this case everything has to be converted to a single type of load carrier. A simple example is as follows.




*This truck can carry a maximum of 54 roll cages or a maximum of 34 pallets.*

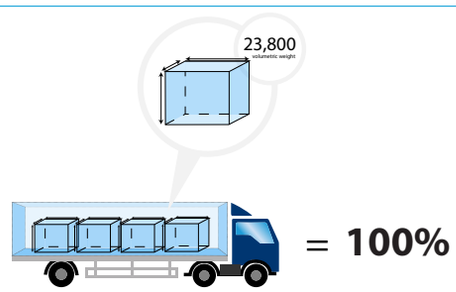


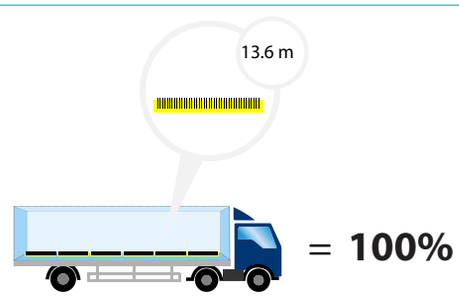

*20 roll cages require 20/54 = 37.3% of the truck's capacity. 6 pallets require 6/34 = 17.6% of the truck's capacity.*

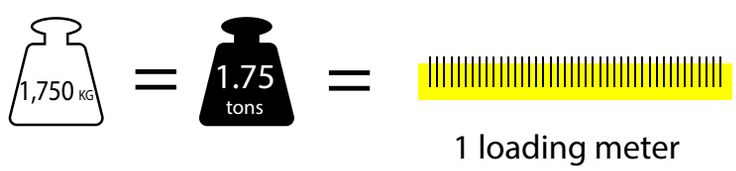


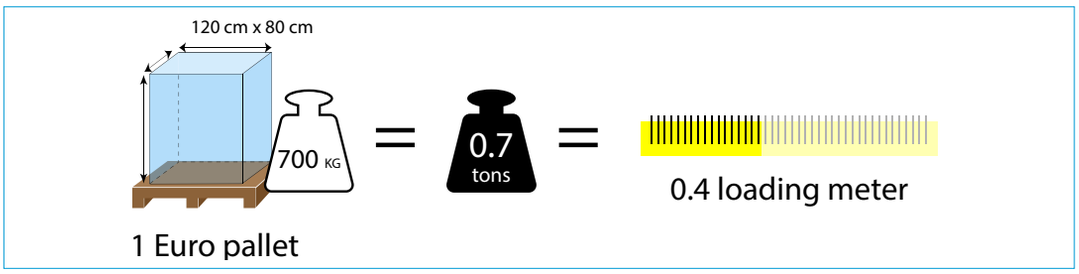

*You can also convert one type of unit to another:*
*6 pallets = 0.176 x 54 = 9.53 'roll cage equivalents' as regards floor utilization.*
*Conversely: 20 roll cages = 0.37 x 34 = 12.6 'pallet equivalents' as regards floor utilization.*
*Provided we use the same measure for the weighting of emissions it is fine.*

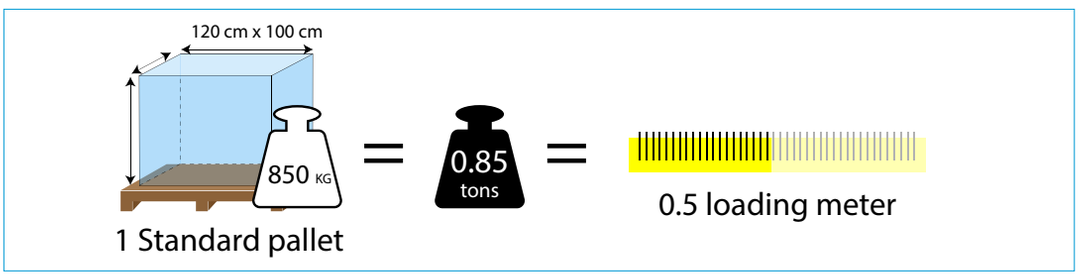
## Volumetric weight is a unit used in practice and is found in many logistics agreements



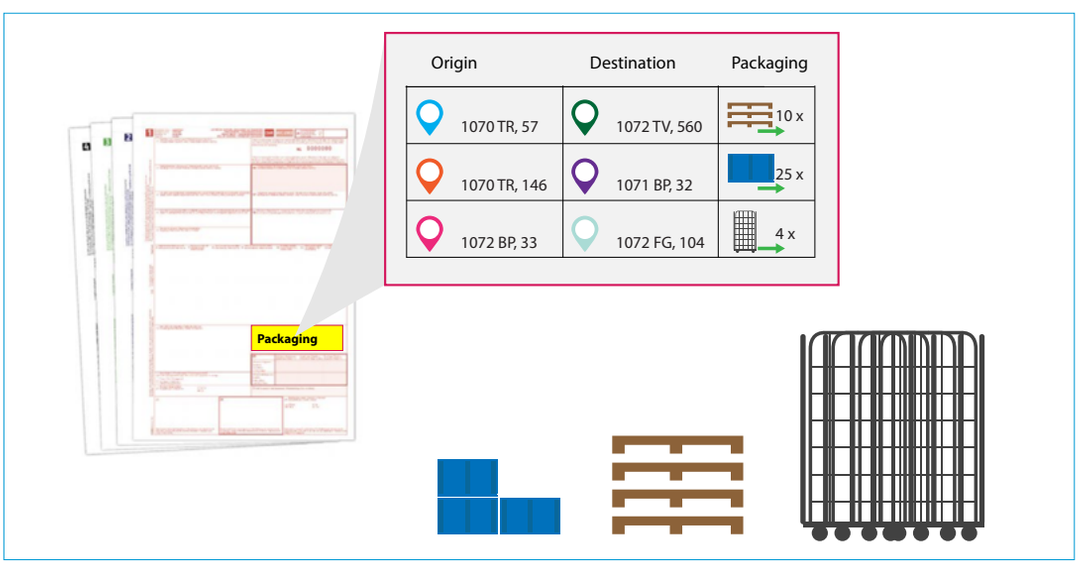



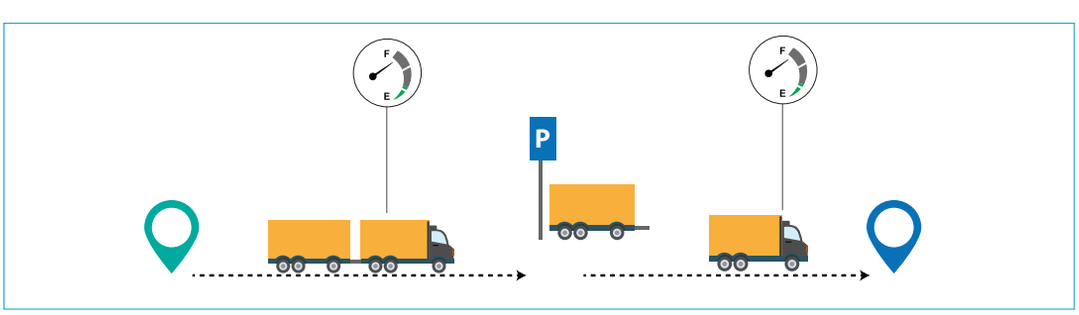



The volumetric weight of a loading meter = 1,750 kilos.
A Euro pallet is 0.4 loading meters = 700 kilos.
A Standard pallet is 0.5 loading meters = 850 kg.

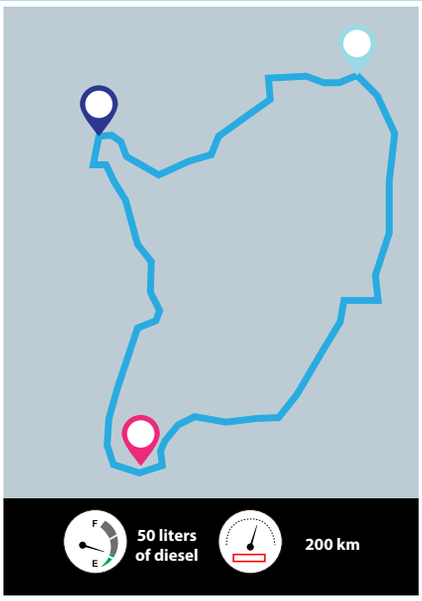



Packaging/returned goods are an important part of the logistics process. Fortunately, they are usually recorded as separate order lines on consignment notes, for both outward and return transport. That means they can be processed just as easily as ordinary cargo.




If a box truck and trailer combination is used, the trailer may be uncoupled from the box truck. The box truck then visits a specific address while the trailer remains stationary. The trailer is then recoupled for the rest of the trip. Does this affect the allocation? No. The calculation is based on the movement of cargo and the total amount of fuel consumed on a round trip.

## What if very precise data are available, per trip or even per stop?




| | 25 x | |
|---|---|---|
| Distribution Center | | |
| Stop 1 | 10 x | 11 L |
| Stop 2 | 15 x | 23 L |
| Distribution Center | | 16 L |
| Total | | 50 L |

Let's assume there are two stops on a trip. The consumption is known for each stop. During the first stop the first portion of the cargo is unloaded and the other portion is unloaded during the second stop. How do you perform allocation in this case? Answer: by adding up the consumption for the stops and then allocating the emissions based on the COFRET method, as explained in the guideline 'Allocation'.


| | |
|---|---|
| Day 1 - trip 1 | 44 L |
| Day 2 - trip 2 | 31 L |
| Day 3 - trip 3 | 23 L |
| ... | ... |
| Total | 350 L |

What happens in the case of a week-long trip involving criss-cross international transport? Here too the fuel has to be added up over the week and then allocated to all orders in that week in accordance with the guideline 'Allocation'.

# Carbon Footprint guidelines

0. Measuring, calculating, allocating and reducing

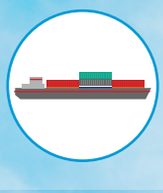
1. Allocating

2. Cargo


3. Origin and destination

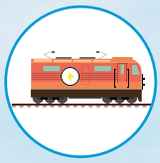
4. Fuel


5. Inland shipping - containers



6. Inland shipping - bulk

7. Freight transport by rail



8. Air freight

9. Maritime and short sea shipping

10. Transshipment

11. Storage


12. Parcel transport and post

13. General road transport

14. Perishable and temperature controlled

15. Outsourced transport

16. Repositioning and empty kilometers

17. (Inter)national supply chains

18. Benchmarking

19. Intermediaries and platforms


20. Auditors and accountants


21. Data quality

22. The relationship between social goals and corporate goals

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