

# Transport guide extreme temperatures



horses



## Be aware of the risks of thermal stress

Heat stress can be caused by:

- Hot weather conditions
- Poor ventilation
- Poor watering provision
- Overstocking

Cold stress can be caused by:

- Cold weather conditions
- Water ingress by rain or snow

Horses are able to adapt to temperature changes well over time but rapid and extreme temperature changes can cause acute thermal stress.

Thermal stress can lead to:

- Weight loss
- Dehydration
- Abnormal behaviour
- Fatigue/exhaustion
- Disease
- Death



## Consider the type of horses that you transport

**LONG JOURNEYS ARE NOT ALLOWED WHEN TEMPERATURE WITHIN THE MEANS OF TRANSPORT CANNOT BE KEPT BETWEEN 5°C AND 30°C, WITH A 5 DEGREE MARGIN.**

In practice, this means that long transports should not be allowed if the forecasted outside temperature along the route is  $> 30^{\circ}\text{C}$

Make sure temperatures inside the trailer stay within the thermo-neutral zone, which is between  $5^{\circ}\text{C}$  and  $25^{\circ}\text{C}$ .

Please note that the thermoregulatory capacity of horses differs between breeds and heat loss is affected by e.g. thickness of the hair coat and body condition.

It is assumed that excessive heat is likely to be a greater problem than extreme cold. The sudden transfer to different environments may cause acute thermal stress, so maintain a stable temperature.

## Truck design



### Make sure deck height is adequate

Internal compartment height should be at least 75 cm higher than the height of the withers of the tallest animal.



### Check temperature and humidity sensors

During long transport (more than 8 hours), the truck should contain a monitoring system for temperature and preferably also humidity.

Sensors should be:

- ✓ Placed on the front and the back inside each transport unit and at a height above the horse's head, but not on the ceiling.
- ✓ Not affected by the ventilation to ensure the adequacy of the measurements.
- ✓ Connected to a warning system that goes off if temperatures rise above 30°C or fall below 5°C.
- ✓ Temperature and humidity inside the animal compartment should be: Monitored in the cabin by the driver.



### Check water supply system

A water supply system is mandatory for journeys longer than 8 hours.



### Check drinking devices

Drinking devices should be easily accessible for all animals to prevent competition, fights, thirst or heat stress.

Drinking devices should:

- ✓ Be clean
- ✓ Have no sharp edges or protrusions
- ✓ Be designed specifically for horses



## Check ventilation

### Passively ventilated trucks:

- ✓ Should have sufficiently large ventilation openings, traversing the whole length of the vehicle at animal height.
- ✓ Should not have aerodynamic air foils that restrict airflow into the trailer.

Preferably, all vehicles (also on short journeys) should be equipped with forced ventilation and have an insulated roof. Forced ventilation equipment should be placed above the horses to promote heat loss and used when ambient temperatures during the journey are likely to fall below 5°C or above 30°C for more than half an hour.

### Actively ventilated trucks (mandatory for journeys longer than 8 hours):

- ✓ Should be able to keep temperatures inside the truck within 5 and 30°C (with a tolerance of 5°C).
- ✓ Should have a capacity of at least 60 m<sup>3</sup>/h/100 kg live weight (even on short journeys).
- ✓ Should, in case of fully-conditioned trucks, function while the truck is standing still when temperature is over 30°C, for up to 4 hours.
- ✓ Should be designed such that they are able to ventilate all individual pens well.



Make sure there is an emergency generator so the fans can be kept running if the engine breaks down.

## Planning



### Make a journey plan

Include the following elements related to extreme weather:

- ✓ Analysis of the weather forecast, use the Livestock Weather Safety index to see the effect of the weather on horses.
- ✓ Choice of the transport company and truck type
- ✓ If the forecast shows extreme temperatures below 5 °C or above 30 °C at any point during the journey, the transport shall not take place, but will have to be scheduled when weather conditions allow it
- ✓ Up-to-date contingency plan that addresses emergencies related to adverse weather conditions
- ✓ Description of the route of travel and estimation of its duration. The organizer should minimize the delay by avoiding known road works and diversions.



The risks of thermal stress are especially high in the following situations:

- Long journeys (more than 8 hours)
- Heat stress: journeys from ~~the North of Europe to the Mediterranean countries in summer time or warm-colder~~ to warmer countries inside and outside the EU
- Cold stress: journeys from warmer climate to cold countries inside and outside the EU
- When the truck breaks down



### Adjust the time-schedule based on weather conditions

In hot weather:

- ✓ Avoid traveling during the hotter parts of the day; travel during cooler conditions at night / drive during the coldest hours of the day/in the evening.

In cold weather:

- ✓ Drive during warmest hours of the day/late morning until the early evening.

## At departure

- ✓ Check the proper functioning of ventilation, temperature and humidity sensors before loading the animals

- ✓ Make sure horses are fully hydrated (even in cold weather)

- ✓ Check space allowances

Adult horses	1,75 m <sup>2</sup> (0,7 x 2,5m)
Young horses (6 – 24 months) (for journeys up to 48 hours)	1,2 m <sup>2</sup> (0,6 x 2m)
Young horses (6-24 months) (for journeys over 48 hours)	2,4 m <sup>2</sup> (1,2 x 2m)
Ponies (under 144 cm)	1 m <sup>2</sup> (0.6 x 1,8 m)
Foals (0-6 months)	1,4 m <sup>2</sup> (1 x 1,4m)

Note: During long journeys, foals and young horses must be able to lie down.

These figures may vary by a maximum of 10% for adult horses and ponies and by a maximum of 20% for young horses and foals, depending not only on the horses' weight and size but also on their physical condition, the meteorological conditions and the likely journey time.

- ✓ In hot weather: prevent heat stress

- ✓ Increase space above allowance but make sure animals can still maintain their balance.

- ✓ In cold weather: prevent cold stress

- ✓ Reduce space allowance if animals have more than the minimum allowed.
- ✓ Keep animals as dry as possible.

## On the road



### In hot weather: prevent heat stress

When driving:

- ✓ Keep the vehicle moving to maintain a constant air flow.
- ✓ Minimise the journey times and number of stops.

When stopping:

- ✓ Park in the shade.
- ✓ Do not park near other vehicles.
- ✓ Keep the stop as short as possible.
- ✓ Put on ventilation. For passively ventilated trucks: put the vehicle in the right angle to the wind direction and make sure ventilation flaps are fully open.
- ✓ Never leave the vehicle without working ventilation and an attendant nearby.



### In cold weather: prevent cold stress

When driving:

- ✓ Reduce ventilation from vent flaps

When stopping:

- ✓ Park in an area that provides protection from the wind.
- ✓ Add extra weather boards to keep wind or freezing rain out. Make sure ventilation is kept adequate.



### Check temperature and humidity measurements

- ✓ If temperatures rise above 25°C: activate ventilation system.
- ✓ If temperatures rise above 30°C: start emergency procedures to reduce temperature.



## Stop regularly to check the condition, behaviour and spatial distribution of the animals

Early detecting of thermal stress is essential.

If horses are sweating, they are experiencing heat stress:

- ✓ Provide drinking water as often as possible
- ✓ Improve ventilation.
- ✓ Spray water on the horses.
- ✓ Prepare operators at the place of destination for immediate unloading.

If the destination cannot be reached within two hours and temperature on the truck cannot be lowered sufficiently, activate the contingency plan and unload the animals at the nearest emergency unloading facility.

If horses are shivering, they could be experiencing cold stress:

- ✓ Provide food if they show signs of hunger.
- ✓ Improve protection from precipitation and wind.

If these measures cannot be implemented, animals should be unloaded at the nearest place available.

## At arrival



### Protect horses from adverse weather conditions during unloading



### Provide adequate housing conditions

Temperature within the housing facilities should be kept within the thermo-neutral zone (see page 1). To achieve this, facilities should be equipped with:

- ✓ Building insulation to prevent frost
- ✓ Adequate mechanical or natural ventilation. Air circulation takes place above the heads of the animals.

If temperatures are not within the thermo-neutral zone (see page 1)

- ✓ Too low: apply additional heating (especially for foals).
- ✓ Too high: provide more floor space, additional fans for ventilation and water spraying.



**Trucks with poor ventilation should be unloaded as a priority.**