



# Sheep: preventing hot and cold stress



## Space on the vehicle

**Sheep need enough room to adopt their preferred spacing strategy** and it will prevent them of losing balance, slipping or falling. If space availability is not sufficient, animals will not lie down; even when they are tired. The amount of space needed by each animal **depends on**: body weight, presence of wool and thickness of fleece, presence of horns, temperature and behaviour of animals during transport



- Always keep in mind, the space above the highest point of the sheep should be at least **15 cm** on vehicles with forced ventilation and at least **30 cm** on vehicles without forced ventilation.

Minimum space allowance	Short journey	Long journey
Shorn ewes	0.44 m <sup>2</sup> for 67 kg	0.44 m <sup>2</sup> for 40 kg
Fleeced ewes	0.56 m <sup>2</sup> for 65 kg	0.53 m <sup>2</sup> for 40 kg
Shorn lambs	0.3 m <sup>2</sup> for 32.5 kg	-
Fleeced lambs	0.4 m <sup>2</sup> for 40.5 kg	-

- Provide **more space** to all animals if they need to **be rested, watered and fed** on the vehicle. In this case, you will enable them to access the feed and water
- Give **25% more space** to unshorn sheep and lambs of  $\geq 26$  kg, than shorn sheep and lambs
- Provide more space during transport at **higher temperatures** or **higher humidity** or if journey is likely to be **more stressful**
- Provide more space, if the vehicle may be **stationary for a longer period** – unless the vehicle has forced ventilation
- **Even better!** Newly **shorn sheep** should only be transported if they have a staple growth of at least 7.0mm (e.g. re-growth, shearing with suitable comb) and if they have not been shorn less than 24 hours before the start of the journey



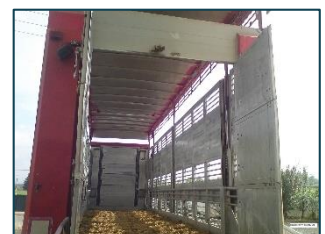
## Bedding in the vehicle



Cold weather: increase **bedding** / insulation and **remove wet bedding** after each trip (to prevent freezing onto the vehicle)



Hot weather: use **wet** sand, wet shavings, sawdust or rice husks (instead of straw bedding)





## Regulating the vehicle environment and climate control

1. **Minimise** the impact of **weather conditions** on the animals
2. Make sure the **temperature and humidity levels** within the vehicle are correct for the type, weight and age of the sheep
3. **Control** the **temperature** inside (min. 5°C, max. 30°C). Make sure the ventilation fans are working
4. **Monitoring system** should consider min/max temperature, but also the duration of out-of-range temperatures
5. For long journeys, check that the **ventilation and temperature monitoring system work properly**. These should be housed in the cabin to facilitate drivers to control them. Also, equip your vehicle with mechanical ventilation systems to regulate humidity and temperature. Sensors must be behind cabin in first floor for warm values and in the third floor at the end of the truck for cold values.



### Always pay careful attention to:

- Airflow within transport unit
- Speed of travel
- Number, location and conditions of planned stops
- Space allowance
- Condition of the sheep

Type	Recommended temperature ranges with force ventilation		
	Minimum (°C)	Maximum adjusted for humidity (°C)	
		Rel. Humidity < 80%	Rel. Humidity > 80%
Full fleeced sheep	0	28	25
Shorn sheep	10	30	29

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## Cold weather

**Avoid cold stress and wind chill**, particularly for recently shorn sheep and lambs. This includes:

- Enclose vents alongside the vehicle or stop the vehicle. Always maintain sufficient ventilation
- Provide food (before loading)
- Avoid loading wet sheep
- Provide additional heating



## Hot weather

**Minimise** the risk of **heat stress**. This includes:

- Load and transport sheep during the cooler parts of the day. Postpone transport until weather conditions are more favourable
- Provide more floor space
- Place the vehicle in a shady area with enough air flow or use forced ventilation (additional fans)
- Minimise duration of stops, when possible

