



## What do huddling and shivering indicate?

- Thermoregulation in newborn piglets is poorly developed. Consequently, piglets are particularly susceptible to hypothermia when ambient temperature is outside their thermoneutral zone.
- Signs of hypothermia are huddling, shivering and pilo-erection.



## Legal requirements



Council Directive **2008/120/EC**: "A part of the total floor, sufficient to allow the animal to rest together at the same time, must be solid or covered with a mat, or be littered with straw or any other suitable material." {Annex I, Chapter II, point C1}

*Note: There might be stricter national legislation in place.*

To allow piglets to find a thermally comfortable lying area, the size of the nest area needs to be large enough: a typical litter size of 10-14 piglets at weaning takes up 1.1-1.3 m<sup>2</sup> when resting. *Photo: Pro Dromi® system.*



Neonatal piglets are vulnerable to low ambient temperature. At the time of birth, piglets' lower limit of the thermos-neutral zone is above 34°C. To check if the basic requirements for piglets' thermal comfort are met, assess the temperature in the nest area at approximately 8-10 cm (= lying piglets' height).



## Inspection method (recommended)

- The farmer records nest temperature and huddling, shivering and pilo-erection during his/her daily inspections.
- The official inspector checks if piglets show signs of hypothermia: huddling, shivering, pilo-erection.
- The inspector reports findings to farmer and in case of discrepancies between legal requirements and situation on farm corrective actions are taken.



# Huddling and shivering

## Assessment method



Since huddling behaviour is best observed in resting animals, wait 10 minutes to allow animals to settle when first entering the room. Huddling behaviour in piglets will only be considered when piglets have more space available to them than they are occupying.

The definition of huddling is when a pig is lying with more than half of its body in contact with another pig (i.e. virtually lying on top of another pig). It is not considered huddling when an individual is just side by side and alongside another animal. Estimate the number of huddling animals in the litter.

**No risk to welfare: 0-20% of resting piglets in the litter display huddling behaviour**



**High risk to welfare: Over 20% of resting piglets in the litter display huddling behaviour**



**Also look for shivering and pilo-erection**

### Shivering

is defined as the slow and irregular vibration of any body part or of the body as a whole.

Estimate the piglets that are shivering:

**High risk to welfare: Over 20% of piglets are observed shivering.**

**Pilo-erection or bristling of hairs** occurs during cold stress and helps to identify piglets suffering from hypothermia

**Photo (r): pilo-erection is visible in the face and neck area**



Source for the assessment method: Welfare Quality® protocol



Co-funded by  
the European Union



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