



Niedersächsisches Landesamt für
Verbraucherschutz und Lebensmittelsicherheit

Space allowances and floors for weaners and rearing pigs

Increased space allowances

Options: Increased space allowances, based on the latest scientific evidence and advice, as regards floor space and height

Current legislation

Directive 2008/120/EC

kg	m2
< 10	0,15
10-20	0,20
20-30	0,30
30-50	0,40
50-85	0,55
85-110	0,65
>110	1,00

Current legislation

Countries with stricter national requirements

kg	m2
< 10	0,15
10-20	0,20
20-30	0,30
30-50	0,40
50-85	0,55
85-110	0,65
>110	1,00

	30 kg	110 kg
Austria	(0,4 m ²)*	0,70 (0,8 m ²)*
Finland	0,40 m ² **	1,00 m ² (> 107 kg)
Germany	0,35 m ²	0,75 m ²
Netherlands	-	0,80 m ²
Norway	0,35 m ²	0,80 m ²
Sweden	0,40 m ² **	1,00 m ² **
Switzerland	0,60 m ² (>25 kg)	0,90 m ²

* New buildings from 2023
**calculated

Consideration

Do thresholds correspond with weight at slaughter?

**Slaughter weight in
EU between 110
and 125 (170) kg**

Current thresholds	Proposal
< 10	< 10
10-20	10-20
20-30	20-30
30-50	30-60
50-85	60-90
85-110	90-120
>110	120-150
	> 150

What do pigs need space for? physiological and ethological needs

- **Resting**
- **Regulation of body temperature by behaviour**
- **Circumnavigate pen mates to access resources**
- **Maintain separate functional areas in the pen**
- **Exploration**
- **Locomotion**

Which are essential?

What do pigs need space for? physiological and ethological needs

- **Resting**
- **Regulation of body temperature by behaviour**
- **Circumnavigate pen mates to access resources**
- **Maintain separate functional areas in the pen**
- **(Exploration)**
- **(Locomotion)**

Which are essential?

How much space does a pig need?

Space allowance (m²) = k x body weight ^{0,67} (Petherick, 1983)

	K value	30 kg	110 kg	120 kg	150 kg	170 kg
Resting half recumbent (thermoneutral)	0,033	0,32 m ²	0,77 m ²	0,82 m ²	0,95 m ²	1,03 m ²
Resting half recumbent (thermoneutral) + circumnavigation	0,036	0,35 m ²	0,84 m ²	0,89 m ²	1,03 m ²	1,12 m ²
Resting fully recumbent (above thermoneutral)	0,047	0,46 m ²	1,10 m ²	1,16 m ²	1,35 m ²	1,47 m ²
Resting fully recumbent (above thermoneutral) + circumnavigation	0,050	0,49 m ²	1,17 m ²	1,24 m ²	1,44 m ²	1,56 m ²

Based on EFSA 2022

Space allowance as a risk factor for tail docking

Table 58: Relative level of tail biting for selected space allowances expressed as k-values, compared to the current legal situation of $k = 0.028$ (from the analysis of the data in the literature)

Space allowance as k-value	Tail biting relative to the situation at $k = 0.028$	m^2 for a 110-kg pig
0.028	100%	0.65
0.030	83%	0.70
0.036	48%	0.84
0.040	33%	0.93
0.045	21%	1.05
0.050	13%	1.17
0.055	8%	1.28
0.060	5%	1.40
0.065	3%	1.52
0.070	2%	1.63

Legal provision analogous to Art. 3 Directive 2007/43/EC

- New minimum requirement for space allowance:
 $0,050 \times \text{body weight}^{0,67}$
(e.g. 30 kg = 0,49 m², 110 kg = 1,17 m², 120 kg = 1,24 m²)
- By way of derogation minimum space allowance may be reduced to:
 $0,036 \times \text{body weight}^{0,67}$
(e.g. 30 kg = 0,35 m², 110 kg = 0,84 m², 120 kg = 0,89 m²)

if
 - a) all pigs are kept undocked
 - b) less than xx% tail lesions are recorded at slaughter

Summary space allowance

- From an animal welfare point of view, space allowances should **as a minimum allow for separate lying in full recumbency ($k = 0,047$)** and preferably provide additional space to maintain separate functional areas (e.g. $k = 0,050$)
- Exceptions might be possible in farms that can demonstrate very good welfare (\rightarrow intact curled tail as iceberg indicator) but should at least provide enough space for lying in half recumbency + some circumnavigation ($k = 0,036$)
- Weight categories should be reconsidered and categories above 110 kg should be added
- From a technical point of view the transitional period can be very short – impact on farmers is mainly economic

Floors - Current legislation

Directive 2008/120/EC

*The accommodation for pigs must be constructed in such a way as to allow the animals to have access to a **lying area physically and thermally comfortable** as well as **adequately drained and clean which allows all the animals to lie at the same time** (Annex I Chapter I No 4)*

Widths of slats and openings (Article 3, 2b)

Floors - Current legislation

Countries with national requirements for “solid” floors

	30 kg	110 kg	allowed % drainage
Austria	0,13 m ² (33%)*	0,26 m ² (33%)*	10%
Denmark	0,15 m ² (67%)	0,22 m ² (33%)	10%
Finland	0,27 m ² (67%)	0,67 m ² (67%)	10%
Netherlands	0,24 m ² (40%)**	0,32 m ² (40%)**	0%
Norway	resting area***	resting area***	0%
Sweden	resting area	resting area	0%
Switzerland	0,40 m ² (>25 kg)	0,60 m ²	2%

*new buildings from 2023

**only for concrete floors

*** all pigs must be able to lie down at the same time

Floors

EFSA

- Provision of some solid flooring will increase comfort and facilitate provision of bedding substrates.
- The minimum solid floor space allowance estimated to accommodate lying behaviour under thermoneutral conditions is equal to a $k = 0.033$
- Tail biting risk is increased with increasing proportion of slatted flooring.
- Maintenance of hygiene on the solid flooring is important and can be influenced by the proportion of solid to slatted flooring, but also by the pen layout, the nature of the airflow patterns and ambient temperature.
- Because of these complications, it is currently not possible to define an area or percentage of solid floor in a partly slatted system, which reconciles the possibly conflicting requirements of pig behaviour and hygiene

Floors

EURCAW (QTE flooring for weaners)

- Weaned piglets prefer a solid floor for lying.
- Under thermoneutral conditions, weaners prefer a soft top layer for resting.
- Solid floors with bedding lower the risk for injuries due to insufficient lying comfort.
- Microclimate in the lying area should adapt to the changing thermal comfort zone of piglets during rearing period.
- At ambient temperatures above the thermoneutral zone piglets choose a cooler lying area and accept a less comfortable lying surface.
- Additional advantages of a solid lying floor: lower emissions (when dry and clean), less draught, provision of enrichment easier.

Floors

EFSA (2022)

Recommendations on the welfare of weaners and rearing pigs from Specific ToR 4: types of flooring (Section 7.7.3.5)

42	Pigs should have a solid floor area equivalent to a k-value of 0.033 (equal to 0.77 m ² for a 110-kg pig) to accommodate lying behaviour (under thermoneutral conditions), with additional space for activity, feeding/drinking and elimination.
43	Further research should be carried out to validate strategies for maintaining hygiene in partly slatted pens
44	Further research should be carried out to determine the effect of different degrees of perforation of the solid floor on pig comfort and pen hygiene

	K value	30 kg	110 kg	120 kg	150 kg	170 kg
Resting half recumbency (thermoneutral)	0,033	0,32 m ²	0,77 m ²	0,82 m ²	0,95 m ²	1,03 m ²

„What is most important is that the design of the pen, floor and climate system form an integrated system”

- You cannot “just close the slats”
- Pen design and climate systems in existing farms must be adapted
- Cooling facilities should be considered (not only for pen hygiene but as a general requirement)
- Longer transitional period needed for existing buildings

Summary floors

- Pigs should have a solid floor area equivalent to a k-value of 0.033 to accommodate lying behaviour (under thermoneutral conditions), with additional space for activity, feeding/drinking and elimination
- The rest of the pen can have drained floors
- It should be discussed if a certain percentage of drainage in the “solid” floor is really necessary
- Longer transitional period needed for existing buildings