

## H2 - Functional requirements to the farrowing pen



**A farrowing pen with room for both sow and piglets**

Several requirements of sow and piglets must be fulfilled in the farrowing pen. The following requirements must be considered when renovating existing facilities or building new ones:

### Sow

1. The sow must be able to stand and lie down in the crate - but not to turn around.
2. The sow must be able to get up and lie down without problems.
3. The volume of the trough must match the feeding strategy.

### Piglets

4. The piglets must be able to suckle without obstacles; adequate space by the udder increases milk intake.
5. All piglets must be able to lie on the solid floor at the same time.
6. It must be possible to adapt the environment to newborn piglets and to 4-5-week-old piglets.

### Pen

7. The design of the pen must fulfil the space requirements of both sow and piglets.



**Very little space by the udder when the sow lies down with her back against the creep area**

### Inadequate room in the farrowing pen

- It may be difficult for the sow to lie laterally and thereby give the piglets access to the udder.
- The piglets are unable to suckle if, for instance, the sow lies with her back against the creep area.
- Not all piglets are able to lie down in the covered creep area and benefit from an optimum environment.

<b>Additional comments - Functional requirements to the farrowing pen</b>	
	The sow must be able to stand up and lie down, but not turn around, in a farrowing crate. The basis for calculating the space required is shown below.
1.	The size of the sow forms the basis of the dimensions of farrowing crates: <ul style="list-style-type: none"> <li>• In length, a sow measures 200 cm (95 % of the sows), 184 cm (av.)</li> <li>• Shoulder width is 47 cm (95 % of the sows), 42 cm (av.)</li> <li>• In depth, a sow measures (back to stomach): 71 cm (95 % of the sows), 63 cm (av.)</li> </ul>
2.	The sow must be able to get up and lie down unhindered. As a general rule, the space required by the sow to get up and lie down is the sow's dimensions plus the space required for the movement. <ul style="list-style-type: none"> <li>• A sow needs approx. 20 - 50 cm in length to get up and lie down</li> <li>• A sow needs approx. 20 - 40 cm in width for the movement of getting up-lying down.</li> </ul> <p>The sows in a herd are of different ages and thereby also of different sizes. On Danish production farms, first parity sows constitute approx. 20 - 25 %. The sows are fully grown by their fourth litter. These recommendations fit 95 % of Danish sows, but smaller sows generally take up less room when they get up and lie down.</p> <p>Recommendations for inside measurements (incl. space above the trough) are approx.:</p> <ul style="list-style-type: none"> <li>• 220 - 250 cm in length</li> <li>• 65 - 90 cm in width.</li> </ul> <p>The width of the front of the crate and the back differs since the sow must not be able to turn around.</p>
3.	It is essential that the trough be large enough for the sow's feed - also towards the end of lactation. The volume of a feed dose of approx. 11 FUsow a day is: <ul style="list-style-type: none"> <li>• 12 l (liquid feed) or 5 l (dry feed), respectively, per feeding with 3 daily feedings.</li> <li>• 9 l (liquid feed) or 4 l (dry feed), respectively, per feeding with 4 daily feedings.</li> <li>• 7 l (liquid feed) or 3 l (dry feed), respectively, per feeding with 5 daily feedings.</li> </ul> <p>See H19 - Feeding of sows - Liquid feed.</p>
4.	When there is space by the udder, research has shown milk letdown to last 25% longer per lactation, and the piglets are heavier at weaning. To ensure sufficient space for suckling, the width from the partition-side of the crate to the opposite pen wall must as a minimum measure the depth of the sow's body (approx. 70 cm) and to this must be added the length of the piglets' bodies. <ul style="list-style-type: none"> <li>• Piglet length measures 56 cm (95 % of the piglets) at 4 wks and 58 cm at 5 wks.</li> <li>• Piglet shoulder width measures 13 cm at 4 wks and 15 cm at 5 wks.</li> </ul>
5.	When piglets rest sternally, 15 4-week-old piglets take up approx. 1 m <sup>2</sup> , i.e. approx. 0.07 m <sup>2</sup> per pig.
6.	It should be possible to place the heat lamp in the cover of the creep area and a close-fitting lid must be available as replacement when the heat lamp is no longer being used. Otherwise there will be a draught in the creep area ("chimney effect").
7.	There must be room for the piglets to suckle regardless of which side the sow lies on. A "suckling width" of approx. 125 cm is therefore recommended on the basis of the sow's dimensions and the length of the piglets. A further 20 cm is recommended from the edge of the sow's space to the backwall and a further 30 - 40 cm for the trough. This results in a recommended pen width of 170 - 180 cm based on the most common pen design today with a creep area in the corner (90 cm creep area, 60 cm trough and 30 cm opposite the creep area). However, pen dimensions will depend on crate and pen design and should primarily be based on the factors listed in 1 - 4.