



Vari Plus

Movable farrowing floor

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Introduction to Vari Plus

Movable farrowing floor



One of the greatest challenges in the farrowing pen is the reduction of piglet mortality. Due to the relatively large difference in bodyweight between the sow and its piglets, it is a common risk that the piglets can get caught underneath the sow when it lies down. Crates with anti-crush irons are often used to reduce this, but unfortunately crushing still occurs too frequently.

That is why over the last 13 years, Vereijken has developed and improved the Vari Plus movable farrowing floor. It is a sophisticated,

piglet saving system that ensures that the piglets cannot get underneath the sow when it is sitting down or lying down: the solution to reduce 80% of the crushed piglet mortality in the farrowing pens! The mechanism is as simple as effective. If the system detects that the sow is sitting or standing up, it will lift the cast iron the sow is standing on to 23 cm above floor level. This way, the piglets cannot get underneath the sow, but they can still walk around freely in the rest of the pen. When the sow decides to lay down again, the system will detect that and will slowly decent back to floor level.



The system works with pneumatic cylinders which lift the sow and the crate smoothly in ca. 10 seconds. Because the cylinders are attached to the movable box with axes, the movable floor segment is very stable, even if the weight on it is unevenly distributed. The spring on the crate, which detects the movements of the sow and a central control unit, are connected to the cylinders to automatically or manually manipulate the movements of the sow.



The latter is especially useful when you want to catch piglets, for instance. Simply turn the switch on the central control unit to fix all the floors in the high position, and you can easily herd the piglets between the penning and the elevated floor with a board. So in addition to increasing the survival rates of the piglets, the Vari Plus floor also facilitates labour.



The box and the axes are made out of sturdy galvanised steel, as are the beams upon which the entire floor rests. Of course it is also possible to make the box (or everything under the floor level) to be made out of stainless steel, should you prefer that. Moreover, to **guaranteeing our customers high quality standards**, all of the Vari Plus parts are designed by, and exclusively produced for Vereijken.

Business case

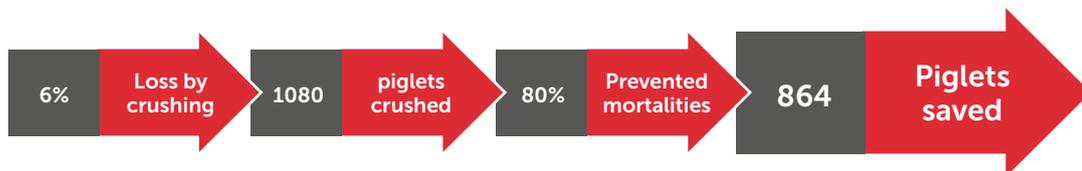
A numeric example

To paint a picture of the economic effects of this Vari Plus movable floor, the following business case was made by Vereijken. Let us assume a fictional farm of 500 sows, which will have an average of 2.4 litters a year. This means circa 1200 litters a year. With an average of 15 live born piglets per litter (this is the Dutch average), you will have 18.000 piglets each year.



If ca. 6% of these piglets will be lost due to crushing, you will lose 1080 piglets each year. However, **80% of these mortalities due to crushing can be prevented with a movable floor.** This means that in this hypothetical

case, as much as 875 piglets can be saved. Multiply that with the price you will get per piglet, and you can easily calculate your increase in turnover and your return on investment.



Of course, you can also insert you own statistics and see what a Vari Plus floor would mean for your own farm.

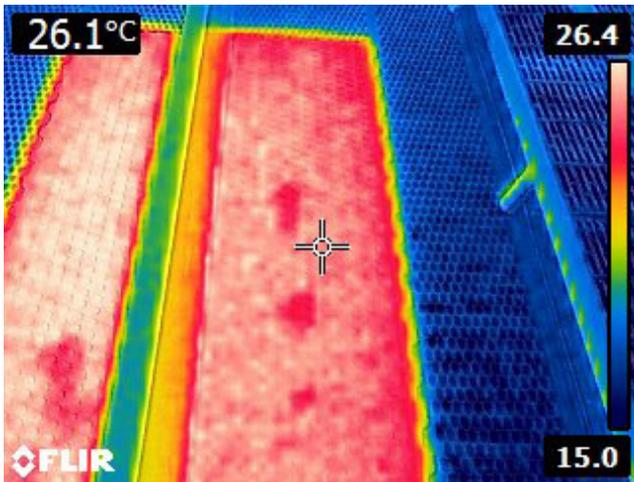
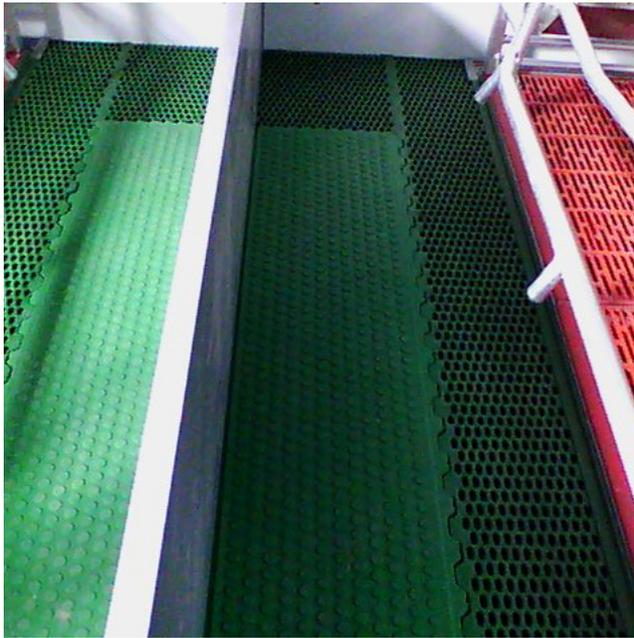
Pro Step flooring slats

Besides the movable box in the floor, the Vari Plus floor is comprised out of the same elements as Vereijken's basic (non-movable) Pro Step floor. The sow stands on cast iron slats, which is nice and cool due to its heat conducting properties, with galvanised tri-bar behind it. The rest of the floor is filled with plastic slats, which do not conduct heat as well, to offer optimal comfort for the piglets.



Plastic slats

The plastic slats offer comfort and warmth to the piglets due to the thermal isolation it offers. The slats are cast out of one piece and made out of **high-quality** polypropylene, causing the slat to not wear and damage as easily as coated slats, and thus have a longer lifespan. Furthermore, the profile ensures a **perfect grip** for the piglets and a good manure permeability (and thus optimal hygiene) because of the V-shaped underside. They are available in many different width measurements, so that farrowing pens of each size are easily formed. In addition to the open slats, all the sizes are also available in a closed alternative. Both types of slats have strong, high ribs on their underside, giving them a high weight bearing capacity. They can even easily bear the weight of the sow when it is going in and out of the pen.



Piglet nest

The piglet nest is also made out of high quality plastic (polypropylene). This can simply be a closed (insulated) slat, but this can also be a heated "waterbed" nest. Both nests have a stud-profile on their surface, to give the piglets a good grip. Thanks to the way the slats are cast, the studs are integrated in the slat, and will not wear easily. The heated piglet nest is filled with water, which provides an equal heat distribution over the surface of the slat. As the picture of the thermal camera shows, the radiating heat is equal over the entire surface. Even in the far corners! In addition, the insulation layer on the bottom of the slat minimizes heat loss into the manure pit.

To maintain the warmth of the waterbed above the nest, the heated nests can be combined with the Easy Climate cover. This is a see-through plastic cover and a galvanised frame holding the 200 mm foil flaps. The cover holds the warmth distributed by the heated piglet nest and creates a perfect microclimate for the piglets. This is beneficial, because for top performances in the farrowing pen, it is important that the sows have a maximum feed intake to ensure a maximum milk yield. However, a high environmental temperature decreases the feed intake, and thus the milk yield. By providing a **warm micro climate for the piglets**, the room temperature can be lowered, creating a **cooler macro environment for the sow**.



Cast iron

The cast iron slats for under the sow (and thus in the movable part of the floor) come in many varieties. There are slats with different lengths and widths (for bigger sows) and open or (semi-) closed slats, as the requirements of the cast iron often depend on the country. They offer a comfortable and stable grip for both sow and piglets by combining the permeable profile with a more coarse high/low profile.

In addition, to further facilitate the macro climate for the sow, the cast iron can be equipped with a cooling element.



This provides the sow with a constant comfortable floor temperature, which will also further prevent the piglets from walking underneath the sow, because it is a uncomfortable temperature for them.

Tribar

Both in front of the movable part, in the movable part and behind the movable part will galvanised tri-bar slats be installed, for better manure passage and thus good hygiene. The slat on the backside of the floor can be made in a standard edition, but also with a manure opening or a manure valve for optimal manure passage.

Protection

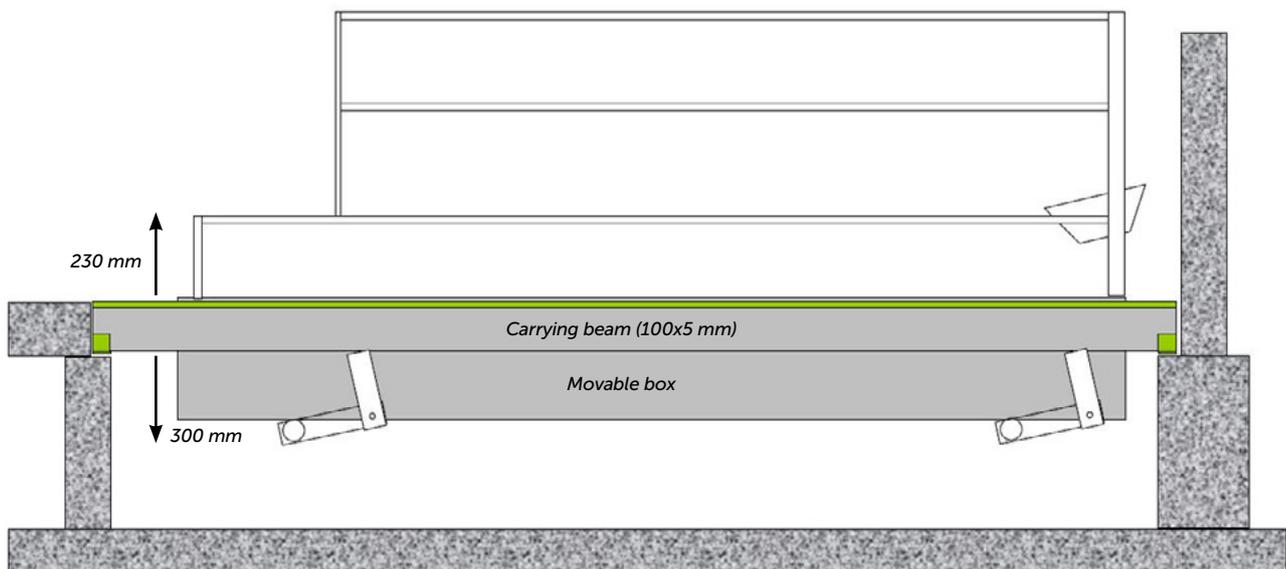
As the piglets will be walking closely past the moving floor segment, a plastic protection strip is placed between the moving box and the plastic Pro Step slats. This way, the piglets cannot get caught between the box and the slats, preventing injuries.

Technical details

Sizes

In addition to being flexible in forming the size of each pen with the Pro Step slats, a Vari Plus floor can also vary in the width of the movable box. The cast iron and crate under the sow can be 600 mm wide, or 650 mm wide. The latter was added to Vereijken's catalogue in a later stage of the development of the Vari Plus floor. This was done, because sows are increasingly bred to be larger, and the wider slat provides **more space** for these bigger sows.

The floor rests on galvanised (or stainless) steel beams of 100 mm high and 5 mm thick. Counting for the height of the plastic beam guides and the slats, the concrete lay-on needs to be 120 mm below floor level. As the movable part of the floor will protrude ca. 30 cm from the beams in the lowered setting, the manure pit must be deep enough to keep the manure from reaching the cylinders and the axes. This is at least 65 cm beneath the floor level.



Pneumatics

The Vari Plus floor works with four pneumatic cylinders of plastic and stainless steel, which lift the sow and the crate very smoothly.

Because the cylinders are attached to the movable box with axes, the movable floor segment is **very stable**, even if the weight on it is unevenly distributed. The cylinders are connected to the spring on the crate, and a central control unit, which supply an air pressure of 5 bar. The floors are connected to the control unit per row or per room, depending on the amount. We advise a maximum of 12 floors per control unit. In turn, these control units are connected to a compressor, a storage tank and an air dryer. The size, type and power of which are dependent on the amount of floors they provide for. We will gladly help you with the specifics, and provide the all the elements. We can also advise you on how to re-use the air to save energy and retain the clean, filtered air.

Contact

At Vereijken Hooijer BV we believe that pig farming success starts in the farrowing pen. Happy, healthy piglets are the best indicators of a successful, healthy pig farm that focuses on the wellbeing of sow, piglets and pig farmer alike. That is why we challenge ourselves to excel in developing farrowing systems and delivering them worldwide.

For more information on Vereijken's Vari Plus movable farrowing floors, please visit our websites. We also have our own YouTube channel, with videos of our products (YouTube channel: Vereijken Hooijer BV Stalinrichting). You can also contact us via the address at the right side of this page. We are happy to answer any questions, discuss possibilities, or help you designing your own Vari Plus farrowing rooms.

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