Healthy Calf Barn

Systems for Light and Air
Only a healthy calf can grow into a prize cow

Working in conjunction with experienced vets and farmers, HUESKER has developed a concept for an optimized climate in calf barns. A healthy combination of natural and active ventilation, continuous air extraction and ample daylight characterise the barn. The micro-climate is defined by an optimised calf cubicle. A simplified building structure lowers the construction expenses.

- Vets throughout Germany provide customer counselling and contribute to the development of purpose-designed solutions.
- In collaboration with the technicians of our partner VETSMARTTUBES, HUESKER analyses the air flows throughout the building and in the individual calf cubicles.
- Practitioners from livestock building specialist Schrijver have also assisted in the development of calf cubicles that combine supreme hygiene with intelligent, labour-saving design and absolute animal comfort.

The calves directly benefit from the high-comfort micro-climate created by the ventilation tubes and specially designed cubicles. The housing quality is further enhanced by the side ventilation system and light ridge.

**Basic concept:**

**Vetsmarttubes®:**
Fundamental to the concept is the ventilation tube. By this tube, each calf always gets optimal fresh air which is germ-free, oxygen-rich and free from harmful gases. Drawing on its own in-depth experience and the expert support of veterinarians, the HUESKER team uses the results of the physical calculations to guarantee the perfect ventilation solution for each calf cubicle.

**Climate-optimized calf cubicle:**
The second core element in the basic concept is the new climate-optimized calf cubicle. It provides calves with a hygienic, animal-friendly environment, simplifies the job of farm workers and raises the quality of livestock keeping.

**Optional extras:**

**Lubratec® Calf:**
The roll-up ventilation system for calves offers an additional means exploiting natural air circulation and promotes the robustness of calves at an early stage in their lives. Fresh wind blowing through the calf barn creates a climate similar to that on the meadow.

**Skytex®:**
The light ridge increases the amount of daylight reaching the young animals and working areas without creating any greenhouse effect and while ensuring continuous air extraction.
Solution: We collect all relevant data of your building and design the perfect tube for every space. The required tube positioning, hole sizes, layouts and the ventilation rate are precisely determined on the basis of air flow simulations. Separate calculations are performed for each tube based on the high-accuracy data gathered by our experts. The barn layout as well as the number and age of the animals are also factored into the calculations. The resulting design guarantees a clearly defined air flow to each calf cubicle. A maximum air speed of 0.3 m/s ensures a draught- and germ-free ventilation for each calf with draught and germ-free ventilation. The tube provides for the uniform entry of air over the full length of the building. At the same time, the ridge and side ventilation system ensure that the used air can exhaust over the entire length of the building.

Climate-optimized Cubicle – the perfect home for a calf


Solution: The climate-optimized twin calf cubicle units incorporate an easily removable partition with communicating window. The small grille allows the new-born calves to make first contacts with their neighbour. After two weeks, the lightweight partition can be pulled out at the front. The contact between the two calves in the twin cubicle then increases their activity and feed consumption.

The castored twin cubicle units are still light enough to be moved by hand. They can be individually rolled out of the calf barn and, after high-pressure cleaning, left to dry in the fresh air. The smooth wall and floor grid surfaces prevent moisture absorption and dry quickly, thereby promoting cleanliness and hygiene. The PVC twinwall sheets are manufactured as jointless single units.

Each half of the two-part front grille can be opened separately in order to wean new-born calves onto the teated bucket. Fitted to each front section are the teated bucket, with lockable mount, and two bowls for water and feed held by a double ring.

Both the rear wall and front are specially designed with a blank and a grille section at exactly predetermined heights. This offers the new-born calf adequate protection while at the same time – in conjunction with the Vetsmarttubes – creating a fresh, hygienic micro-climate.

With a length of 1.62 m and a width of 1 m, the climate-optimized calf cubicle is designed for occupation for a period of over two weeks, thereby meeting the current minimum requirements of the German animal protection ordinance.
Requirement: In summer, fresh wind must be allowed to blow freely across the calf barn. In winter, cold air may only enter the barn carefully and must not fall in an uncontrolled manner down onto the young animal. Continuous air extraction must be ensured by a minimum opening over the full length of the building.

Solution: Lubratec Calf – special side ventilation

The Building

Requirement: The livestock building must accommodate the local conditions while meeting the client’s demands. It should be inexpensive and of a standard that allows a wide choice of suppliers. The floor plan must be flexible enough to cater for a variety of uses, simplify work procedures and allow free access, including vehicles.

Solution: We recommend different barn layouts containing the following areas: continuous feed table, space for rows of single cubicles, deep-litter area with group cubicles plus separate room for drink and feed supplies. The intelligent layout allows easy extension. A standard gable-roof shed suffices as the building envelope. Some special requirements are already met by the system components, e.g. no wall plinth is needed due to the continuous fabric strip at the base of the mesh eliminates the need for a wall plinth, thereby cutting construction costs.

Compact configuration that simplifies extension

Supply and extract air flows are functioning efficiently along full length of calf barn

Skytex – the light ridge

Requirement: Calves need an ample supply of daylight that is uniformly distributed throughout the housing, though without any greenhouse effect and resulting build-up of heat. Provision must also be made for stale air extraction at ridge level over the full length of the building.

Solution: The Skytex light ridge features a structurally efficient round-arch construction over which a membrane is tensioned. The diffused daylight prevents both a greenhouse effect and heat stress for the animals from direct sunlight. The aerodynamic wind defectors are designed to ensure stale air extraction, even in cases of very little air movement, and to prevent the entry of cold air from the top – thereby eliminating the need for shutters or dampers. The wide-spanning construction is important for effective light diffusion and also reduces the roof area.