



Light and Air

Light ridge, roll-up ventilation and Stabidoor

Lubratec® side ventilation systems and Skytex® light ridge for ideal conditions in livestock houses



External view of cubicle cattle house with all three products installed



Wide daylight diffusion in housing, without greenhouse effect

Background

To secure their livelihood in the decades ahead and build a future in agriculture for the following generations, the Hueske family in 2015 decided, among other things, to add a new cubicle cattle house to its farm. The family needed a facility which, throughout this period, would efficiently supply its animals with fresh air and light. The freestanding disposition of the livestock building is not the only feature conducive to a high air change rate: both eaves fronts are fully open, from top to bottom, with ventilation regulated by a curtain on one side to ensure an adequate supply of air. The closed gable fronts are fitted with easily operated doors for fast vehicle access. An economical solution with corrugated fibre-cement sheeting was adopted for the roof covering. This incorporates a generously sized light and ventilation ridge to extract stale air. The real challenge, however, was to admit as much daylight as possible through the ridge while minimizing solar heat gains.

Solution

To optimize environmental conditions in the livestock house, the father and daughter opted not for one, but

for several HUESKER products. The textile Lubratec Stabidoor system allows the rapid opening and closing of large vehicle entrances as well as easy access to the feed table. The Lubratec roll-up ventilation provides livestock houses with controlled, draught-free ventilation – as does the Skytex light ridge, which additionally serves to diffuse daylight widely across the shed. Specially designed membranes rule out any risk of a greenhouse effect. The shed contractor used steel columns and glulam beams to fabricate the cattle house in line with the structural design requirements – which were geared to the load situation resulting from the 7 x 47 m ridge opening. The ridge was installed by four operatives in less than four days in autumn 2015.

The support ribs were preassembled complete with brackets at ground level and the wind deflectors fitted with brush seals. The ribs were subsequently raised onto the





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Exterior close-up of Skytex light ridge



Shed interior with closed Lubratec Stabidoor



Interior view of Lubratec WLU-XL „bottom opening – central roller“ roll-up ventilation

roof by lifting platform and fixed to the steel purlins. The sheet was then prepared on the ground before being placed with a cross-piece onto the arched ribs. (This operation should normally be performed on windless days.) After the membrane had been tensioned, the wind deflectors and gable-end cladding were installed. The new shed is now home to the farmer's cows. Even on cloudy winter days, the light ridge ensures the adequate provision of daylight and fresh air. This not only promotes the health of the animals, but also increases the milk yield.

Benefits of HUESKER products

The SKYTEX light ridge uses a round-arch frame and a dim translucent membrane to diffuse daylight widely across the shed. Given that at least half of the intense solar radiation is blocked out, the risk of a greenhouse effect is completely banished. This allows the specification of substantial opening widths between 4 and 7 m to optimize daylighting performance. The result is a cattle house with uniform illumination instead of a brightly lit strip down the middle of the shed. The air flows induced by the slanting wind deflectors guarantee constant turbulence-free extract ventilation. The Lubratec roll-up ventilation on one of the eaves fronts serves to regulate the air supply while providing excellent wind and weather protection. The selected model opens from the bottom upwards while simultaneously winding two tarpaulins onto a central roller. The Lubratec Stabidoor can accommodate high wind loads and offers rapid access to the feed table. All three installed products thus perfectly embody HUESKER's new light and air concept for cubicle cattle houses.

Location: Hueske farm, Südlohn, Germany

Client: Schmeing Stahlbau GmbH,
for end customer Hueske

Designer: Schmeing Stahlbau GmbH

Contractor: Schmeing Stahlbau GmbH

Built: April 2015 – January 2016

Products: **Skytex light ridge, Lubratec Stabidoor, Lubratec WLU-XL „bottom opening – central roller“ roll-up ventilation**

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