



Light and Air

Light Ridge

Light and air in livestock houses with SKYTEX® light ridge



Modern cubicle cattle house in Upper Bavaria with side ventilation and light ridge

Background

In 2013, the farmer Armin Högenauer – a young husband and father – decided to invest in a new cubicle cattle house that would be his place of work for the next 30 years. He needed a facility which, throughout this period, would efficiently supply his animals with fresh air and light. The site of the new shed, on top of a small rise, is ideal for achieving a high air change rate. Both eaves fronts are fully open, from top to bottom, with a side curtain installed to regulate supply ventilation. The sandwich-panel roof covering has the primary function of preventing heat stress in summer. Stale air is extracted via an extra-wide light ridge. The challenge was to admit as much daylight as possible through the ridge while minimizing solar heat gains.

Solution

Mr Högenauer singled out HUESKER's new SKYTEX® light ridge concept as the best solution. The shed contractor fabricated the steel-frame cattle



Light-flooded shed, newly occupied

house to meet the structural design requirements – which were geared to the load situation resulting from the 7 x 61 m ridge opening.

The 61 m long ridge was installed by four operatives in less than four days at the end of October 2013. 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 roof by lifting platform and fixed to the steel purlins. The sheet was then unrolled and the grooved tubes slotted into place. The sheet was pulled over the arched ribs by means of straps attached along one edge. (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.



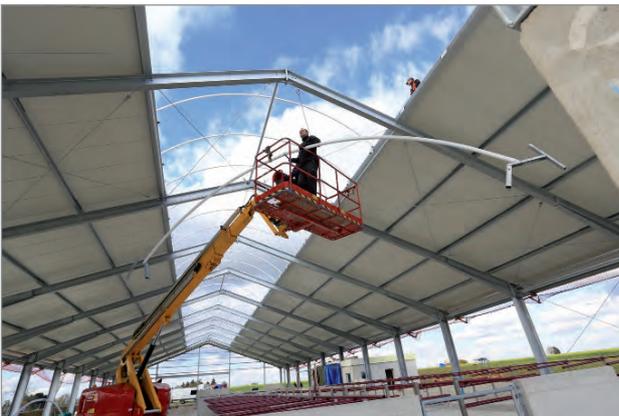


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Support ribs preassembled at ground level



Ribs mounted on roof structure



Sheet membranes pulled over frame

Benefits of light ridge system

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 opening size, wind deflector height and positioning are co-ordinated so as to prevent wind from blowing into the opening, thus obviating the need for shutters and dampers. Thanks to its innovative features, the **SKYTEX**® light ridge is the perfect embodiment of the new light and air concept for cubicle cattle houses.

Project: Cubicle cattle house with **SKYTEX**® light ridge at Högenauer farm

Location: Högenauer farm at Winkl near Augsburg, Germany

Client: STALLTEC, for end customer Armin Högenauer

Designer: Architectural practice Junker & Partner, Amtzell, Germany

Contractor: STALLTEC DIETRICH GmbH and Wolf System GmbH

Built: July 2013 – February 2014

Product: **SKYTEX**® light ridge

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