



TECHNOLOGICAL
ELEMENTS IN AGRICULTURE
2023

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About the Company



Dear customers,

I founded Haze in 2007 and since then, we have supplied our systems to several hundred stables, riding halls and other agricultural structures. We specialise in producing and installing stables equipment, such as side and roof ventilation systems, roller gates, entrance systems or slurry tank roofing. Thanks to our in-house development and production, we are able to create tailor-made solutions for our customers in top quality and on time. And in this direction, we have decided to take it a step further.

Let me review last few years. In 2021. We have moved production of Haze company, including office space and all logistics to new production area at Kříčceň 108. Project was co-financed from operational programme MPO Entrepreneurship and innovation for competitiveness, i. e. from European Union resources and the state budget of the Czech Republic. New production area will provide us improvement in developing new procedures and materials, thanks to which our products will keep up with technological development in the field. It is 2500 m² hall, which we approved in 2021.

In 2022 we implemented a project called „Digitalisation and automation of production“, in which the main focus was extension of existing technology interconnection with additional machines, areas and uses which have not yet been fully digitized and involved in data collection. Project output is deepening two-way communication between the elements.

In 2023 we are preparing project called „Country for the Future“, thanks to which Haze company will gain a lead in areas of logistics and simplifying the ordering and production of products.

I believe that thanks to the changes we've made in the past 3 years we can further improve our products and service provided to our customers. I hope you will also appreciate these changes as a result. Thank you for your patronage and I look forward to working with you again.

Petr Hanousek

Owner and managing director
of Haze company

Animal Welfare



When renovating or designing a new stable for cattle of all ages it is important to remember one essential criterion, namely the question of wellbeing of animals a.k.a welfare. In 1993, the British Council of Animal Welfare (FAWC) adopted a code of five basic freedoms, which have been adopted globally, including the Czech Republic. One of these freedoms is the provision of adequate breeding environment and ensuring the protection of animals from the adversities of the macroclimate - removal of physical and thermal factors of discomfort (Manteca et al., 2012). Quality ventilation systems for stable buildings play a crucial role in this issue. In the case of breeding cattle, the greatest danger to the well-being for the welfare of the animals is their breeding in a barn with inadequate air circulation - ventilation (↑ air humidity, ↑ concentration of stable gases, ↑ but also ↓ temperature = cold and heat stress, etc.). Any deficiencies in quality of the stable or breeding environment significantly increase the risk of animal diseases (e.g. respiratory diseases) and have a negative effect on a number of physiological processes of the organism that are closely related to utility and reproduction of bred animals. We speak of thermal comfort when over a certain temperature range and at constant values of other physical elements, the thermal state of the organism is optimal and the animal has little energy expenditure to

maintain physiological functions. This range of external temperatures is the so-called „thermoneutral zone“ (Doležal et al., 2004). The thermoneutral zone in cows varies ranges from -6 °C to +19 °C for cows and between +10 and +10 °C for calves. +25 °C (Staněk, 2016). With regard to the course of temperatures over the last few years, during the summer months, we have been experiencing the phenomenon of heat stress in cattle, especially in high producing cows. Cows enter heat stress when the ambient temperature rises above the threshold where cows can no longer efficiently dissipate metabolic heat out of the body. Heat stress in cows activates many thermoregulatory mechanisms that help them to dissipate excess heat from the body. Externally, heat stress is most often manifested by increased breathing rate, increased salivation - salivation, cows reduce feed intake, drink more, seek shaded areas, reduce the length of the rest period while increasing standing time (limb loading), and in some cases try to cool down by lying down in wet/cool movement corridors. The heat stress threshold in cows generally occurs roughly at the moment when the air temperature has already exceeded 21 °C. However, it is worth mentioning in this regard, that heat stress is usually a combination of not only temperature of the environment but also of the relative humidity. With increasing temperature and relative humidity of the environment, the risk of thermal stress significantly increases. An immediate consequence of heat stress is usually not only a reduction in milk production, but a noticeable changes in milk composition are also evident and farmers often also face problems in cow reproduction (aggravated cow teething, worse estrus symptoms, early embryonic mortality, etc.). Consequences of high environmental temperatures – thermal stress – are long-term, up to several weeks. In the case of cold stress, the situation is much easier, precisely because for cows it is easier to „produce“ metabolic heat in the rumen (cows ↑ food intake) rather than „getting rid of it“. On the other hand, in the stable buildings at the time of ice and arctic days, we

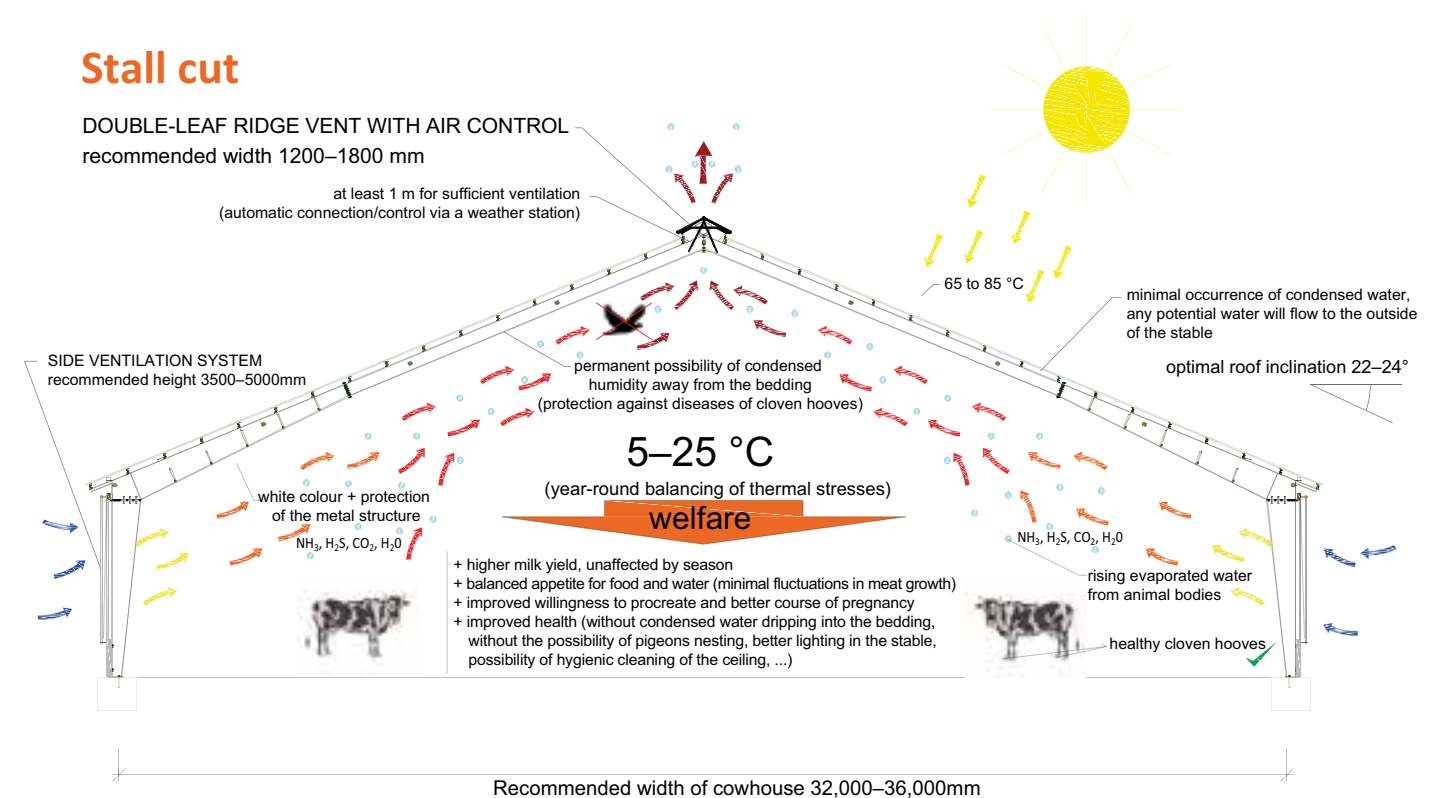
are faced with problems with water freezing or slurry removal technology, in the case of stables with minimal air exchange, high relative air humidity can be encountered, less often water condensation, etc. Ensuring an adequate breeding environment is paramount task of every breeder and it needs to be thought about during the construction itself, possibly during reconstruction of the stables. In the last few years, the trend became building structurally simple stable buildings that ensure an adequate breeding environment by their design. Efficient natural air exchange in the stable building is nowadays most often

solved by means of open side systems with retractable tarpaulins in combination with high quality ridge vents. For breeders, It is also worth installing a weather station that automatically regulates the microclimate in the stable, and which can be used not only for the side ventilation systems and ridge vents, but also for forced ventilation technology, evaporative cooling, controlled lighting system or a slurry collecting system using wipers or shovels. Fully digitally controlled stable microclimate is the current innovative trend that not only contributes to a better animal comfort, but also contributes to a cost-effective animal production.

Literature:

- Manteca, X., Mainau, E., Temple, D. 2012. *What is Animal Welfare*. FAWEC (Farm Animal Welfare Education Centre). No. 1.
- Staněk, S. 2016. *Zootechnický pohled na tepelný stres* (prezentace ze semináře). VÚŽV, v.v.i., Praha Uhřetěves. 35 str.
- Doležal, O., Dílek, M., Dolejš, J. 2004. *Zásady welfare a nové standardy EU*. VÚŽV, Praha. 70 str. ISBN 80-86454-51-7.

Stall cut

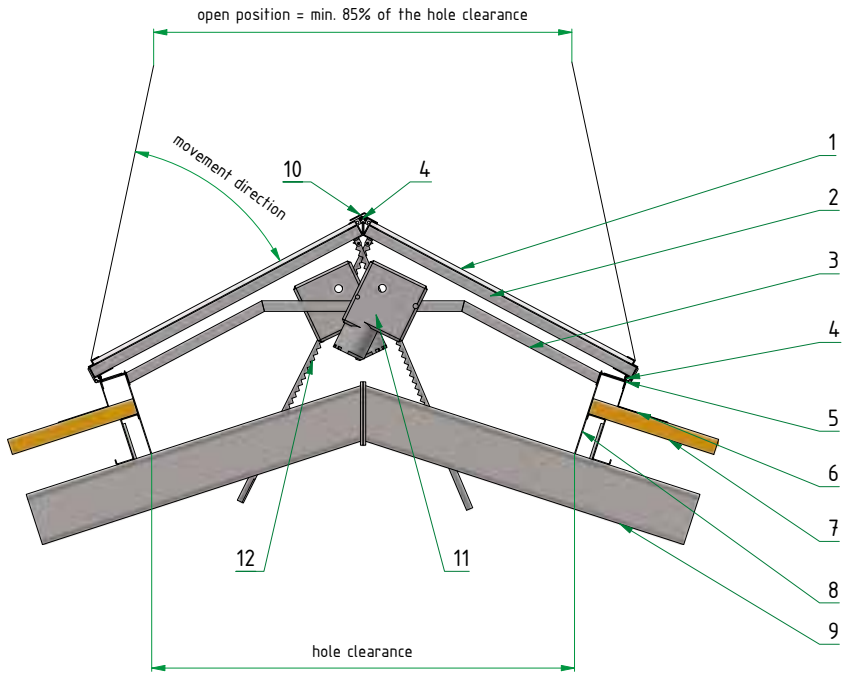


01 Double-Leaf Ridge Vent with Air Flow Control



Double-Leaf Ridge Vent with Air Flow Control is powered by electric drive, which can be operated either manually by a button or by our Haze weather station (including a backup power supply). Double-Leaf Ridge Vent consists of part of the actual segment, the Ridge Vent wings, a ridge lifting mechanism and an electric

engine. For the filling of the wings of the ridge vent, the stables use tarpaulin, while polycarbonate is more suitable for milking parlours and waiting rooms. For the metal sheeting of Ridge Vents and underfloors it is possible to choose with or without a sealing profile, the colour can be selected from the RAL sampler.



Scheme of Double-Leaf Ridge Vent controlled by an electric drive

- | | |
|---|-----------------------------------|
| 1. Wing filling (polycarbonate 16mm, pvc sheet) | 7. Roof cladding |
| 2. Wing frame (AL. profile) | 8. Steel chassis |
| 3. Steel segment for fitting shaft (hot-dip galvanized) | 9. Roof bearing structure |
| 4. Brush seal | 10. Overlay sheet with brush seal |
| 5. Fit of wings (stainless steel hinge) | 11. Motor |
| 6. Metal sheeting | 12. Ridge mechanism |

Product details



Closed Ridge Vent



Opened Ridge Vent



View from the bottom



Location of the drive

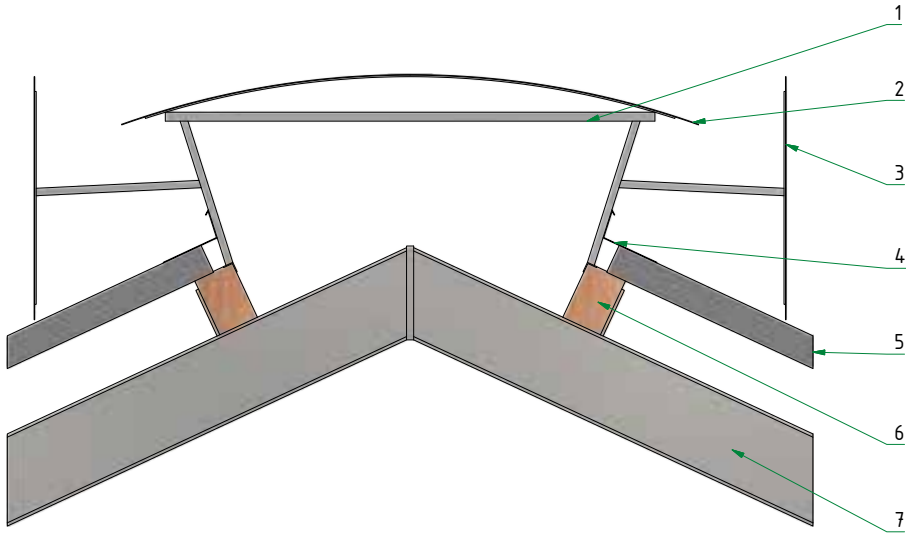
02 Ridge Vent with Air Flow Control without Damper



Realization: Okrouhlá Radouň
Maximum width of the construction hole: 4,5 m
Minimum width of the construction hole: 0,5 m
Length of the ridge vent: copies length of the stable
Optimal roof inclination: approx. 24°

Ridge vent which is located in the roof ridge enlightens the area and ensures air exchange in the stable. Thanks to its design allows a chimney effect and very efficiently dissipates heat, water vapour and stable gases away from the the building. Ventilation efficiency depends on the sizes of the Ridge Vent, which is based on the width of the stall, and the inclination of the roof. The most popular version of the Ridge Vent with Air Flow Control is the laminate Ridge Vent without Damper. Its design is steel, hot-dip galvanized

and fixed on a wooden or steel elements. The upper arch is most often made of laminate or polycarbonate and the vent is not closed by damper. This Ridge Vent is suitable for stables for cattle, horses, sheep or goats, but also for waiting rooms in milking parlours, sewage treatment plants or warehouses. If the roof has an inclination less than 16°, the Ridge Vent must be metal sheeted, so that even in extreme weather water does not enter the stable. This variant of the Ridge Vent is virtually maintenance-free.



Scheme of a Ridge Vent without Damper

- | | |
|---------------------------------------|---------------------------|
| 1. Steel segment (hot-dip galvanized) | 5. Roof cladding |
| 2. Top cover laminate board | 6. Subaddress |
| 3. Deflector - side laminate board | 7. Roof bearing structure |
| 4. Metal sheeting | |

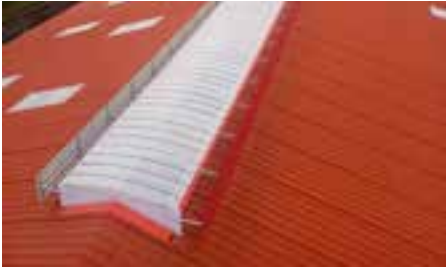
Product details



Ridge Vent with Air Flow Control with smooth plate laminate (for sizes 400–1500 mm)



Ridge Vent with Air Flow Control made of polycarbonate sheet (for sizes 500–3500 mm)



Ridge Vent with Air Flow Control with laminate arch (for sizes 1500–4500 mm)



Ridge Vent with Air Flow Control without top arc (for sizes 400–1000 mm)



Ridge Vent with Air Flow Control countertop roofs (covering is possible with a roll-up tarpaulin or draught-proof net)

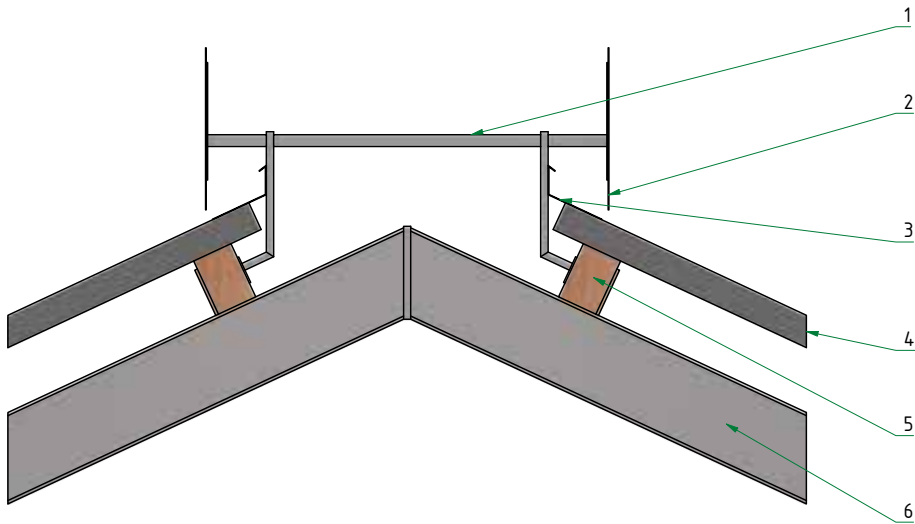
03 Open Ridge Vent H without Air Flow Control



Realization: Osičky
Width of the construction hole: 0,8 m
Optimal width of the construction hole: 1 m
Length of the ridge vent: copies length of the stable
Optimal roof inclination: 24°

Open Ridge Vent with Air Flow Control located in the ridge of the roof enlightens the area and provides air circulation in the stable. Thanks to it's construction it provides chimney effect and very effectively dissipates heat, water vapours and stable gases out of the building. Effectivity of the air circulation depends on dimensions of the Ridge Vent which result from the width of the stable and roof inclination. Construction of the Ridge Vent is made out of steel, hot-dip galvanized and mounted to steel elements. It is convenient to use

Open Ridge Vent H with Air Flow Control only for steel constructions. It is not convenient to use these Ridge Vents for wooden constructions, mainly because of water leakage in extreme weather conditions. It is a good idea to take this ridge vent into account during the project and divert water from the feeding table by structural modifications. Convenience of this ridge vent is that even in tropical temperatures the stable is still ventilated. This option of the Ridge Vent with Air Circulation is maintenance-free.



Scheme of a Open Ridge Vent H without Air Flow Control

- | | |
|---------------------------------------|---------------------------|
| 1. Steel segment (hot-dip galvanized) | 4. Roof cladding |
| 2. Deflector - side laminate board | 5. Subaddress |
| 3. Metal sheeting | 6. Roof bearing structure |

Product details



Open Ridge Vent H without Air Flow Control, side view



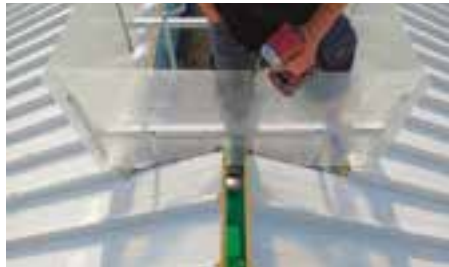
Lightning rod mounting to the Open Ridge Vent H



Construction of Open Ridge Vent H

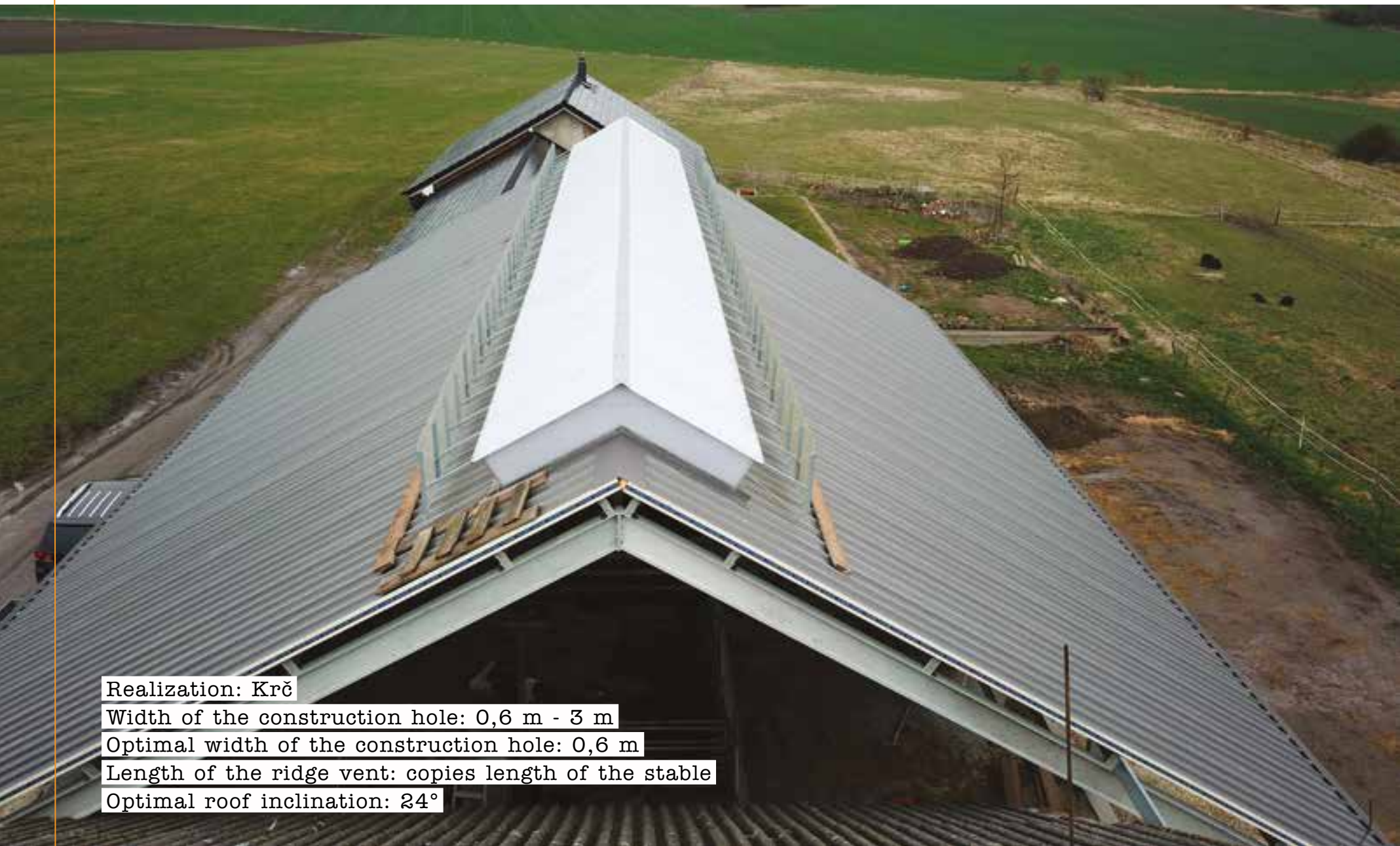


Open Ridge Vents H without Air Flow Control in length of 80 meters



Detail of the shield before metal sheeting

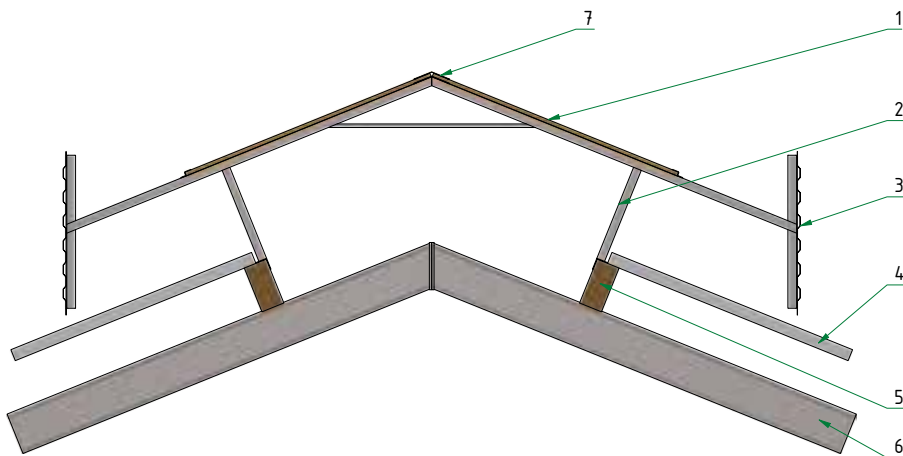
04 Ridge Vent without Air Flow Control – saddle cover



Realization: Krč
Width of the construction hole: 0,6 m - 3 m
Optimal width of the construction hole: 0,6 m
Length of the ridge vent: copies length of the stable
Optimal roof inclination: 24°

Ridge Vent without Air Flow Control with saddle cover is intended primarily for natural ventilation and lighting of stables and waiting rooms. Top covering is at the same slope as the roof (18-30°). Thanks to this solution, customers often choose it for places where there is a requirement to preserve the original character of the construction object. The entire system is maintenance-free. The ridge vent is always available with a polycarbonate top and a side sheet

metal deflector with a large range of colours. It can be mounted to a squared timber, metsec profile or other supporting element. As a supplement to the ridge vent, a cladding can be added, which in poor weather conditions prevents water from flowing into the stable. This supplement should be included whenever the the roof pitch is less than 16°. Metal sheeting is done using galvanised sheet metal or sheet metal Lindab (with the option of adding a seal).



Scheme of Ridge Vent without Air Flow Control – saddle cover

- | | |
|---------------------------------------|--------------------------------|
| 1. Polycarbonate cover plate 16 mm | 5. Undercoat |
| 2. Steel segment (hot-dip galvanized) | 6. Roof load-bearing structure |
| 3. Deflector - trapezoidal plate | 7. Ridge Tile |
| 4. Roof cladding | |

- Technical information:**
- all elements of the ridge ventilation slit are hot-dip galvanized
 - the top cover plate is made of 16 mm thick polycarbonate in opal finish
 - side deflectors are made of trapezoidal sheet metal, choice of shades (RAL 3000, 3005, 3009, 3011, 6005, 6020, 6029, 7016, 7024, 7035, 8004, 8017, 8019, 9002, 9005, 9006, 9010, golden oak light, golden oak dark)

Product details



Installation of the steel structure



Installation of polycarbonate filling



Installation of the side deflector

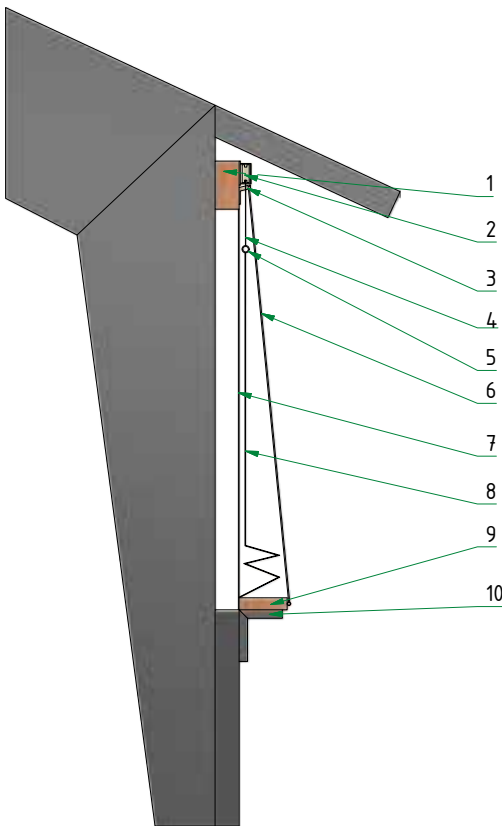


Completed work

10 Side Ventilation System type A



Realization: Vysoké Studnice
Maximal width: 60 m
Maximal height of the construction hole: 2,9 m



Description of Side Ventilation System type A

- 1. Upper squared timber
- 2. Silon pulley
- 3. Nylon rope holder
- 4. Steel rope
- 5. Pipe
- 6. Nylon rope
- 7. Support net
- 8. PVC tarpaulin
- 9. Bottom plank
- 10. Bracket for the bottom plank

Until recently, side ventilation system type A was the most popular system for ventilating stables. Its functionality has been proven by more than 20 years of experience. Tarpaulin is suspended at the top by steel cables, and these are connected to the main rope, which is coiled via guide pulleys to the drum of the engine or mechanical winch. In this way the vertical

movement is ensured. At the bottom, the tarpaulin is fixed to the sill plank. When moving the tarpaulin, the tarpaulin is folded into a sill at the bottom. An integral part of the system is the support net, which serves as a support for the tarpaulin in adverse weather conditions. The type A side ventilation system can be operated manually or electrically.

Product details



Tarpaulin pulled down on the lower sill



Tarpaulin retracted



Detail of folded tarpaulin

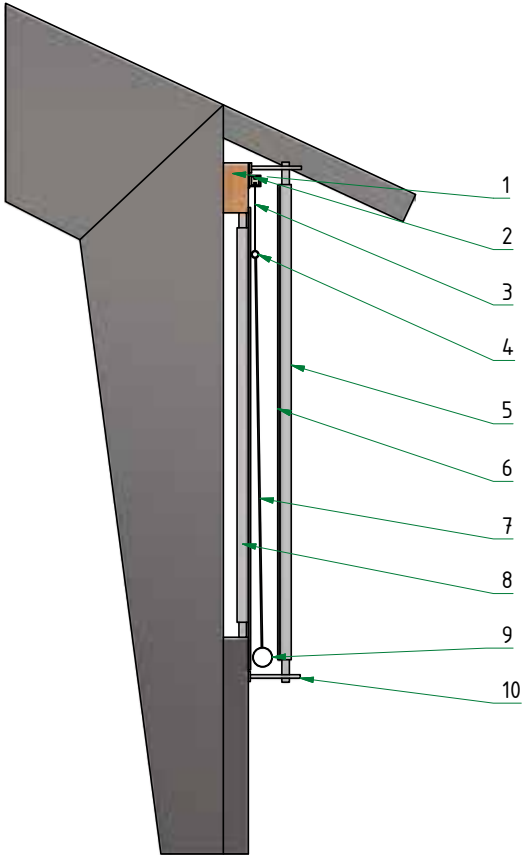
06 Side Ventilation System type B



Realization: Okrouhlá Radouň
Maximal width of construction hole: 60 m
Maximal height of construction hole: 3 m

Side ventilation system type B is one of the most popular side ventilation solutions. The tarpaulin is hung on steel cables at the top part and these are connected to the main rope, which is wound over guide pulleys on the engine drum. In this way, a vertical movement is ensured. At the bottom of the tarpaulin is strung shaft connected to the engine. The moment the tarpaulin is

is in motion, the tarpaulin is being reeled in simultaneously at the bottom part of the hole. This way, the tarpaulin does not get dirty and is not soiled when fully or partially closed and it is always inflated. System drive is provided by either a mechanical winch or an electric drive, which can be connected to a Haze weather station.



Description of Side Ventilation System type B

- 1. Wooden squared timber
- 2. Silon pulley
- 3. Steel rope
- 4. Static shaft
- 5. Outer support profile
- 6. PVC support net anti-penetration
- 7. PVC tarpaulin
- 8. Inner support profile
- 9. Shaft-motor driven
- 10. Support profile holder

Product details



Fixed motor mounting with gimbal for coupling with the sail



Guide pulley that guides the auxiliary rope

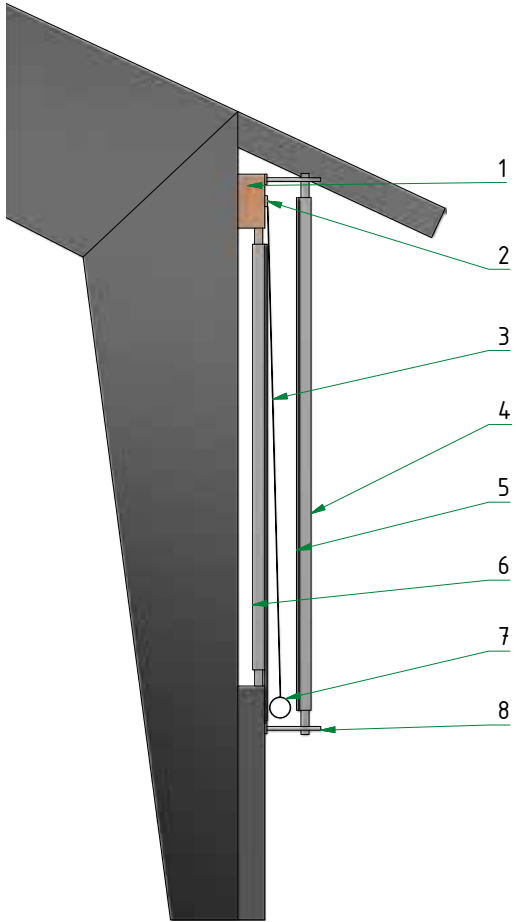


Wind sensor that is connected to the weather station HAZE, which regulates the openness of the tarpaulin

07 Side Ventilation System type C/C+



Realization: Sejřek
Maximal width of construction hole: 100 m
Maximal height of construction hole: 5,5 m



Description of Side Ventilation System type C

- 1. Wooden squared timber
- 2. Fixing AL rail
- 3. PVC tarpaulin
- 4. Outer support profile
- 5. PVC support net anti-penetration
- 6. Inner support profile
- 7. Shaft-motor driven
- 8. Support profile holder

Side Ventilation system type C has the tarpaulin firmly attached at the top and works on the principle of opening from the bottom. At the top, the tarpaulin filling is fixed in an aluminium and a shaft is fitted at the bottom of the tarp. This shaft is driven by an electric drive. As the shaft rotates, the height of the hole cover changes. Against wind, the tarpaulin is secured with guides. This solution allows a greater volume of air to pass through. System drive is provided by either a mechanical winch or an electric drive, which can be

connected to a Haze weather station. Side Ventilation system type C is used in cattle stalls or waiting rooms, but also in riding stables, where in a good weather conditions, just roll the tarpaulins upwards, and the air flows pleasantly through the stable. But as soon as the wind blows, it rains or snows, the walls retract and customers can ride inside however they want. For this side wall, we also produce + variant that can be up to 5,5 metres high thanks to the two shafts! For openings higher than 4 metres we always install the C+ version.

Product details



SVS C in retracted state



Corner cover that extends lifetime of



SVS C Wall – SCRIM filling

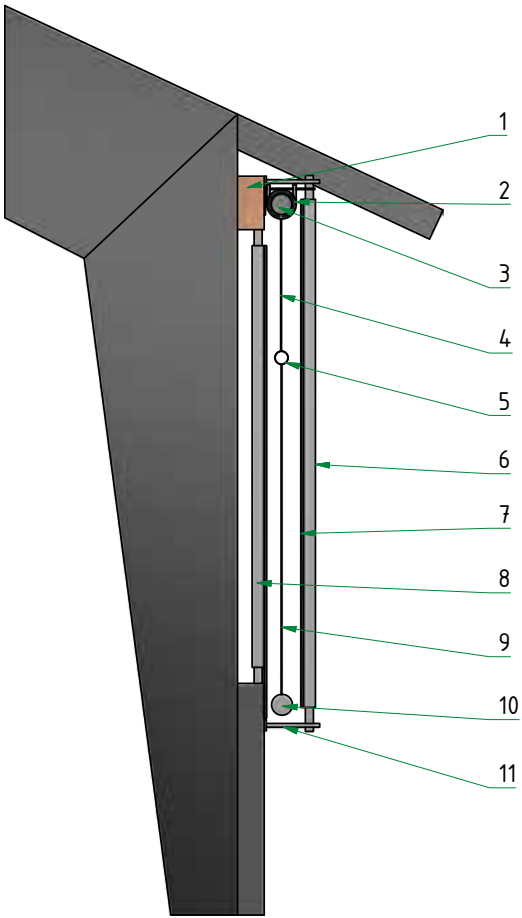
05 Side Ventilation System type D/D+



Realization: Sloupnice
Maximal width of construction hole: 100 m
Maximal height of construction hole: 5,5 m

In the case of a type D side ventilation system, the tarpaulin is rolled onto a lower shaft operated by an electric drive. The upper sail attachment is also movable and is controlled by another drive thanks to which moves the system also moves vertically. Side Ventilation System type D thus serves not only for ventilation but also for shading. Another indisputable advantage is the absence of support nets that are replaced by solid profiles covered with rubber, which act

as a guide and support for the entire system. The so-called central flooding can be mounted between the walls, thanks to which it doesn't blow into the stable. Edges of the tarpaulins are protected against tearing by wind by outer and inner sailings which extend the life of the ventilation system. For this side wall we also produce variant +, which can be high as up to 5,5 metres thanks to two shafts! For openings higher than 4 metres we always install the D+ version.



Description of Side Ventilation System type D

- 1. Wooden squared timber
- 2. Upper shaft storage
- 3. Shaft-motor driven
- 4. Nylon rope
- 5. Static shaft
- 6. Outer support profile
- 7. PVC support net anti-penetration
- 8. Inner support profile
- 9. PVC tarpaulin
- 10. Shaft-motor driven
- 11. Support profile holder

Product details



BVS D+



BVS D+

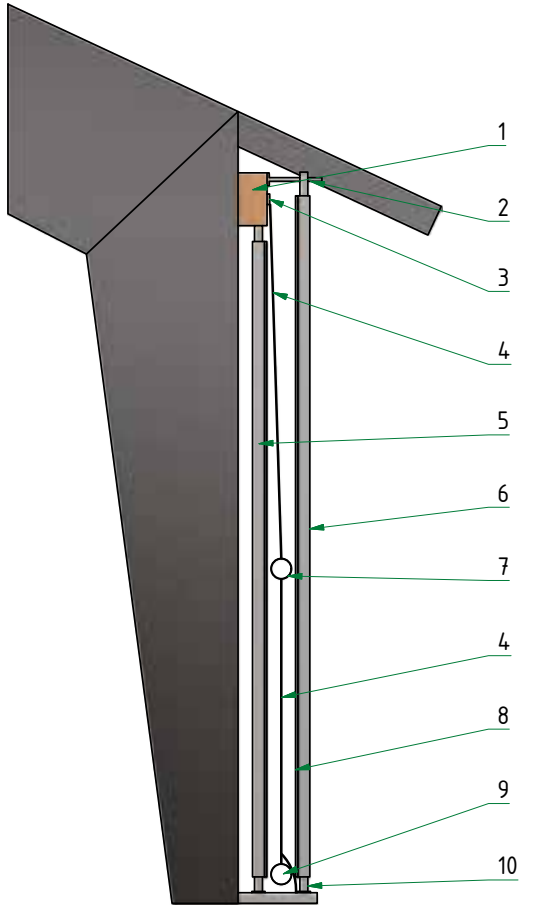


BVS D+

08 Side Ventilation System type E



Realization: Ovčáry
Maximal width of construction hole: 60 m
Maximal height of construction hole: 4,5 m



Description of Side Ventilation System type E

- 1. Wooden squared timber
- 2. Support profile holder
- 3. Fixing AL rail
- 4. Tarpaulin
- 5. Inner support profile
- 6. Outer support profile
- 7. Shaft-motor driven
- 8. PVC support net anti-penetration
- 9. Static shaft
- 10. Support pillar holder

Side Ventilation System type E works on the principle of opening from the bottom. At the top, there is a tarpaulin filling fixed in an aluminium rail. The tarpaulins in the middle part is fitted with a cedar, which is used to fit into the winding shaft. Thanks to the position of the central winding shaft, the tarpaulin winds up twice as fast. The lower part of the system is fitted with a shaft that ensures the tension of the tarpaulin. Space between the tarp and the ground

is sealed by welded collar. The vertical movement of the system is defined by the supporting inner and outer profiles with PVC profile, which protects the tarpaulin against penetration. Side Ventilation System type E can also be used in cases where the client needs a roll-up door in a wider design than can be manufactured. Instead of that, this ventilation system can be installed. All visible elements can be produced in colour from RAL sampler.

Product details



Control detail



SVS E in semi-open state



SVS E in retracted state

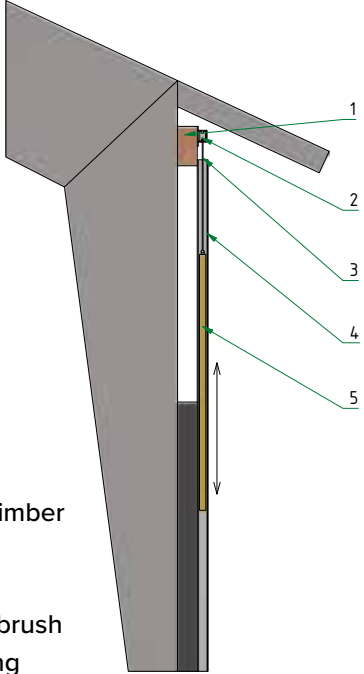
09 Side Ventilation System type F



Realization: Bohdalov
Maximal width of construction hole: 60 m
Maximal height of construction hole: 2,5 m

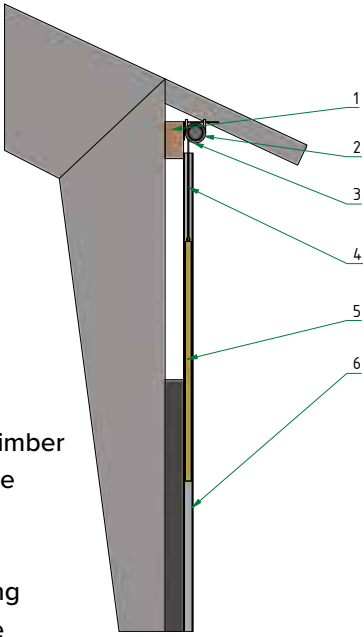
This side ventilation system uses the polycarbonate walls. We recommend the polycarbonate cavity for buildings with higher demands on thermal insulation, especially in waiting rooms in front of milking parlours. Our company supplies polycarbonate sheets

of various dimensions and construction designs. We install plates with different permeability of light into the stables. The polycarbonate walls are operated by manual winch or electric engine. Filling is polycarbonate with a thickness of 16 or 32 mm.



SVS F: mechanical

- 1. Wooden squared timber
- 2. Nylon pulley
- 3. Steel rope
- 4. Guide profile with brush
- 5. Polycarbonate filling



SVS F: electrical

- 1. Wooden squared timber
- 2. Upper shaft storage
- 3. Shaft-motor driven
- 4. Steel rope
- 5. Polycarbonate filling
- 6. Brush guide profile

Product details



SVS F, where there is no requirement for high sill



electrical SVS F, two-piece, filling: polycarbonate 16 mm



electrical SVS F, two-piece, filling: polycarbonate 32 mm

11 Haze Weather Station



Our weather station monitors the weather conditions and automatically adjusts ventilation systems in the stables - both side walls and any double-leaf ridge vents. The weather stations includes two sensors for wind speed (one on each side of the stable), heated sensors for rain that is also capable of detecting snowfall, and one to three temperature sensors. The weather station reacts to wind changing, rain and temperature and adjusts the ventilation system based on pre-set values to maintain an optimal microclimate. It can pull the side walls. Completely open or close them. The same goes for the ridge vent. The system's reaction to weather also has

pre-set inertia, meaning the weather station takes a short while before sending a signal to adjust the ventilation system, which conserves the drive units and reduces their wear.

The weather station can be linked to all variants of side ventilation systems in our company's assortment. We can also link additional elements to the system, such as evaporation cooling equipment or controls for the fans in stable. The system is also equipped with programmes for summer and winter operation. You can keep track of all information on an easily-comprehensible screen. The latest version is also linked to a PC or smart mobile device.



Functional segments:

- **Controls for double-leaf ridge vent with electric drive.** The system controls the opening and closing of the vent based on the air flow rate and temperature in the stable. It also reacts to rain and snowfall thanks to interconnection with precipitation sensors.
- **Controls for side ventilation systems.** Maintains the ideal microclimate in the stables by controlling the side walls. The system enables different settings of the side wall on the windward and leeward side of the stable and can optimise settings parameters based on the placement of the stable in the landscape.
- **Ensuring adequate lighting in stables.** The weather station can be linked to artificial lighting to provide and adequate light level during the whole year.
- **Forced ventilation to prevent cattle from suffering heat stress.** The system's temperature sensors evaluate the current temperature in the stable and activate forced ventilation (fans) if needed. The activation system is independent of the human factor.
- **Elimination of overheating of stall beds along the perimeter wall.** The system can adjust the unfolding of the side ventilation system type D in summer months to prevent stall beds located along the perimeter walls of the stable from overheating.
- **Basic pre-setting for summer and winter operation.** Our weather station has pre-set basic models for controlling the microclimate in the stables during summer and winter months. These parameters can be optimised based on the particularities of the given farm, location, etc.

12 Electrical Roller Gates



Realization: Okrouhlá Radouň
Maximal width: 5 m
Maximal height of construction hole: 6 m

Electrically operated roller gates are suitable for areas where they will be used frequently - for example feed corridors. The electric engine can be conveniently operated via remote control, in the event of a power failure, a backup handle is available. Gate design is hot-dip galvanised and the tarpaulin is wound onto the shaft located above the passage-

way. The customer can choose both the colour design of the gate and the anti-leak net instead of tarpaulin. The gates can be mounted from the inside or from the outside, depending on the building possibilities. Optional item is a zinc sheet roofing (in RAL colours), customers can also choose from a variety of guide profiles.

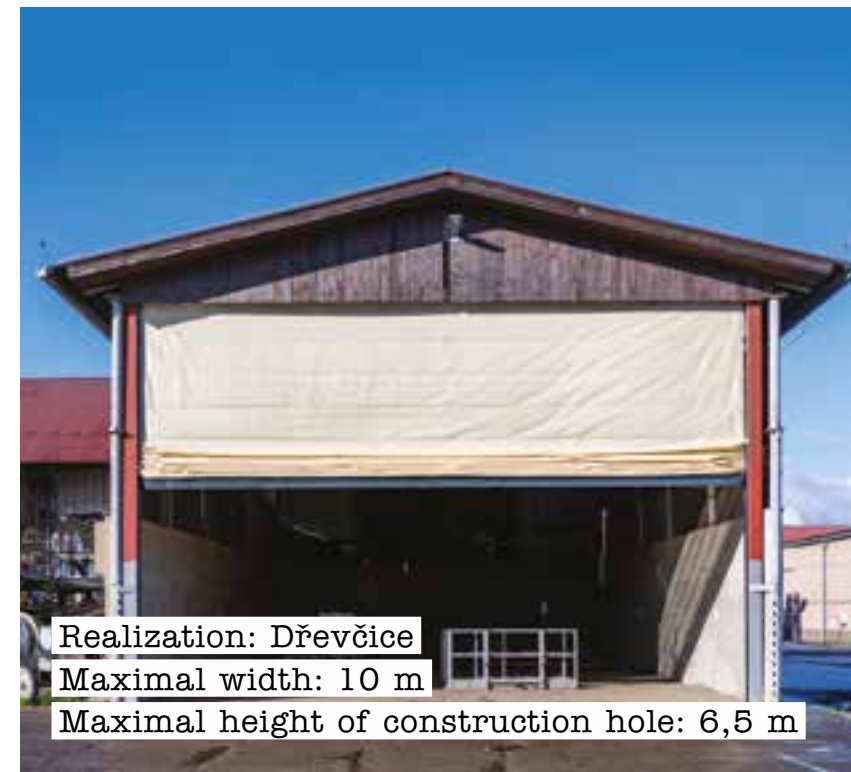
13 Chain Roller Gates



Benešov u Semil

We manufacture and install chain roller gates in dimensions up to a maximum of 20 m² area. The gates are mechanically operated by means of a chain gearbox. The advantage of this control is the fast handling during opening and closing of the gates. The gate can be equipped with a safety fall brake. The customer can choose both the colour as well as the anti-penetration net instead of tarpaulin. The gate can be installed from the inside or outside, depending on the building possibilities. An optional item is zinc sheet roofing (in RAL colours), Customers can also choose from a variety of guide profiles.

14 Folding Gates



Realization: Dřevčice
Maximal width: 10 m
Maximal height of construction hole: 6,5 m

Folding gates are suitable for the areas, that are too wide and therefore a conventional rolling gates cannot be installed. They also have the advantage of lower weight of the system compared to rolling gates. Gates of width up to 10 metres do not need support profiles and always include an industrial drive. In the case of lateral tarpaulin guidance in closed profiles, the system can withstand strong winds. The filling can be PVC tarpaulin or net (the possibility of veneering the filling). Installation is carried out from inside and outside. Folding gates can also be installed in internal spaces, where widths up to 20 metres can be achieved.

15 Roller Gates with Mechanical Gearbox



Realization: Řidký
Maximal width: 3 m
Maximal height of construction hole: 3 m

Roller gates replace classic swing or sliding doors. Roller gates with mechanical gearbox are the basic variant, which is operated by a handle. The door construction is hot-dip galvanized, the canvas is wound on a shaft which is located above the passageway. This saves space and prevents the tarp from being damaged by gusts of wind when opened. Colour design of the gates can be chosen by the customer, thanks to a wide range of variants (including colour

combinations), the door can also serve as a illuminating element. Similarly, instead of tarpaulin an alternative in the form of a draught-proof net can be chosen. The door can be installed from the inside or outside, depending on the building possibilities. An optional item is a roof made of zinc sheeting (in RAL colours), customers can also choose from a variety of guide profiles.

16 Electric Roller Gates with mutual shaft



Realization: Koberovice/Jívová
Maximal width: 40 m
Maximal height of construction hole: 5,7 m

Rolling wall with central shaft can be fitted into holes with a width of above 5700 mm. It is therefore ideal option for spaces that can no longer fit a rolling door. The electric operator can be conveniently operated by remote control, in the event of a power failure, there is a backup handle available. The construction of the door is hot-dipped galvanized and the canvas is rolled up on shaft located above the passageway. The customer can choose both the colour as well as the anti-penetration net instead of tarpaulin. The door can be installed from the inside or outside, depending on the building possibilities. An optional item is zinc sheet roofing (in RAL colours), Customers can also choose from a variety of guide profiles.

17 Insulated Electric Roller Gates

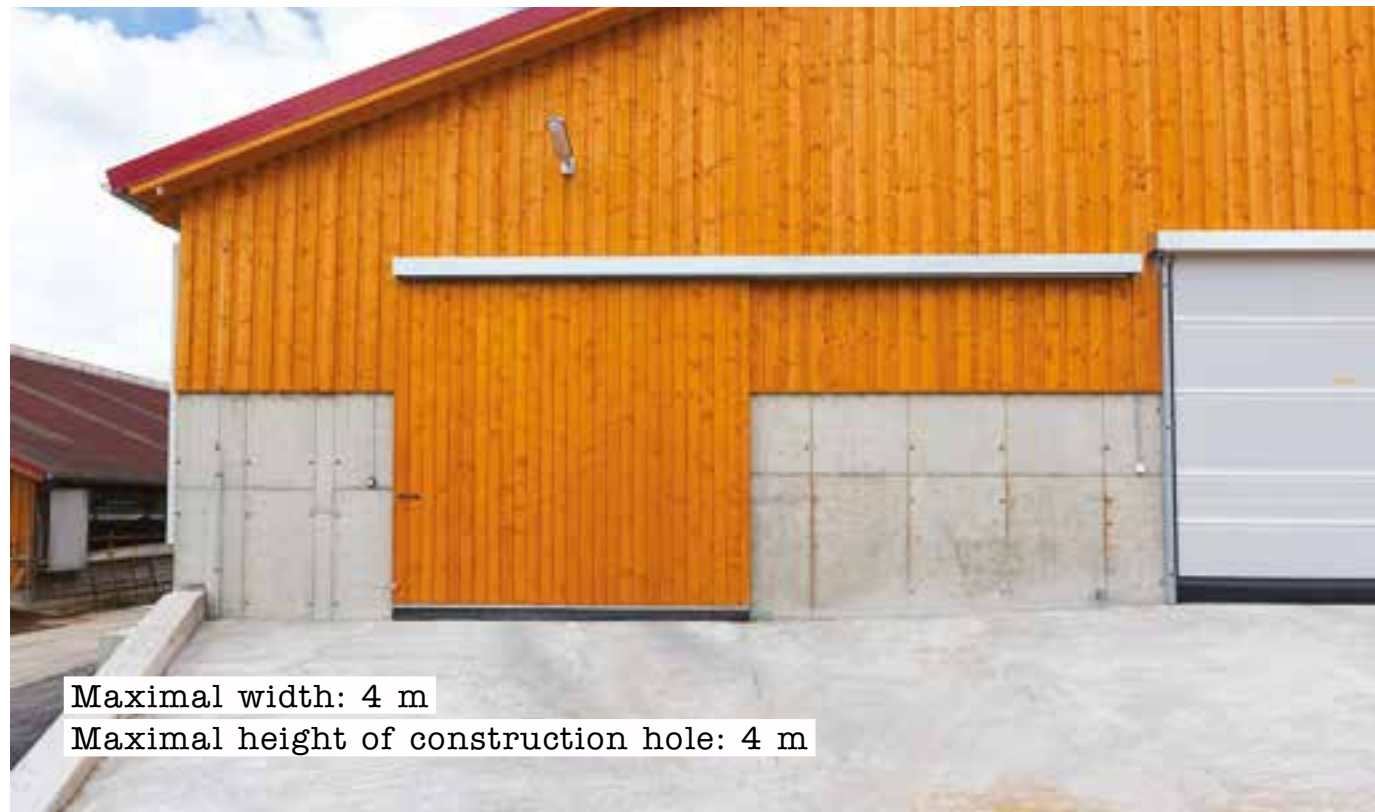


Maximal width: 4 m
Maximal height of construction hole: 4 m

Insulated roller gates are particularly suitable for areas where there is a need for elimination of the heat leakage and keeping stable temperature. They can be used for example in sheep, goat or young cattle farms, where there is a requirement for thermal stability. They can also be installed in entrances or outlets in milking parlours or between waiting room and milking parlour. They are manufactured in two wall thicknesses (16 and 32 mm) and two colour shades (grey and ochre). The bristle seal reduces heat leakage, heat transfer coefficient (U) is 3.9-5.5 W/m²K.

18 Gates and Passageways

Single-leaf Sliding Gates



Maximal width: 4 m
Maximal height of construction hole: 4 m

Single-leaf Sliding Gates are made of a galvanized steel structure that can be filled with decking, PUR panel or sheet metal. Roofing can be added on request, and you can also choose from several types of closing.

Double-leaf Sliding Gates



Even the double-leaf variant of sliding doors consists of galvanized steel construction with a boarding, PUR panel or sheet metal. Roofing is optional, you can also choose from several closing types.

Leaved Swing Gates



The gates consist of a galvanized steel structure with boarding, which is offered in a single-leaf and double-leaf version.

Lamellar Entrances



This option partially replaces the rolling tarpaulins or gates. Slatted passages prevent excessive heat leakage, dust and eliminate draughts. They are mainly used in passageways to enclosures, waiting rooms or milking parlours. We offer them in different thicknesses and colours, you can choose a version with detachable hinges, which extends system lifespan. The recommended maximum passage height is 2500 mm.

Milking Parlour Shutters



Insulated aluminium roller shutters are used mainly for waiting rooms and milking parlours. They are operated by an electric engine.

19 Flexible Hutch for calves Haze Comfort 4



Realization: Prototype

One of the key elements of effective breeding calves is their comfortable and welfare housing. Our company offers you a Flexible Hutch for calves Haze Comfort 4, which represents a new generation of flexible and modular calf housing, allowing it to be converted in a flash from individual to a pair or group hutch for calves weighing up to 220 kg. Removable centre hutch barriers allow you to create either 4 individual

calf hutches (1100 mm wide x 1800 mm long), or two pair hutches or one group hutch for 4 calves, eliminating the need for the farmer to transport and house the calves in another calf house after 8 weeks of rearing. Flexible hutch for calves Haze comfort 4 is available in the following variants a) with grid/no grid, b) with outdoor enclosure/without enclosure, c) with free front side/with front side fitted with draught-proof net.

Product description:

- Overall dimensions of the Flexible Hutch for calves Haze Comfort 4: Width max. 4640 mm x depth max. 3900 mm x height max. 2300 mm. Weight of the whole hutch up to 800 kg
- Individual hutch size 1800 mm x 1100 mm
- Galvanised construction for long life span
- Insulated roof (PUR panel)
- Walls made of durable and washable plastic
- Three easily removable central box barriers
- Removable plastic floor grates with slats
- Lighting and electrical equipment
- Available with various accessories

Advantages:

- Quality galvanised frame for long product life span
- Removable slatted floors for comfortable calf rest
- Flexible central hutch walls allow for individual, paired and group rearing of calves
- Rolling draught-proof net at the front of the box allowing climate regulation in the hutch
- Lighting and electricity for optimum working and rearing comfort of calves
- Easy and quick movement with a loader
- Equipped with bucket holders for milk, water and starter



20 Slurry Tank Roofing



Realization: Školní statek Humpolec

We provide roofing for slurry tanks with internal diameters between 15 to 35 m. Roofing using a special rigid canvas is the only tried and tested method of completing this task. This solution reduces leakage of ammonia and other odorous gases from the slurry tanks to the atmosphere. It also keeps the rainwater out of these slurry tanks. Our technicians will review your building personally. The statistic calculation will be prepared and they will provide the complete installation. The installation runs as follows – we install steel hoops along the circumference of the existing concrete tank to anchor the straps mounted in a ring in the centre of the tank.

The ring is fitted onto a stainless or concrete pillar. During the installation we use entirely stainless steel, thus significantly extending the life of the roofing. After the straps are tensioned, a special rigid canvas (900 g/m²) is stretched onto the structure to provide roofing.

Why?

Primarily due to its ability to reduce leakage of ammonia and other odorous gases from the tank into the atmosphere. Secondly, it also prevents rainwater from leaking into the tank.

How?

We install steel hoops along the circumference of the existing concrete tank to anchor the straps mounted in a ring in the centre of the tank. The ring is fitted onto a stainless or concrete pillar. After the straps are tensioned, a special rigid canvas (900 g/m²) is stretched onto the structure to provide roofing. The entire solution is provided along with structural analysis and installation work. All the steel components are made of stainless steel to extend the system's service life as much as possible.



News in Haze: digitalization and new production machines

In addition to the construction of the new hall, Haze has recently proceeded to digitizing part of its operations and purchasing new, modern machines that we use in the production of our products. These machines are now also available to our collaborating companies – so they don't have to buy expensive machines themselves, we are happy to process their products on our machines.

In our hall you will now find, for example, a modern Kardex storage machine Remstar Shuttle XP 700. Its purchase was a part of the project „Digitalization and automation of production at HAZE, s. r. o.“, co-financed by the Operational Programme Enterprise and Innovation for Competitiveness, i.e. from the resources of the European Union and the state budget of the Czech Republic. This project was implemented with financial support from the state budget through the Ministry of Industry and Trade under The Country for the Future programme. Thanks to this modern storage system, we are not only saving space in the warehouse, but above all we are digitising the entire logistics chain. Another new addition to our operation is a high-frequency welding machine TARPA PRO from Zemat Technology Group. Unlike the older hot air welding technology high-frequency welding results in a higher quality weld and therefore stronger tarpaulins, which we install in our side ventilation systems and roller gates.

For the machining of wooden squared timbers and other wooden structural elements, we now use a fully automatic 4-sided planer WEINIG Cube Plus. Working with metal is now made easier by three new machines – hydraulic plate shears DURMAZLAR VS 3006, hydraulic bending press DURMAZLAR AD-R 30175 and a band saw FMB JUPITER+CN.



High frequency welding machine TARPA PRO



Hydraulic press brake
DURMAZLAR AD-R 30175



Bandsaw FMB JUPITER+CN



Automatic planer WEINIG Cube Plus



Hydraulic table shears DURMAZLAR VS 3006



Storage machine Kardex Remstar Shuttle XP 700

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