

Dairy farms in Jezdkovice and Větrkovice

High-temperature Ecosun S (SB) panels are designed mainly for the heating of buildings housing industrial operations. However, they can be used successfully in agriculture as well. The company FARMTEC a.s. has more than 10 years of experience in the design of these buildings, and their experience has shown that radiant systems are the most suitable for heating with regards to the characteristics of such facilities. Some of the latest applications are at the dairy farms in Jezdkovice and Větrkovice - both of these can be found near Opava in the Moravian - Silesian region.

ZOD Větrkovice



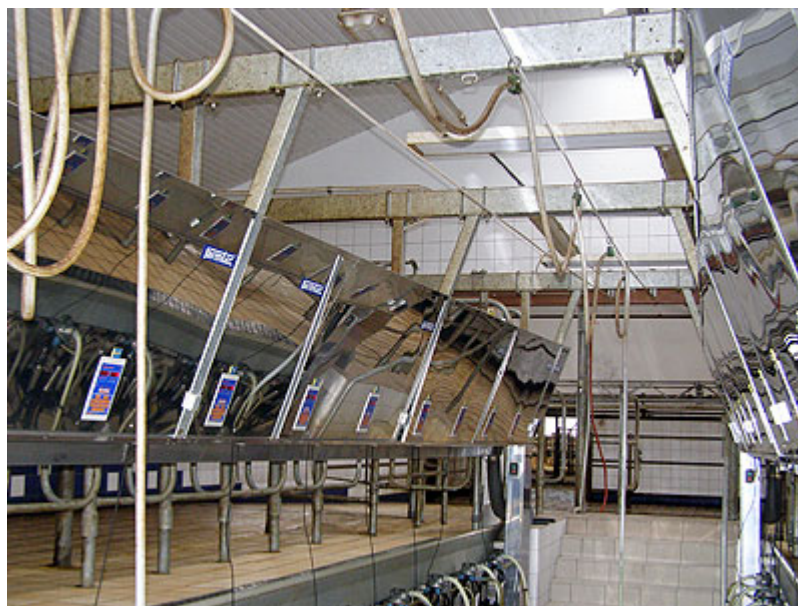
VOD Stěbořice- Jezdkovice farm



Such buildings typically had no connection to gas distribution networks in the past; on the other hand, they have to be connected to the electricity network. The equipment used in milking requires an input of tens of kW and operators are granted wholesale customer tariffs. The application of simple logic then leads to the idea of making the most of those low tariffs and installing electric heating. This choice saves the operators investment into a gas distribution connection; it doesn't require the solution of issues involved in gas distribution, i.e. the intake of combustion air or the venting of gas. Electrical installations are simpler and therefore also less expensive.

As far as the heating of the building is concerned, the biggest problem is the heating of the milking parlours. These premises are used only at certain times - usually in the mornings - and therefore don't need to be heated to higher temperatures permanently. Permanent heating would be very ineffective and non-economic because the doors to the cattle pens are wide open during milking - this area is often permanently connected to the area outside - and all heat would escape. For the same reason, systems based on convection (warm-air) heating are generally unsuitable.

Milking parlour of the ZOD Větrkovice agricultural and business collective



The main purpose of the heating is to create heating comfort for the workers in charge of the automated milking equipment. With regards to the limited space, any wall heaters were out of the question. Therefore, only two options were left - floor heating or radiant ceiling panels.

Floor heating didn't prove to be the best option because it has low dynamic performance for the required purpose and, due to regular rinsing of the floors, undesired cooling would also take place. On the other hand, radiant panels proved ideal. Infra-red radiant

systems don't heat the air but only objects or people which are hit by the radiation. ECOSUN high-temperature panels can be heated up within approximately 10-15 minutes and thanks to their performance, even when placed at a height of approximately 4-5 m above the workplace, create the needed heating comfort for the staff operating the milking equipment.

Milking parlour of the farm in Jezdkovice



Radiant panels can also be used in other areas of dairy farms. Technical facilities - the dairy room, sanitation etc. - need to be protected from frost; in the staff facilities (WC, washrooms, cleaning chambers) there usually isn't enough room for typical heaters with the required coverage. Here, low-temperature ECOSUN panels are used, which are produced with coverage of up to IP65, and Eex II certification.



Regulation

Regulation is very simple - the milking parlour is controlled by one industrial EBERLE thermostat, with a separate sensor which ensures that the area is not overheated. A time switch has precedence over the sensor so that the time when the panels should be in operation can be programmed. There is also the option of switching off the individual radiant panels and choosing how many panels will be in operation in this way. In other areas, an area thermostat has precedence over the heaters, depending on the required coverage.

ZOD Větkovice	VOD Stěbořice-Farm in Jezdkovice
<p>Operators: Agricultural and business studio SLEZSKÁ DUBINA 747 43 Větkovice tel. 556 455 270</p>	<p>Operators: STĚBOŘICE production and business collective FARM JEZDKOVICE Stěbořice 168 747 51 Stěbořice</p>

ZOD Větrkovice				VOD Stěbořice-Farm in Jezdkovice			
built-up area 259,8 m²				built-up area 425,6 m²			
Type	No. of pieces	CZK / piece	CZK in total	Type	No. of pieces	CZK / piece	CZK in total
Ecosun 300 U	1	1 727	1 727	Ecosun 300 U	3	1 727	5 181
Ecosun 700 IN	3	3 810	15 240	Ecosun 700 IN	5	3 810	19 050
Ecosun S 24	5	5 390	26 950	Ecosun S 24	6	5 390	32 340
Storage heater WFMi 20	1	12 903	12 903	Storage heater WFMi 40	2	17 312	34 624
Storage heater WFMi 30	1	15 565	15 565	Storage heater WFMi 30	1	15 565	15 565
Reg EBERLE Instat 2	3	1 250	3 750	Reg EBERLE Instat 2	6	1 250	7 500
Reg EBERLE UTR 60	1	2 592	2 592	Reg ITR 3	1	1 880	1 880
Reg ITR 3	1	1880	1880	Reg EBERLE AZT-I	4	1 690	6 760
Reg EBERLE AZT-I	1	1 690	1 690	Sensor EBERLE	1	412	412
Sensor EBERLE	2	412	824				
Total not including VAT			83 121	Total not including VAT			123 312

Design of the project and processing of project documentation

FARMTEC a.s.

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