

BioCel[®] V XLA Filters safeguard Cincaporc against PRRS outbreaks

CASE STUDY - SWINE INDUSTRY



Customer and Project Profile

Enduser name: Cincaporc
Enduser contact: Antonio Montull (CEO)
Customer industry: Swine industry
Web: www.cincaporc.com

Engineering company name: Prodes-Option Engineering
Engineering contact: Joan del Sol
Web: www.option-engineering.com

With more than 40 years of experience, Cincaporc has positioned itself as a benchmark in quality within the pig sector. With a solid base as a pig integrator, Cincaporc now has 8 own farms in Spain, more than 300 integrated farms and its own feed factory.

Initial Situation

For a new production sow farm with 4.665 heads located in Sariñena (Huesca, Spain), an area with high swine farms density, the owner decided to include the installation of intake air filtration systems, as part of the barn ventilation. The goal of these systems is to control and reduce risk of potential outbreaks caused by pathogens like PRRS or IAV whilst offering an efficient energy performance.

Filter sections are made of precast concrete walls with big openings for the filter systems. These systems are designed, supplied and installed by AAF as a whole biosecurity package.



Bringing clean air to life.™

BioCel V XLA Filters safeguard Cincaporc against PRRS outbreaks

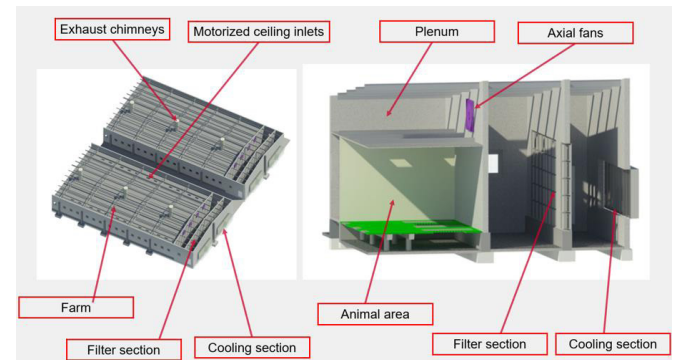
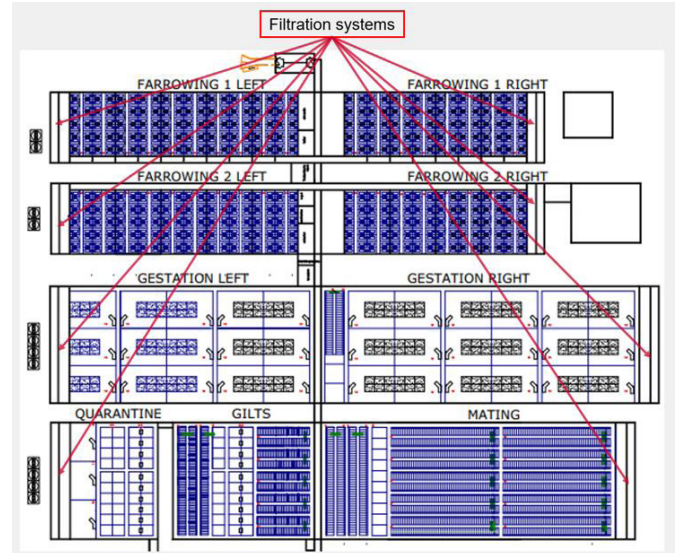
AAF Solution

The ventilation systems are composed of a first section for the cooling systems and a second section for the air filtration systems, distributing the air through axial fans to the plenums above the animal areas and generating positive pressure. The farm is divided into four buildings with one enclosed air filtration system at each side of every building, resulting in total of eight filtration systems.

The filter structures consist in special customized metal housings where different size combinations of premanufactured frame modules are assembled.



These airtight seal frame systems are designed to minimize risk of bypass to the clean side, with a clip-free system for fast installation and removal of filter elements. All components of the structures are made in AISI 304 stainless steel for corrosion resistance and long durability. The system is completed with Sensor360 for monitoring air quality levels and filtration performance.



Images taken from the project memory elaborated by Prodes-Option Engineering

The whole project includes the following total list of components: 40 housings (one housing per each opening in the concrete walls), 1.356 prefilters, 1.356 main filters, 250 frame modules in size combinations of 3x2, 2x2, 3x1 and 2x1, and 32 sensor devices. Filter selection was discussed and chosen in collaboration with Prodes-Option Engineering, the Engineering Company in charge of facility design and with Cincaporc, the farm owner.

The filtration systems must provide effective protection against viruses whereas consume low energy compared to standard farms without filters. For this purpose, at the maximum required airflow per filter of 1.051 m³/h at summer regime, the filters selected by AAF allows to significantly reduce the initial pressure drop desing value of 45 Pa, based on standard filters from competition commonly used in this industry, to 28 Pa, keeping the same efficiency classes established in the project memory.



Bringing clean air to life.

BioCel V XLA Filters safeguard Cincaporc against PRRS outbreaks

AAF Products of Choice

The metal frames are equipped with a two-step air filtration system consisting of RedPleat ISO Coarse 70% 592 x 592 x 96 with plastic frame as prefilter and BioCel V HXLA 85 592 x 592 x 440 as main filter. The BioCel V XLA 85 filters (MERV 15) provide 85% efficiency on 0.3-1 µm particles.

Outlook

The farm is located at an area with high swine farms density where viruses like PRRS and IAV can travel among farms quite easily. These air filtration systems are intended to prevent and maximize protection against potential outbreaks by mean of airborne transmission.

Cincaporc goal is to get prefilters duration of 2 years and main filters duration of minimum 3 years although this will highly depend on outdoor air conditions in the area, where combination of dust and wind may occur quite often.

To monitor filter performance, pressure drop evolution and expected lifetime AAF Sensor360 is the perfect tool, with one DP Sensor and two PM Sensors per filter system reporting and monitoring in real time trough Sensor360 Software, which allow to proactively resolve issues before virus outbreaks and to have control of the air at all times.

PRE FILTER

RedPleat Coarse 70%

- Filter Class: Coarse 70%
- Self supporting media
- Plastic frame
- Environmentally friendly – no metal, fully incinerable
- Low initial resistance



MAIN FILTER

BioCel V XLA 95

- Water repellent filter media to ensure moisture resistance
- 100% sealed construction to avoid any bypass
- Plastic grids on downstream side to optimize operational protection.
- High filtration area with very low resistance
- PU gasket at Clean Air Side
- Environmentally friendly – Plastic frame construction fully incinerable



View from clean air side



Sensor360 Installation



Bringing clean air to life;

AAF International
European Headquarters
Odenwaldstrasse 4, 64646 Heppenheim
Tel: +49 (0)6252 69977-0
aafintl.com

Specifications and performance data contain average values within existing production specification tolerances and are subject to change without prior notice. AAF explicitly rejects any liability for any direct or indirect damage, in the broadest sense, arising from or related to the use and/or interpretation of this information.

©2021 AAF International and its affiliated companies.
CASE_116_EN_022021