



Odour Stop

Premium Compost Covers

The **ODOUR STOP™** compost cover system is manufactured in the U.S. The cover system is designed to enhance the compost process while providing significant odor-reducing capabilities. The fabric is backed by a five-year warranty.

The **ODOUR STOP™** cover system consists of three-layers. The two outside layers of the system are tough polyester fabrics that protect the inner layer (waterproof breathable membrane). The interior layer is a membrane made from a hydrophobic ePTFE (expanded polytetrafluoroethylene) film that has been rendered oil-repelling via a method that

retains the inherent open-pore structure of the membrane.

The ePTFE membrane pore size is so small that larger water molecules and odorous molecules (VOCs) cannot pass through the membrane. However, smaller molecules such as oxygen, water vapor and CO₂ can pass through the membrane. The pore size of the membrane also prevents 99% of microorganisms from passing through the membrane to prevent airborne transmittal of pathogens and organic irritants. In addition to reducing odors, the **ODOUR STOP™** cover system also

prevents rainwater from the composting material preventing potential anaerobic conditions which lead to odors. In addition, the waterproof cover prevents contaminated water from leaving the compost piles.

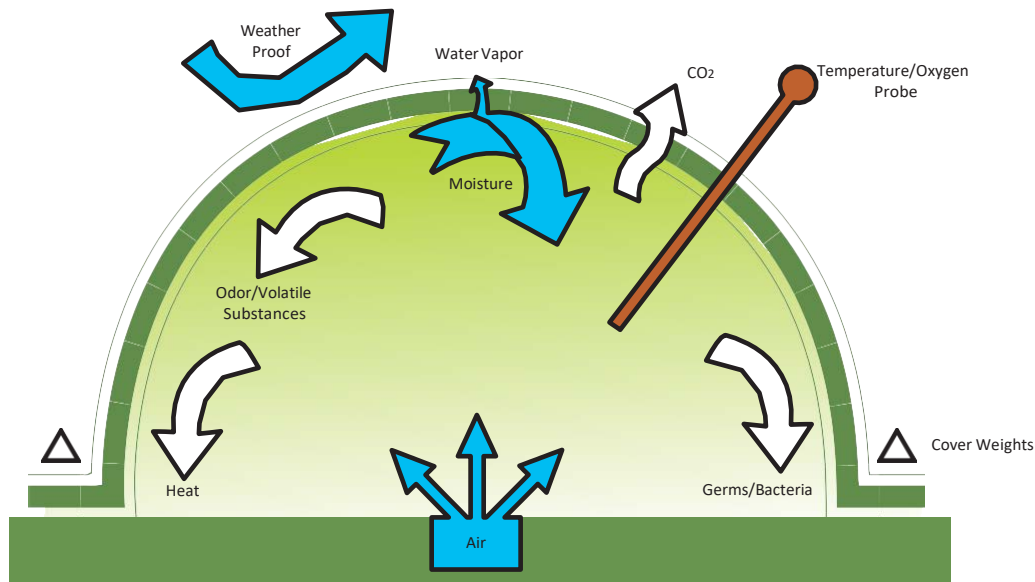
As organic materials are composting, volatile organic compounds (VOCs) are released as gaseous compounds and rise through the compost pile by convection. Also during the composting process water condenses on the underside of the **ODOUR STOP™** fabric cover. When the rising VOCs come in contact with the condensed water on the fabric some VOCs are captured in the water.

Over time the condensed water droplets fall back into the compost pile and the captured VOCs are consumed by the microorganisms in the pile.

The **ODOUR STOP™** cover material is designed allow compost facilities to operate with significantly reduced odor generation and may allow it to meet new stringent air emission restrictions.

The system is specifically designed for the compost industry to reduce odors associated with the compost process, increase compost rates, and reduce contaminated runoff from compost piles.

DIAGRAM OF **ODOUR STOP™** COMPOST COVER SYSTEM



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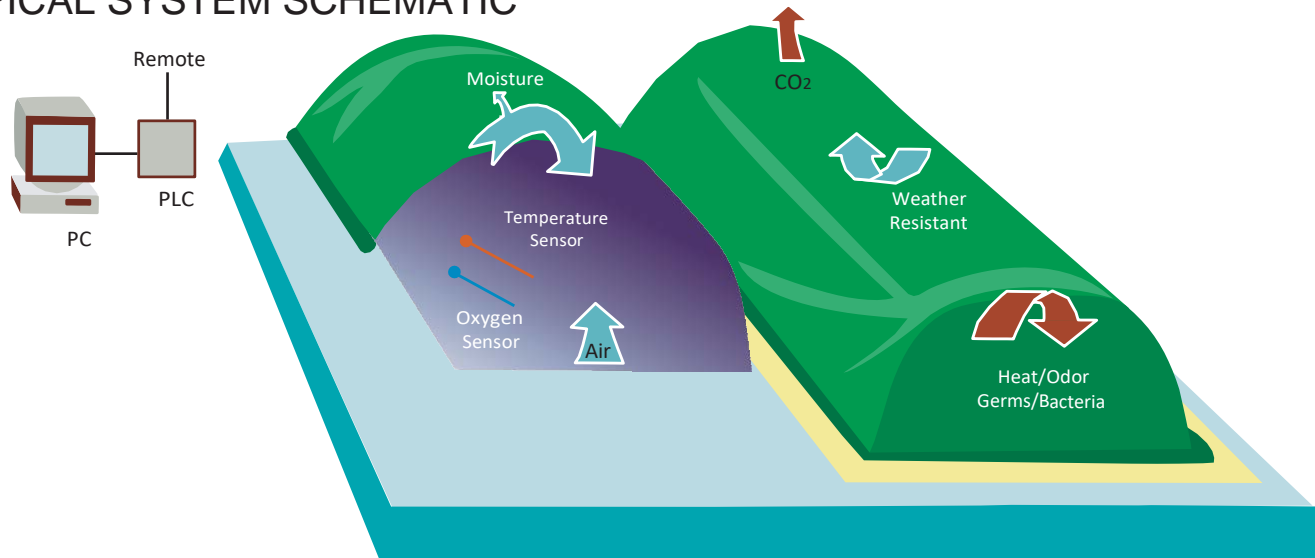
The **ODOUR STOP™** in-vessel aerated static pile (IASP) system is a proven composting technology capable of meeting pathogen reduction requirements, while providing significant odor and VOC reduction. One of the keys to the **ODOUR STOP™** system is its ability to maintain optimum temperature during active composting through controlled aeration. The active compost phase with the **ODOUR STOP™** IASP system requires approximately four weeks. During this period the compost piles remain covered and no additional handling or mixing is required. At the end of the initial three weeks of primary composting, the piles are uncovered and the material is moved to the curing area. New windrows are then created and the piles are covered for an additional two weeks in order to further stabilize the compost. Further curing of the product (uncovered) may be required to meet individual product quality specifications.

To efficiently manage the temperature within the compost piles the **ODOUR STOP™** system uses an automated aeration control system to match temperature and oxygen levels to the respiration requirements of the compost microorganisms. Aeration can be controlled based on pile temperatures and oxygen levels inside within the pile. In general, the pile temperatures should not exceed 165°F and the oxygen content of the piles should not be less than 10%. The temperature and oxygen level in the piles can be controlled by the integrated computer software.

The computer controlled aeration system generally operates as follows:

- :: Aeration blower control system can operate automatically to turn on blowers in each compost pile based on temperature and/or O₂ levels in the pile.
- :: Aeration system blowers can be controlled by a computer and on/off cycles are infinitely adjustable to provide aeration to each compost pile around the clock.
- :: Large compost piles could have as many as three combinations temperature/O₂ probes. Data from each probe is collect and averaged by the computer to effect any change in blower operational status, i.e., on/off.
- :: The high set point for temperature is generally 165°F. If the average temperature in the pile exceeds the set point temperature the blower will be turned off.
- :: The low set point for O₂ can be set at 10% oxygen concentration. If the average O₂ concentration drops below 10% the blower would be turned on.
- :: Set points are adjustable through the computer terminal.
- :: The computer tracks and plots the time/temperature/O₂ data for each active pile.
- :: The system can use radio telemetry (wireless) probes so that no cabling between the field probe and computer is required.

TYPICAL SYSTEM SCHEMATIC





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Advantages of ODOUR STOP™ cover system:

- :: Provides control of odors, airborne pathogens and particulate.
- :: Allows positive aeration which reduces aeration energy costs by approximately 25%.
- :: Eliminates the need for biofilters.
- :: Maintains optimum temperature and moisture in compost pile for uniform stabilization of volatile organic compounds and pathogen kill.
- :: Insulates pile and retains pile temperature when ambient temperatures are low.
- :: Significantly reduces moisture loss in piles from wind.
- :: Significantly reduces contaminated runoff from the composting site due to waterproof cover material.
- :: Shortens composting time by at least ten days.
- :: Eliminates the need to compost in a building in order to meet air quality regulations or can prevent site closure due to odor complaints.
- :: The cover system provides an economical solution to odor control, and particulate and VOC restrictions.

Who should consider the ODOUR STOP™ cover system?

- :: Facilities that are experiencing odor complaints.
- :: Facilities that have limited water supplies.
- :: Facilities that are facing air quality regulations related to airborne particulates and VOCs.
- :: Facilities that are concerned with airborne pathogens and/or contaminants.
- :: Facilities that are considering converting from open windrow composting to an ASP system.

The cover system is designed to enhance the compost process while providing significant odor-reducing capabilities. The fabric is manufactured in the US, and backed by a five-year warranty.

The cover fabric is sold separately or in combination with an integrated system of blowers, oxygen/ temperature probes, and a computer control software program.

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Flexibility

The major advantage that the **ODOUR STOP™** cover system provides over its competitors is flexibility. The system is available as a totally integrated system that includes the waterproof/breathable fabric covers, an aeration and blower system, temperature/oxygen sensor probes, mobile cover winder system and a computer software operating system. Any of the system's components are also available to be purchased separately, including the fabric covers. You can purchase all of the system components or any of the separate components.

In-Vessel System

The **ODOUR STOP™** in-vessel aerated static pile (IASP) system provides an affordable solution to control odor nuisances and volatile organic compounds (VOCs) at composting facilities. Other in-vessel systems require buildings and expensive air emission control systems to provide the same benefits as the **ODOUR STOP™** IASP system. The system allows an existing compost facility to convert to an in-vessel system without the high cost of an in-building facility. For most composting facilities the high cost of other in-vessel systems would not be affordable.

Odor Control

Many municipalities are now co-mingling organic recyclables in curbside collection programs. Food waste is being collected along with yardwaste in order to increase

recycling. Many compost facilities are either not permitted to accept food waste or the odor potential from the food wastewould not allow the facility to operate without a significant increase in odors.

The **ODOUR STOP™** system provides the necessary odor controls for composting facilities to manage odorous materials and operate in urban areas nearer the source of organic materials.

Economical Solution

The **ODOUR STOP™** system provides an economical solution to significantly reduce odors when composting materials such as food waste and biosolids. Pricing for the covers is significantly lower than competitors' pricing for comparable covers.

Design and Engineering

We can provide consulting services to design new composting facilities or convert existing open windrow facilities to in-vessel aerated static pile (IASP) systems. Engineering services and system components are available separately.

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