

Aerated Static Pile (ASP)



Aerated Static Pile (ASP) are a simple and efficient way to compost challenging feedstocks like food waste, bio-solids and manures. ASP's are simple because they compost faster and require less labor. ASP systems fit on a significantly smaller footprint than turned windrows. Smaller footprints result in reduced land costs, smaller leachate ponds and reduced pavement or concrete surfaces. Our ASP systems use the WebMACS computer controllers to regulate temperature and guarantee aerobic conditions for faster composting and improved odor control. A Biocover layer (6-12" layer of woody material) caps off the pile and is used to insulate the compost and reduce odors.

GMT has designed and built ASP systems for over 25 years and its design staff has more than 100 years of combined experience developing in-vessel or open pile ASP systems. While ASP is simple in principle, it is not easy to design in practice. Some poorly designed ASP systems have insufficient blower capacity or air distribution leading to temperatures that kill beneficial microorganisms which slows the process and causes odors. GMT has never had an ASP facility close because of odor complaints.



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ASP Design Features

Positive, Negative and Reversing Aeration

- Positive air allows for smaller blowers, less water generation and does not require biofilters. This feature is adequate for most feedstocks
- Negative air allows for complete capture and treatment of the air coming out of the piles, which is then treated using biofilters
- Reversing systems use both positive and negative aeration systems which reduce temperature gradients, reduce water losses, and speed up the composting process significantly.

Above and Below Grade Aeration Systems

Pipes distributing air under the compost piles can be either above or below the working surface. There are significant savings for pipe handling labor and repair costs if the piping is put below grade. Above grade pipes work on existing paved or dirt sites. Below grade piping is done by trenching existing paved sites or placing pipes below any new pavement. GMT below grade aeration systems can last over 25 years without replacing pipes, nozzles or dampers.

Zone Sizing and Configuration

A key design decision in an ASP is the size and number of zones for aeration control and the division of the pile into discrete batches. The zone size depends on how much waste you want to compost every day and how long it will take to accumulate a batch. Partition walls function to divide compost into discrete batches. Mass beds, or trapezoidal piles have no dividing walls and therefore have less batch delineation but reduce the cost of construction. Ideally, a push wall is provided along the back of the ASP pad to allow a loader to collect and move material while protecting aeration equipment.

Storm Water Management

Storm water management is a critical part of facility design. Many states require impermeable surfaces for the active compost process. All the water collected on the pad must be collected in a storm water pond and treated. ASP systems reduce the amount of impermeable surface by 50% or more over windrow systems. This adds up to a significant savings in construction costs and leachate disposal. GMT will design your facility to minimize the size of your pad and storm water collection system.

Process Control

The key to rapid decomposition is proper moisture and temperature control. Without an automatic temperature feedback system, it is almost impossible to keep up with the rapidly changing conditions in a composting pile. GMT manufactures wired and wireless temperature probes and state of the art controllers to accurately control and record compost pile temperatures.

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