

# HEATEC BULLETIN

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Heatec incinerator system has a combustion chamber (center), secondary heat exchanger (left of center), combustion air preheater (far left) and exhaust blower (lower left.)

## Manufacturer of asphalt roofing products avoids pollution and saves on fuel costs

Eagle Asphalt Products in Houston, Texas uses an 8.4 million Btu Heatec incinerator system to help produce asphalt for roofing. Virgin asphalt must be oxidized so it will have a suitable hardness when used for "steep roof asphalt." Oxidation is achieved by blowing air into liquid asphalt while in "blow" tanks.

However, the oxidation process produces fumes that cannot be allowed to pollute the atmosphere. Consequently, the Heatec incinerator burns the fumes so they cannot affect air quality.

About 5 million Btu of heat from incinerating the fumes is recovered and used for two heating functions that save on fuel costs:

1. Secondary heating for asphalt storage tanks.
2. Heating combustion air for the burner on the incinerator.

The Heatec incinerator system has a combustion chamber, two heat exchangers, and an exhaust blower. The combustion chamber is where the fumes are burned. It is lined with 6" thick ceramic fiber block insulation to eliminate heat loss.

One heat exchanger has serpentine coils heated by gases from the combustion chamber. The coils serve as a secondary source of heat for asphalt that circulates through them from asphalt tanks.

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The other heat exchanger heats intake air for the burner on the combustion chamber. Heated intake air increases the burner's fuel efficiency about 4 or 5 percent.

The exhaust blower induces a draft in the combustion chamber, pulling the asphalt fumes from the blow tanks into the chamber. The fan has a variable speed drive that maintains constant pressure in the combustion chamber despite variations in the blow tanks.

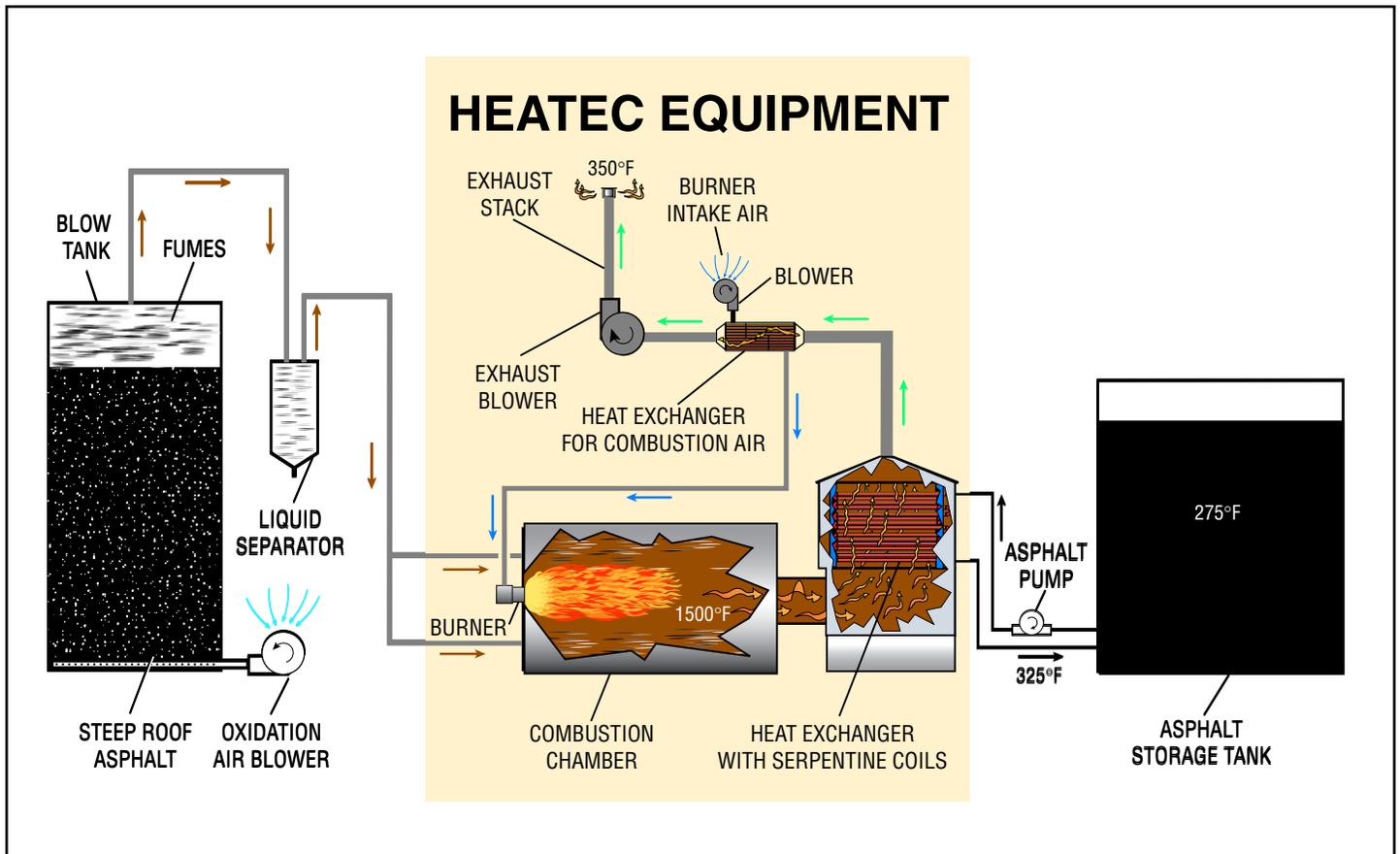
Hydrocarbons from fumes entering the combustion chamber are incinerated at temperatures of 1500 degrees F, leaving only carbon dioxide and steam. These clean gases then go through the two heat exchangers and are then exhausted to the atmosphere.

Thus, the Heatec incinerator not only protects the atmosphere, but conserves energy for lower fuel costs.

**Please see schematic  
on other side of page**



**HEATEC**  
an Astec Company



Heatec 8.4 million Btu incinerator system at Eagle Asphalt Products in Houston, Texas

## OTHER APPLICATIONS

The Heatec incinerator system has numerous other applications. It can be used to eliminate fumes or fugitive emissions from many industrial processes besides asphalt.

Another *very* important option for the system is to heat thermal fluid in the serpentine coils of the heat exchanger instead of product. Thermal fluid can be used for many purposes, such as:

- heating platens of presses
- heating products in shell and tube heat exchangers
- heating reactors
- generating steam

Using thermal fluid has significant advantages. It can simultaneously heat a variety of products to different temperatures. It extends the life of the heating system by at least 10 years. And it operates at a higher thermal efficiency, which saves on fuel usage.

An optional thermal fluid system requires minimal changes to the system depicted above. It requires addition of an expansion tank, piping, tank heating coils and controls.

