



# HEATEC



**PRODUCTS AND SERVICES  
FOR THE FOOD INDUSTRY**

# WELCOME TO HEATEC



## About Heatec

Our offices and manufacturing facility are located in Chattanooga, Tennessee. Astec Industries bought the company in 1977 and it became known officially as Heatec.

In the beginning our products were primarily for heating and storage of asphalt used in the road construction industry. It soon became apparent that our heaters were well suited for industries unrelated to road construction. Consequently we make heaters and storage tanks for many other industries, including the food industry.

Our company has grown steadily over the past 35 years. We now have over 200 employees, including an engineering staff of approximately 28 engineers and designers.

We offer extensive parts and service. We have eight qualified service technicians that provide on-site service for our products as well as similar products made by others. And we provide live technical support by phone. Our stock room has an inventory valued at \$1,000,000.



Heatec offices and manufacturing plant 2012.

We continue to add new shop bays. Our most recent bay has new blasting and painting booths with built-in man lifts that enable us to apply a finish to our products second to none.

**H**EATEC MAKES a variety of heating products for use in the food industry. Key products and their primary uses are shown in the accompanying table. Each product listed is available in a variety of configurations.

HEATEC PRODUCTS	PRIMARY USES					
	Heat cooking vessels (cookers, fryers, etc)	Heat cooking oil directly	Heat source for heat exchangers	Blanching & purification	Sanitary Cleaning	Packaging
Process heaters		•				
Thermal fluid heaters	•		•			•
Water heaters—direct contact					•	
Water heaters—helical coil	•		•	•		
Vaporizers	•		•			
Steam generators	•		•	•	•	•

# PROCESS HEATERS



Our process heaters are designed to directly heat a fluid product as it flows through the heater. The product may be liquid or gas. Process heaters heat products directly whereas thermal fluid heaters heat media (thermal fluid) that in turn heats products or other equipment indirectly.

We offer a variety of process heaters with fired burners for use in the food industry. Most are vertical heaters with helical coils made of stainless steel.

The helical coils of vertical heaters can be cleared completely after use by simply draining the liquids under the force of gravity. Moreover, the small footprint of vertical heaters require much less floor space than other configurations.



A process heater we built for food processing. It has a helical coil made of stainless steel. It heats vegetable oil that cooks food products.

# THERMAL FLUID HEATERS



Heatec specializes in thermal fluid heaters, especially those with helical coils heated by fired burners. The burner heats heat transfer fluid (thermal fluid) that circulates through the heater coil and through heating coils in other equipment.

A single heater can heat multiple pieces of equipment connected in one or more thermal fluid circuits. Moreover, heating of each piece of equipment can be controlled independently by valves that modulate the flow of the fluid through the equipment.

Heaters with two-pass helical coils are the most popular. They burn a variety of fuels and have high thermal efficiencies that conserve fuel. Heaters are also available with three-pass helical coils or with serpentine coils. Outputs range up to about 75 million Btu/hour.

We make our own coils for thermal fluid heaters. So we can configure the coils for your heater to provide a flow rate that closely matches your required flow rate without compromise.

The heaters can be either vertical or horizontal. A significant advantage of vertical heaters is their small footprint so they can fit into small floor spaces.

This is an example of a thermal fluid heater that can be used by food processors. It is skid mounted in a horizontal configuration and has a two-pass helical coil. It has an output of one million Btu/hour. Except for its expansion tank the heater is fully assembled on a single skid.



It has a convection section with finned tubing for increased efficiency that equals or surpasses that of some three-pass heaters. Unlike a typical three-pass heater, it has a much lower radiant flux rate and easy access to the coil for maintenance.

This thermal fluid heater heats special presses that print food packaging. Two economizers enable it to achieve a thermal efficiency of 91.5 percent (LHV). One preheats the thermal fluid. The other preheats the combustion air. It is designed to fit into a building with very limited height.



This vertical heater is an example of a thermal fluid heater that can be used by food processors. It has a two-pass helical coil and a fired burner. It can be equipped with a stainless steel coil if required.

# WATER HEATERS



## Direct contact water heaters

Firestorm® is the brand name of our most popular water heater. It is a direct contact water heater that heats water on-demand and provides a continuous supply of instant hot water at a constant temperature. A key feature is its on-demand water heating that eliminates the need for water storage tanks.

Special versions of the Firestorm heater are available with NSF certification for food processors. The heater is certified in accordance with NSF/ANSI Standard 5. This certification means that all parts of the heater that contact the water it heats are lead free. The heater is entitled to bear the official NSF seal of approval.



Firestorm heaters have extremely high thermal efficiencies: up to 99 percent. They raise the temperature of water up to 185 degrees F at flow rates from 13 to 1200 gpm depending on heater size. Their exhaust stack temperatures are close to incoming water temperatures.



## Helical coil water heaters

Our helical coil heaters that heat thermal fluid can also be used for heating treated water. They are virtually the same as thermal fluid heaters, except they heat water as it is pumped through its helical coil to an external storage tank or reservoir. Unlike a thermal fluid heater, the water does not normally recirculate through the heater.

The Firestorm® water heater pictured here has an output of 6 million Btu/hour. These heaters are available with outputs ranging from 0.75 to 36 million Btu/hour.

And unlike a direct contact heater, the water is not exposed to burner gases and can be heated to temperatures much higher than 185 degrees F.

# VAPORIZERS



Vaporizers are similar to thermal fluid heaters. However, they heat the liquid heat transfer media and change it into vapors.

These vapors transfer heat to all heating surfaces in heat exchangers more uniformly than possible if the media remains a liquid.

Some processes require the extreme uniformity of temperature that can only be achieved using heated vapors. One processor claims that a temperature variation of one or two degrees can affect the flavor of their product.

Heatec vaporizers are usually in a vertical configuration. We can build them either with serpentine coils or with helical coils.

Although some users prefer serpentine coils because they can be built to API specifications, the helical coil works just as well or even better.

Our vertical serpentine heater/vaporizer at a food processing plant of a major food producer in Springfield, IL. The unit occupies only a small ground area.



# STEAM GENERATORS



Food processors usually have a variety of uses for steam. Using a steam generator instead of a boiler as the source of steam has important advantages and eliminates the need for a boiler.

A steam generator produces steam by heating water with thermal fluid from a thermal fluid heater. The hot thermal fluid circulates through tubes of the steam generator, heating water surrounding the tubes and converting it into steam.

Unlike a boiler, tubes in the steam generator never get hotter than the thermal fluid flowing through them. This minimizes explosion hazards associated with boilers. It also eliminates the need for a boiler tender, who must be present when a boiler is in operation.



Heatec steam generator rated at 10,000 pounds/hour. Also available in other sizes as needed to meet customer requirements.



We make our own coils. This is a capability that most heater manufacturers lack. We can intertwine multiple helical coils to create additional fluid circuits to achieve

an optimum fluid velocity. Our coils are built to ASME code. (Certification is optional.) Stainless steel coils are optional.

Use of helical coil heaters to heat cooking oil is discussed in an article on our website. To download a copy of this article please type the following information into your web browser:  
[http://www.heatec.com/literature/Articles/CookingOilArticle\\_sm.pdf](http://www.heatec.com/literature/Articles/CookingOilArticle_sm.pdf)



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