

Drying Lumber with a Thermal Fluid Dryer

A thermal fluid heater provided heat for a new wood-drying kiln. Discover the benefits a thermal fluid system provided to this lumber-drying process.

Skeena Cellulose is located in a remote area of northwest Canada known for timber, salmon and bears. The company processes logs from the area into high grade finished lumber for domestic and export markets. When the company added a new kiln to its process, it specified a thermal fluid heater from Heatec Inc., Chatanooga, TN. The specified heater provided the required heat and still had enough capacity to add an additional kiln in the future.

The thermal fluid heater provided a number of advantages over the boilers used in four of the five kilns on site. Although the advantages of thermal fluid systems are somewhat offset by their initial cost compared to boilers, the systems lack the potential for corrosion that is common in boilers, and there is no need for water treatment. Thermal fluid heaters also do not require annual shutdown for inspection, have no blow down, and do not require cool wastewater or maintenance of steam traps.

The new heater had an output of 25 million BTU/hr and heated coils in the kiln. It also heated a steam generator that injected steam into the kiln to precisely control humidity and avoid drying lumber too quickly. A Heatec vertical heater extends through the roof of the building next to the kiln. It has two helical coils arranged so that burner gasses make three passes over their surfaces before entering the exhaust stack. The coils heat Petrotherm heat transfer fluid to 500°F (260°C) as it circulates to heating coils. The heating fluid also circulates through the steam generator in the same building.

The heater's burner is fired with natural gas, and the three-pass heater design is energy efficient because it ensures that more heat from the burner is transferred to helical coils, reducing the amount of heat that exits out the exhaust. The vertical configuration of the heater allows it to fit well into limited floor space.



A vertical heater extending through the roof of the building located next to the kiln has two helical coils arranged so that burner gasses make three passes over their surfaces before entering the exhaust stack.



After installing a new kiln, Skeena Cellulose specified a Heatec thermal fluid heater to provide the required amount of heat to its lumber-drying process.



Skeena maintenance superintendents appreciate

Fans in the kiln blow air over the heated coils, circulating heated air around the lumber and removing moisture. Drying air temperatures range from 190°F (88°C) at the start of the drying process to 200°F (93°C) at the end. Drying times range from 65 to 100 hr per load.

*For more information on Heatec's heaters:
Call (423) 821-5200.
Visit*

that the thermal fluid heater requires less maintenance. The boilers used on the other kilns must be shut down for inspection, are susceptible to corrosion and require maintenance of steam traps.