

# THINGS THAT WORK AND THINGS THAT DON'T WORK IN A NEW DRY KILN AND BOILER <sup>1</sup>

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## Things That Work

We put a concrete form down the center of the kiln to keep the I-beam columns off the floor. This will help reduce corrosion by avoiding the dew point at the base of columns, and keep the condensate lines off the floor and away from the dew point.

Both kilns have separate condensate return systems. These systems save energy and chemicals in deaerator.

## How the Condensate System Works

Each kiln has a thermocouple placed in the exterior condensate pipe that talks to a transmitter on the fan deck. When you start up, the kiln condensate is warm and at low pressure. This condensate is put in a condensate receiver that sits next to kilns and is then pumped over to the low pressure side of the deaerator. Then when the condensate warms up to 205°F, a valve opens and the condensate is pushed over to the low pressure side of the deaerator. When the condensate temperature goes over 215°F, the low pressure valve closes, the high pressure valve opens, and this condensate goes to the high pressure side of the deaerator. The deaerator is split in two. One-half is low pressure and one-half is high pressure. Separate pipes run to each side of the deaerator with two air operated valves.

For control we have put all electric steam valves on dry kiln. These have worked well except for some problems during start up. We put the kilns between the sawmill and planer with a 300-foot outfeed track so we don't swing as much lumber off track. The lumber at outfeed of kiln is about 20 feet from the infeed of the planer.

Our schedules for hemlock and Douglas-fir require the following times -

Hemlock	winter	44 hours
	summer	38 hours
Douglas-fir	winter	34 hours
	summer	24 hours

The final kiln temperature is over 215°F, trim loss is 1.5 to 2 percent, and wets are 10 percent or less.

<sup>1</sup> This paper was presented at the 2001 Annual Meeting and inadvertently omitted from the Proceedings.

## **Boiler Room**

We have two Cleaver Brooks boilers that produce 1600 HP and almost 60,000 lbs of steam per hour. Both boilers run on natural gas or diesel. We have put two 20,000 gallon tanks in the boiler room. One tank is used for make-up water. This tank runs off well water and 9,000 gallons of water from the planer. We plumbed the planer guide water to the tank. The second tank will be used for boiler shut downs. We are trying to save all the water we can at this facility.

Our diesel tank holds 20,000 gallons of fuel and the boiler can run for three days in the winter time before we refuel the tank. The blow down and dirty water from the kilns is evaporated. The evaporator will be cleaned out every 6 months. American Wood Dryers and Cole Industrial did a good job engineering this project.

## **Things That Don't Work**

I tried to use the dirty water out of kilns for make up water. This plugged up my deaerator and pumps. There is too much wood fiber in the water. You can treat the water but you can't filter out all of the wood fiber.

