

# FOCUS ON EMERGING TECHNOLOGY

## STEEL YANKEE DRYER

### Technology Description

Yankee dryers are large (diameters between twelve and thirty feet) rotating drum pressure vessels that utilize steam to dry paper. Yankee dryers are commonly used for producing tissue and machine glaze (MG) paper.

Traditional Yankee dryers are manufactured from cast iron. Cylinders are cast separately from the heads, which are affixed with many bolts. Yankee dryers fabricated from rolled and welded steel are a relatively recent development. Steel Yankee dryers offer several advantages over conventional (cast iron) units including significant energy savings.

### Benefits

1. Improved Heat Transfer – Derived from reduced shell thickness and the ability to use higher pressure steam.
2. Insulated Heads – Not feasible on cast iron dryers. Reduces heat loss by 2% - 3%.
3. Steam Heating versus Gas-Fired Air Heating - Increased heat transfer reduces the need for gas-fired air drying leading to boost in overall efficiency of 10% or more.
4. Edge Effect – Thinner steel and no bolts provide a more even moisture profile across the entire sheet width. This reduces the needs for correction methods that require more energy.
5. Safety – Cast iron gets more brittle as it ages, weakening the cylinder. Steel dryers have no bolts that can fail and reduce the need for non-destructive examination. Defects can be readily fixed in the steel dryer.

### Customer Type

Paper Companies.

### Applications

Production of tissue, machine glaze paper, and some coated papers.

### Market Sectors

Industrial.

### Potential Energy Savings

Two Focus-incented projects showed energy savings of 500,000 to 1,000,000 Lifecycle MMBtu. Most of the Wisconsin market is standard practice technology.

### Potential Payback Range

Site dependent. 10 years pre-incentive. 8.5 years with incentives.

### Incentives Available

Download and complete the [Custom Project Incentive Guide \[PDF\]](#) or [Find an Energy Advisor](#) to get started.

#### REDUCING ENERGY WASTE ACROSS WISCONSIN

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