HEATEX
Industrial Ventilation

Wood Drying

Industry

Wood is a popular material in several industries, from construction to furniture manufacturing. There is an increasing demand for sustainable wood products produced with efficient methods and less impact on the environment.

Company

The company has been in the business of drying wood for over 40 years and is today an international leader in this field. Constant innovation and technological development have made its solutions unique in the market.

Application

Freshly sawn timber, contains a lot of water and needs to be dried to a moisture content suitable for the intended end-use of the wood product. The drying process is the most time- and energy-demanding process at a sawmill.

CASE STUDY

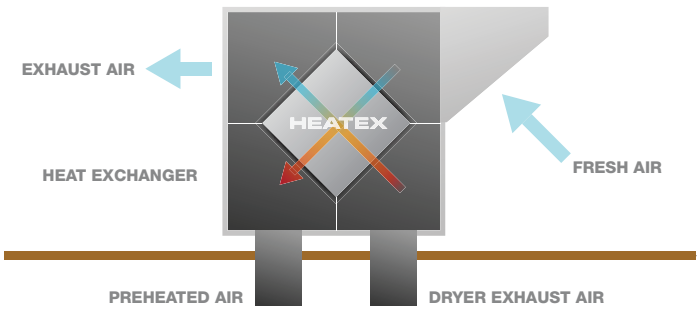
Introduction

Every kind of wood is unique, because Nature doesn't let itself be forced into one standard norm. Equally varied are the challenges that rise up in the drying of wood.

Drying wood is the single most energy-consuming process for a sawmill. With the increasing energy cost and higher awareness of the environmental impact of using various fuels, sawmills are looking for energy-efficient solutions today.

A leading company in drying kiln technology turned to Heatex for an energy recovery solution to transfer heat from the humid exhaust air to the incoming fresh air in the drying kiln.

The solution is based on a Heatex cross-flow plate heat exchanger and is fitted in a heat recovery module placed on the roof of the kiln. The system works with the fans inside the kiln, resulting in a significantly higher efficiency of the complete drying process.



General Problems

Industrial wood drying is ususally associated with:

- Very high energy need (thermal energy is typically 70-80% of the total drying cost)
- Corrosive environment (substances from wet wood give rise to a corrosive environment inside the kiln)
- Risk of unplanned shutdowns (particles and debris from the wood are mixed into the air stream and could clog the drying system)

Challenges

The drying kiln's warm air is a mixture of moist and small particles from the wood. This mixture is a challenge for the heat recovery system as it easily clogs the heat exchanger with reduced performance and increased need for maintenance.

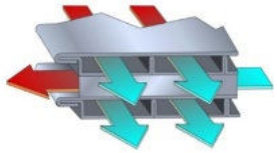
Certain substances from the wood in combination with humid air are also a challenge from a corrosion perspective, and proper materials must be selected to avoid problems.

Solution

To meet the requirement of high efficiency and yet eliminate the risk of clogging issues, Heatex model H with 12 mm channel height was selected. All parts of the heat exchanger, including plates, end plates and profiles, are made of aluminum to prevent corrosion.

Model H comes in several sizes, and the customer chooses two sizes to meet capacity requirements but still enable standardization of the heat recovery module.

Model H



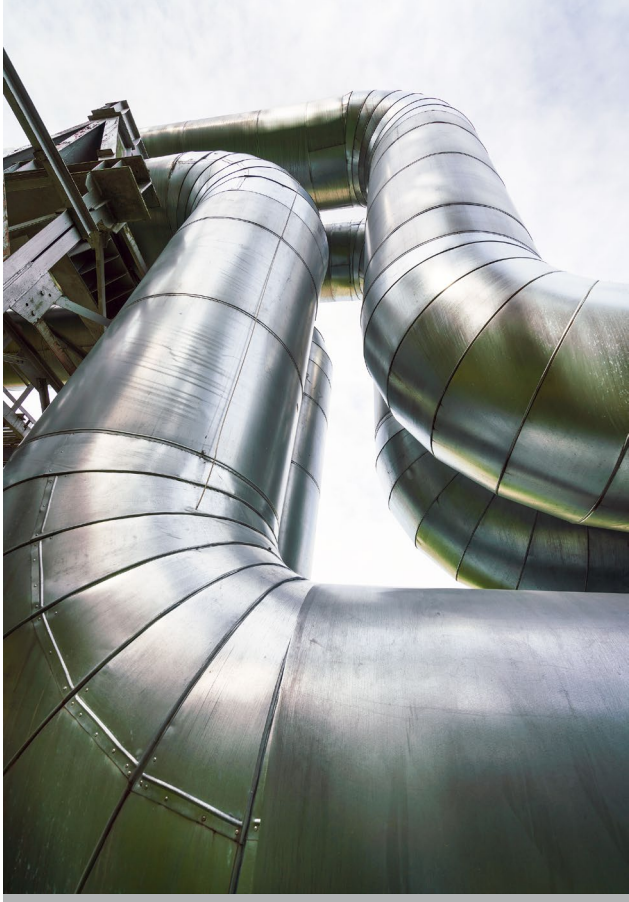
Heatex Model H crossflow heat exchanger with 12 mm plate distance.

Heatex air-to-air cross flow plate heat exchangers:

- High thermal efficieny
- Corrosion resistant materials
- Modular design features for flexibility
- Low maintenance for decreased downtime

Heatex's skilled and experienced application engineers support you throughout the development process, finding the right solution for your unique needs.

Ask an Expert



Results

Energy Saving

20%

reduction of the total thermal energy consumption.

Corrosion Elimination

100%

aluminium to eliminate risk of corrosion.

Return on Investment

< 1 year

payback period.

HEATEX