

PENN PALLET

Protecting the Environment through Recycling and Heat Treating

Introduction

Dan, John and Paul Cunningham established Penn Pallet in 1976 in, at the time, the small town of St Marys, PA. As the local town grew so did the company. The first few years were mainly focused on building new pallets in and around the local community. As time went on the company grew into more regional markets and later became a valuable supplier in some of the major markets throughout the USA. In the mid-80's Penn Pallet was introduced to pallet recycling for one of its largest new pallet customers. Of course there was some apprehension from the family, as this would reduce the amount of new pallets that were being sold. After much debate the family decided to embark on the possibility of offering customers a choice of new or recycled pallets. This decision paid off and Penn Pallet has become one of the region's largest suppliers of both new and recycled pallets. Today we employ approximately 85 people and ship over 50,000 new and reconditioned pallets every week all over the country.

Recycling Waste

During the early years of repairing pallets a major cost was the disposal of the broken wood components into the landfill. What do you do with all the wood waste? It took several years before the company could invest in equipment to grind the wood waste into a product that could be used for other industries. In 2004 when Penn Pallet opened its repair facility in Woodland, PA, the building was equipped with grinding equipment and a furnace that used the ground wood waste as fuel to heat the building. That project was a success by eliminating the need for the fuel oil furnace used to heat the manufacturing area in the winter months.



Heat treater and wood fiber burning biomass furnace by Abbott Control.



Wood fiber ground from pallets and particleboard.

Penn Pallet

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RECYCLING

PARTNERSHIPS

Over the past years we have seen the increased demand for this ground waste. Local Schools, Businesses and Hospitals have installed similar equipment intended to reduce their dependency on fossil fuels. In mid-2006 Penn Pallet made a conscious effort to process as much waste from its customers and combined it with green sawdust generated from new pallet production. Nothing was charged to the customers for this service as some of the trucks were headed back to our plant empty. We also opened our doors to those companies we did not service and allowed them to deliver wood wastes to our facilities. The main objective was to generate enough wood waste to support sales while reducing the amount of wood waste entering landfills.

Wood wastes such as pallets and particleboard end up in landfills every day. For this reason Penn Pallet has continued to collect junk, broken pallets, crates, particleboard all over the local communities of St. Marys and Woodland, Pa. This wood waste is being ground into fuel and sold to local businesses, hospitals, schools, where most is used as a source of heat/energy. Our goal is to provide our community with an outlet for this wood waste rather than the landfills or back yard burning.

Abbott Furnace Company is a locally owned, Saint Marys, PA company that was started in 1982. The company offers many industrial services but its primary product is continuous belt furnaces which are used in the powdered metal process and other industries.

With a downturn in the economy in 2008 Abbott decided to investigate other products & services to offset the downturn in industries it was serving. The Biomass furnace industry seemed like a good fit.

Penn Pallet, a long time customer of Abbott's for general fabrications, was contacted for their experience and opinions on existing biomass equipment. The information gathered from Penn Pallet was invaluable and helped lead to Abbott's first sale. In late 2009 Abbott installed its first 3mmbtu/hr hot water biomass furnace at Horizon Wood Products facility located in Kersey Pa. This furnace, which utilizes a 'cross flow' design, delivers hot water to heat drying kilns as well as to heat manufacturing buildings.

In early 2010 Abbott designed an alternative biomass furnace to be rated below 2.5mmbtu/hr. This design, called a 'Vortex', would have a lower cost and would produce hot air. It would be suitable for a company that produced its own wood waste and was looking for inexpensive heat.

Initially, Abbott's plan was to build this unit to heat their own manufacturing area. It would also be a demonstration unit for potential customers. Instead the company decided to find a local company that produced wood waste and would be willing to work with Abbott to prove out the product.

Penn Pallet was the first company contacted and they agreed to utilize the Vortex biomass furnace to heat one of their pallet drying kilns which is presently heated with natural gas. These kilns are closely monitored for gas usage so it would be a good test for a biomass replacement.

With the present price of gas, the payback on heating just one kiln with the biomass furnace was uncertain. Nevertheless, Penn Pallet felt that it was important to reduce fossil fuel usage by using wood waste and made the financial investment to have the Vortex heating unit installed at their facility. Over the next year both companies will be sharing the costs and resources for this project as they monitor its performance.



BTU's from Wood Fiber

One pallet gives off an average of 350,000 BTU's when burned. Imagine all the pallets behind every retail store, grocery store and small business in every community throughout the US. If all of these were stopped from land filling and converted to fuel for hospitals or schools, we would make a huge difference to our environment. Imagine the additional space that would be in each landfill. Imagine the fossil fuel savings.

Penn Pallet sold over 11,000 tons of ground wooden pallets and sawdust between our St Marys and Woodland locations in 2009. That's enough sawdust to cover a football field over 30 feet high. Converting tons into BTU's, we have supplied over 150 billion BTU's into our local community. That's more than 1 million gallons of #2 fuel oil replaced by sawdust. Enough sawdust to heat 1000 homes if the proper equipment was available.



Heat Treating Pallets

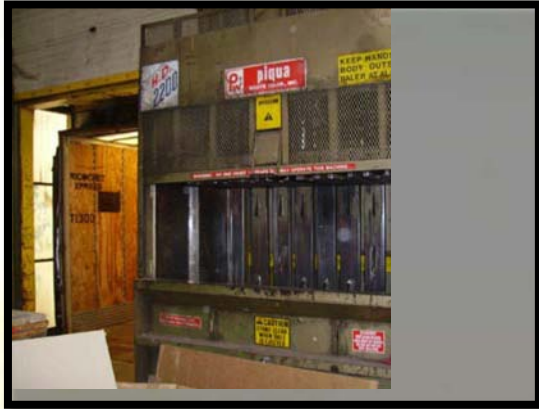
The Asian Long-Horned Beetle and Emerald Ash Borer have killed tens of millions trees in Michigan, Illinois, Indiana, Kentucky, Minnesota, Missouri, New York, Ohio, Ontario, Pennsylvania, Tennessee, Quebec, Virginia, West Virginia, and Wisconsin. Since then, laws were passed to control the spread of these insects, including heat-treating wooden pallets, boxes and crating.



Heat Treated pallets are required when shipping product overseas or in areas where pests are being controlled. Since 2004 several loads of pallets are heat-treated every day using gas-fired kilns. Last year alone, we heat-treated approximately 150,000 pallets for our customers. We are on pace in 2010 to treat over 225,000 pallets.

We have combined efforts with Abbott Furnace Company to utilize a biomass furnace system to fuel the heat-treating kilns. The goal is to reduce the overall consumption of natural gas in the process by using wood waste generated at Penn Pallet.

Additional Recycling at Penn Pallet



We have two bailers for waste cardboard received from our customers. Cardboard sheets are often in-between pallets that are returned to us. This cardboard is baled and sent to local recycling companies.



We recycle over 100 tons of scrap nails from the grinding process every year.



Plastic pallets, bins and components are being recycled. Some of the plastic pallets can be repaired and resold.



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