## KMI Pulp Machines Inc.

# **KMI's Green Approach**

The more our society's buy products that are packaged in pulp moulded packaging the more trees we save and the fewer landfills we create. This environmentally friendly packaging reduces the amount CO<sub>2</sub> released into our atmosphere, which decreases the producers' contribution to global warming.

## **REDUCE** -- CO<sub>2</sub>, CO, & NO<sub>x</sub> Emissions

## **RE-USE** - - Energy

### **RECYCLE** - - Recycled Raw Material

Why use pulp moulded packaging?

+ It is reusable, environmentally friendly, can be produced economically and sold for a reasonable profit

#### Why recover energy?

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- + To save you money
- + To reuse the energy
- + To reduce toxic gases released into the atmosphere

#### Why use recycled material?

- + It lowers the material costs
- + Lessens impact on the environment

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Why Buy KMI? Our equipment helps to create sustainable businesses that recycle previously discarded fibrous material. Our efficient moulders and dryers reduce the energy used in the process when compared to other manufactures systems.



Not only do we believe in reducing energy inputs, but we also believe in recapturing and reusing these energy inputs. So that this energy can be re-used, therefore reducing the need for diesel fuel, natural gas, and electricity, and saving you money (without spending any). This is how we at KMI have created a way to produce pulp moulded products without spending as much as the traditional systems do on consumables. We believe that saving you money while at the same time reducing your ecological footprint is just good business! Here at KMI we build the machine you want and need. We DO NOT just provide a list of available options. We do this to save you money, by providing only what is necessary for your system to function properly and efficiently.

#### Hot Press Support

When a hot press is used with our systems the heat energy, for pressing, is extracted from the exhaust of our conveyer dryers (which we call our hot press support system). Without a hot press support system this energy would normally be exhausted into the atmosphere. We created the support system to conserve energy (protecting the environment) and as a direct result save you money. We have found that the savings, with our hot press support system are as high as 80% of the cost of the energy required to press these products.

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## **Dryers & Heat Recovery**

KMI dryers are built to match the production rate of our moulders, as well as to match the requirements of the product they are drying. This is helpful because it is more efficient to use only the amount of energy needed to dry the product (no wasted space being heated or extra energy being used). We achieve this by assessing your company's needs, and building a complete system tailored to you, instead of providing a system that 'best fits' your needs.

In KMI dryers the drying temperature is set manually in each zone (and is controlled automatically), to match the current product being produced. The temperature can be changed when switching to another type of product. This controlled drying process insures that your products are being dried effectively, to ensure the best possible product quality. It also insures that you are not wasting energy by over drying certain products, which do not require as high a temperature.

By controlling the temperature of each individual zone the first zone can be extremely hot without causing damage to the product. This will accelerate the drying process. The second and third zones will be cooler. The last zone has a humidistat on it to control the exhaust. Since up to 50% of the cost, in the drying process, is in heating the makeup air this results in energy savings.

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KMI has a unique water and energy recovery system that is unlike other manufactures out there. All of our conveyor dryers have heat recovery systems. These systems capture the heat energy in the exhaust. We then use a makeup air supply fan that returns this energy back to the dryer to be used over and over

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again. This process can reduce the use of fuel in the dryer by up to 40%. As a result of these heat exchangers water is recovered and returned back to the process system through the use of gravity.

We also capture energy from the seal water of the vacuum pump to reduce the need for a cooling tower. This process captures energy, and returns it back to the process water using a passive heat exchanger. The end result is recovered energy that can be used in the pulper to reduce the pulping time. This warm pulp will increase drainage in the forming process. The result will be tighter formed product with less moisture that dries easier. This increases production by up to 20% and give you a better product.

#### Maxon Burners

The sizes of the burners are matched to the weight of the product being dried. At KMI we use efficient low emission burners. The burner produces less CO and less than 20ppm NO<sub>x</sub>. This greatly reduces the amount of these toxic gases released into our atmosphere and their impact on the environment.

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### Manufacturing in Stainless Steel

At KMI we manufacture our tanks and process piping systems in our own plant. Stainless steel is primarily used for areas that come in contact with the pulp and process water recovery system. The moulding platen and transfer platen are also fabricated from stainless steel.

•Easier to maintain and clean for the production staff

Will not contaminate the process water or pulp system
Longer life for our systems that maintains it's value & reduces the environmental impact of our

systems