

Designing Kilns for Firewood

Bob MacGregor

NEKDA

Fall 2009

Requirements

- High temperature quickly
- High air velocity *through* the wood pile
- Ability to monitor and record wood core temperature
- Simple operation, low cost equipment

Why kiln dry firewood

- Faster than air drying
- Allows for quicker turn of inventory
- Ability to heat treat kills bugs and satisfies “export” to other states
- Reduces mold in bundled firewood
- Reduces weight for shipping

Why *not* kiln dry firewood

- Capital cost is very high. Many firewood producers have simple, relatively low cost methods and equipment
- In addition to kilns, you need a heat source, land, power, baskets, dry storage, etc.
- Local markets may not demand HT or dry wood

Can I dry firewood in my kiln?

- Simple answer: Yes, but.....
- Do you have a supply of firewood?
- How will you load and unload?
- Where will you store dry wood?
- Do you have spare kiln capacity
- Do you have enough heat and airflow; can you get air and heat through the wood instead of around it? Can you achieve HT requirements if needed (160 degF core for 75 min.)
- How will you market the wood? Wholesale? Retail? Bundled?
- Consider providing the *service*, instead of the *product*

Challenges

- State of Vermont.....
- Two boiler systems feeding the kilns
- Noise restrictions due to close neighbor
- Seasonal operation only due to close neighbor

The simple way



The Process



The old kilns



















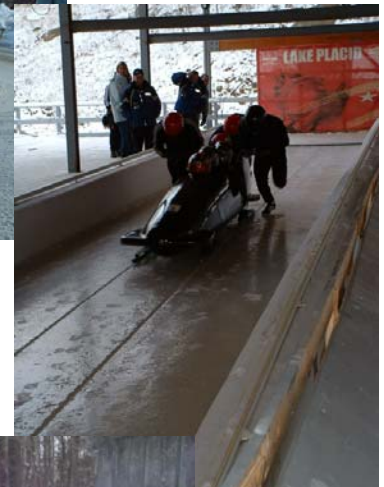
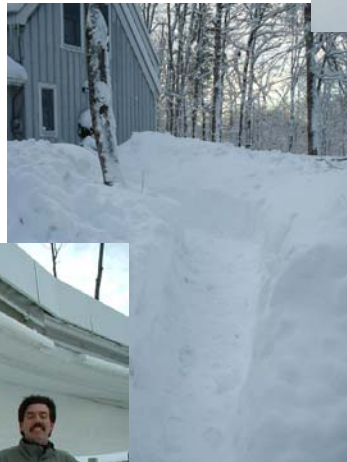






Results

- Increased production with larger kilns and same drying time
- Satisfied noise situation using variable frequency drives
- Easy operation and good records of wood core temperature
- Phytosanitary certification from State of Vermont to satisfy other states



Enjoy life and hope the lumber market improves!



Any questions?

