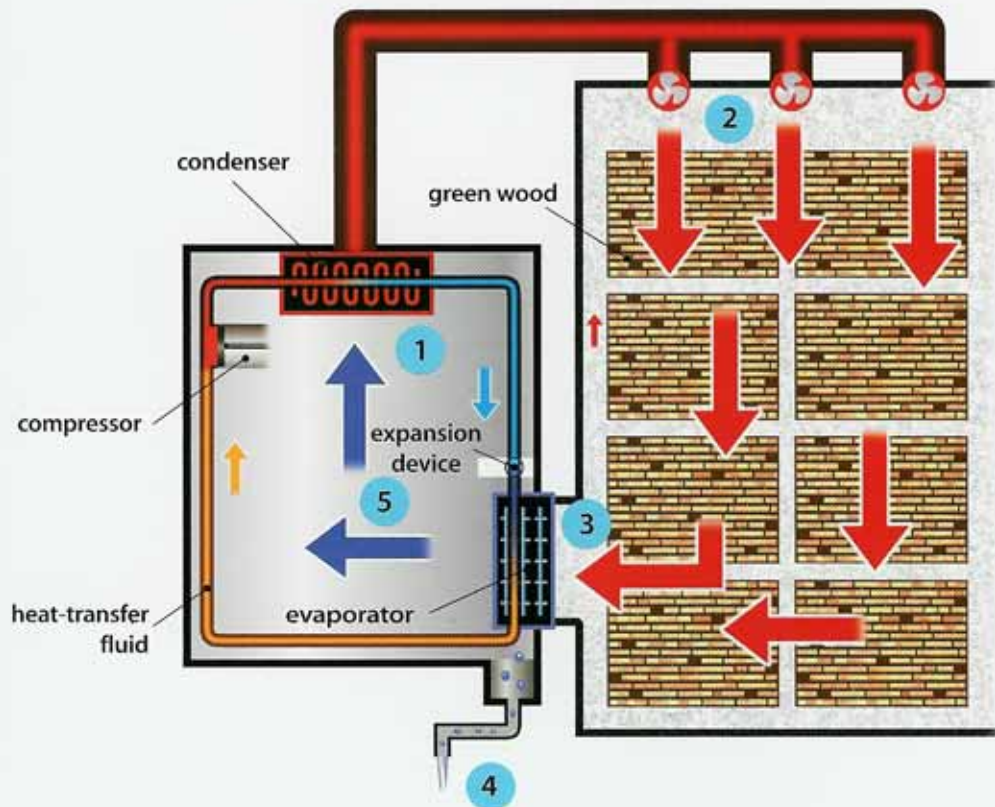


How a heat pump kiln works



Why does a heat pump kiln **consume two to three times less energy** than a conventional kiln?

Unlike conventional systems, a heat pump kiln recirculates hot air instead of venting it away. The heat is thus recycled within the system, conserving energy.

Simplified operating cycle of a heat pump

Made up of four mechanical components (compressor, condenser, expansion device and evaporator) and a heat-transfer fluid circulating through it, the heat pump shown above operates in a closed loop.

- 1 Air flowing through the condenser absorbs heat released by the transfer fluid as it converts from a gas to a liquid.
- 2 The resulting hot, dry air is forced into the drying cell, where it absorbs humidity as it circulates between the piles of lumber.
- 3 In the evaporator, the hot, moist air is cooled and dehumidified on contact with the heat-transfer fluid, which absorbs heat as it converts from a liquid to a gas.
- 4 The condensate resulting from the cooling process is drained from the kiln without causing any heat loss.
- 5 The dehumidified air goes back through the condenser, and the thermodynamic cycle begins again.

Did you know?

- The air temperature in the kiln can vary from 50°C to 70°C (110°F-160°F), depending on the type of pump.
- A heat pump kiln requires 1 kWh of electricity to evaporate approximately 3 kg of water.



To obtain examples of the total costs applicable to your company's operations, ask your Hydro-Québec representative. This service is free of charge.

We can help increase the productivity of your business by proposing a solution tailored to your needs.