Vacuum-Bag Lumber Kiln on a Concrete Pad

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https://globalmicroturbine.com/vacuum-bag-kiln-energy-article-by-global-energy.html

Trade the steel pressure vessel for a concrete pad. A flat, reinforced pad and a vacuum bag can dry lumber by the same physics as a commercial vacuum kiln — draw down the pressure, drop the boiling point of water, and pull moisture out at 140 F instead of 200 F. We ran the numbers for a 5,000 board-foot charge using USDA Forest Products Laboratory data as the baseline: 3,363 kWh of heating energy, a 101.5 kW peak load on the resistance blankets, a 10 hp vacuum pump, and a 110 kW connected service — all to dry a charge in 58 hours instead of 12 days.

This webpage QR code

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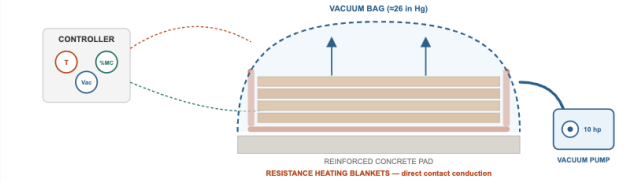
Sizing a 5,000 board-foot charge — built on drying physics from USDA Forest Products Laboratory GTR–287

Charge: 5,000 bd ft

Species basis: hard maple (SG 0.56) | **60% → 8% MC**

Cycle: 58 hours | **Vacuum:** ≈26 in Hg

HOW IT WORKS



Same drying physics as FPL's steel-chamber vacuum kilns — conduction heating under reduced pressure — delivered through a flexible bag and electric blankets instead of a welded vessel and hot-water platens.

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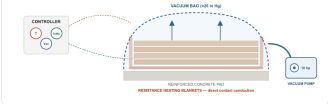

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