

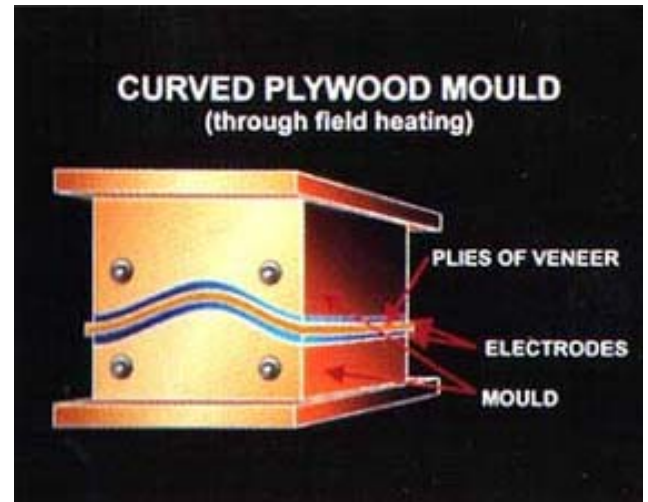
RF THROUGH FIELD HEATING



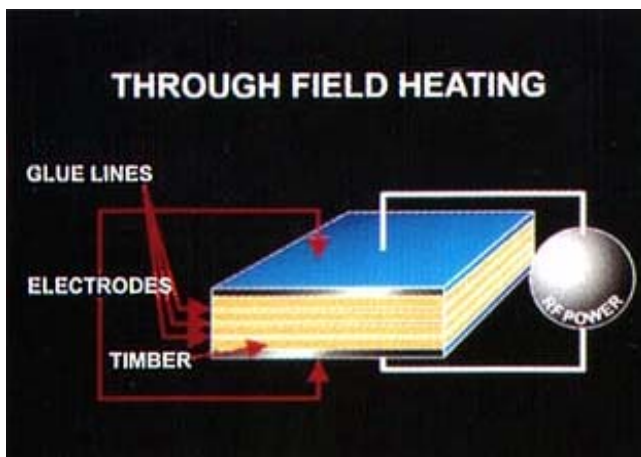
In through field heating, also known as transverse heating, the two plates or electrodes are situated on either side of the material being treated with the glue lines positioned parallel with the electrode plates, as illustrated.

The electric field passes through both the glue line and the wood. The temperature of the wood which is in contact with the cool electrodes will be slightly lower than the wood adjoining the glue line.

Through field heating is mainly used when gluing thin wood products, however, there is no limit to the area or wood thickness that can be heated with this method. In particular, the furniture industry uses through field heating for the manufacture of curved plywood.



Curing plywood mould



Through Field Heating

Cured plywood components are dried in moulds designed to house the RF electrodes, as illustrated. The RF power output requirement for shaping curved plywood is typically 10 to 25 kW. Strip parquet flooring is an additional application for RF through field heating.

RF Through Field Curing Time Calculation

The process time required to heat the volume of product can be calculated from the following formula:

Pressing time (min) =

$$\frac{2.2 \times \text{Weight of piece (kg)}}{\text{Power used (kW)}}$$

The energy required would be approximately 0.037 kWh per kg of product. An electrode pressure of 300 to 500 kPa is generally recommended, although higher pressures in the order of 1400 kPa may be required for complex shapes.



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