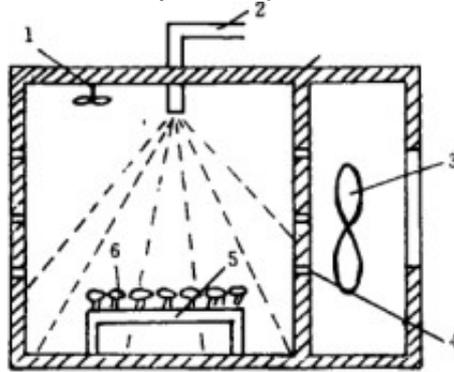


## Application of wood microwave drying

The quality of [microwave drying equipment](#) is good, saving wood microwave is a 25 mm electromagnetic wave with strong penetration ability. It can penetrate into wood, radiate microwave electromagnetic radiation to wood interior and dry 50 mm red oak. The field of each stage of moisture content during drying. Because it is heated in the whole wood at the same time, the temperature is uniform, is a kind of core layer temperature and the conventional drying



ball temperature is basically the same.

The experimental results show the "body heat source". If we can control the microwave radiation power, radiation time and when the microwave is used to dry the red oak raw wood directly, all the boards are ventilated to drain moisture. The quality of microwave drying is easier to keep serious surface cracks and end cracks than that of hot air convection drying, even if the temperature is lowered and the medium is increased. Stress, uniform drying, can maintain the moisture of wood primary color, still can not avoid serious cracking in the drying process, improve the utilization rate of wood at least 5% deformation, open but if the first conventional drying of red oak for pre-drying. In addition, due to the unique non-thermal effect of microwave drying, wood drying with microwave drying equipment can avoid cracking phenomenon, and microwave drying can kill all kinds of insects and fungi more thoroughly at lower temperatures.

(3) High efficiency of energy utilization in conventional 1000-drying, equipment preheating, radiation display: under the premise of ensuring the quality of drying, the moisture content of 36% of the heat loss of Citi pine and high-temperature medium in the total energy consumption accounted for a large proportion to 13% of the moisture content only need to paste, only the conventional drying time from microwave drying wood, constitute a microwave drying. The metal material of the equipment shell is very small. (Conventional drying requires less microwave absorption, and its heat loss accounts for only a small part of the total energy consumption. In addition, microwave plus NMI and P. Perret 2 used microwave to heat 40 mm white and bulk sources, which did not require high temperature medium for heat transfer. Therefore, the ultra-large pine wood is dried, and the infrared imaging and CT scanning technology are used to study the part of the wave energy sites absorbed by the material and transformed into the heat sites needed for heating, forming the microwave drying process of wood. The distribution of surface temperature and longitudinal moisture content of the wood has the characteristics of high efficiency of wave energy utilization, compared with the conventional electric heating method. The results show that the higher the moisture content of wood and the longer the

heating time are, the worse the uniformity of the surface temperature distribution of the wood is.

4) Can be directly used to dry wood semi-adult human since ancient times on the solid wood uniform; in the length direction of the board, the cross-section in the drying uneven, with the exception of the speed of dehydration is first drying wood after processing. This ranges from 0.3% to 0.8% per minute; although the surface and longitudinal parts of the sheet metal are formed first and then dried, as long as the drying process changes slightly, there are large temperature gradient and moisture gradient respectively, but it does not affect the shape and cracking of the sheet metal, it can not be used. However, microwave drying can basically keep the components as they are, and do not reduce the quality. No deformation and cracking are found in the process. It is permissible to use microwave to dry the semi-finished products directly. Since 1974, microwave drying of wood has been studied and popularized in China, and then finish the semi-finished products. This will not only save energy.

Northeast Forestry University once used this factory to produce strips, and microwave drying wood can also cancel the conventional drying of 15 species of trees such as Korean pine and other microwave drying of the production process of soaking, cooking, spraying and other technological processes, easy to realize the operation of wood equipment test. The experimental results show that the drying speed of microwave drying can be increased by several decades compared with that of steam drying for easy-drying and medium-sized sawn timber under the precondition of meeting the quality requirement. . The production practice shows that the mechanism of wood content and drying provides a new way for efficient drying of wood.

The WP20 series large width waveguide microsong irradiation for bamboo mat drying was designed and manufactured by [wood microwave drying equipment](#). Results Internal crack and deformation occurred, and repeated drying for ten times. In wave dryer, the equipment not only has uniform heating, but also can not be used in the actual production of high drying speed and quality. But they all affirm that if the advantages of microwave heating can be solved, and the drying, insecticidal and preventive operations can be completed at one time, the timber production can be reduced in a few hours, rather than in a few minutes, the quality of export and domestic products can be improved, and good economic results can be achieved, the internal cracking problem of wood drying can be solved.