

## QUESTIONS AND ANSWERS

### Why the artificial drying is the best choice?

Because artificial drying is the best choice from every point of view: both temporal and qualitative, productive, economic and environmental. A better wood stabilization to a determinate moisture, also faster than the natural outside drying process, it raises exponentially the quality of the product, it lightens the weight quite at the 50%, facilitating a cost breakdown of the transport. Artificial drying, beside, permits a drastic reduction of the cutting wood waste equal to 30/50%. This last aspect determinates a big economic impact, but mostly environmental: a less waste of product means a better management of the worldwide forest patrimony and therefore a less need of deforestation from sawmills.

### Why to invest in artificial drying kiln?

Because the buy of a conventional drying kiln Termolegno do not have to be understood as economic cost but as an investment quality, a real business growth and economic development.

The high quality of the materials used in the structure and in the components guaranties a significant reduction of the management costs, immobilizations of materials and waste of dried product to make this investment economic and productive, quickly depreciable.

### How the conventional drying process develops?

The conventional drying kilns permits drying cycles in hermetic and controlled environment. For the correct performance of the drying programs, two parameters are consider: temperature (**T**) and moisture (**EMC**). This result is obtained by placing the needed instruments (heating systems, cooling/refill, humidification, de-humidification) and a suitable tools control system. The important phases of the process itself are: **WARMING-UP** : the wood is heated in a gradual way, maintaining the EMC steady, it avoids the too fast drying process of the wood surface. **INITIAL CONDITIONING**: Initial **T** and **EMC** are for a range of time constant maintained, so that the central zone of the boards remain in balance with the external one. The time of the phase depends on both the type and the thickness of wood. **DRYING**: the **EMC** of the wood is reduce until the desired **FMC = Final moisture content** (final moisture). **FINAL CONDITIONING**: it needs to reduce the tensions present in the wood because of the different EMC between the central zone and the surface of the board. Its period depends on the type and thickness of wood. The final conditioning his needed mostly for hard wood, where a high quality has requested. **COOLING**: Before the extraction from the cell, the material has cooled of 1/3 from the initial **T** reached during the drying phase. During the winter -season it will be extremely reduce in order to avoid excessive heat shock than the **T** outside.

**EQUALIZATION** (optional) usually this phase is included inside the process depending on the wood to be dried. It permits to uniform the **EMC** of the wood in the various areas of the drying kiln. **HEAT TREATMENT HT (phytosanitary treatment according to standard FAO ISPM-15)**: For some applications required from the international norms, it is necessary that the material have to be treat at high **T** for reducing the not desired micro - organism. That phase permits to certificate that the wood **T** has maintained higher than a particular value during the request process.

### What are the types of wood that can be dried?

Every type of soft wood, hard and tropical, most of all coming from Africa and South America. The company Termolegno designs plant and realized drying programs in order to dry different timber species. Some examples: Scots pine, maritime pine, douglas fir, spruce, ash, acacia, Oak, steamed beech, white/steamed beech, radiate pine, patula pine, acacia mangium, padauk, teak, sapele, iroko.