MODELING MOISTURE DISTRIBUTION OF A DRIED RED OAK LUMBER PACKAGE IN A HIGH HUMIDITY ENVIRONMENT

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Many companies store dried lumber in an uncontrolled environment prior to use in manufacturing. They often ask - how long can lumber be stored outside and still be good to use? In this project, the relationship between the ambient environment and moisture content distribution throughout a package of dried red oak (*Quercus rubra*) lumber over time is analyzed. Thirty nine wireless moisture content transmitters were embedded in a packet of lumber 8 feet long, 42inch wide and 34 layers high. End coating was applied to both ends of each board prior to drying to 7 percent MC, but was removed from one end for this experiment to study the effect of end-coating. The environmental chamber conditions were set to EMC of 16 percent and moisture content changes were observed for several months.

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