

## Investigation of Changes of Physical Properties of the Poplar Wood in Radial and Longitudinal Axis at Chaloos Zone

**Authors :** Afshin Veisi

**Abstract :** In this study, the physical properties of wood in poplar wood (*Populus sp.*) were analyzed in longitudinal and radial directions of the stem. Three *Populus Alba* tree were cut in chaloos zone and from each tree, 3 discs were selected at 130cm, half of tree and under of crown. The test samples from pith to bark (heartwood to sapwood) were prepared from these discs for measuring the involved properties such as, wet, dry and critical specific gravity, porosity, volume shrinkage and swelling based on the ASTM standard, and data in two radial and longitudinal directions in the trunk were statistically analyzed. Such as, variations of wet, dry and critical specific gravity had in radial direction respectively: irregular increase, increase and increase, and in longitudinal direction respectively: irregular decrease, irregular increase and increase. Results of variations to moisture content and porosity show that in radial direction respectively: irregular increasing and decreasing, and in longitudinal direction from down to up respectively: irregular decreasing and stability. Volume shrinkage and swelling variations show in radial direction irregular and in longitudinal axial regular decreasing.

**Keywords :** poplar wood, physical properties, shrinkage, swelling, critical specific gravity, wet specific gravity, dry specific gravity

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