Wood Drying Processes under Essentially Nonisothermal Conditions

Автор: Gorokhovskiy, AG (Gorokhovskiy, A. G.)[1]; Shishkina, EE (Shishkina, E. E.)[1]; Starova, EV (Starova, E., V)[1]; Mikov, AA (Mikov, A. A.)[1]

Показать номер Web of Science ResearcherID и ORCID

LESNOY ZHURNAL-FORESTRY JOURNAL
Выпуск: 2 **Стр.:** 88-96
DOI: 10.17238/issn0536-1036.2018.2.88
Опубликовано: 2018
Тип документа: Article

Аннотация

The wood drying technology is being developed mainly by improving the wood drying schedule based on modern methods of computer simulation and process optimization A promising direction is the improvement of drying schedules in terms of their energy efficiency and ensuring the required quality of products. The scope of research is a theoretical analysis of heat and mass transfer when wood drying by schedules on the basis of the phenomenon of thermal moisture conductivity. Such regimes are characterized by the presence of a temperature gradient along the section of the drying assortment, which classifies them as essentially nonisothermal. A model based on the two-phase filtration equations, sorption isotherms, the Kelvin-Cliperon-Clausius thermodynamic equations could be used to analyze nonisothermal transfer processes, but it is associated with significant mathematical difficulties. The goal of research is to adjust solve simultaneous equations of heat and mass transfer under the essentially nonisothermal conditions. The methodological basis of the study is the physical model of the capillary-porous wood structure, taking into account the colloidal nature of the cell wall and moisture transfer model in wood capillaries. In capillary-porous bodies, to which wood can be referred, moisture exchange with the medium occurs due to the removal of liquid from

ВЕРНО
Начальник отдела документационного обеспечения
А.А. Нейковская
«01» 06 2018

РОССИЙСКАЯ ФЕДЕРАЦИЯ Российский университет дружбы народов Министерство образования и высшего образования ОГРН 1026605426814