

Moisture effects in the compaction of fibrous agricultural residues

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Abstract

Moisture effects during the compaction of fibrous agricultural residues have been examined on the basis of the variation of the physical and mechanical properties of the materials, as well as on the materials' post-compression recovery and energy requirement.

The study confirms the significant influence of the moisture content on the compression and relaxation behaviour of a material, with the moisture level beyond which the formation of stable wafers becomes impossible identified as the 'fiber saturation point'. The fiber saturation points for fibrous plant residues appear to lie in the moisture range of 20–26%, wet basis.

Material post-compression recovery increases with increasing moisture content, and an index is suggested to reflect this in assessing moisture effects on the basis of the energy requirement. Copyright © 1989 Published by Elsevier Science Ltd.

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