



## VARIABILITY OF HEMP SHIVES: STUDY THROUGH IBIS AND CHANVRISOL PROJECTS

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There is a growing interest in the study of biobased material for thermal insulation, in order to reduce the environmental impact of building works.

The properties of vegetal particles that come from plant stalks, such as hemp, colza, sunflower or flax, might be influenced by the plant growth conditions and their after harvest processing. The following variability sources might be relevant to consider: weather conditions, soils nature, plants organization, variety, retting process, defibration, crushing, sieving.

The present study is focused on the characterization of ten hemp shives, coming from all over France hemp producers. The investigated physical properties are water absorption and sorption, bulk density, particle size distribution and dust ratio. The results are compared to other biomass resources: flax and colza.

These characterizations were performed in the framework of two projects:

1. The IBIS project, "Isolants Biosourcés pour le bâtiment" ("biosourced insulators for building sector"). One of the aims is the development of a spraying insulation mortar lightened with biobased particles;
2. The CHANVRISOL project, "développement de la filière CHANVre en circuit court pour l'ISOLation des bâtiments normands" ("development of hemp production in short circuit for buildings insulation in Normandy"). One of the aims is to characterize several hemp raw products, to evaluate their variability and their impact on the required performances for thermal insulation (thermal conductivity, hygroscopic behaviour...).

