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IMPACT OF HEMP SHIV ON SETTING AND HARDENING OF CEMENTITIOUS BINDERS IN LIGHTWEIGHT CONCRETE

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Abstract.

Shiv constitutes the central part of hemp stalk (*Cannabis Sativa*). It can be considered as a by-product of the long fibers and seed production. Regarding the chemical composition, shiv is comparable to wood but it presents a much lower density. Due to this low density, shiv can be used as a natural aggregate to produce hemp lightweight concretes (HLC), characterized by good thermal and acoustic insulation properties. Whereas the functional properties and environmental advantages of HLC are clearly established, some questions remain on their formulation and setting up. In particular, like the most of the lignocellulosic residues, shiv develops complex interactions with cement during setting reactions, which are at the origin of various technical problems during curing and further performances.

Our study is focused on the influence of shiv extractives on binders (setting delay, hydrates yield and mechanical performances) and on the development of the interface between shiv and binder.