

Wood-Polymer-Hybrid-Fabrics

A feasibility study to innovate wood-polymer-hybrid-fabric (woven and/or non-crimped) to substitute steel reinforcements (for concrete) in construction

All materials used will be characterized. Highly loaded and strong wood-polymer-filaments will be spun and further processed to woven and non-crimped fabrics. These fabrics shall be monitored in concrete constructions over a long period of time.

The compatibility and interface behavior between wood, polymer, and concrete have to be determined under real conditions and environmental influences.

Since the overall objective is very ambiguous and risky, it is advised to perform a feasibility study of 18 months to identify and resolve issues at an early stage, minimizing the risk for a comprehensive proposal.

Firstly wood flour and fibers will be compounded into a polymer matrix. Secondly, it has to be established that the resulting compounds can be stretched and spun. The mechanical properties (especially the strength) of the spun filaments have to be compared with steel reinforcements.

If the properties are comparable, a prototype material for an innovative reinforcement will be manufactured.



Figure: PP/Woodfiber Filaments

Project duration:

07/2020 – 11/2021

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