Development of Sustainable Engineered Biopolymers in Wood Composites

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Over the last few years, advancements have been made around improving sustainability for wood composite boards. One of the last and most challenging sustainability hurdles is finding a viable alternative to petroleum based resin binders. In today's market, no longer is formaldehyde emission control sufficient to meet the requirements of many architects and end use consumers. The immergence of bio-polymers specifically engineered for use as wood composite binders has been successfully demonstrated as an option towards a truly renewable wood composite board.

Recent technology advancements driven by EcoSynthetix have exploited the advantages of using an engineered bio-polymer. The evidence shows that this renewable technology has the potential to be used as a partial up to full replacement of classical formaldehyde technologies. Numerous trials, both in the lab and at industrial scale, have shown that a renewable binder of the proposed technology can produce a commercially viable board in a traditional industrial setting. This technology has also been successfully trialed in additional applications such as wood vaneer bonding to MDF and PB, and décor surfacing materials. The ultimate goal of this work is to provide evidence that a sustainable binder alternative can be used to make a commercial board while at the same time improving the total cost of manufacturing.

Our presentation will expand upon the commercialization and extensive industrial trials of engineered biopolymers in MDF and PB applications.