CelluWoodFlex - biobased hot-melt adhesive fibers as binders for wood fiber insulation mats

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Abstract

Flexible wood fiber insulation mats are commonly bonded with petrochemical bicomponent fibers, typically based on polyethylene and polypropylene. While these fibers enable thermal bonding, they reduce the bio-based content of the product and limit material recycling. The Project CelluWoodFlex aims to develop bio-based, melt-spun binding fibers from cellulose esters as alternative. As Cellulose derivatives, Cellulose acetate propionate (CAP) and cellulose acetate butyrate (CAB) are considered renewable and bio-based. Unlike cellulose the ester derivates are thermoplastics therefore can be melt spun. One key target of the project is to have the characteristics of the new binding fibers matching the traditional bicomponent fibers, so minor adjustments in processing would be needed and similar product performance is achieved. The second key development of the project is a separation and recycling concept for both, wood and ester fibers.

Keywords: celluloseester, wood, insulation, fibers, recycling, bio, based

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