

BIO-RESINS FOR RE-ENGINEERED UK WOOD PRODUCTS

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A scoping study being conducted for the Forestry Commission

This project aims to provide the platform upon which Forestry Commission can evaluate support for emerging bio-resins and their application in timber re-engineering industry in UK. The study consists of an appraisal of the status of bio-resins worldwide and the drivers and barriers dictating commercial growth, their fitness for purpose and viability for the timber re-engineering products, industry and recognised experts in the field. The findings of the study shall then be developed into a series of recommendations and proposals, comprising a strategy for the further development of bio-resins in re-engineered UK timber products.

DEFRA has been supportive in developing new polymer resins to create fully bio-based composites, such as boards in which the fibre component is made from hemp, flax or timber and the resin binder from rapeseed oil rather than the commonly used synthetic chemical resins. Considerable advances have been made over the past 5 years. A range of adhesives have been derived from natural oils such as Cashew Nut Shell Liquid (CNSL) and vegetable oils (rapeseed, soybean, sunflower). The cost was a significant barrier to the development of renewable materials, however, the production has become viable as technologies

evolve, and economies of scale come on stream, along with price inflation of petroleum and increasing awareness relating to end of life disposal. Bio-resins can now be used as natural, sustainable alternatives to traditional petro-chemical derived materials such as phenol-formaldehyde and iso-cyanate resins in the manufacture of composite products. Many of the synthetic resins are coming under increasing restrictions due to tightening environmental exposure regulations. The industry risk losing key familiar resins in the future; hence the need to critically assess the opportunity for bio-resins. The development of a bio-resin system for replacement of synthetic resin becomes important for the present and future 'green' credibility of re-engineered wood products.

FURTHER INFORMATION

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