**Summary**

A surface treatment process and water-based primer for timber that can be applied by brush or spray which enhances bond strength and durability of subsequently applied adhesives. Potential commercial applications include glued structural timber components (such as window frames and doors), furniture manufacture, and production of laminated and veneered wood products.

The treatment has shown excellent results on timbers, both hardwoods and softwoods, which are normally difficult to bond.

The process can be easily integrated into existing manufacturing systems, allowing rapid treatment.

CRC Wood Innovations seeks a partner to confirm treatment performance in industrial situations and further develop it for commercial sales.

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**Connect with CRC Wood Innovations**

**SIRO-grip**

Water-based surface treatment for improving adhesion to natural polymers such as wood.

**The opportunity**

Many Australian hardwood timbers are difficult to glue and paint with surface coatings. After machining, extractives migrate rapidly to the wood surface, creating a surface which can seriously hinder adhesion of glues and paints. According to industry, Spotted Gum (*Corymbia maculata*), Sugar Gum (*Eucalyptus cladocalyx*) and Blackbutt (*E. pilularis*) are considered timbers difficult to glue, while a softwood species such as *Pinus radiata* is an easily bonded timber.

“SIRO-Grip” has been developed to increase the adhesion strength and bond durability of glues and paints through modifying the surface of wood and other natural polymer-based products before application of adhesives. Use of “SIRO-Grip” ensures that a strong bond can be obtained even if the glue is not applied for some time after the wood has been machined.

“SIRO-Grip” has been tested with excellent results on hardwoods and softwoods considered difficult to bond. Its feasibility for use in commercial situations has been shown using a pilot plant facility for on-line surface modification established in 2004.

**Advantages of “SIRO-Grip” treatment:**

- Increases bond strength in “difficult to glue” hardwood timbers.
- Creates a strong, durable bond by dramatically reducing scatter of adhesion strength in comparison with untreated substrates.
- A water-based formulation using non-noxious chemicals which can be applied by spray or brush.
- Easily integrated into commercial on-line processing using rapid treatment speeds.
- Suitable for DIY or in-field surface priming.
- Ensures a strong, durable bond for some time after surface machining.
- Provides costs savings by allowing the use of relatively cheap materials and efficient processing.

“SIRO-Grip” has been developed by researchers at CSIRO (Commonwealth Scientific & Industrial Research Organisation) working with Research Program “High Value Added Wood Products” of CRC Wood Innovations.

**What the CRC seeks:**

A partner to confirm treatment performance of “SIRO-Grip” in industrial situations and further develop it for commercial sales.