

A Novel high performance Epoxy structural adhesive for Windmill applications.

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Abstract:

Three different thixotropic adhesives were made comprising a) a standard two component epoxy adhesive, b) a modified two component epoxy adhesive where synthetic rubber is used as a toughening agent and c) a novel proprietary two component epoxy adhesive modified with novel toughening agent. A comparative study of rheology, mechanical properties, fracture toughness, and fatigue properties in tension shear mode is done. The standard adhesive without toughening agent is found inferior in most of the properties tested. Novel additive is found to work as an excellent toughening agent and provides more or less similar fracture toughness as synthetic rubber. The adhesive modified with synthetic rubber shows cyclic hardening during fatigue test in tension shear mode while novel adhesive is found unchanged up to 1 million cycles when tested under identical conditions.

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