Bell Helicopter
A Textron Company

S.O.W. - UNIVERSITY WORK

Airframe Design

PROJECT TITLE: Quick cure adhesives for a faster assembly time.

OBJECTIVE: The objective of this project is to identify and screen quick cure structural/semi-structural paste adhesives (< 4 hours cure at room temperature). The use of such quick cure paste adhesives on the assembly lines will allow a quicker move rate.

DESCRIPTION:

The intent of this project is to screen and identify quick cure paste adhesives (< 4 hours cure at room temperature): epoxies, urethanes and/or acrylics. Presently, where permissible by Stress, sealants having 2-4 hrs curing time are used to replace adhesives; in these cases (riveted and bonded assemblies), Stress would rather have adhesives because of fatigue concerns. In other cases when sealants cannot be substituted, the cure time is 24 hours at room temperature. The use of these quick cure paste adhesives on the assembly lines would allow a quicker assembly time and quicker move rate.
Also the use of such quick cure paste adhesives is to be evaluated for installation of bonded nutplates and/or click studs.

DELIVERABLES:

Provide a list of best candidates from the screened adhesives, 1 of which is to be qualified to a specification. The other candidates are to be qualified at a later date when the full extent of testing is completed.

SCHEDULE: May – September 2011

NO OF HOURS: Total hours: 500

SOFTWARE: Excel, Minitab (a plus), PowerPoint, Word.

PRE-REQUISITES: Mechanical/Aerospace Engineering Student

- General knowledge of aircraft structure, strength of materials and composites.
- Familiar with mechanical testing
- Familiar with Excel, Word and PowerPoint.
- 2nd year or more bachelor student is preferable

BENEFITS: Reduce waiting time for adhesives to cure, improve move rate, improve design for manufacturability and improve internal customer satisfaction

PROJECT SUPERVISOR AT THE UNIVERSITY:

BELL PROJECT SUPERVISOR: Joe Aquino Tel: 450-971-6500, ext 2534

REVISION:

PROJECT COST:

UNIVERSITY: