

NASA National Center for Advanced Materials

PERFORMANCE BULLETIN

at the National Institute for
Aviation Research



February 12, 2007

N07-01

NCAMP Update

The last few months have been busy for the NCAMP staff and its partners. Below is a status report for the NCAMP qualification programs.

Status of ACG MTM45-1 Qualification

- For qualification programs
 - Prepreg production completed
 - G30-500 3K plain weave qualification testing completed, final report being created
 - 6781 S-2 glass qualification panels received January 2007, conformity inspection is underway
 - HTS 5631 12K 145 gsm uni panels are being made
- For equivalency programs
 - Prepreg production near completion
 - Twelve companies are participating. Some aircraft companies have received the prepreg
 - Test plans, material spec and process spec have been approved by the FAA. Panel conformity requests being processed by the FAA

Status of Hexcel 8552 Qualification

- Prepreg production began in late January and will last three to five weeks to supply to 15 participating aerospace companies (over 1,000 lbs per batch)
- Aircraft companies invited to witness production and review

draft prepreg PCD

- Test plan, prepreg specifications and process specification
 - Reviewed by NCAMP members, comments incorporated, released, and submissions to the FAA began the week of Feb. 4, 2007.
- Process spec contains one base and two alternate cure cycles (currently being used by existing 8552 customers to control flow and prevent core crushing). The three cure cycles have been compared with existing process maps and cure kinetics models and believed to be equivalent for basic lamina and laminate properties.

In addition, the following caveat is used: *“Since not all properties are investigated in a typical equivalency program, users should not assume that successful equivalency demonstration also means that all other properties are equivalent; a more extensive test matrix that includes more test methods and test conditions may be necessary to thoroughly evaluate the true equivalency of the alternate cure cycle(s). Based on the popularity of the alternate cure cycle(s), NCAMP may perform more extensive testing to investigate the equivalency of the alternate cure cycle(s).”*

Status of Cytec 5215 Qualification

- Prepreg production is near completion for 13 aerospace companies
- Aircraft companies invited to witness production and review draft prepreg PCD
- Test plan and prepreg specifications
 - Reviewed by NCAMP members, comments incorporated, will be released soon
- Process specification (which contains Cytec proprietary information) is being optimized to be more production-friendly.

Status of Cytec 5250-5 Qualification

- Seven members that are participating in the panel fabrication process agreed to change from 5250-4 to 5250-5. Advantages over Cycom® 5250-4 include:
 - Better Handling
 - Better Tack
 - Improved for slit tape automation applications
 - In addition, Cycom® 5250-5 prepregs remain compatible with the entire BMI complement of products including glass products, multiple film adhesives, core splicing, and edge fill materials
- Material allocated for prepreg production, prepreg production to begin soon
- Test plan and material & process specifications are being written, to be reviewed by NCAMP members soon

Status of PCD Preparation Guides

- NCAMP Prepreg PCD Preparation Guide Rev -
 - Released and being used by prepreg companies
- NCAMP Carbon Fiber PCD Preparation Guide Rev -

- Initial drafts are being reviewed by selected members and subject matter experts. Will be reviewed by general membership after initial comments are incorporated.

Status of NCAMP Carbon Fiber Tow and Carbon Fiber Fabric Material Specifications

- Initial drafts created and being reviewed by selected members and subject matter experts. Will be reviewed by general membership after initial comments are incorporated.
- These specifications are intended to cover the reinforcements that are used in NCAMP prepegs.

For more information about NCAMP visit the website:

<http://www.niar.wichita.edu/coe/ncamp.asp>

